



June 2023

DOD CIVILIAN WORKFORCE

Actions Needed to Analyze and Eliminate Barriers to Diversity

GAO Highlights

Highlights of [GAO-23-105284](#), a report to congressional committees

Why GAO Did This Study

DOD employs over 700,000 federal civilians—over one-third of the total federal civilian workforce—and recognizes the importance of a diverse workforce to achieve its critical missions. However, DOD has faced challenges ensuring its workforce reflects the diversity of the nation it serves.

House Report 116-617, accompanying the National Defense Authorization Act for Fiscal Year 2021, includes a provision for GAO to examine diversity in the DOD federal civilian workforce. This report analyzes (1) the demographic composition of the DOD civilian workforce by gender and racial or ethnic group; (2) promotion outcomes among these demographic groups; and (3) the extent to which DOD has developed policies and plans to identify any barriers and track progress eliminating them.

GAO analyzed DOD data for appropriated-fund civilian employees in the three military departments and across the other DOD components from fiscal year 2012 through fiscal year 2021 and conducted a multivariate regression analysis of promotions by gender and racial or ethnic group. GAO also analyzed DOD diversity and EEO policies, strategic plans, and federal standards to analyze barriers and track progress.

What GAO Recommends

GAO recommends that DOD (1) update policies to ensure it collects barrier-related data, (2) assign clear oversight roles, and (3) establish measures to track progress in eliminating barriers. DOD concurred with these recommendations.

View [GAO-23-105284](#). For more information, contact Brenda S. Farrell at (202) 512-3604 or farrellb@gao.gov.

June 2023

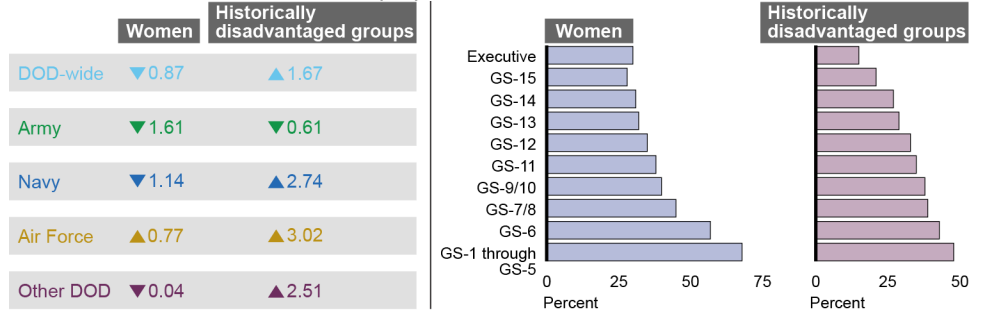
DOD CIVILIAN WORKFORCE

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What GAO Found

Over the 10 years of Department of Defense (DOD) data GAO analyzed, the representation of women and of employees from historically disadvantaged racial or ethnic groups (historically disadvantaged groups) in DOD's civilian workforce generally remained unchanged and below total federal civilian workforce levels. Overall, from fiscal year 2012 through fiscal year 2021, the proportion of women decreased slightly, from 33.0 to 32.1 percent, but increased slightly for historically disadvantaged groups, from 31.0 to 32.6 percent. GAO also analyzed the General Schedule (GS) workforce and found that women and historically disadvantaged groups remained less represented at upper GS grades and the executive level.

Demographic Representation in the DOD Civilian Workforce: Changes from Fiscal Year (FY) 2012–2021 and in General Schedule (GS) Grades and Senior Executive Service in FY 2021



Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Note: Data reflect percentage-point change in the military departments and other DOD components from FY 2012 to 2021 (left) and percentages in FY 2021 (right). Historically disadvantaged groups include Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races.

Promotion outcomes were generally lower for historically disadvantaged groups than for White employees, and varied for women relative to men, based on GAO analysis of DOD data. For example, when controlling for factors such as occupation and education level, historically disadvantaged groups—particularly Black or African American employees—were less likely to be promoted in nearly all grades at or above GS-7. This analysis does not completely explain reasons for different promotion outcomes or establish causal relationships but can provide agencies additional insight.

DOD has developed policies and plans to manage department-wide diversity, and it has taken steps to identify potential barriers to diversity and equal employment opportunity (EEO) in the military departments and other DOD components. However, GAO found that little has changed in terms of demographic representation. DOD has developed mechanisms to improve department-wide data analysis, but does not have clear policies for collecting barrier-related data, which may limit their utility. Unclear oversight roles and measures for tracking DOD progress to eliminating barriers—a top DOD and federal priority—may also hinder meaningful progress overcoming disparities in representation and promotion outcomes. Without additional actions, DOD lacks reasonable assurance its many efforts will effectively contribute to achieving its goals.

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Abbreviations

DMOC	Diversity Management Operations Center
DOD	Department of Defense
EEO	Equal Employment Opportunity
EEOC	Equal Employment Opportunity Commission
FEORP	Federal Equal Opportunity Recruitment Program
GS	General Schedule
IC	Intelligence Community
MD-715	Management Directive 715
ODEI	Office for Diversity, Equity, and Inclusion
OPM	Office of Personnel Management
STEM	science, technology, engineering, and mathematics
WHS	Washington Headquarters Services

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June 21, 2023

The Honorable Jack Reed
Chairman
The Honorable Roger Wicker
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Mike Rogers
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

As the largest federal employer with over 700,000 full-time federal civilians throughout the United States and worldwide, the Department of Defense (DOD) and its workforce diversity efforts directly affect the federal workforce government-wide.¹ Yet, in the 75 years since President Truman first established standards for fair employment practices in the federal workforce, DOD has faced challenges ensuring its workforce reflects the diversity of the United States, with equal employment opportunity (EEO) for all.²

According to DOD's 2022 diversity strategic plan, DOD needs diverse perspectives, experiences, and skillsets to remain a global leader, deter war, and secure the nation. Federal national security strategies also emphasize the importance of workforce diversity in achieving U.S. national security goals, and the President cited the talent and diversity of

¹Estimates for the total federal civilian workforce vary. Further, not all agencies are required to report data to the Office of Personnel Management (OPM) for public reporting, including intelligence agencies and others, such as the White House staff and Office of the Vice President.

²Exec. Order No. 9980, *Regulations Governing Fair Employment Practices within the Federal Establishment*, 13 Fed. Reg. 4311 (July 26, 1948).

the workforce as the greatest asset to protecting the United States and advancing our interests abroad.³

A conference report accompanying the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 includes a provision for us to examine diversity of the DOD federal civilian workforce.⁴ This report analyzes 1) the demographic composition of the federal civilian workforce by gender and racial or ethnic group from fiscal year 2012 through fiscal year 2021, 2) promotion outcomes among demographic groups from fiscal year 2012 through fiscal year 2021, and 3) the extent to which DOD has developed policies and plans to identify any barriers to diversity and track progress eliminating them.

For our first two objectives, we obtained data from the Defense Manpower Data Center for all appropriated-fund DOD federal civilian employees for fiscal years 2012 through 2021, which were the latest data available for this review.⁵ The DOD data included individual-level quarterly data for full-time (i.e., 40-hour workweek) employees, in all

³Department of Defense, *Department of Defense Diversity, Equity, Inclusion, and Accessibility Strategic Plan, Fiscal Years 2022-2023* (Sept. 30, 2022) and *2022 National Defense Strategy of the United States of America, including the 2022 Nuclear Posture Review and the 2022 Missile Defense Review* (Oct. 27, 2022); The White House, *Presidential Memorandum: Promoting Diversity and Inclusion in the National Security Workforce* (Oct. 5, 2016).

⁴H.R. Rep. No. 116-617, at 1773 (2020) (Conf. Rep.).

⁵Our analysis of the DOD civilian workforce includes appropriated-fund employees of the federal government, and excludes non-appropriated fund civilian employees, contractor personnel that work at DOD, or active-duty military service members. Non-appropriated fund employees, such as those working at military exchanges, are federal employees, but they are not covered by most laws administered by OPM unless specifically provided by statute. Department of Defense, *Financial Management Regulation, 7000.14-R Volume 13 Chapter 8, Non-appropriated Fund Payroll* (Nov. 2022).

available pay plans and occupations.⁶ We examined demographic composition by 1) women and men and 2) racial or ethnic group.⁷

We analyzed the demographic composition of the DOD federal civilian workforce as a whole, as well as by its military departments and the other DOD components. Specifically, we analyzed the composition of the civilian workforce within each of the three military departments of the Army, the Navy, and the Air Force, as well as the remaining DOD civilian workforce in the defense agencies, field activities, or other DOD component organizations—which we collectively report as the “other DOD components.” We also compared our demographic analysis with available OPM-reported data on diversity across the entire federal civilian workforce.⁸ We assessed the DOD and OPM data sets and data elements we used through documentation review, interviews with knowledgeable officials, and other examination of the data and

⁶We also obtained fiscal-year transaction data to examine newly hired employees to DOD. For more information on how we used both types of data we obtained, see appendix I.

⁷The DOD data we analyzed includes demographic information based on OPM’s data standards, which defines sex as female and male and does not include additional information on gender identity. In this report, we use gender terms of “women” and “men” to describe female and male employees. The data also identifies race and ethnicity based on the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, White, and two or more races. We analyzed racial and ethnic demographic composition in the following two ways: 1) a combined group of employees who identified with one or more historically disadvantaged group and White employees, and 2) by individual racial or ethnic group as defined by OPM, but combining the two categories of American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander, into a single “other races” category. DOD’s data include a small number of instances where race or ethnicity was unspecified, which we do not include in all figures or tables, so percentages may not total 100. We did not examine the DOD civilian workforce by disability status in this report, but we included targeted and non-targeted disability as control variables in our analysis of promotions. See appendix I for more information on our scope and methodology.

⁸OPM and DOD generally report federal civilian workforce data by each of the three military departments, and report as the DOD workforce those in the other, non-military DOD components. For an example of this approach, as well as the federal-wide demographics against which we compared our analysis for fiscal years 2012 through 2018, see Office of Personnel Management, *Federal Equal Opportunity Recruitment Program (FEORP) Report, Fiscal Year 2018* (Dec. 2020), the most recent available during our review. Neither OPM nor DOD requires the National Security Agency, the National Geospatial-Intelligence Agency, and the Defense Intelligence Agency, which are all DOD component agencies in the Intelligence Community, to submit workforce data. For more information on our scope and methodology, including this comparison with OPM federal workforce data, see appendix I.

determined they were sufficiently reliable for the purposes of reporting demographic trends and promotion outcomes.

For our second objective, we analyzed promotion outcomes of DOD employees in the General Schedule (GS) federal civilian pay system, and from the GS into the Senior Executive Service based on the same demographics of gender, race, and ethnicity in the three military departments and across the other DOD components. We analyzed the GS workforce because it represents over 60 percent of the workforce and the observations in our data and follows a standard 15-grade structure.⁹ We conducted our promotion analyses using a multivariate statistical method (i.e., duration analysis) that accounted for certain factors other than gender and racial or ethnic group status that could influence promotion, such as occupation. Specifically, we used a discrete-time multivariate statistical logit model to analyze the number of yearly cycles it took to be promoted up through GS grades to the executive, Senior Executive Service, level. We examined the statistical relationship between promotion and racial or ethnic status and gender, incorporating various characteristics in the models to control for differences.

For our third objective, we obtained DOD diversity-related policies for DOD's federal civilian workforce, including for EEO, to assess how, if at all, they include guidance for identifying potential barriers and tracking

⁹We analyzed existing DOD employee promotions from one GS grade to another, or from the GS into the Senior Executive Service. As a result, our analysis does not account for external applicants who promoted into either system from other pay plans or agencies. For both objectives, our analysis of the DOD civilian workforce in the GS federal pay system includes employees assigned to the GS pay-plan code in the DOD data—the largest number of employee records in our data. We do not include other GS-equivalent pay plans in our analysis. Our promotion analysis is based on the number of individuals in the given grade in the current year and not on the number of applicants for promotion. The DOD data does not identify employees who may have reached the maximum grade for their particular occupation and may therefore have no remaining promotion potential in that occupation. Appendix I includes additional information on the populations we analyzed, our statistical analysis of promotions to estimate the odds of promotion across various demographic groups, and other details and limitations of our methodology.

progress to eliminating such barriers.¹⁰ We analyzed DOD barrier analysis efforts included in available annual reports to the U.S. Equal Employment Opportunity Commission (EEOC) for fiscal years 2018 through 2021, and in the DOD and military department self-assessments required by Executive Order 14035, to understand the types of potential barriers DOD has identified through these practices.¹¹ We also interviewed DOD and military department-level officials with responsibilities for diversity, EEO, and civilian personnel, including in the Office of the Under Secretary of Defense for Personnel and Readiness. We compared DOD information with government-wide and DOD diversity strategic plans, federal internal control standards, and best practices for diversity management.¹² For a more detailed description of our scope and methodology, see appendix I.

We conducted this performance audit from July 2021 to June 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

¹⁰Department of Defense Directive 1020.02E, *Diversity Management and Equal Opportunity in the DOD* (June 8, 2015) (incorporating change 2, effective June 1, 2018); Department of Defense Instruction 1020.05, *Diversity and Inclusion Management Program* (Sept. 9, 2020); and Department of Defense Directive 1440.1, *The DOD Civilian Equal Employment Opportunity (EEO) Program*, (May 21, 1987) (incorporating through change 3, Apr. 17, 1992; certified current as of Nov. 21, 2003). The first two policies apply to the total DOD workforce of civilian and military personnel, while the third pertains exclusively to the civilian EEO program.

¹¹Equal Employment Opportunity Commission, *Equal Employment Opportunity Management Directive 715, (EEO MD-715)* (Oct. 1, 2003); Exec. Order No. 14035, *Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce*, 86 Fed. Reg. 34593 (June 25, 2021).

¹²For example, see The White House, *Government-Wide Strategic Plan to Advance Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce* (Nov. 2021); Department of Defense, *Department of Defense Diversity, Equity, Inclusion, and Accessibility Strategic Plan, Fiscal Years 2022-2023* (Sept. 30, 2022); GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014), including principles on establishing organizational structure and responsibility, designing control activities and policies, and internal communication; and GAO, *Diversity Management: Expert-Identified Leading Practices and Agency Examples*, [GAO-05-90](#) (Washington, D.C.: Jan. 14, 2005).

Background

Requirements and Oversight of Federal Workforce Diversity

Diversity-Related Laws and Regulations

A number of federal laws, regulations, and other directives aim to ensure the federal workforce is diverse, equitable, inclusive, and accessible, and provide long-standing guidance regarding equal employment opportunity and, more recently, diversity.

Title VII of the Civil Rights Act of 1964 directs that federal personnel decisions be made free of discrimination on the basis of race, color, religion, sex, or national origin. The statute also requires that agencies establish a program of equal employment opportunity for all federal employees and applicants.¹³ Additionally, federal law requires that recruitment policies endeavor to achieve a workforce that reflects all segments of society, while avoiding discrimination for or against any employee or applicant on the basis of race; color; religion; sex (including sexual orientation, gender identity, and pregnancy); national origin; age (40 or older); disability; genetic information; or any other prohibited basis.¹⁴

More recently, executive orders and other federal guidance have required agencies to plan and ensure diversity in the federal workforce, among other things.¹⁵ Executive Order 13583, issued in August 2011, directs all executive departments and agencies to develop and implement a more comprehensive, integrated, and strategic focus on diversity and inclusion

¹³42 U.S.C. § 2000e-16(b). Section 501 of the Rehabilitation Act of 1973 prohibits employment discrimination against individuals with disabilities in the federal sector. Rehabilitation Act of 1973, as amended, codified at 29 U.S.C. § 791.

¹⁴See 5 U.S.C. §§ 2301(b)(1) and 2302(b). While this report does not specifically examine representation of employees with disabilities, federal law and EEOC regulations also require agencies to take specific steps to increase the employment of individuals with disabilities or targeted disabilities until the agency meets established goals 29 U.S.C. § 791; 29 C.F.R. § 1614.203.

¹⁵Exec. Order No. 13583 (2011); Exec. Order No. 14035 (2021). References to the federal workforce in these executive orders, as in our report, pertain to the federal civilian workforce (i.e., excluding military service members and individual contracted employees).

as key components of their human resource strategies. Executive Order 14035, issued in June 2021, expands on Executive Order 13583 and related directives to require federal agencies to advance diversity, equity, inclusion, and accessibility in the federal workforce. The order directs agencies to develop related strategic plans, provide resources to implement these plans, and report annually on progress, among other things. Appendix II provides additional details pertaining to Executive Order 14035.

Federal Oversight

OPM and EEOC are responsible for human resource, diversity, and equal employment opportunity policies and processes for the federal workforce. While the two agencies have different missions, each has a key role in promoting diversity in the federal workforce and providing oversight of federal agencies' efforts, including for the DOD civilian workforce. Specifically:

- OPM's mission is to lead and serve the federal government in human resource management, including policies and services to achieve a trusted and effective civilian workforce. OPM is also responsible for issuing regulations that determine eligibility for veteran recruitment appointments as well as subsequent career-conditional appointments.¹⁶ OPM also leads federal diversity, equity, inclusion, and accessibility efforts and issued government-wide diversity strategic plans in 2011, 2016, and 2021.¹⁷ As the focal point for collecting government-wide workforce data and providing statistical information about the federal civilian workforce, OPM also reports on diversity-related analysis and employment trends. For example, OPM is responsible for annual reports to Congress on progress under the Federal Equal Opportunity Recruitment Program and on Hispanic employment in the federal government.¹⁸
- EEOC's mission is to prevent and remedy unlawful employment discrimination and advance equal opportunity for all in the workplace,

¹⁶38 U.S.C. § 4214; see generally 5 U.S.C. § 1103 (describing OPM's statutory responsibilities).

¹⁷Office of Personnel Management, *Government-Wide Diversity and Inclusion Strategic Plan* (2011) and *Governmentwide Inclusive Diversity Strategic Plan* (July 2016); The White House, *Government-Wide Strategic Plan to Advance Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce* (Nov. 2021).

¹⁸Exec. Order No. 13171, *Hispanic Employment in the Federal Government*, 65 Fed. Reg. 61,251 (Oct. 16, 2000); see generally 5 U.S.C. § 7201 and 5 C.F.R. § 720.203.

both for federal civilian employees and most other workers in the United States. For federal civilian employees, EEOC is responsible for enforcement, coordination, and oversight of federal agencies' compliance with equal employment laws and regulations that make it illegal to discriminate against a job applicant or an employee because of the person's race, color, religion, sex (including pregnancy, transgender status, and sexual orientation), national origin, age (40 or older), disability, or genetic information.¹⁹ EEOC *Management Directive 715* (MD-715), which sets policy guidance for EEO program requirements for federal agencies under Title VII of the Civil Rights Act, directs all federal agencies to maintain programs to promote equal opportunity in the federal civilian workforce and to identify and eliminate barriers. MD-715 also sets general reporting requirements on the annual status and progress of their EEO programs, including discrimination complaint processes, anti-harassment policies, special programs for people with disabilities, and other program elements.²⁰ DOD's uniquely large, multi-department structure, results in numerous DOD components and subordinate components being responsible for submitting annual reports to EEOC.²¹

Barrier Analysis Process

To attract, develop, and retain a top-quality workforce, EEOC requires that all departments and agencies, including DOD, must ensure that their workforces are free of barriers to equal employment opportunity. EEOC's MD-715 lays out a four-step process for agencies to regularly conduct

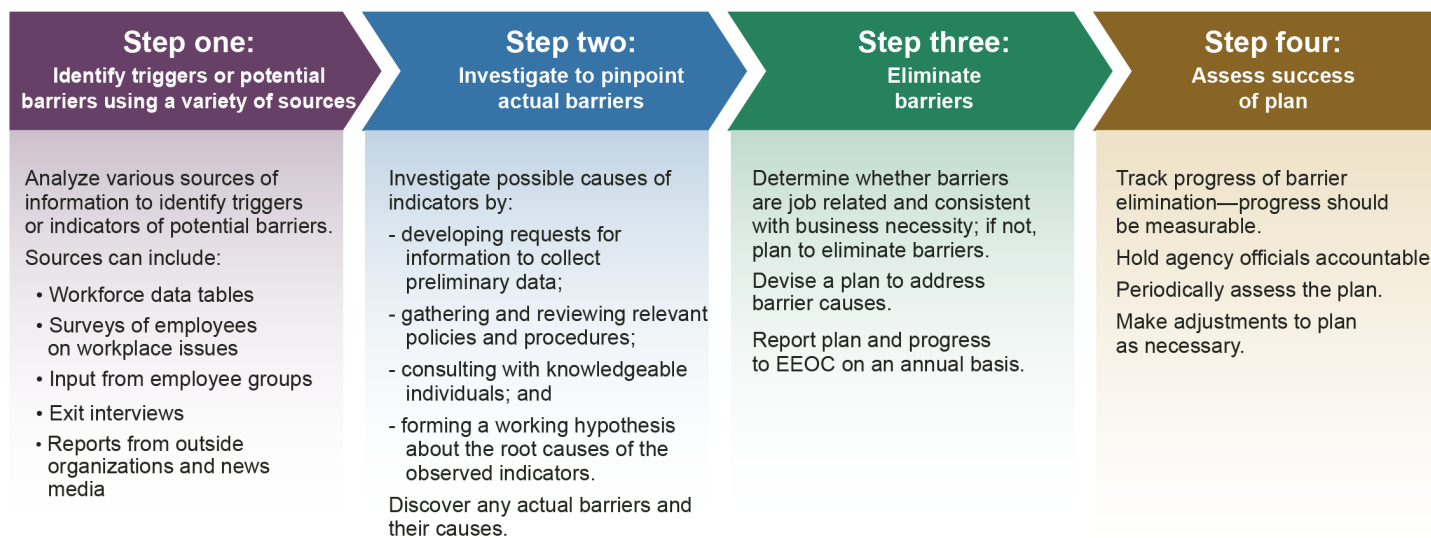
¹⁹29 C.F.R. §1614.102(a); Exec. Order No. 12067, 43 Fed. Reg. 28,967 (July 5, 1978). DOD operates a separate military equal opportunity program for military service members. See Department of Defense Instruction 1350.02, *DOD Military Equal Opportunity Program* (Sept. 4, 2020); see also Department of Defense Directive 1020.02E, *Diversity Management and Equal Opportunity in the DOD* (June 8, 2015) (incorporating change 2, effective June 1, 2018).

²⁰Equal Employment Opportunity Commission, *EEO MD-715* (Oct. 1, 2003). MD-715 EEO requirements apply to all executive agencies and military departments as defined in Sections 102 and 105 of Title 5, U.S.C. MD-715 also sets general reporting requirements for agencies, as well as subordinate components and others to submit status reports of their EEO programs. See Equal Employment Opportunity Commission, "Department or Agency List with Second Level Reporting Components," accessed Mar. 28, 2023, <http://www.eeoc.gov/federal-sector/management-directive/department-or-agency-list-second-level-reporting-components>.

²¹While not all entities of a federal agency must submit an annual report, MD-715 EEO program requirements apply to all entities that make up a federal agency and all federal executive departments including DOD and, according to EEOC officials, agencies have flexibility in how they incorporate subordinate components' EEO program information into a single report. DOD is not required to aggregate these into a single MD-715 report to submit to EEOC.

barrier analyses to identify barriers, plan to address them, and track progress (see figure 1).

Figure 1: EEOC Steps of the Barrier Analysis Process



Source: GAO analysis of Equal Employment Opportunity Commission (EEOC) guidance. | GAO-23-105284

Notes: Indicators of potential barriers—which EEOC refers to as “triggers”—are trends, disparities, or anomalies that suggest the need for further inquiry into a particular policy, practice, procedure, or condition. EEOC defines a barrier as an agency policy, principle, or practice that limits or tends to limit employment opportunities for members of a particular group based on their sex, race, ethnic background, or disability status.

The first step of EEOC’s barrier analysis process, as shown in figure 1, calls for agencies to analyze various sources, such as workforce composition, surveys, exit interviews, employee groups, and other methods to identify red flags that indicate potential barriers may exist, such as trends, disparities, or anomalies, and suggest the need for further analysis. The second step involves exploration of possible connections between the indicators and applicable policies, procedures, and practices to pinpoint actual barriers. EEOC requirements emphasize these first steps rely on robust quantitative and qualitative evidence, and a thorough investigation to develop a working hypothesis and examine possible root causes.

Once an agency has identified all available source materials and conducted a thorough analysis, it should, as the third step, develop a plan to eliminate the actual barriers identified. The plan should include

objectives, corresponding action items, responsible personnel, and target dates. EEOC describes step four as a continuous process to evaluate the plan's effectiveness, such as by measuring the extent to which efforts have removed the identified barrier or affected the original indicators identified in earlier steps. According to EEOC, agencies should continuously monitor their efforts and adjust their plans as necessary to ensure the programs they develop are effective and continue to work to eliminate barriers.

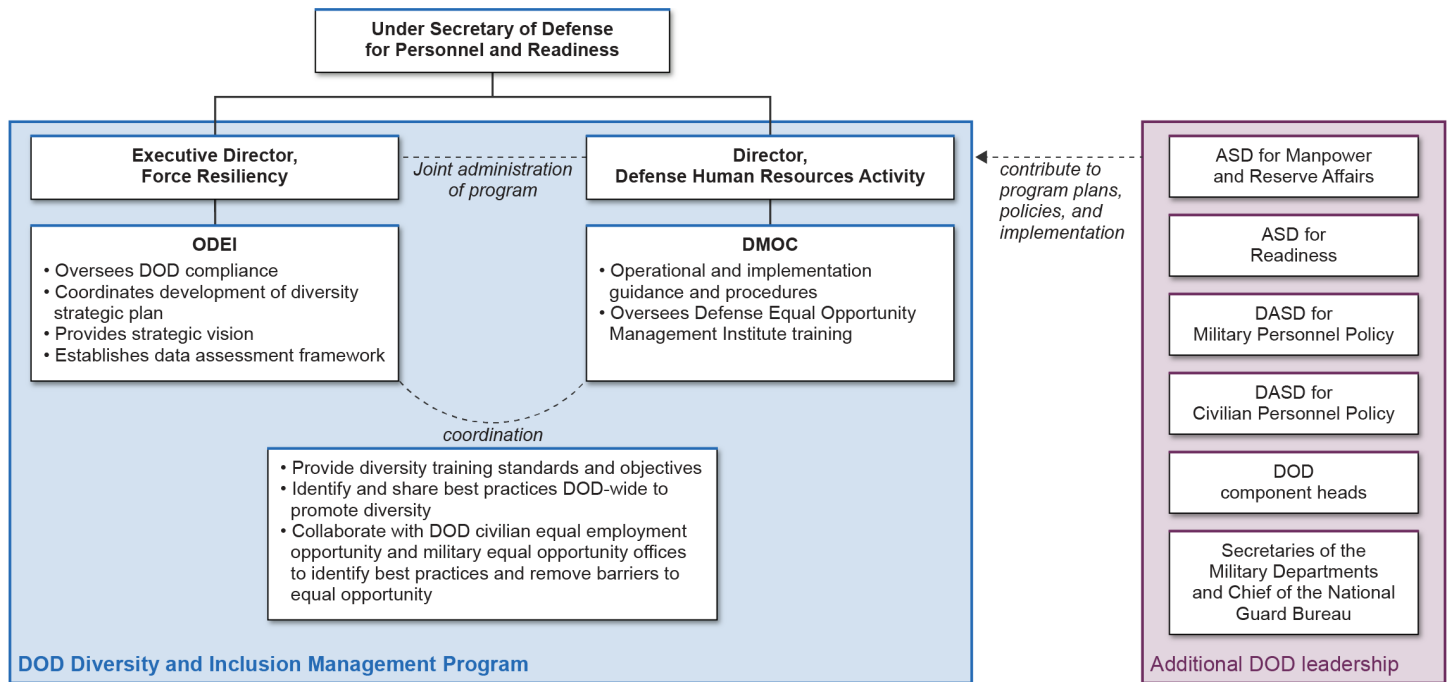
OPM guidance also directs agencies to analyze and reduce barriers to diversity, equity, inclusion, and accessibility. Additionally, the 2021 Government-wide Strategic Plan reflects executive-order direction to improve data collection to take an evidence-based approach to reducing barriers in employment practices, like hiring, promotion, professional development, and retention efforts.

Diversity Management for the DOD Civilian Workforce

Key DOD Diversity Organizations

Management of all matters pertaining to civilian personnel, including diversity management and equal employment opportunity, fall under the leadership and responsibility of the Under Secretary of Defense for Personnel and Readiness. In April 2022, the Under Secretary was also designated DOD's chief diversity and inclusion officer. Figure 2 illustrates the key organizational structure and responsibilities for DOD's diversity management program as laid out in DOD Instruction 1020.05, and the additional DOD organizations that may help develop and implement related policy, plans, and processes.

Figure 2: DOD’s Diversity and Inclusion Management Program Organizational Structure and Responsibilities



ASD Assistant Secretary of Defense
 DASD Deputy Assistant Secretary of Defense
 ODEI Office for Diversity, Equity, and Inclusion
 DMOC Diversity Management and Operations Center

Source: GAO analysis of Department of Defense (DOD) documents. | GAO-23-105284

Note: The above organizational structure reflects what is laid out in DOD Instruction 1020.05, *Diversity and Inclusion Management Program* (Sept. 9, 2020), which establishes the policy and program for diversity and inclusion at DOD.

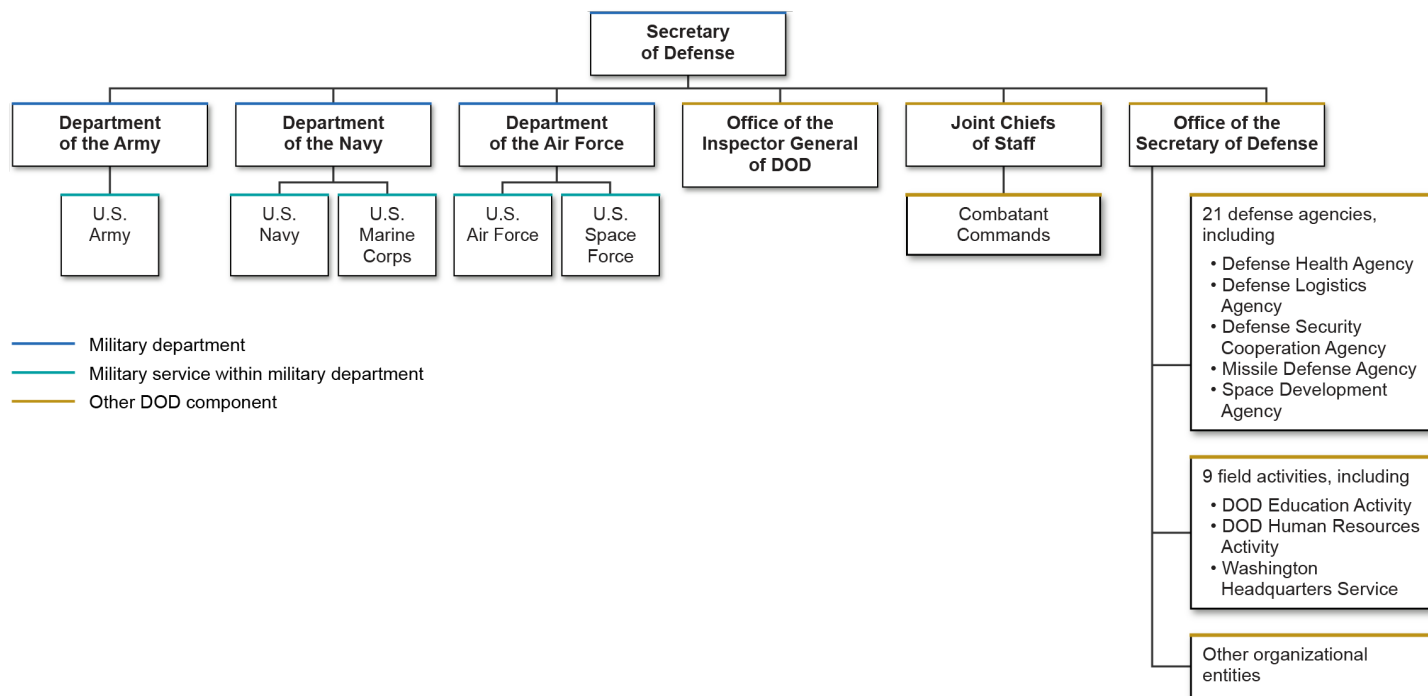
In addition to the DOD leaders and offices with diversity responsibilities, DOD also relies on ad-hoc or temporary teams to conduct key diversity efforts, including implementation of many requirements of Executive Order 14035, and oversight of past, current, and future efforts.

Diversity and EEO across DOD’s Organizational Structure

DOD is composed of three military departments and more than 30 other DOD components. These components include the defense agencies, field activities, and other organizations such as the Office of the Secretary of

Defense—all of which employ DOD civilians.²² OPM and DOD also generally report diversity or other data pertaining to the federal civilian workforce based on this structure. They generally separate the DOD workforce into the four employing organizations—the departments of the Army, the Navy, and the Air Force (which include their respective military services), and the other DOD components. See figure 3.²³

Figure 3: Organization of the DOD Federal Civilian Workforce: The Military Departments and Other DOD Components



Source: GAO analysis of Department of Defense (DOD) information. | GAO-23-105284

Notes: DOD employs a mix of federal civilians, active-duty military service members, and individual contractor personnel throughout its organizational structure. The DOD Office of the Inspector General is an independent agency within DOD.

²²DOD collectively refers to the Office of the Secretary of Defense, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, military departments, defense agencies, DOD field activities, combatant commands, the Office of the Inspector General of DOD, and all other organizational entities within DOD as “DOD components.” Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010) (incorporating change 1, Sept. 17, 2020).

²³For an example of this approach to reporting federal workforce data, see Office of Personnel Management, *Federal Equal Opportunity Recruitment Program (FEORP) Report, Fiscal Year 2018* (Dec. 2020).

Many of these organizations are composed of numerous subcomponents, subordinate military commands, and other entities employing federal civilians across the United States, U.S. territories, and worldwide. DOD establishes high-level policy to guide and inform civilian workforce management across its components, but DOD recruits, hires, promotes, trains, develops, and otherwise manages its civilian workforce across this decentralized set of organizations and locations. DOD's diversity, EEO, and human resources personnel therefore implement their interrelated programs throughout DOD, from the department level down to the hundreds of military and other component offices and installations worldwide. For example, Navy officials estimated that as many as 300 individual EEO program personnel exist across Navy headquarters, commands, and other offices. Additionally, hiring managers at individual DOD offices may have flexibilities or processes available to them to meet their specific staffing needs.²⁴

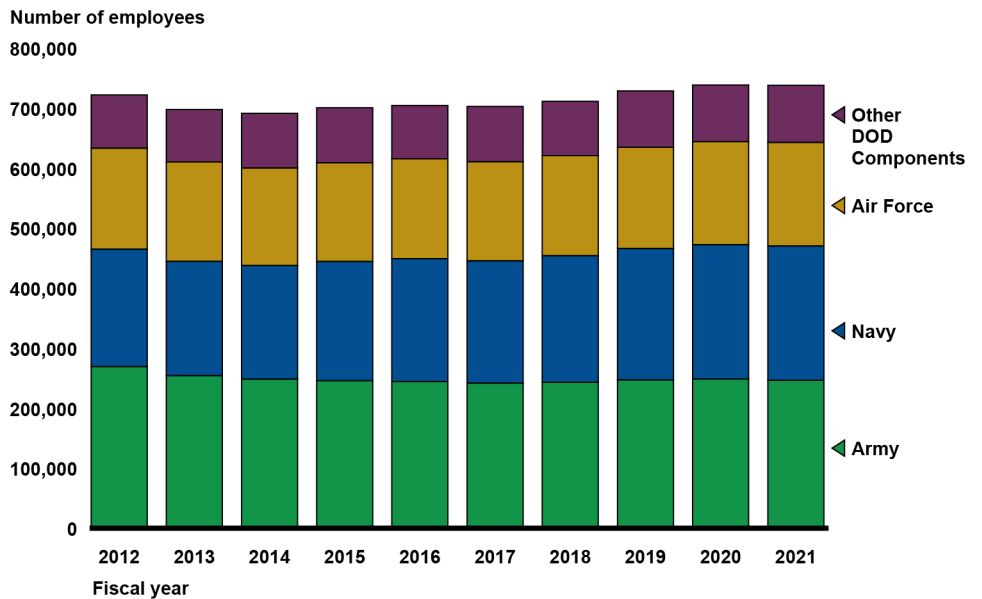
Data on DOD Civilian Workforce Size and Characteristics in Fiscal Year 2021

In fiscal year 2021, DOD employed 737,768 appropriated-fund, full-time (i.e., working 40-hour workweek schedules), federal civilian employees.²⁵ The DOD workforce included 246,452 employees in the Department of the Army, 172,558 in the Department of the Air Force, 223,613 in the Department of the Navy, and 95,145 in the other DOD components. Figure 4 shows the size of the civilian workforces of the departments of Army, Navy, and Air Force, and other DOD components from fiscal year 2012 through fiscal year 2021.

²⁴Individual DOD offices have used hiring flexibilities for a number of highly competitive or mission-critical occupations, such as science, technology, engineering, and mathematics (STEM) professions. In 2018, we examined the hiring authorities used by 15 individual defense laboratories to hire 11,562 personnel in fiscal years 2015 through 2017, and talked with hiring managers at these locations. GAO, *DOD Personnel: Further Actions Needed to Strengthen Oversight and Coordination of Defense Laboratories' Hiring Efforts*, [GAO-18-417](#) (Washington, D.C.: May 30, 2018). DOD implemented our three recommendations to improve oversight and evaluation of laboratory hiring efforts, and establish time frames to guide hiring authority approval.

²⁵In fiscal year 2012, DOD's more than 700,000 civilian employees made up over one-third of the total federal civilian workforce and, as reported by OPM, remained so every year from fiscal year 2012 through 2017, the most recent reported data.

Figure 4: Numbers of DOD Civilian Employees, by Military Department and in the Other DOD Components, Fiscal Years 2012–2021



Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Note: The data shown includes appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees in the three military departments and across the other DOD components, including defense agencies and field activities, unless not publicly reported in the data.

Federal civilian employees, including at DOD, work in a variety of jobs, with different education or experience requirements, skills, and functions. The General Schedule (GS) federal pay system covers the largest group of white-collar employees—i.e., those in professional, technical, administrative, and clerical positions, according to OPM.²⁶ The Federal Wage System covers trade, craft, or labor (i.e., blue-collar) positions. About 62 percent of DOD’s 737,768 employees in fiscal year 2021 were

²⁶OPM uses dozens of pay plans to manage federal civilian employees’ pay and career progression. OPM uses two-letter codes associated with these pay plans to provide statistical information about the workforce. Our analysis of the General Schedule includes employees identified with the GS pay-plan code in the DOD data, but not other General Schedule pay-plan codes, such as GL, GP, or GM. In the DOD data we analyzed, the other General Schedule codes were associated with 2,348 DOD federal civilian employees in fiscal year 2021 (0.32 percent).

in the GS pay plan, and more than 15 percent in Federal Wage System pay plans, according to our analysis of DOD's data.²⁷

OPM administers GS job classification standards, qualifications, pay structure, and related human resources policies (e.g., general staffing and pay administration policies) government-wide. Each agency classifies its GS positions, and appoints and pays its employees filling those positions, following statutory and OPM guidelines.

The General Schedule has 15 grades, starting with the lowest at GS-1 and progressing to the highest at GS-15. Agencies establish the grade of each job based on the level of difficulty, responsibility, and qualifications required, according to OPM. For example, a high school diploma and no additional experience typically qualifies for a GS-2 position, while a master's degree typically qualifies for GS-9. Table 1 shows the number of DOD civilian employees identified in the GS pay plan in the DOD data we analyzed.

Table 1: DOD Civilian Employees in the General Schedule (GS) Pay Plan, Fiscal Year 2021

GS grade	Number of DOD employees	Percentage of GS workforce at DOD	Percentage of DOD workforce (737,768)
GS-1 through GS-5	22,710	4.98	3.08
GS-6	23,624	5.18	3.20
GS-7 and GS-8	50,115	10.98	6.79
GS-9 and GS-10	56,057	12.29	7.60
GS-11	82,799	18.15	11.22
GS-12	112,024	24.55	15.18
GS-13	74,633	16.36	10.12
GS-14	25,134	5.51	3.41
GS-15	9,171	2.01	1.24
Total GS	456,267	100.00	61.84

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees identified with the two-letter GS pay-plan code in the DOD data, but not other pay-plan

²⁷The remainder of DOD's employees were in more than 60 other pay plans, including those that are specific to the military departments, the DOD acquisition workforce, or other organizations or occupational functions. Appendix III includes a list of all the pay plans associated with DOD's federal civilian workforce, and the number and percentage of employees in each, in the fiscal year 2021 data we analyzed.

codes also associated with the GS pay system—GP, GM, GL, and GR. The GR code did not appear in the data we analyzed, but the GP, GM, and GL codes were associated with 2,348 DOD civilian employees, or 0.32 percent of the total DOD civilian workforce. We have combined grades with smaller populations and similar experience requirements for ease of reporting across all 15 GS grades.

GS employees may promote to higher grades at certain intervals, as determined by OPM regulations, qualification standards, agency policies, and the promotion potential advertised in the job announcement.²⁸ After that, competition under merit system principles is necessary to advance to a higher GS grade. The most senior positions in the federal civilian workforce are in the Senior Executive Service or other executive positions, such as political appointees, senior technical officials, or other positions. In fiscal year 2021, for example, 1,173, or about 0.16 percent, of DOD civilian employees were in the Senior Executive Service pay plan.²⁹ Federal agencies may fill positions in the Senior Executive Service or other senior-level positions from existing employees or select external applicants, depending on agency procedures and the requirements and qualifications of a given position.

²⁸According to OPM's *Introduction to the Position Classification Standards* (Aug. 2009), occupation series in the General Schedule are divided into two categories: those covering one-grade interval work, and those covering two-grade interval work. For one-grade interval occupations, employees generally progress by one-grade increments—e.g., from GS-1 to GS-2, then to GS-3, etc. The typical grade range for one-grade interval occupations is GS-2 through GS-8, although some occupation series may have jobs at higher grades. Two-grade interval occupations follow a two-interval progression up to GS-11—e.g., GS-7 to GS-9, then GS-11. From GS-11 through GS-15, such series follow a one-grade pattern. Professional and administrative occupations generally follow a two-grade progression, while technical or clerical work, typically associated with and supportive of a professional or administrative occupation, follows a one-grade progression. However, certain occupation series may include both one- and two-grade positions. Agencies have the authority and responsibility to determine the appropriate grade intervals for the different types of work that may be associated with the same occupation series.

²⁹Our analysis of the executive level includes only Senior Executive Service employees identified with the ES pay-plan code, which does not include other senior-level positions in other pay plans or political appointees.

Representation of Women and Historically Disadvantaged Groups at DOD Generally Remained Unchanged from 2012–2021, and Decreased with Seniority

Our analysis of the composition of the DOD federal civilian workforce by gender and racial or ethnic group from fiscal year 2012 through fiscal year 2021 found that little changed for the representation of women and employees from historically disadvantaged racial or ethnic groups (historically disadvantaged groups).³⁰ Specifically, the representation of women slightly decreased and that of historically disadvantaged groups slightly increased during that period. Representation of both groups generally remained below the total federal civilian workforce, compared to available OPM-reported data for fiscal years 2012 through 2018.³¹ We also analyzed the demographic composition of the GS workforce and found that the higher the seniority, the lower the representation of women and of historically disadvantaged groups.

Representation of Women Decreased Slightly in the DOD Federal Civilian Workforce

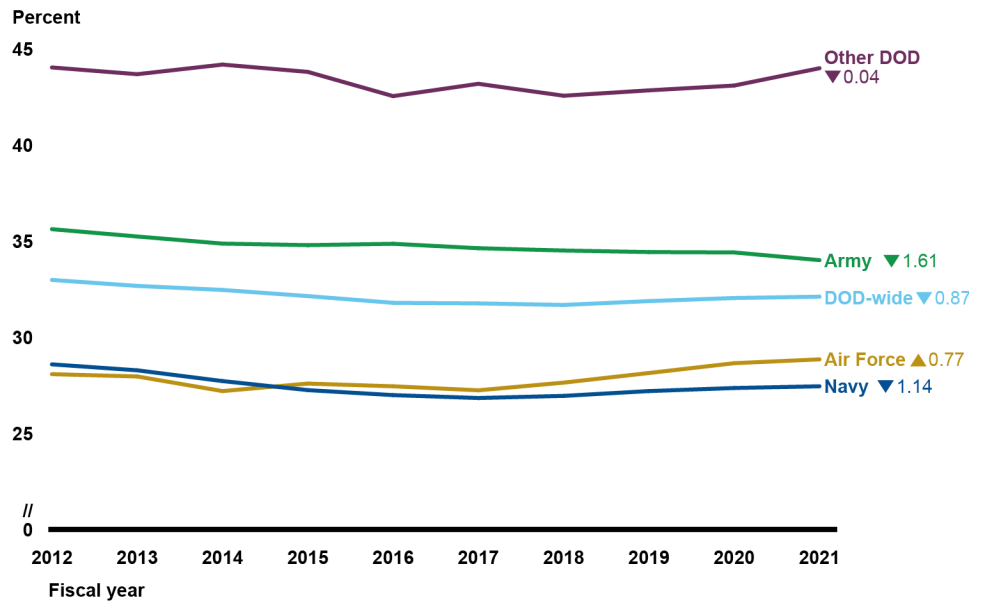
Representation of Women Decreased Slightly in the Army, Navy, and Other DOD Components

We found that overall representation of women in DOD’s federal civilian workforce slightly decreased from fiscal year 2012 through fiscal year 2021, and for the Army, Navy, and other DOD components based on our analysis of DOD data. The Air Force experienced a slight increase, improving from having the lowest representation of women in fiscal 2012 to the second lowest in fiscal year 2021 when compared across DOD. Figure 5 depicts representation of women at DOD and by department or the other DOD components across the 10 years of data we analyzed.

³⁰In this report, historically disadvantaged groups include the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races.

³¹We compared our analysis of DOD data to annually reported demographic data by OPM. For example, see Office of Personnel Management, *Federal Equal Opportunity Recruitment Program (FEORP) Report, Fiscal Year 2018* (Dec. 2020), the most recent report available during our review.

Figure 5: Representation of Women in the DOD Federal Civilian Workforce, Fiscal Years 2012–2021



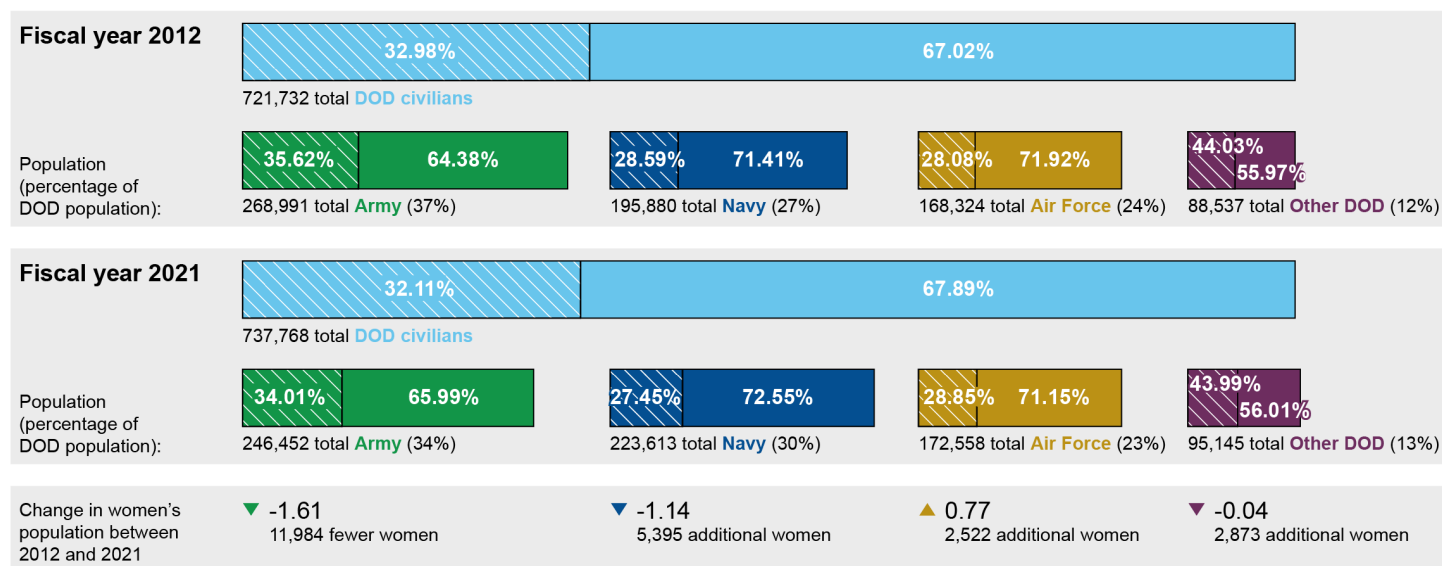
Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees at the end of each fiscal year in the military departments and the other DOD components, which include defense agencies and field activities. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The overall size of DOD’s full-time federal civilian workforce increased by more than 16,000 employees between fiscal years 2012 and 2021. However, representation of women decreased slightly, based on our analysis of DOD data. In fiscal year 2012, DOD’s 721,732 employees consisted of 238,055 (33 percent) women and 483,677 (67 percent) men. In comparison, in fiscal year 2021, DOD’s 737,768 civilian workforce consisted of 236,861 (32 percent) women and 500,907 (68 percent) men. Thus, by fiscal year 2021, DOD employed 17,230 additional men and

1,194 fewer women.³² Figure 6 depicts changes in this representation in DOD’s civilian workforce between fiscal years 2012 and 2021.

Figure 6: Representation of Women and Men in DOD’s Federal Civilian Workforce, Fiscal Years 2012 and 2021



Women
 Men

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees in the three military departments and the other DOD components, which include defense agencies and field activities. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Our analysis of DOD data on new hires and of employees who left in fiscal years 2012 through 2021 similarly suggested that little has changed regarding representation of women at DOD over at least the period we

³²Our comparison of the DOD workforce size in fiscal years 2012 and 2021 reflects the net change in workforce size but does not account for the specific numbers of newly hired employees or employees who left DOD in each year between fiscal years 2012 and 2021. In other words, women and men in varying numbers were newly hired or left DOD during the 10 years we analyzed, but the net change in workforce size resulted in fewer women in the workforce in fiscal year 2021 than in 2012. For more data specific to newly hired employees to DOD during this time, see appendix IV; for employees who left, see appendix V.

Army and Navy Most Affected
Representation of Women in
DOD Civilian Workforce

analyzed.³³ See appendix IV for our analysis that about a third of all new hires to DOD's federal civilian workforce each year were women, and appendix V for analysis showing that women left DOD at rates at least 3 percentage points higher than men every year during 10 years of data we analyzed.

Because the Army and Navy are the largest employers of DOD federal civilians and had greater decreases in representation of women in fiscal year 2012 as compared to 2021, those two departments most affected overall representation of women at DOD.³⁴ Specifically:

- **Department of the Army.** The Army is the largest employer of DOD federal civilian employees, but it experienced a decline in its overall workforce size in fiscal year 2021 compared to 2012, according to our analysis of DOD data. This decline disproportionately affected women. Specifically, the Army's 268,991 employees in fiscal year 2012 decreased by about 22,500 employees to 246,452 in fiscal year 2021. Women represented 53 percent of this decrease and, while we did not separately analyze reasons for this or any other change, it equated to about 12,000 fewer women.
- **Department of the Navy.** The Navy was the second-largest employer of DOD federal civilians and had one of lowest representations of women every year during the 10 years of data we analyzed.³⁵ For example, 55,995 of the Navy's 195,880 employees (28.59 percent) were women in fiscal year 2012. The Navy's workforce increased to 223,613 employees in fiscal year 2021, but representation of women was lower, at 27.45 percent. That was because the Navy's workforce growth included substantially more men than women. Specifically, the fiscal year 2021 increase of 27,733 included only 5,395 women—

³³We did not analyze the reasons why employees left DOD (e.g., retirement, death, termination, and other reasons).

³⁴As the largest civilian employer in the federal government, increases or decreases in DOD's workforce size or changes in representation of certain demographic groups may equate to numbers of employees greater in size than other agencies' entire workforce. For example, in fiscal year 2020, we reported that USAID had a total of 2,964 full-time permanent, career or direct hire U.S. citizen employees in 2018. The net growth of 16,000 employees in DOD's workforce between fiscal years 2012 and 2021 is more than five times that size. GAO, *USAID: Mixed Progress in Increasing Diversity, and Actions Needed to Consistently Meet EEO Requirements*, [GAO-20-477](#) (Washington, D.C.: June 23, 2020).

³⁵Of the four, the Navy had the lowest representation of women every year in fiscal years 2015 through 2021 and the second lowest proportion in fiscal years 2012 through 2014.

about 19 percent. Thus, for every additional woman, the Navy employed four additional men.

The Air Force experienced an increase in representation of women over the 10 years we analyzed, but it also began that period with the least representation. Specifically, 47,266 of the 168,324 employees (28.08 percent) in fiscal year 2012 were women, based on our analysis of DOD data. In fiscal year 2021, women comprised 49,788 of the 172,558 employees (28.85 percent). The difference in size of the Air Force demonstrates the net increase in women in its workforce between these two periods. Specifically, women accounted for about 60 percent of the 4,234 additional employees in fiscal year 2021 compared to 2012 (2,522 women versus 1,712 men).³⁶

In comparison, representation of women at the other DOD components consistently was greater than at each of the military departments every year over the 10 years we analyzed, about 43 to 44 percent of its federal civilian workforce. Though the size of the other DOD components' workforce is the smallest compared to the military departments, it also grew from 88,537 employees in fiscal year 2012 to 95,145 in fiscal year 2021.

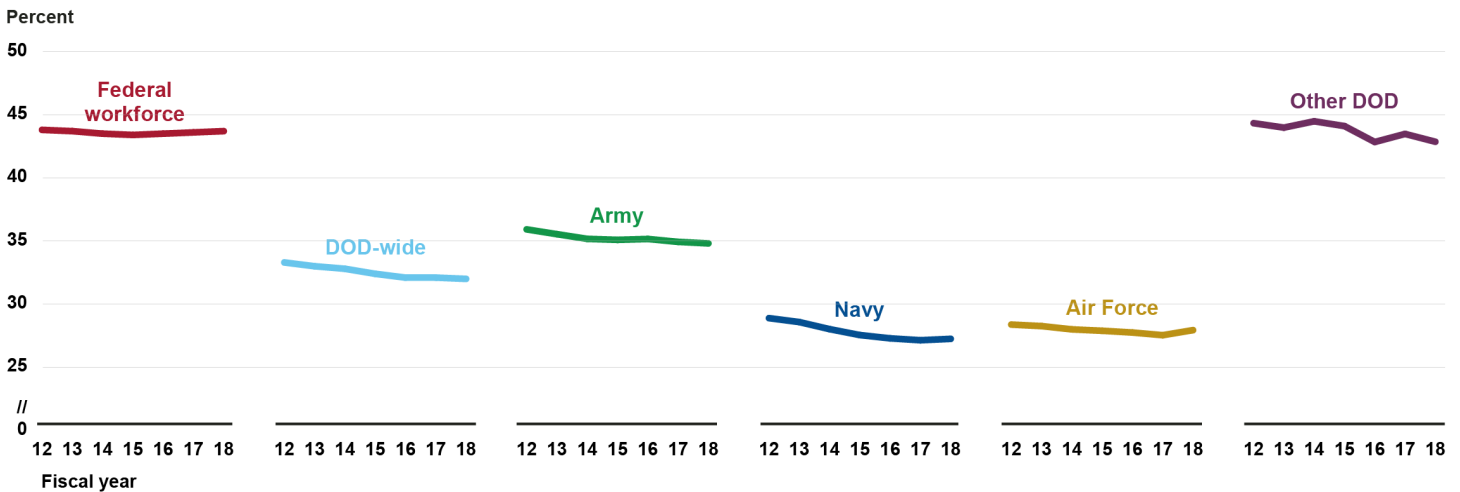
Representation of Women at DOD Remained below Total Federal Civilian Workforce Levels

When we compared representation of women in our analysis of DOD data to that reported by OPM for the total federal civilian workforce from fiscal year 2012 through fiscal year 2018—the most recent OPM data available during our review—we found that representation of women DOD-wide was at least 10.5 percentage points below the federal civilian workforce every year, as shown in figure 7.³⁷ For example, women comprised 43.4 percent of the total federal workforce in fiscal year 2018, compared with 31.7 percent DOD-wide (an 11.7 percentage point difference). Each of the three military departments similarly had levels of women below the federal workforce levels that same year—Army (34.5 percent), Navy (27.0 percent), and Air Force (27.6 percent). The other DOD components had a percentage of women (42.6 percent) that was comparable to the federal level in fiscal year 2018.

³⁶Of the four, the Air Force had the lowest representation of women every year in fiscal years 2012 through 2014 and the second lowest in fiscal years 2015 through 2021.

³⁷OPM includes permanent employees in non-postal federal executive branch agencies unless not publicly reported in OPM data. For more information on our scope and methodology, including this comparison with OPM data, see appendix I.

Figure 7: Representation of Women at DOD and in the Total Federal Civilian Workforce, Fiscal Years 2012–2018



Source: GAO analysis of Department of Defense (DOD) and Office of Personnel Management data. | GAO-23-105284

Notes: The DOD data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees in the military departments and other DOD components, which include defense agencies and field activities. The federal workforce data are reported annually by the Office of Personnel Management (OPM) for the Federal Employment Opportunity Recruitment Program and include permanent civilian employees in non-postal federal executive branch agencies unless not publicly reported in OPM data. The OPM report for fiscal year 2018, issued in December 2020, was the most recent report available during our review.

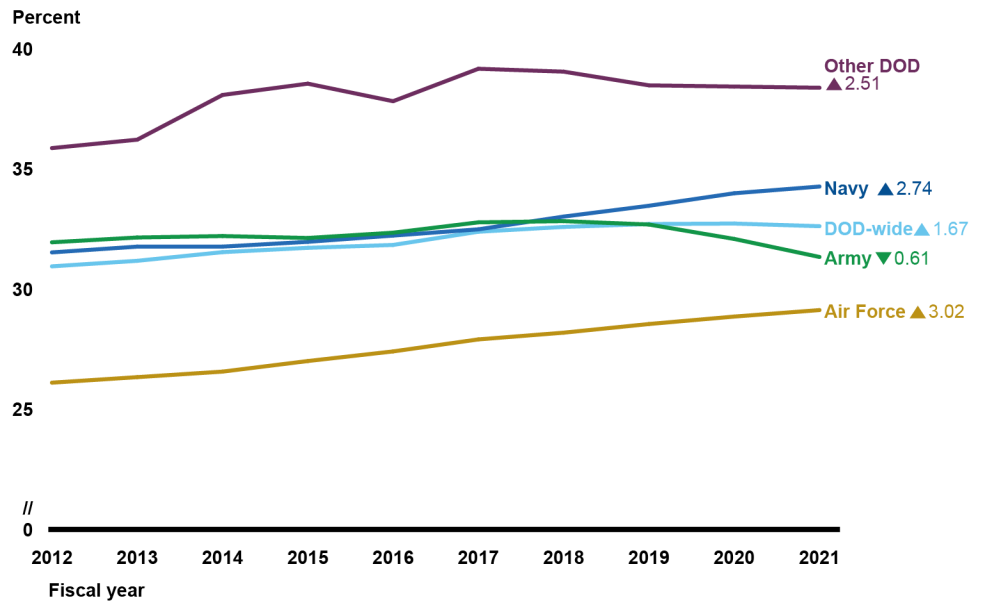
Representation of Most Historically Disadvantaged Groups Increased Slightly in the DOD Federal Civilian Workforce

Representation of Historically Disadvantaged Groups Increased Slightly in the Navy, Air Force, and Other DOD Components

We found that overall representation of historically disadvantaged groups in DOD’s federal civilian workforce increased slightly from fiscal year 2012 through fiscal year 2021, based on our analysis of DOD data.³⁸ Representation of these groups also generally increased in the Navy, Air Force, and other DOD components across the 10 years of data we analyzed, as shown in figure 8.

³⁸We also analyzed the DOD civilian workforce composition by individual racial or ethnic group, and found that while overall representation of historically disadvantaged groups remained unchanged, representation of Black or African American employees, as well as White employees, slightly decreased while that of other racial or ethnic groups slightly increased. See appendix VI for this analysis of DOD data.

Figure 8: Representation of Historically Disadvantaged Racial or Ethnic Groups in the DOD Federal Civilian Workforce, Fiscal Years 2012–2021



Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

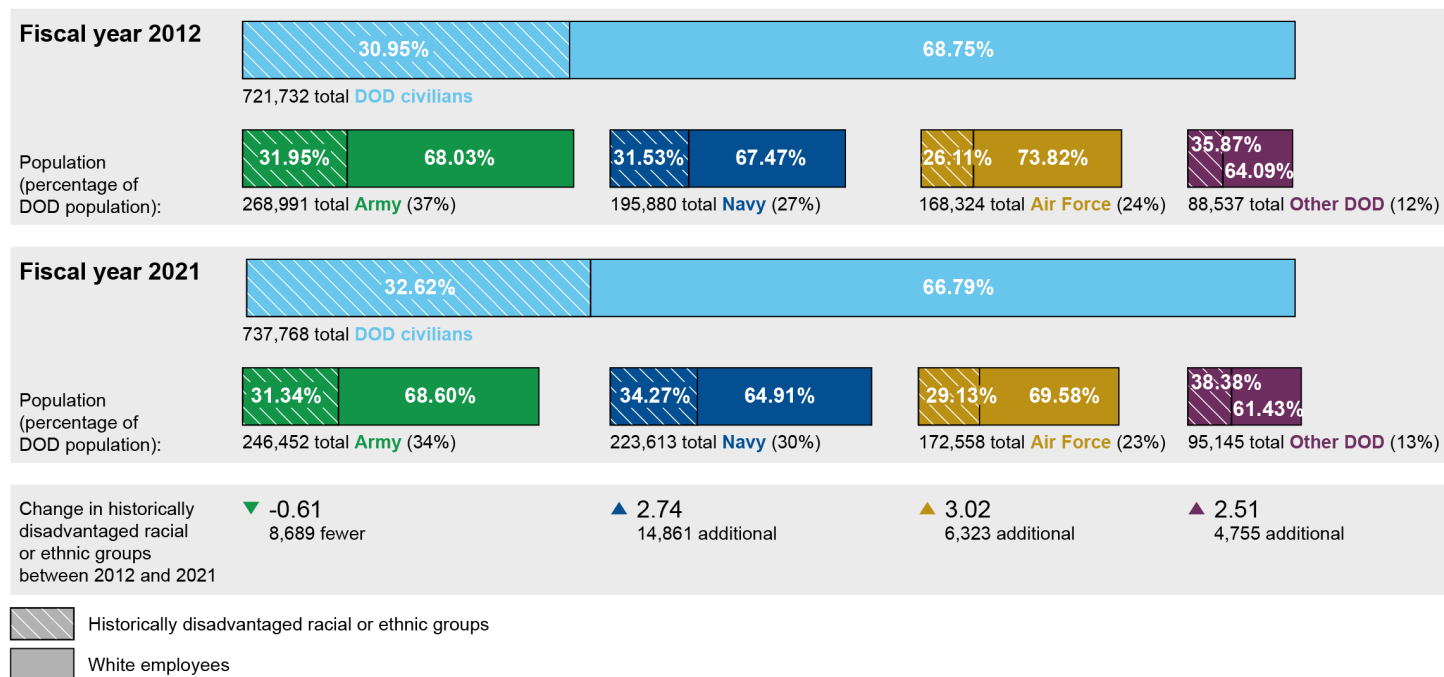
Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees in the three military departments and across the other DOD components, which include defense agencies and field activities.

Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

DOD employed 16,000 more federal civilians in fiscal year 2021 than in 2012. With this increase, representation of historically disadvantaged groups increased slightly. Specifically, DOD had 17,250 more civilian employees from historically disadvantaged groups and about 3,400 fewer

White employees.³⁹ Figure 9 depicts changes in this representation in the military departments and the other DOD components in fiscal years 2012 and 2021.

Figure 9: Representation of Historically Disadvantaged Racial and Ethnic Groups and White Employees in DOD’s Federal Civilian Workforce, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees in the three military departments and the other DOD components, which include defense agencies and field activities.

³⁹The net change in employees compared between fiscal years 2012 and 2021 includes about 3,400 fewer White employees in the workforce and about 2,200 more employees with unspecified race. The DOD data we analyzed included 2,167 employees in fiscal year 2012 and 4,387 employees in fiscal year 2021 whose race or ethnicity was unspecified. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our comparison of the workforce size does not account for the specific numbers of newly hired DOD employees or employees who left DOD in each year between fiscal years 2012 and 2021. In other words, employees from various racial or ethnic groups may have joined or left DOD during the 10 years we analyzed, but the net change in workforce size resulted in more employees from historically disadvantaged groups in the workforce in fiscal year 2021 than in 2012. For more data specific to newly hired employees to DOD during this time, see appendix IV; for employees who left, see appendix V.

Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Percentages exclude instances for which race or ethnicity was unspecified.

We also analyzed DOD data to examine demographic characteristics of new hires to DOD and employees who left in fiscal years 2012 through 2021, and similarly found that little has changed regarding representation of historically disadvantaged groups over at least the decade of data we analyzed.⁴⁰ See appendix IV for our analysis that found about a fourth of annual new hires to DOD's federal civilian workforce were from these groups, and appendix V for analysis that shows employees from these groups left DOD at rates comparable to their White counterparts every year during the 10 years of data we analyzed.

Representation of Women Was Lower in Some Racial or Ethnic Groups

Representation among women from different racial or ethnic groups varied depending on where they worked. For example, the percentage was lower in fiscal year 2021 than in 2012 for

- White women in each of the three military departments and the other DOD component;
- Black women in the Army, Navy, and the other DOD component;
- Asian women in the Navy; and
- American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander women in the Army.

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Navy, Air Force, and Other DOD Components Contributed to Increased Representation

Representation of historically disadvantaged groups slightly increased in the Navy, Air Force, and other DOD components, which helped such representation at DOD, according to the DOD data we analyzed from fiscal year 2012 through fiscal year 2021. Specifically:

- **Department of the Navy.** We found that while the Navy had the second lowest representation of these groups in the first 6 years of the DOD data we analyzed, it slightly increased over the remaining 4 years.⁴¹ For example, 61,769 of the Navy's 195,880 federal civilian employees (31.53 percent) were from historically disadvantaged

⁴⁰We did not analyze the reasons why employees left DOD (e.g., retirement, death, termination, and other reasons).

⁴¹The Navy had the second lowest proportion of employees from historically disadvantaged groups every year from fiscal year 2012 through fiscal year 2017 and the third lowest proportion from fiscal year 2018 through fiscal year 2021.

groups in fiscal year 2012—the second lowest percentage among the three departments and the other DOD components. In comparison, 76,630 of its 223,613 employees (34.27 percent) were from these groups in fiscal year 2021—the greatest percentage over the 10 years of data we analyzed and greater than all but the other DOD components. Additionally, 54 percent (14,861 employees) of the Navy’s workforce growth by fiscal year 2021 (27,733 more employees) involved those from historically disadvantaged groups. The remainder, 46 percent (12,872), were White employees.⁴²

- **Department of the Air Force.** We found that while the Air Force had the lowest representation of these groups over each of the 10 years of data we analyzed, it slightly increased over this period. For example, 43,949 (26.11 percent) of the 168,324 Air Force employees—or the lowest percentage of the four—in fiscal year 2012 were from historically disadvantaged groups. In comparison, 50,272 (29.13 percent) of the 172,558 employees—a 3 percentage point increase but still the lowest—were from these groups in fiscal year 2021. Because the Air Force had 6,323 more employees from these groups and 4,186 fewer White employees between these 2 fiscal years, its net growth consisted entirely of employees from historically disadvantaged groups.⁴³
- **The other DOD components.** The other DOD components, although smaller than the three military departments, had the greatest representation of these groups in the civilian workforce over the 10 years of DOD data we analyzed. For example, 31,761 of the other DOD component’s 88,537 employees (35.87 percent) were from historically disadvantaged groups in fiscal year 2012—the highest percentage of the four. Additionally, 36,516 of the other DOD components’ 95,145 civilian employees (38.38 percent) were from these groups in fiscal year 2021, also the highest percentage and an increase when compared to fiscal year 2012. Thus, almost 72 percent (4,755) of the other DOD components’ 6,608 additional employees in fiscal year 2021 compared to 2012 were from these groups. The other DOD components also included about 1,700 more White employees between these 2 years.

⁴²The Navy also employed 1,839 civilians in fiscal year 2021 whose records did not specify a race or ethnicity in the DOD data we analyzed, compared with 1,960 in fiscal year 2012—resulting in 121 fewer employees with unspecified race or ethnicity.

⁴³The Air Force also employed 2,215 civilians in fiscal year 2021 whose records did not specify a race or ethnicity in the DOD data we analyzed, compared with 118 in fiscal year 2012—resulting in 2,097 more employees with unspecified race or ethnicity.

Representation of Black or African American Employees Decreased at DOD

In contrast, representation of employees from historically disadvantaged groups in the Army civilian workforce slightly declined as the size of the Army shrunk, according to our analysis of the same 10 years of DOD data. For example, 85,931 of the Army's 268,991 employees (31.95 percent) were from these groups in fiscal year 2012. In comparison, 77,242 of the Army's 246,452 employees (31.34 percent) were from these groups, a smaller percentage (and second lowest) in comparison with fiscal year 2012. That is, the decrease in the Army's workforce size between these 2 years equated to 22,539 fewer employees, 39 percent of which (8,689) were from historically disadvantaged groups.

While representation increased slightly for most historically disadvantaged groups in the DOD federal civilian workforce from fiscal year 2012 through fiscal year 2021, representation of Black or African American employees decreased based on our analysis of DOD data. Specifically, we found that representation of Hispanic or Latino employees and those from two or more races increased by nearly a percentage point in fiscal year 2012 as compared to 2021 (up 0.85 and 0.84 percentage points, respectively). We also found that representation of Asian employees and our other races category increased slightly (up 0.46 and 0.14 percentage points, respectively).⁴⁴ In comparison, representation of Black or African American employees decreased from 15.44 percent to 14.79 percent (down 0.65 percentage point).

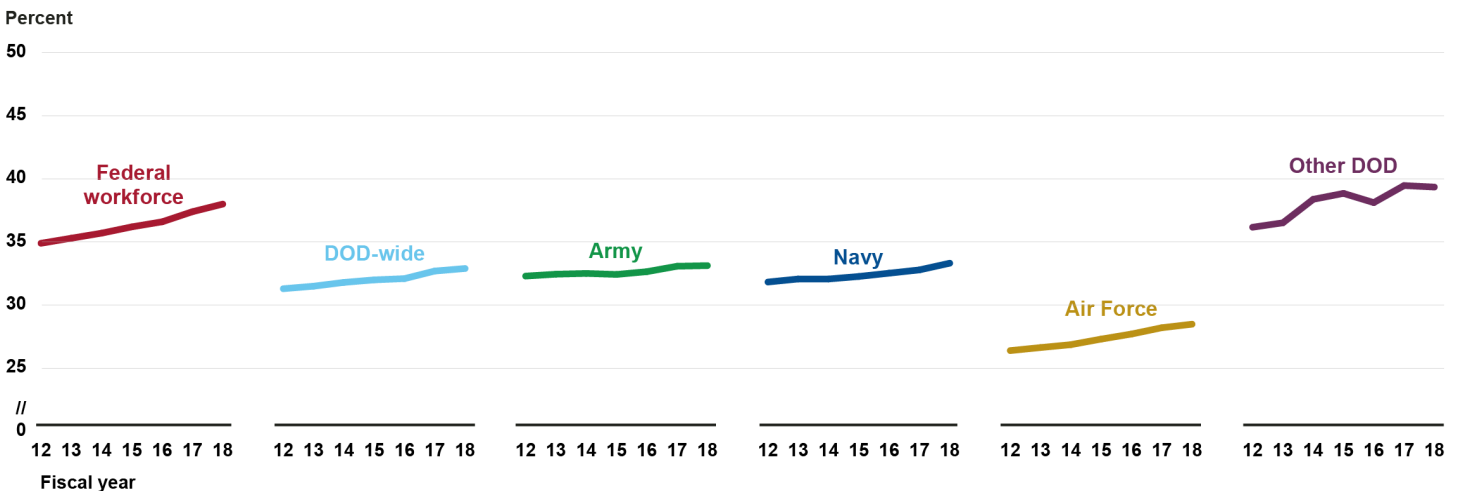
As with other changes in representation, the decrease of Black or African American employees in the large Army and Navy workforces drove the overall decrease at DOD, despite overall increases in their representation in the Air Force and other DOD components. For example, while the Army's overall decrease in size, of 22,539 employees in fiscal year 2021 compared to 2012, included 8,689 from historically disadvantaged groups, most of these—8,015—were Black or African American. Additionally, while over half of the Navy's 27,733 more employees—14,861 employees—in fiscal year 2021 compared to 2012 were from historically disadvantaged groups, 2,975 were Black or African American, a proportional decline of 0.33 percentage point. See appendix VI for additional information on individual racial or ethnic groups.

⁴⁴For our analysis, the "other races" category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers in the data.

Representation of Historically Disadvantaged Groups at DOD Remained below Total Federal Civilian Workforce Levels

When we compared our analysis of the DOD-wide workforce to OPM-reported data for the total federal civilian workforce from fiscal year 2012 through fiscal year 2018—the most recent available—we found that representation of historically disadvantaged groups at DOD was at least 3.8 percentage points below the federal civilian workforce every year, as shown in figure 10.⁴⁵ For example, these groups comprised 37.7 percent of the total federal workforce in fiscal year 2018, compared with 32.6 percent DOD-wide (a 5.1 percentage point difference). Each of the three military departments was also lower that year—Army (32.8 percent), Navy (33.0 percent), and Air Force (28.2 percent). In contrast, representation in the other DOD components, at 39.1 percent in fiscal year 2018, exceeded that for the federal civilian workforce by 1.4 percentage points.

Figure 10: Representation of Historically Disadvantaged Racial or Ethnic Groups at DOD and in the Total Federal Civilian Workforce, Fiscal Years 2012–2018



Source: GAO analysis of Department of Defense (DOD) and Office of Personnel Management data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees in the military departments and other DOD components, which include defense agencies and field activities.

Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management (OPM) categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

The federal workforce data is reported annually by OPM for the Federal Employment Opportunity Recruitment Program and includes permanent employees in non-postal federal executive branch

⁴⁵OPM includes permanent employees in non-postal federal executive branch agencies unless not publicly reported in OPM data. For more information on our scope and methodology, including this comparison with OPM federal workforce data, see appendix I.

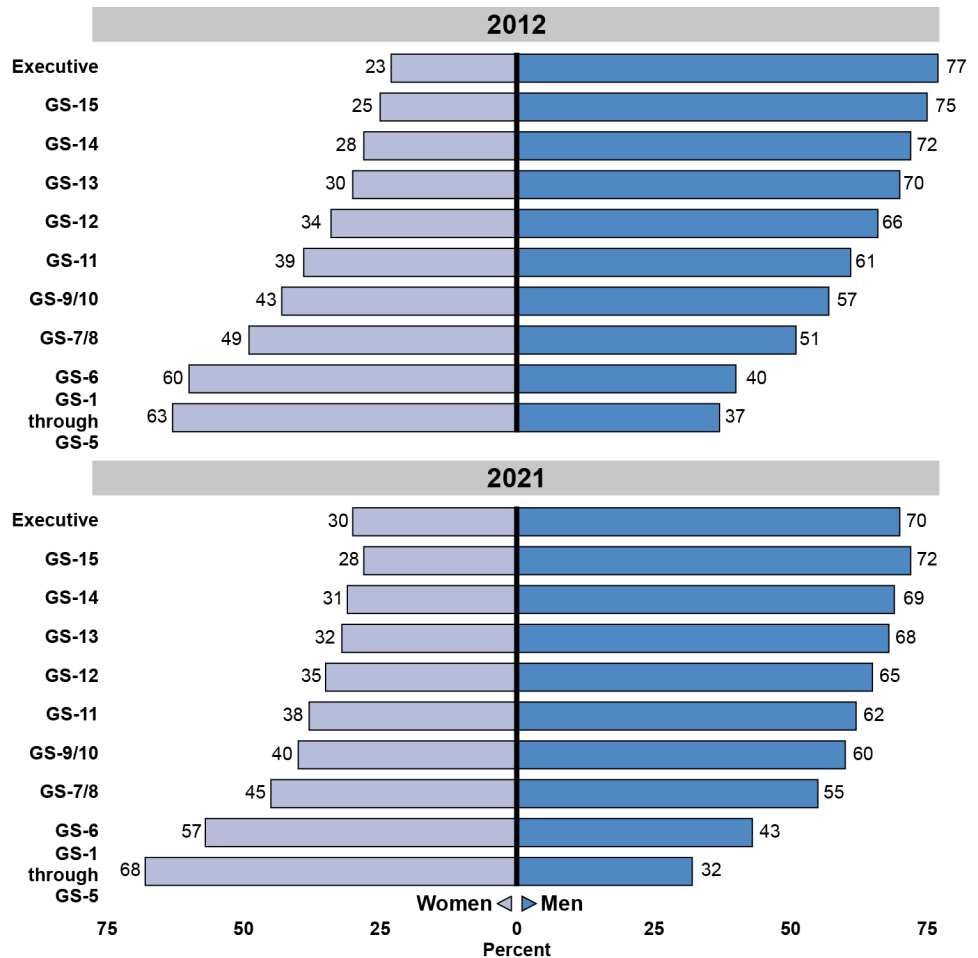
agencies unless not publicly reported in OPM data. The OPM report for fiscal year 2018, issued in December 2020, was the most recent report available during our review.

Representation of Women and Employees from Historically Disadvantaged Groups at DOD Is Lowest at Senior Levels

We found that women and employees from historically disadvantaged groups remained less represented, sometimes substantially, at upper GS grades and at the executive level than their male or White counterparts, respectively, every year from fiscal year 2012 through fiscal year 2021.⁴⁶ In general, the more senior the level, the lower the representation for both groups, as shown in figure 11. For example, women’s representation at the executive level in fiscal year 2012 was 23 percent. Women comprised about 63 percent in our combined category of GS-1 through GS-5 grades. This represents a difference of 40 percentage points between women’s representation at the executive level versus the lowest grades. In fiscal year 2021, while women’s representation in both grade levels slightly increased, there was a 38 percentage point difference between the executive level and lower grades.

⁴⁶Our analysis includes employees assigned to the GS pay-plan code, not other pay-plan codes in the GS pay system, such as GL, GP, GM, or GR. In the DOD data we analyzed, the other codes were associated with 2,348 DOD civilian employees, or 0.32 percent of the total DOD civilian workforce in fiscal year 2021. Our analysis of the executive level includes only Senior Executive Service employees identified with the ES pay-plan code; we do not include political appointees or other special senior-level positions in other pay plans. The GS pay plan is neither the only way nor a guaranteed path to obtaining a position in the Senior Executive Service. DOD employees from other pay plans, as well as applicants external to DOD and government can be accepted into the Senior Executive Service or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Figure 11: Representation of Women and Men in General Schedule (GS) Grades and the Senior Executive Service at DOD, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

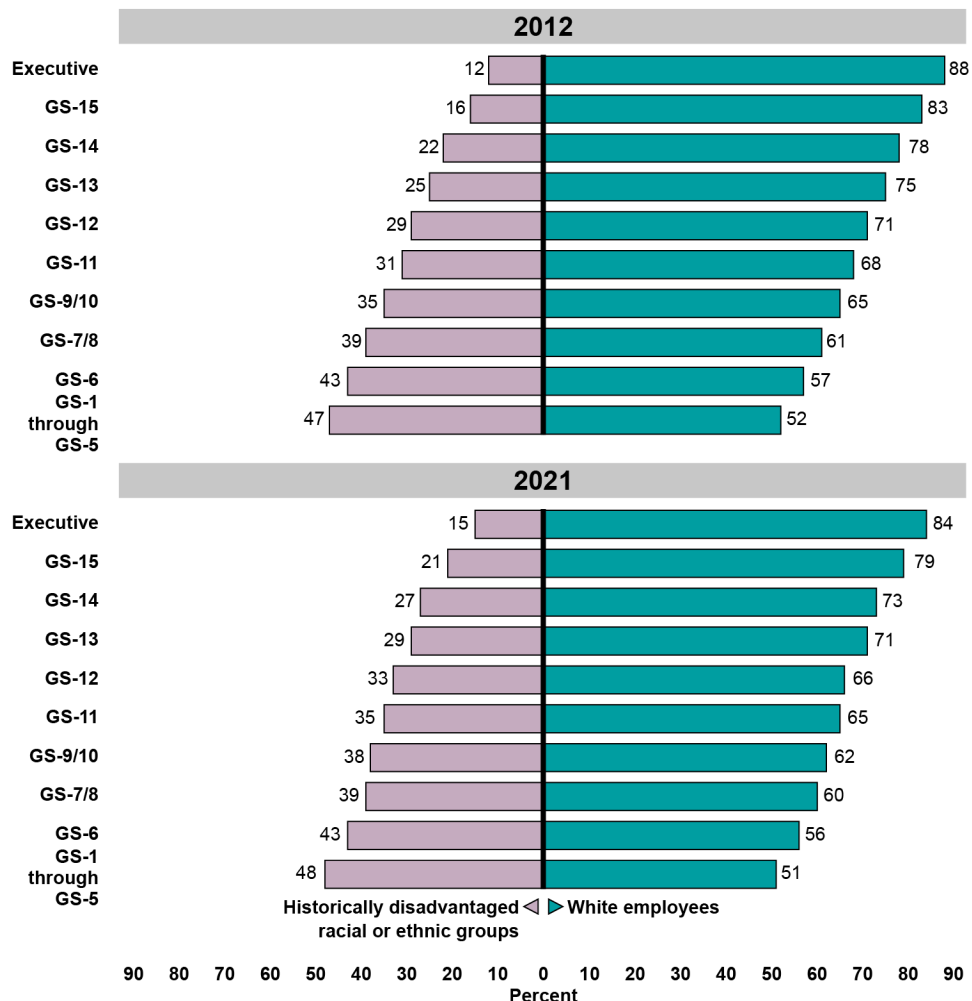
Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Our analysis reflects employees in the GS pay-plan code and ES pay-plan code for the Senior Executive Service. The data do not account for the small number of DOD employees in GS-equivalent pay plans, or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay plans, as well as applicants external to DOD, can be accepted into the Senior Executive Service or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Representation of employees from historically disadvantaged groups also substantially declined as GS grade increased (see figure 12). For example, in fiscal year 2012, representation of these groups compared to

White employees was 12 percent at the executive level and 47 percent in our combined GS-1 through GS-5 category—35 percentage points lower. In fiscal year 2021, representation of historically disadvantaged groups slightly increased, but there was a 33 percentage point difference in such representation.

Figure 12: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in General Schedule (GS) Grades and the Senior Executive Service at DOD, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees.

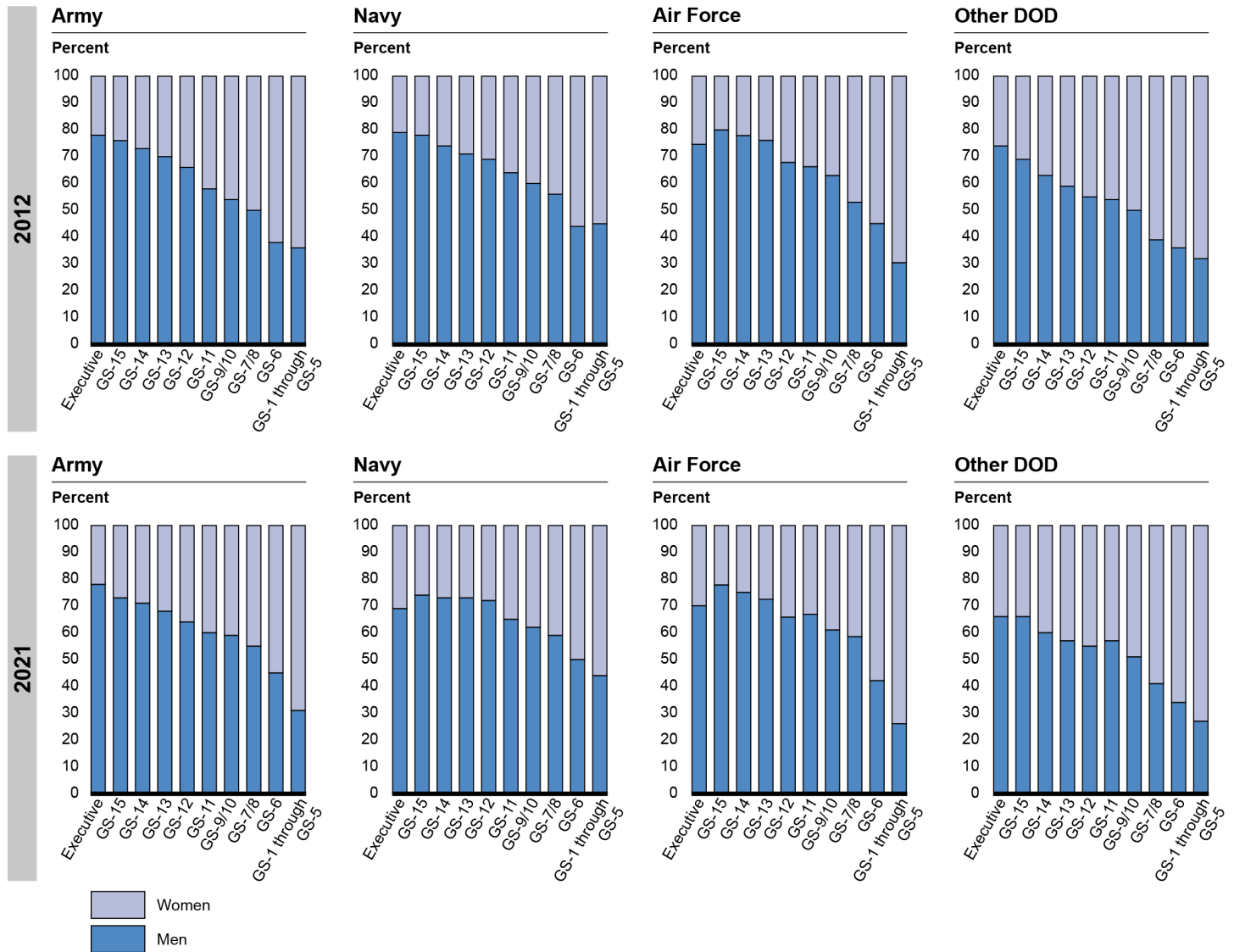
Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or

Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. Percentages may not total 100 due to rounding and the small percentage of employee records with unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Our analysis reflects employees in the GS pay-plan code and the ES pay-plan code for the Senior Executive Service. The data do not account for the small number of DOD employees in GS-equivalent pay plans, or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay plans, as well as applicants external to DOD, can be accepted into the Senior Executive Service or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Women and employees from historically disadvantaged groups in the three military departments and other DOD components also remained less represented, sometimes substantially, at upper GS grades and the executive level than their male or White counterparts, according to our analysis of DOD data. We found the more senior the position, the greater the difference in representation. For example, in fiscal year 2021, representation of women in the Air Force executive level was 44 percentage points lower than representation at the lowest level (our GS-1 through GS-5 grade category), and 32 percentage points lower for employees from historically disadvantaged groups. Figures 13 and 14 depict additional details pertaining to women and historically disadvantaged groups in the three military departments and other DOD components in fiscal years 2012 and 2021.

Figure 13: Representation of Women and Men in General Schedule (GS) Grades and the Senior Executive Service in the Military Departments and Other DOD Components, Fiscal Years 2012 and 2021



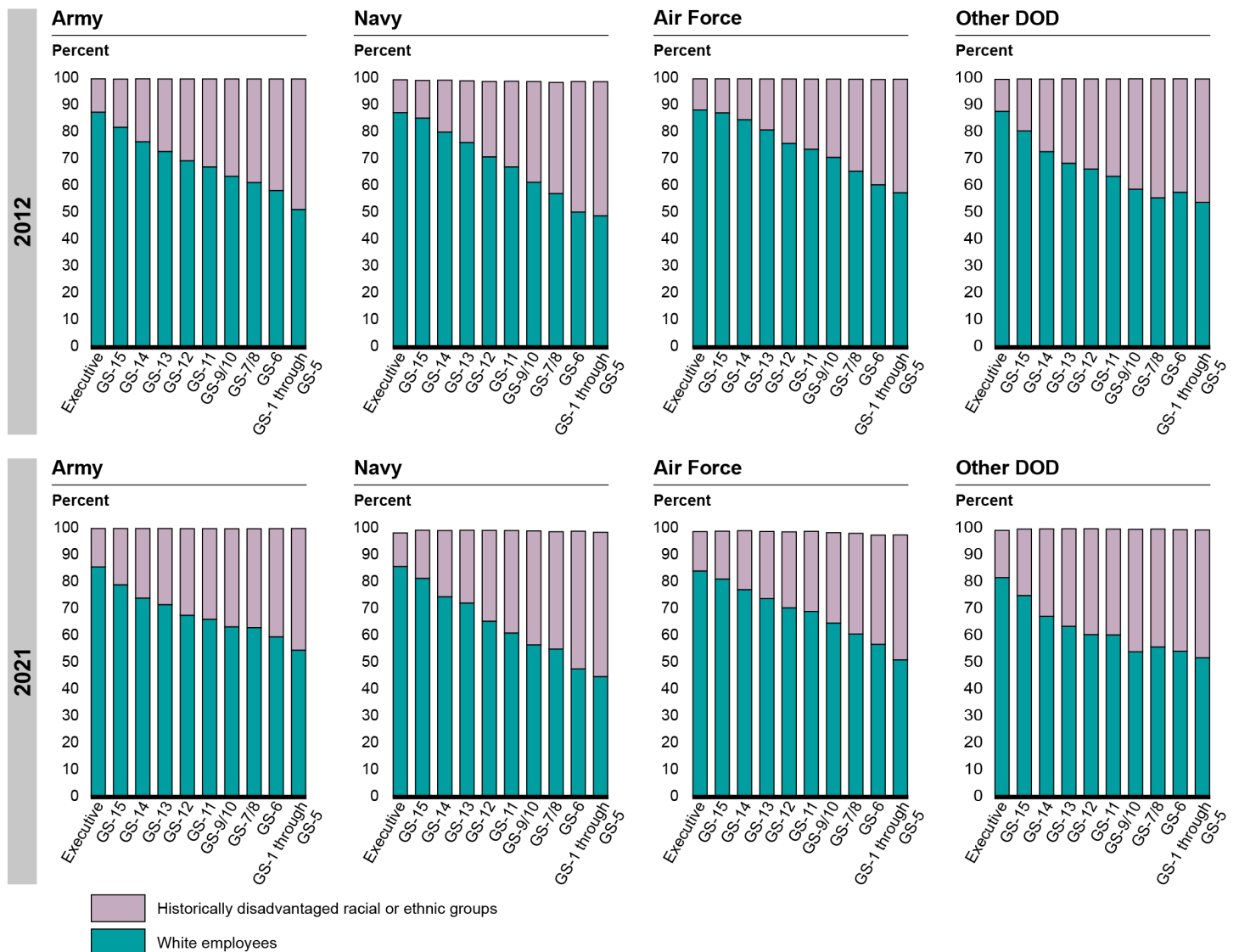
Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated fund, full-time (i.e., 40-hour workweek) employees in the three military departments and the other DOD components, which include defense agencies and field activities. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Our analysis reflects employees in the GS pay-plan code, and the ES pay-plan code for the Senior Executive Service. The data do not account for the small number of DOD employees in GS-equivalent pay plans or other senior-level positions such as political appointees or senior-level technical positions. DOD employees in other pay plans, as well as applicants external to DOD, can be

accepted into the Senior Executive Service or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Figure 14: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in General Schedule (GS) Grades and the Senior Executive Service in the Military Departments and Other DOD Components, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) employees in the three military departments and the other DOD components, which include defense agencies and field activities.

Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White.

Percentages may not total 100 due to rounding and the small percentage of employee records with unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis reflects employees in the GS pay-plan code and the ES pay-plan code for the Senior Executive Service. The data do not account for the small number of DOD employees in GS-equivalent pay plans, or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay plans, as well as applicants external to DOD, can be accepted into the Senior Executive Service or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Executive-Level Representation of Women and Historically Disadvantaged Racial or Ethnic Groups in the Military Departments and Other DOD Component Was Higher in Fiscal Year 2021 than in 2012

While representation of women and historically disadvantaged groups increased, representation of women in the Senior Executive Service in the military departments and the other DOD components increased slightly more than did representation for employees from historically disadvantaged groups when comparing fiscal years 2012 and 2021. For example, the percentage point differences for women and employees from historically disadvantaged groups at the executive level increased as follows:

Department of the Army

- **Women:** 2.18 percentage points (from 20.00 to 22.18 percent)
- **Historically disadvantaged groups:** 1.84 percentage points (from 12.45 to 14.29 percent)

Department of the Navy

- **Women:** 9.85 percentage points (from 21.07 to 30.92 percent)
- **Historically disadvantaged groups:** 0.24 percentage points (from 12.26 and 12.50 percent)

Department of the Air Force

- **Women:** 4.53 percentage points (from 25.41 to 29.94 percent)
- **Historically disadvantaged groups:** 3.09 percentage points (from 11.60 to 14.69 percent)

Other DOD Components

- **Women:** 7.36 percentage points (from 26.21 to 33.57 percent)
- **Historically disadvantaged groups:** 5.66 percentage points (from 11.95 to 17.61 percent)

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

See appendix VII for additional data by GS grade and at the executive level at DOD. See other appendixes for additional analysis of the demographic composition in the DOD federal civilian workforce as follows: by U.S. state and the District of Columbia (appendix VIII); by veteran status (appendix IX); STEM occupations (appendix X); and OPM occupational categories for white- and blue-collar positions (appendix XI).

Historically Disadvantaged Groups Had Lower Likelihood of Promotion Compared to White Employees from 2012–2021, While Likelihood for Women Compared to Men Varied

We found that, on average, employees from historically disadvantaged groups had generally lower likelihood of promotion than White employees across DOD from fiscal year 2012 through fiscal year 2021, including when we analyzed promotions by individual racial or ethnic category in the DOD data. We also found that likelihood of promotion for women relative to men varied by DOD component and GS grade, and found differences for women and men depending on if they were from historically disadvantaged groups.

To examine the promotion outcomes for various demographic groups, we conducted a multivariate statistical regression analysis (specifically, duration analysis) to estimate promotion odds by controlling for factors that could affect promotion, such as occupation. This adjusted analysis, using employee records in GS grades from DOD's snapshot data from fiscal year 2012 through fiscal year 2021, compared the likelihood of promotion for employees from historically disadvantaged groups relative to White employees, and women relative to men. We also analyzed descriptive promotion rates of employees, including by various demographic group over this time period. See appendix XII for these results.⁴⁷

Our adjusted analysis of DOD's civilian workforce data controlled for certain individual and occupational factors other than racial or ethnic group, and gender that could influence promotion. However, our analyses do not completely explain the reasons for differences in promotion outcomes, which may result from various unobservable factors, such as employee skills or performance. None of our analyses established a causal relationship between demographic characteristics and promotion outcomes. However, the analyses can provide insights into whether any differences between promotion outcomes persist even after accounting for certain individual factors, such as length of service and other various control factors.

⁴⁷We found differences in our descriptive analysis, for which we calculated the number of newly elevated employees in a higher grade in a fiscal year divided by the number of employees in the last quarter of that same fiscal year and averaged over the 10 years of data. See appendix XII for a summary of our descriptive and adjusted analyses.

Control Variables Used in Our Statistical Analysis of Department of Defense Data

To examine the statistical relationship between racial or ethnic group, gender, and promotion, we controlled for certain individual and occupational factors other than racial or ethnic group and gender, including:

- age,
- disability status,
- veterans' preference,
- prior federal experience,
- educational level,
- duty station location, and
- occupation.

See appendix XIII for all control variables we used and more detailed results of our analysis.

Source: GAO analysis. | GAO-23-105284

Promotion Outcomes Were Generally Lower for Historically Disadvantaged Groups

Our adjusted analysis of DOD data found that employees from historically disadvantaged groups were less likely to be promoted than their White counterparts at all three military departments and other DOD components. Additionally, we found these lower odds of promotion to be statistically significant for most GS grades as shown in figure 15.

Figure 15: Statistical Likelihood of Promotion of DOD Employees from Historically Disadvantaged Racial or Ethnic Groups Compared to White Employees, by General Schedule (GS) Pay Grade, in the Military Departments and Other DOD Components, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to Executive
Army	▼	▼	▼	▼	▼	▼	▽
Navy	▼	▼	▼	▼	▼	▼	▽
Air Force	▼	▼	▼	▼	▼	▽	▲
Other DOD	▼	▼	▽	▼	▼	▼	▼

▲ Historically disadvantaged racial or ethnic groups more likely than White employees to be promoted at a 95 percent confidence level (1 instance)

▼ Historically disadvantaged racial or ethnic groups less likely than White employees to be promoted at a 95 percent confidence level (23 instances)

▽△ More or less likely but not statistically significant at a 95 percent confidence level and, therefore, we could not conclude that there is a statistical difference between historically disadvantaged racial or ethnic groups and White employees in likelihood of promotion (4 less likely instances)

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White.

For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and to GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 through GS-11 promote at a two-grade interval, from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade

intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 to GS-11 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

Statistical significance tests in regression models are useful as a diagnostic tool, but they may not be the only information sources agencies use to help identify disparities.

In the Air Force, for promotions from GS-15 to executive, historically disadvantaged groups fared better than their White counterparts. In all other grades, employees from historically disadvantaged groups were less likely to be promoted (though in four instances we could not conclude that there was a statistically significant difference in promotion outcomes in the grade). Specifically, our analysis of DOD data on promotions in fiscal years 2012 through 2021 found the following:

- In the Army, employees from historically disadvantaged groups were 7.80 percent to 19.60 percent less likely to be promoted from GS-7 through GS-15 than their White counterparts. There was no statistically significant difference in the odds of promotion between historically disadvantaged groups and White employees from GS-15 to executive.
- In the Navy, employees from historically disadvantaged groups were 5.70 percent to 21.80 percent less likely to be promoted from GS-7 through GS-15 than their White counterparts. There was no statistically significant difference in the odds of promotion between historically disadvantaged groups and White employees from GS-15 to executive.
- In the Air Force, employees from historically disadvantaged groups were 8.90 percent to 14.80 percent less likely to be promoted from GS-7 through GS-14 than their White counterparts. We did not find a statistically significant difference in the odds of promotion from GS-14 to GS-15. Historically disadvantaged groups were 79.40 percent more likely to be promoted than White employees from GS-15 to the executive level.
- In the other DOD components, employees from historically disadvantaged groups were less likely to be promoted in nearly all GS grades and to executive. This difference ranged from 5.70 percent to 33.50 percent less likely to be promoted from GS-7 to GS-09 and from GS-15 to executive, respectively. We did not find a statistically significant difference in the odds of promotion from GS-11 to GS-12 for historically disadvantaged groups relative to White employees.

We also analyzed the likelihood of promotion between individual racial or ethnic groups in comparison to their White counterparts. We found that

Black or African American employees were generally less likely to be promoted than their White counterparts from GS-7 to GS-15 across DOD, at statistically significant levels (see figure 16).⁴⁸ Black or African American employees were, on average, 5.50 percent to 44.70 percent less likely to be promoted than White employees. Hispanic or Latino and Asian employees were also less likely to be promoted across most GS grades. Specifically, Hispanic or Latino employees were 7.90 percent to 25.00 percent less likely and Asian employees 6.90 percent to 37.70 percent less likely, on average, than White employees.

⁴⁸Statistically significant at a 95 percent confidence level. Statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, but they may not be the only information sources agencies use to help identify disparities.

Figure 16: Statistical Likelihood of Promotion of DOD Employees from Different Racial or Ethnic Groups Compared to White Employees, by General Schedule (GS) Pay Grade, in the Military Departments and Other DOD Components, Fiscal Years 2012–2021

		GS-7 to GS-8/9	GS-9 GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to Executive
Army	Black or African American	▼	▼	▼	▼	▼	▼	▽
	Hispanic or Latino	▼	▼	▼	▼	▼	▼	△
	Asian	▼	▽	▼	▼	▼	▽	△
	Other races	▽	▼	▼	▼	△	▽	N/A
	Two or more races	▲	▲	▲	△	△	▽	N/A
Navy	Black or African American	▼	▼	▼	▼	▼	▼	▽
	Hispanic or Latino	▼	▼	△	▽	▽	▽	△
	Asian	▼	▼	▼	▼	▽	▼	N/A
	Other races	▼	▼	▼	▼	▽	▽	△
	Two or more races	▽	▽	△	▽	▲	▽	△
Air Force	Black or African American	▼	▼	▼	▼	▽	▽	△
	Hispanic or Latino	▼	▼	▼	▽	—	△	▲
	Asian	▼	△	▽	▼	▼	▽	△
	Other races	▽	▽	▼	▼	▽	▽	△
	Two or more races	△	△	▲	▽	△	▽	△
Other DOD	Black or African American	▼	▼	▼	▼	▼	▼	▼
	Hispanic or Latino	▲	△	▲	▼	▼	▽	△
	Asian	▼	▼	▲	▼	▼	▼	▽
	Other races	▽	▼	▽	▼	▼	△	N/A
	Two or more races	△	△	▲	△	△	△	▽

▲ More likely than White employees to be promoted at a 95 percent confidence level (10 instances)

▼ Less likely than White employees to be promoted at a 95 percent confidence level (65 instances)

▽△ More or less likely but not statistically significant at a 95 percent confidence level and, therefore, we could not conclude that there is a statistical difference in the likelihood of promotion (27 more likely and 33 less likely instances)

— There was no difference in promotion likelihood (1 instance)

N/A No promotions occurred for this racial or ethnic group based on the data we analyzed (4 instances)

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: Racial and ethnic groups based Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees.

For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 through GS-11 promote at a two-grade interval, from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 to GS-11 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

Statistical significance tests in regression models are useful as a diagnostic tool, but they may not be the only information sources agencies use to help identify disparities.

Promotion Outcomes for Women Relative to Men Varied across DOD

We found that promotion outcomes for women compared to men varied by GS grade and by department, based on our statistical analysis of DOD data from fiscal year 2012 through fiscal year 2021. Women were generally less likely to be promoted at lower and middle GS grades but more likely to be promoted once they reached higher grades as shown in figure 17. For example, women were more likely to be promoted from GS-13 to GS-14 across all military departments but our results were not statistically significant in the other DOD components. Specifically, our analysis found:

- In the Army, women had generally higher promotion odds than men from GS-9 through GS-14. For example, the statistically significant promotions for women ranged from 2.70 percent to 13.50 percent higher for women than for men.
- In the Navy, women were less likely to be promoted than men, ranging from 4.10 percent to 9.50 percent, from GS-7 through GS-12, but women were 7.90 percent more likely to be promoted than men from GS-13 to GS-14.
- In the Air Force, promotion odds varied for women compared to men across grades. For example, women were 14.10 percent less likely to be promoted from GS-7 to GS-9 but 10.10 percent more likely to be promoted from GS-13 to GS-14.
- In the other DOD components, the odds of promotion of women were lower than for men from GS-7 up to GS-13 (as shown in figure 17) ranging from 4.40 percent to 13.40 percent less likely to be promoted.

Figure 17: Statistical Likelihood of Promotion of Women Compared to Men, by General Schedule (GS) Pay Grade, in the Military Departments and Other DOD Components, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to Executive
Army	▽	▲	▲	△	▲	△	▽
Navy	▼	▼	▼	▽	▲	△	△
Air Force	▼	▽	▲	▼	▲	▽	▽
Other DOD	▼	▼	▼	▼	△	△	△

▲ Women are more likely than men to be promoted at a 95 percent confidence level (6 instances)

▼ Women are less likely than men to be promoted at a 95 percent confidence level (9 instances)

▽△ More or less likely but not statistically significant at a 95 percent confidence level and, therefore, we could not conclude that there is a statistical difference between women and men in the likelihood of promotion (7 more likely and 6 less likely instances)

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 through GS-11 promote at a two-grade interval, from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 to GS-11 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

Statistical significance tests in regression models are useful as a diagnostic tool, but they may not be the only information sources agencies use to help identify disparities.

Promotion Outcomes for White Men Were Generally Highest across DOD

We found that men and women from historically disadvantaged groups had lower odds of promotion compared to White men (see figure 18) when we analyzed the intersectionality between gender and racial or ethnic group with odds of promotion in fiscal years 2012 through 2021. Men from historically disadvantaged groups had higher odds of promotion than White men from GS-15 to executive in the Air Force. Odds of promotion for White women varied when compared to White men, but women from historically disadvantaged groups had lower odds of promotion than White men in all GS grades across DOD.

Figure 18: Statistical Likelihood of Promotion of White Women, and Men and Women from Historically Disadvantaged Racial or Ethnic Groups Compared to White Men, by General Schedule (GS) Pay Grade, in the Military Departments and Other DOD Components, Fiscal Years 2012–2021

		GS-7 to GS-8/9	GS-9 GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to Executive
Army	White women	▽	▲	▲	△	△	▲	△
	Men from historically disadvantaged racial or ethnic groups	▼	▼	▼	▼	▼	▼	△
	Women from historically disadvantaged racial or ethnic groups	▼	▽	▼	▼	▼	▼	▽
Navy	White women	▼	▼	▽	▽	▲	△	△
	Men from historically disadvantaged racial or ethnic groups	▼	▼	▼	▼	▽	▼	△
	Women from historically disadvantaged racial or ethnic groups	▼	▼	▼	▼	▽	▼	△
Air Force	White women	▼	△	▲	▼	△	△	△
	Men from historically disadvantaged racial or ethnic groups	▼	▼	▼	▼	▼	▽	▲
	Women from historically disadvantaged racial or ethnic groups	▼	▼	▼	▼	△	▽	△
Other DOD	White women	▼	▽	▼	▼	△	△	△
	Men from historically disadvantaged racial or ethnic groups	▽	▼	△	▼	▼	▽	▽
	Women from historically disadvantaged racial or ethnic groups	▼	▼	▼	▼	▼	▼	▽

▲ More likely than White men to be promoted at a 95 percent confidence level (6 instances)

▼ Less likely than White men to be promoted at a 95 percent confidence level (46 instances)

▽△ More or less likely but not statistically significant at a 95 percent confidence level and, therefore, we could not conclude that there is a statistical difference in the likelihood of promotion (18 more likely and 14 less likely instances)

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Our promotion analysis includes employees assigned to the GS pay plan. The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 through GS-11 promote at a two-grade interval,

from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 to GS-11 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

Statistical significance tests in regression models are useful as a diagnostic tool, but they may not be the only information sources agencies use to help identify disparities.

DOD Has Taken Steps to Identify Potential Barriers to Diversity, but Has Not Developed Oversight Policies or Plans to Track Progress in Eliminating Them

DOD has developed policies and plans to manage department-wide diversity efforts, including equal employment opportunity (EEO), and taken steps to identify potential barriers as part of its various diversity and EEO programs. DOD has also developed data-analysis mechanisms for department-wide analysis of diversity issues and barriers, but not having a policy or plan for coordinating and collecting these data may limit their use as intended. Additionally, not having clear oversight roles and measures for tracking DOD progress to eliminating barriers—a top priority of its diversity strategic plan—may also prevent DOD from making meaningful progress in achieving its goals.

DOD Has Taken Steps to Identify Potential Barriers and Department-Wide Issues

DOD Policies and Diversity Strategic Plans Highlight the Importance of Identifying and Analyzing Barriers

Three DOD issuances establish overall policy for promoting diversity and EEO in the DOD civilian workforce and highlight the importance of identifying and analyzing related barriers. Specifically:

1. **DOD Directive 1020.02E, *Diversity Management and Equal Opportunity in the DOD***. Establishes overall policy for diversity management and equal opportunity at DOD, and that efforts to identify and eliminate barriers to diversity and EEO should be part of the DOD civilian EEO program.
2. **DOD Instruction 1020.05, *DOD Diversity and Inclusion Management Program***. Establishes the policy and program for diversity and inclusion at the department, including that the secretaries of the military departments and other DOD component heads must ensure their diversity programs work to remove barriers to disadvantaged groups.
3. **DOD Directive 1440.1, *The DOD Civilian Equal Employment Opportunity (EEO) Program***. Establishes DOD's civilian EEO

program and directs the heads of the military departments and other DOD components to evaluate employment policies, practices, and patterns to identify and correct any institutional barriers for people based on sex, race or ethnicity, and disability.⁴⁹

DOD has also developed diversity-related strategic plans in response to two executive orders. First, in April 2012, DOD issued a diversity and inclusion strategic plan in response to Executive Order 13583, *Establishing a Coordinated Government-wide Initiative to Promote Diversity and Inclusion in the Federal Workforce*.⁵⁰ Second, in September 2022, DOD issued its most recent diversity strategic plan in response to Executive Order 14035.⁵¹ Each of these plans prioritizes identifying and eliminating barriers to workforce diversity. For example, in line with Executive Order 14035 and the 2021 government-wide plan to advance diversity, equity, inclusion, and accessibility in the federal government, DOD's 2022 strategic plan commits to developing "processes to identify and remove employment barriers and provide enhanced opportunities to all individuals."⁵² DOD officials told us that they are working on an annual update to the strategic plan, though they anticipate additional guidance from OPM to inform this update.

⁴⁹DOD Directive 1020.02E, *Diversity Management and Equal Opportunity in the DOD* (June 8, 2015) (incorporating change 2, effective June 1, 2018); DOD Instruction 1020.05, *DOD Diversity and Inclusion Management Program* (Sept. 9, 2020); and DOD Directive 1440.1, *The DOD Civilian Equal Employment Opportunity (EEO) Program*, (May 21, 1987) (incorporating through change 3, Apr. 17, 1992; certified current as of Nov. 21, 2003). These policies define DOD components to include, among others, the Office of the Secretary of Defense, military departments, defense agencies, and field activities. The first two policies apply to the total DOD workforce of civilian and military personnel; the third pertains exclusively to civilian EEO. Military service members have different equal opportunity protections and processes, such as for processing and resolving complaints of unlawful discrimination or harassment. See DOD Instruction 1350.02, *DOD Military Equal Opportunity Program* (Sept. 4, 2020, change 1, Dec. 20, 2022).

⁵⁰Department of Defense, *Diversity and Inclusion Strategic Plan 2012-2017* (2012); see also Exec. Order No. 13583 (2011).

⁵¹Department of Defense, *Department of Defense Diversity, Equity, Inclusion, and Accessibility Strategic Plan, Fiscal Years 2022-2023* (Sept. 30, 2022); see also Exec. Order No. 14035 (2021).

⁵²The White House, *Government-Wide Strategic Plan to Advance Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce* (Nov. 2021).

DOD Has Taken Steps to Identify Potential Barriers to EEO and Diversity

DOD has taken steps to identify potential barriers to diversity, through individual military department and the other DOD component efforts, as well as through other recent efforts to report issues department-wide.

Military and other DOD component EEO programs and other efforts.

The military departments and other DOD components have identified various diversity issues in their annual reports on the status of their EEO programs, as required by EEOC's MD-715. They have also reported steps they have taken to identify and analyze any potential barriers. For example, the military departments and other DOD components have reported underrepresentation of the following demographic groups in certain components or occupations, among others.⁵³

- **Women.** All three military departments have reported that workforce data indicated potential barriers associated with the employment of women. For example, for fiscal year 2020, the Army identified that women were underrepresented compared to its analysis of the relevant civilian labor force in three of its mission-critical occupations: information and technology management, logistics management, and nursing. In its report for fiscal year 2021, the Army also laid out steps it planned to take to further identify potential barriers to the employment of women, including to improve hiring and other employment practices.⁵⁴

⁵³We reviewed MD-715 reports for fiscal years 2018 through 2021 available from the three military departments, and covering 16 other DOD components, during our review (e.g., reports for each fiscal year are generally issued in the following calendar year, so 2020 and 2021 reports were generally issued in 2021 or 2022, respectively). DOD is not required to submit a department-wide report to EEOC each year and, according to EEOC officials, federal agencies including the military departments and DOD components have flexibility in how they incorporate any subordinate organization MD-715 reports, including any barrier analyses, into a department- or component-wide report. For example, the Department of the Navy's report for 2020 identified and provided high-level summaries of 60 barrier analysis efforts reported by various subcomponents, in addition to the three at the department-wide level. In contrast, the Department of the Army's report focused its reporting on the department-level barrier analysis efforts. The other DOD components also take different approaches to submitting MD-715 reports. For example, the Missile Defense Agency submitted its own report, while DOD's Washington Headquarters Service report covers its workforce as well as a number of other DOD components each year, including the Office of Secretary of Defense and the Defense Advanced Research Project Agency, among others. We did not evaluate the extent to which all relevant DOD components or subordinate organizations submit their reports each year as required by EEOC, though EEOC periodically reviews the status of military department and other DOD component EEO programs and MD-715 reports.

⁵⁴The Army's fiscal year 2021 report was issued in September 2022, the most recent available during our review.

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- **Hispanic or Latino employees.** All three military departments have also reported that their workforce data identified low representation of Hispanic or Latino employees, and identified specific issues or steps to analyze potential barriers. For example, the Air Force specifically reported lower representation in the senior GS levels for fiscal year 2020, and the Navy's fiscal year 2021 report identified planned steps to identify related barriers, including reviewing EEO complaint data and conducting focus groups.
 - **Both genders and all racial and ethnic groups.** Across the annual EEO reports we analyzed, at least one military department or other DOD component reported that potential barriers may exist for both women and men and for all racial or ethnic groups, based on the circumstances of their respective workforces. For example, DOD's Washington Headquarters Service (WHS), whose fiscal year 2021 report covered the workforces of 10 DOD components, identified that Hispanic or Latino, White, and Asian women had lower rates of representation compared to the comparable civilian labor force. WHS identified steps it planned to take to examine potential barriers related to hiring and retention. The DOD Education Activity reported that for fiscal years 2020 and 2021, its mission-critical occupations—1) general education and training, and 2) educational and vocational training—had lower representation of men across various racial and ethnic groups, and it reported steps it planned to take to examine root causes and potential barriers.⁵⁵

In addition to the annual reports required by the EEOC, military departments have commissioned one-time reports or established task teams or other efforts to examine diversity issues, including barriers.⁵⁶ The Air Force, for example, has established at least seven barrier

⁵⁵For additional analysis of DOD component MD-715 reports and the potential barriers they have identified, see GAO, *Intelligence Community: Additional Actions Needed to Strengthen Workforce Diversity Planning and Oversight*, [GAO-21-83](#) (Washington, D.C.: Dec. 17, 2020). In that report, we reviewed the Intelligence Community's (IC) efforts to identify and assess barriers to workforce diversity, including in MD-715 reports from DOD components that are part of the IC. We found the DOD IC components also identified a number of diversity-related issues indicating that barriers may exist for women and various racial or ethnic groups. That report also examined the extent to which the IC is taking steps to address leading practices for diversity and made seven recommendations to the Director of National Intelligence pertaining to updated guidance, strategic planning, barrier analysis, and accountability. The Office of the Director for National Intelligence agreed with these recommendations, and we continue to monitor its actions on these issues.

⁵⁶These entities' efforts may be separate from any formal diversity or EEO program, according to officials, and DOD may not report them as part of their annual EEOC reporting requirements.

analysis teams, for civilian and military personnel, including teams to examine Black or African American employment, Indigenous Nations equality, and women's initiatives. Additionally, the Departments of the Army and Air Force have commissioned studies to identify and address potential barriers and related diversity issues in their civilian workforces.⁵⁷

DOD-wide efforts to identify potential barriers to diversity. DOD has undertaken a number of other efforts to identify some potential barriers to diversity. In June 2021, Executive Order 14035 required DOD and the military departments to identify potential barriers to diversity, equity, inclusion, and accessibility in various employment practices. DOD submitted its department-wide assessment to OPM in March 2022 and, along with the three military departments' assessments, reported potential barriers associated with recruiting, hiring, promotion, retention, professional development, performance evaluation, and pay and compensation.⁵⁸ For example, DOD's assessment identified challenges with consistent recruitment and employment data and the lack of standard recruiting strategies to guide DOD's decentralized hiring processes.

Independent organizations, such as defense advisory committees and inspectors general, have also analyzed areas where potential barriers may exist, such as in response to leadership direction or legislative requirements, and made recommendations to address them. For example, the Secretary of Defense convened the DOD Board on Diversity and Inclusion in 2020, which issued 15 recommendations to improve racial and ethnic diversity in the U.S. military, such as regarding policies and promotion practices to ensure they do not present barriers for certain

⁵⁷RAND Corporation, *Advancement and Retention Barriers in the U.S. Air Force White Collar Civilian Workforce: Implications for Diversity* (Santa Monica, CA: 2020); *Career Paths in the Army Civilian Workforce: Identifying Common Patterns Based on Statistical Clustering* (Santa Monica, CA: 2018).

⁵⁸They also all identified potential barriers associated with reasonable accommodations based on disability, as well as safe workplace and sexual harassment, but we did not examine these particular issues.

racial or ethnic groups.⁵⁹ The DOD and Air Force inspectors general have also issued recent reports looking at diversity issues, including racial disparities in the military and civilian workforce.⁶⁰ Finally, DOD has also commissioned a number of one-time studies and analyses of diversity-related issues, including to identify barriers to representation of women and Hispanic or Latino employees across the DOD civilian workforce.⁶¹

DOD Oversight Mechanisms and Plans to Analyze Barriers and Track Progress Have Limitations

Data-Analysis Mechanisms for Identifying DOD-Wide Barriers Have Limitations

DOD has reported challenges identifying and analyzing barriers across its large, decentralized organizational structure. For example, the Office for Diversity, Equity, and Inclusion (ODEI) officials stated that the lack of

⁵⁹The DOD Board on Diversity and Inclusion's efforts focused on military service members, though some of the 15 recommendations also related to the civilian workforce and related policies. Section 551 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 directed the Secretary of Defense to report to the defense committees on actions taken based on the board's report and information related to the Defense Advisory Committee on Diversity and Inclusion in the Armed Forces. In October 2022, DOD officials reported to the Defense Advisory Committee on Diversity and Inclusion that they had made progress on 13 of the 15 recommendations since December 2020. See *Department of Defense Board on Diversity and Inclusion Report: Recommendations to Improve Racial and Ethnic Diversity and Inclusion in the U.S. Military* (Dec. 2020).

⁶⁰For example, section 554 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 directs the DOD Inspector General to report annually on DOD progress regarding diversity and inclusion, including the effectiveness of programs and policies in preventing extremist, supremacist, or criminal gang activity in the military. Additionally, in 2022 the DOD Inspector General evaluated DOD's efforts to implement recommendations from the congressionally directed Military Leadership Diversity Commission, finding it had implemented six of the 18 recommendations and taken action on the remaining 12. See DOD Office of Inspector General, *Evaluation of the DOD's Implementation of the Military Leadership Diversity Commission's 2011 Report Recommendations and the DOD Diversity and Inclusion Plan for 2012 to 2017* (Sept. 30, 2022). The Air Force Inspector General has also found racial and gender disparities, including in the military and civilian workforce. See Department of the Air Force Inspector General, *Report of Inquiry (S8918P): Disparity Review* (Sept. 2021).

⁶¹RAND Corporation, *Hispanic Representation in the Department of Defense Civilian Workforce: Trend and Barrier Analysis* (Santa Monica, CA: 2017); *Women's Representation in the U.S. Department of Defense Workforce: Addressing the Influence of Veteran's Employment* (Santa Monica, CA: 2018).

standardized, department-wide diversity information and data had impeded their ability to analyze issues across DOD, including barriers to diversity. In an attempt to address this issue, DOD has developed the following two data-analysis mechanisms to help examine diversity issues across the department: 1) an annual data-collection process from military departments and the other DOD components, and 2) a workforce data dashboard.

- **Annual data collection from military department and other DOD components.** In 2020, DOD established a process for ODEI to collect annual workforce data from all DOD components, and began to collect this data in 2022. Specifically, as described in DOD Instruction 1020.05, DOD directs that, as part of a “yearly comprehensive analysis,” the Office of the Secretary of Defense, military departments, and other DOD components gather information on the demographic composition of their military and civilian workforce to submit to ODEI by April 1 each year.⁶² The policy states the data may come from military and other components’ annual EEO MD-715 reports, and lists about 2 dozen variables they must submit, including sex, race, ethnicity, grade level, past promotions, veteran status, occupation, and pay information.
- **Workforce data dashboard.** In 2021, ODEI developed a data dashboard to provide on-demand analysis of the active-duty military and civilian workforces. With the dashboard, ODEI is able to quickly analyze workforce data across DOD and compare different organizations, occupations, or demographics in the military and civilian workforces. ODEI officials stated they intend to use the dashboard to, among other things, streamline annual EEO MD-715 reporting for military department and other DOD component workforces, and to enable DOD-wide barrier analysis.

However, we identified limitations to these two mechanisms that may affect DOD’s visibility and ability to analyze barriers across the department as intended by DOD and federal guidance. For example, while ODEI officials stated they intend to use the annual data collection process to examine barriers across the department, DOD’s policy provides no information on the standard barrier-related information military departments and DOD components should collect and report as part of this process. Specifically, while DOD Instruction 1020.05 directs

⁶²DOD Instruction 1020.05, *DOD Diversity and Inclusion Management Program* (Sept. 9, 2020).

DOD components to collect and submit annual information to ODEI, the policy does not outline any requirements to report barrier-related information as part of their yearly data submissions.⁶³

Furthermore, while the DOD strategic plan points to the data dashboard as a mechanism for collecting department-wide data for ongoing assessments of diversity in the civilian workforce, neither the plan nor DOD policy explains how it will be used to collect data on barriers, analyze the data, and report up the chain of command. It is also unclear how this mechanism incorporates and aligns with military department and other DOD component efforts to analyze systemic diversity issues. For example, ODEI and military officials stated that military departments rely on their own data systems or dashboards for their analyses of workforce diversity and ODEI's dashboard is not compatible with the components' databases. Additionally, full use of the ODEI dashboard outside the Office of the Under Secretary of Defense for Personnel and Readiness may be limited without purchasing a license from the contractor that developed it, according to ODEI officials.

DOD's 2022 diversity strategic plan prioritizes the use of standardized policies and approaches to guide and enhance department-wide diversity efforts. The plan also suggests DOD expand existing data collection to fully understand the root causes of systemic diversity issues, in line with the 2021 government-wide strategic plan and executive order direction to improve data collection for an evidence-based approach to reducing barriers in employment practices.⁶⁴ Finally, *Standards for Internal Control in the Federal Government* states that management should internally communicate the necessary quality information to achieve the entity's objectives.⁶⁵

⁶³DOD Instruction 1020.05, *DOD Diversity and Inclusion Management Program* (Sept. 9, 2020); DOD Directive 1020.02E, *Diversity Management and Equal Opportunity in the DOD* (June 8, 2015; incorporates change 2, June 2018); and DOD Directive 1440.1, *The DOD Civilian Equal Employment Opportunity (EEO) Program* (May 21, 1987) (incorporating through change 3, Apr. 17, 1992; certified current as of Nov. 21, 2003).

⁶⁴Department of Defense, *Department of Defense Diversity, Equity, Inclusion, and Accessibility Strategic Plan, Fiscal Years 2022-2023* (Sept. 30, 2022); see also The White House, *Government-Wide Strategic Plan to Advance Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce* (Nov. 2021) and Exec. Order No. 14035 (June 25, 2021).

⁶⁵[GAO-14-704G](#).

Unclear Oversight Plan May
Limit DOD's Ability to Track
Progress Eliminating Barriers

ODEI officials stated that part of the department's intention to strengthen diversity includes helping ensure department-wide understanding and reporting of identified barriers. These officials added that it would be beneficial to update policies to ensure the military departments and other DOD components know what information to collect and provide ODEI for department-wide analysis. However, the Under Secretary of Defense for Personnel and Readiness has not updated DOD civilian diversity policies or plans to (1) identify how the annual data-collection process or department-wide dashboard are to be used to analyze department-wide barriers, or (2) communicate what barrier-related information military departments or other DOD components should submit each year to do so. Without explaining how it plans to use the two data-collection mechanisms to analyze department-wide barriers, or the barrier-related information military departments and other components should report to ODEI each year, DOD is limited in its ability to fully understand the root causes of systemic diversity issues and address the disparities in representation and promotions that we have identified.

DOD has continued to reorganize its diversity leadership and organizational structure to improve department-wide efforts and developed the two data-analysis mechanisms to further examine diversity issues, but not having a clear oversight plan to track progress made in eliminating barriers limits DOD's ability to ensure it is achieving its goals.

In 2018, DOD divided the Office of Diversity Management and Equal Opportunity, the office responsible for diversity and EEO across the department, into the following two offices with joint responsibilities for diversity and inclusion at DOD:

1. the Office for Diversity, Equity, and Inclusion (ODEI), under the Office of the Under Secretary of Defense for Personnel and Readiness, Office of Force Resiliency, and
2. the Diversity Management Operations Center (DMOC), in the Defense Human Resources Activity.

In 2022, DOD also redesignated the role of chief diversity officer from the director of ODEI to the Under Secretary of Defense for Personnel and Readiness, and announced the creation of a task force responsible for advancing department-wide progress on diversity, equity, inclusion, and

accessibility.⁶⁶ However, the repeated organizational changes in recent years as well as the creation of new data-analysis tools, though intended to help achieve key goals, have resulted in unclear oversight roles and plans for tracking progress to eliminate barriers.

Standards for Internal Control in the Federal Government states that management should establish an organizational structure with an understanding of the overall responsibilities to achieve measurable objectives, assign these responsibilities to discrete units, and implement them through policies.⁶⁷ These standards also provide that management should track and evaluate progress to achieve the entity's objectives and, when designing activities significant to achieving objectives, document and evaluate the purpose of the activity. However, as DOD has continued to adjust its organizational structure and create new data-analysis mechanisms to achieve diversity priorities, it has not established clear oversight responsibility or how it will measure and track progress, as follows:

- **DOD has not updated diversity policies with clear and consistent organizational structure or identified who is responsible for tracking progress to eliminating barriers.** Although DOD's 2022 diversity strategic plan identifies eliminating barriers to diversity as a top priority, none of DOD's three diversity policies, nor its strategic plan, clearly or consistently defines the department-level leadership and oversight structure responsible for DOD's diversity and EEO programs.⁶⁸ In 2020, the Secretary of Defense directed that DOD Directive 1020.02E, *Diversity Management and Equal Opportunity in the DOD*, be updated to "delineate roles and responsibilities of leaders and provide reference points for engaged and critical thinking

⁶⁶Executive Order 14035 (June 25, 2021) directs federal agencies to seek opportunities to establish a chief diversity officer with sufficient authority to coordinate efforts to promote diversity, equity, inclusion and accessibility within the agency. Section 913 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 directs the Secretary of Defense to appoint a chief diversity officer that reports directly to the Secretary of Defense. Codified at 10 U.S.C. § 147.

⁶⁷[GAO-14-704G](#).

⁶⁸DOD Instruction 1020.05, *DOD Diversity and Inclusion Management Program* (Sept. 9, 2020); DOD Directive 1020.02E, *Diversity Management and Equal Opportunity in the DOD* (June 8, 2015; incorporates certain changes June 2018); and DOD Directive 1440.1, *The DOD Civilian Equal Employment Opportunity (EEO) Program* (May 21, 1987) (incorporating through change 3, Apr. 17, 1992; certified current as of Nov. 21, 2003).

on this topic.”⁶⁹ DOD subsequently issued Instruction 1020.05 to reflect the 2018 creation of ODEI and DMOC, but the policy also assigned joint authority and administration of DOD diversity management between their two higher-level leadership positions.⁷⁰ As a result, the policy does not clearly identify who at DOD has primary oversight for monitoring the effectiveness or progress of DOD efforts. Additionally, the Under Secretary of Defense for Personnel and Readiness did not update Directive 1020.02E, and the Secretary of Defense did not direct updates of Directive 1440.1 (on civilian EEO), so these two key policies continue to reflect outdated diversity organizational structures and requirements, including for eliminating barriers. Moreover, DOD Directive 1440.1, the foundational policy for civilian workforce EEO has not been updated for more than 20 years, during which time the concepts and federal requirements related to diversity, including equity, inclusion, and accessibility have substantially evolved.

Finally, none of the policies identifies clear oversight roles for tracking progress to eliminating barriers. For example, DOD Instruction 1020.05 identifies that ODEI and DMOC should collaborate on best practices for eliminating barriers specifically related to EEO, and DOD Directive 1020.02E identifies DOD’s intent to establish accountability for identifying and eliminating barriers to diversity, but neither of these policies identify a specific organization responsible for oversight of these efforts.

- **DOD has not established measures in policies or plans to track or evaluate department-wide progress towards eliminating barriers.** DOD’s diversity-related policies and strategic plan highlight the importance of eliminating barriers, and officials point to the two data-analysis mechanisms as a way to examine systemic issues. However, DOD has not identified how it plans to measure or otherwise evaluate progress to eliminating barriers, including with these two mechanisms. For example, officials stated they plan to use the annual data-collection process to assess department-wide barriers, but the DOD policy establishing the annual data-collection process does not explain how it is to be used for this, or any, purpose. For instance, the policy does not specify who is responsible for conducting any oversight based on this data, or how, if at all, it will be

⁶⁹Secretary of Defense Memorandum, *Immediate Actions to Address Diversity, Inclusion, and Equal Opportunity in the Military Services* (July 14, 2020).

⁷⁰Specifically, the policy identifies that diversity management falls jointly under the authority and administration of the 1) Office Force Resiliency and 2) Defense Human Resources Activity.

used to track progress to eliminating barriers. DOD's diversity strategic plan points to the data dashboard as a primary way it aims to achieve two of its five diversity strategic goals and for senior leaders to track progress. However, the plan does not include specific measures to evaluate their efforts.

ODEI, DMOC, and other officials stated that while DOD's organizational changes aimed to improve diversity efforts or respond to federal requirements, the specific authorities and responsibilities among the various entities for diversity in general—and for analyzing and eliminating barriers to diversity and EEO in particular—could be clarified. DOD also pointed to a new entity announced in May 2022, the Defense 2040 Task Force, as another organization with responsibilities for coordinating and monitoring progress toward DOD's diversity strategic goals. However, the DOD strategic plan does not identify the task force, and in February 2023 officials confirmed that the future and enduring structure of the task force were undetermined. Additionally, ODEI officials acknowledged that while they had begun to collect information as part of the annual data-collection effort, they had not yet determined how to use this information, including to track progress to eliminate barriers. ODEI officials stated that as part of their efforts to respond to continuing federal executive order requirements, they plan to continue to assess their organizational structure and needed policy updates.

Our prior work on diversity best practices has found that successful change management initiatives in large public sector organizations can often take 5 to 7 years to substantially complete, so it is important to institutionalize diversity efforts and commit the time to effect such change.⁷¹ However, without clear, consistently defined oversight roles and measures for tracking DOD progress to eliminating barriers, such as through its two data-analysis mechanisms, DOD may not be positioned to make meaningful change. Without updating its relevant policies and plans to assign clear oversight responsibility and establish measures for tracking progress toward eliminating barriers, DOD risks continued, limited visibility over any progress achieving its strategic goals.

Conclusions

As the largest employer of civilians in the government, DOD's efforts to advance diversity, equity, inclusion, and accessibility have a bearing on the overall diversity of the entire federal civilian workforce. Since issuing its first diversity strategic plan in 2012, DOD has taken a number of steps to develop policies, mechanisms, and organizations to improve diversity

⁷¹[GAO-05-90](#).

and help ensure that the department reflects the nation it serves. However, little has changed in the overall representation of women and historically disadvantaged groups in DOD's civilian workforce over the last 10 years. For example, we found that representation of women across the department had not improved. Instead, it decreased slightly by nearly one percentage point, between fiscal years 2012 and 2021. We also found DOD faces continued lack of diversity in senior GS positions and differences in promotions across demographic groups.

The roles and responsibilities associated with advancing diversity-related efforts are complex and wide-ranging for any agency, especially for one with the size and breadth of DOD. While it is appropriate and required that DOD's many components conduct their own analysis to understand the characteristics and circumstances that bear upon their own organizations, clear and updated policies are a way to demonstrate sustained commitment and consistent direction towards achieving department goals. Without establishing specific requirements for collecting and using barrier-related information from across military departments and other components, DOD lacks reasonable assurance it will collect the information it needs to conduct the desired barrier analysis. Further, without clearly identifying the oversight body responsible for tracking progress toward eliminating barriers across the department, and establishing the measures to do so, such as in policies or plans, DOD will be unable to reliably or consistently evaluate whether its efforts are advancing diversity goals. Taking these steps to put policies and plans in place can help DOD address the disparities in representation and promotions that we and others identified and ensure equal employment opportunity for all.

Recommendations for Executive Action

We are making the following three recommendations to the Secretary of Defense:

The Secretary of Defense should ensure that the Under Secretary of Defense for Personnel and Readiness updates relevant civilian workforce diversity and EEO policies to (1) explain how DOD's data-analysis mechanisms relate to department efforts to identify barriers, and (2) communicate the standard barrier-related information the military departments and DOD components should submit to ODEI.
(Recommendation 1)

The Secretary of Defense should ensure that the Under Secretary of Defense for Personnel and Readiness assigns, in relevant policies or

plans, clear DOD oversight roles for tracking DOD progress towards eliminating barriers to diversity and EEO. (Recommendation 2)

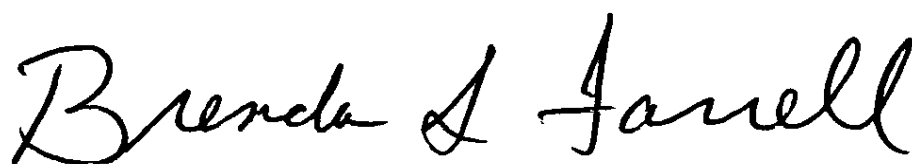
The Secretary of Defense should ensure that the Under Secretary of Defense for Personnel and Readiness establishes, in relevant policies or plans, measures for tracking DOD progress towards eliminating barriers to diversity and EEO. (Recommendation 3)

Agency Comments

We provided a draft of this report to DOD for review and comment. In its written response, reproduced in appendix XIV, DOD agreed with our recommendations. In addition, we provided sections of the draft report to EEOC and OPM for technical review, both of which informed us they had no comments.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, the Secretary of the Army, the Secretary of the Navy, the Secretary of the Air Force, the Chair of EEOC, the Director of OPM, and the Under Secretary of Defense for Personnel and Readiness. In addition, this report is available at no charge on the GAO website at <https://www.gao.gov>.

If you or members of your staff have any questions about this report, please contact me at (202) 512-3604 or farrellb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix XV.



Brenda S. Farrell
Director, Defense Capabilities and Management

Appendix I: Objectives, Scope, and Methodology

A conference report accompanying the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 includes a provision for us to examine the diversity of the Department of Defense (DOD) federal civilian workforce.¹ This report analyzes 1) the demographic composition of the federal civilian workforce by gender and racial or ethnic group from fiscal year 2012 through fiscal year 2021, 2) promotion outcomes among demographic groups from fiscal year 2012 through fiscal year 2021, and 3) the extent to which DOD has developed policies and plans to identify any barriers to diversity and track progress eliminating them.

Data

For our first two objectives, we obtained data from the Defense Manpower Data Center for all appropriated-fund DOD federal civilian employees for fiscal years 2012 through 2021, which were the latest data available for this review.² These data included individual-level quarterly snapshot data and fiscal-year transaction data.

For individual-level quarterly snapshot data, we analyzed record-level data for DOD's federal civilian employees. This included demographic and administrative data identified for each employee, such as gender, race, ethnicity, employing organization within DOD, pay plan, occupation, location or duty station, education level, and the employee's unique identifier.³ We used fiscal-year transaction data, which includes certain personnel actions, to analyze demographics of federal civilian employees hired by DOD.

For all our analyses, we examined the federal civilian workforce across DOD including by individual military department (of the Army, the Navy, and the Air Force) and across the other DOD components based on how

¹H.R. Rep. No. 116-617, at 1773 (2020) (Conf. Rep.).

²These data were the most recent available at the time of our request. Our analysis of the DOD civilian workforce includes appropriated-fund, civilian employees of the federal government, and excludes non-appropriated fund employees, contractor personnel that work at DOD, or active-duty military service members. Non-appropriated fund employees, such as those working at military exchanges, are federal employees but they are not covered by most laws administered by the Office of Personnel Management (OPM) unless specifically provided by statute. Department of Defense, Financial Management Regulation, 7000.14-R Volume 13 Chapter 8, *Non-appropriated Fund Payroll* (Nov. 2022).

³In this report, we use gender terms of "women" and "men" to describe female and male employees. The DOD data we analyzed includes demographic information based on OPM's data standards, which defines sex as female and male and does not include additional information on gender identity.

employee records were identified in the data.⁴ We chose this approach based on how OPM and DOD generally report federal civilian workforce data across executive departments, which often includes the three military departments as separate from those employed by other DOD components. We also compared our demographic analysis with available OPM-reported data on diversity across the entire federal civilian workforce in its Federal Equal Opportunity Recruitment Program (FEORP) reports for the following fiscal years that were available during our review: 2012 through 2014, and 2016 through 2018.⁵

We assessed the reliability of the DOD data we analyzed, as well as the data analysis reported by OPM for the purposes of our analysis in the first two objectives and our additional analysis explained below. For DOD's data, we reviewed documentation associated with the collection, structure, and elements of the DOD data, and conducted electronic testing of the data for completeness and consistency. We also interviewed DOD officials who were knowledgeable about the management and uses of the data. For the OPM data, we reviewed OPM methodology and other documentation regarding the data collection and analysis reported in OPM's annual FEORP reports, and we interviewed knowledgeable agency officials responsible for analyzing and overseeing these reports. We also assessed elements of the underlying data OPM uses for this analysis, the Enterprise Human Resources Integration-Statistical Data Mart. We determined these data were sufficiently reliable for the purposes of reporting demographic trends and promotion outcomes.

⁴DOD consists of dozens of DOD components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency.

⁵For an example of how OPM and DOD generally report federal civilian workforce data by each of the three military departments separate from the other DOD components under the department, as well as the federal-wide demographics against which we compared our analysis, see Office of Personnel Management, *Federal Equal Opportunity Recruitment Program (FEORP) Report, Fiscal Year 2018* (Dec. 2020), which was the most recent available during our review, and <https://www.opm.gov/policy-data-oversight/diversity-equity-inclusion-and-accessibility/reports/#url=Federal-Equal-Opportunity-and-Recruitment-Program> (last accessed Apr. 11, 2023).

Demographic Composition

We examined demographic composition of DOD's federal civilian workforce by the gender and racial or ethnic group categories identified in DOD data based on OPM data standards.⁶ The DOD data we analyzed includes employee gender and racial or ethnic information based on OPM's two sex categories of female and male and the following racial or ethnic group categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and White. We analyzed racial and ethnic composition in two ways: 1) a combined group of employees who were identified in the data by one or more historically disadvantaged racial or ethnic group compared to White employees, and 2) by individual racial or ethnic group. For data we present by individual racial or ethnic group, we combined the two categories of American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander into a single "other races" category. OPM data standards allow employees to identify more than one race category, so for those employees we categorize as two or more races. Employees who identified ethnicity as Hispanic or Latino are included in that category irrespective of whether or not they also identified a separate race. DOD's data included some instances where race or ethnicity were unspecified, which we included in our overall calculations of the composition of the DOD workforce.

To examine size and demographic composition of the existing DOD federal civilian workforce, we used individual-level quarterly snapshot data to examine full-time employees (i.e., 40-hour workweek schedules). For each fiscal year, we calculated the number and percentage (i.e., representation) by gender and by racial or ethnic group, as of the end of each fiscal year. We analyzed these numbers and percentages across the DOD civilian workforce as well as within the departments of the Army, the Navy, and the Air Force, and the other DOD components. We also analyzed these numbers and percentages by occupation, including by general occupation group or family as defined by OPM, and science,

⁶We did not examine the DOD civilian workforce by disability status in this report, but we included targeted and non-targeted disability as control variables in our analysis of promotions. See appendix XIII for more information on the other control variables we used to analyze promotions.

technology, engineering, or mathematics (STEM) occupational categories defined by DOD.⁷

To examine demographic composition of the federal civilian workforce by grade and executive level, we analyzed the numbers and percentages of DOD civilian employees identified in the individual-level quarterly snapshot data as part of the General Schedule (GS) pay system and the Senior Executive Service (SES).⁸ Our analysis included employees identified with the GS and ES pay plans, respectively, but did not include other GS-related pay-plan codes or other types of executives.⁹

To examine the demographic composition of federal civilian employees newly hired to DOD, we used fiscal-year transaction data files of civilian employees DOD hired. These data did not include record-level information on work schedules (e.g., 40-hour workweek), so our analysis of new hires includes all employees, regardless of work schedule. To determine summary statistics on the population of newly hired employees, we defined new hires based on the first time an employee was identified as hired in the data from fiscal year 2012 through fiscal

⁷In 2012, DOD identified 12 broad categories for its STEM occupational series. For a list of the 12 categories and the occupational series they contain, along with our findings of this analysis, see appendix X.

⁸The General Schedule has 15 grades, starting with the lowest at GS-1 and progressing to the highest at GS-15, depending on the occupation, level of difficulty, responsibility, and qualifications required, according to OPM. For example, individuals with a high school diploma and no additional experience typically qualify for GS-2 positions, while those with a master's degree typically qualify for GS-9 positions. For ease of reporting smaller numbers, we combined some of the 15 grades in our figures and tables.

⁹The GS pay system includes several two-letter pay-plan codes—GS, GL, GP, GM, and GR, according to OPM guidance. In the DOD data we analyzed, pay plans GL, GP, and GM were associated with 2,348 DOD civilian employees (0.32 percent of the total DOD civilian workforce) at the end of fiscal year 2021. Our analysis of the executive level includes only Senior Executive Service identified with the ES pay-plan code. We do not include other executive positions, such as political appointees, or other special senior-level positions in other pay plans. See appendix III for a list of all the OPM federal civilian pay plans associated with DOD civilian employees at the end of fiscal year 2021 in the data we analyzed.

year 2021. As a result, our analysis does not account for instances in which an employee may have left DOD and been later rehired.¹⁰

To provide additional context on the number of employees who left DOD in fiscal years 2012 through 2021, we analyzed the DOD's quarterly snapshot data to identify employees who no longer appeared in the DOD data and were absent for at least the four following fiscal-year quarters. We calculated the numbers and percentages of the employees who left by gender and racial or ethnic group.¹¹

Promotion Analysis

To examine promotion outcomes for historically disadvantaged racial and ethnic groups and women in the DOD federal civilian workforce, we used DOD individual-level quarterly snapshot data for appropriated-fund, federal civilian employees identified in the data with a 40-hour workweek schedule (i.e., full time).¹² We analyzed DOD employees in the GS and

¹⁰For example, if a civilian employee left DOD employment prior to the last quarter of fiscal year 2012 then was rehired in fiscal year 2013, we captured that employee as a new hire in 2013. If an employee was newly hired in the last quarter of fiscal year 2012, left DOD, and was hired again in fiscal year 2020, we only count that new hire in 2012.

¹¹The DOD data we used ends in the last quarter of fiscal year 2021. As a result, our analysis may not include employees who left DOD after the first quarter of 2021, and later returned in fiscal year 2022 (or during the last of the four quarters that followed). We also did not include employee records with unspecified race or ethnicity nor analyze reasons why employees left (e.g., retirement or other reason for separation), in our analysis of attrition.

¹²Our promotion analysis may include some individuals who worked less than 40 hours per week for some but not all fiscal-year quarters, but we excluded employees who worked less than 40 hours per week for all fiscal-year quarters of data we analyzed. Our promotion analysis also excludes employees with unspecified race or ethnicity.

ES pay-plan codes only.¹³ Thus, we do not report on DOD employees in other pay plans or employees outside of DOD that promoted into or out of the GS or ES pay plans. We analyzed the GS workforce because it represents over 60 percent of the workforce and the observations in our data and follows a standard 15-grade structure. We examined promotion in each of the departments of the Army, the Navy, and the Air Force, and across the other DOD components, by gender and racial or ethnic group through 1) adjusted statistical analysis of promotion odds and 2) descriptive analysis of promotion rates.

For our adjusted analysis, to examine the statistical relationship between racial or ethnic group status, gender, and promotion in DOD civilian employees, we analyzed DOD quarterly snapshot data using a multivariate statistical method (i.e., duration analysis).¹⁴ Specifically, we used a discrete-time multivariate statistical logit model to analyze the number of fiscal-year quarterly cycles it took to be promoted up through the GS grades, and from the GS to the Senior Executive Service. This method accounted for certain individual and occupational factors other than racial or ethnic group status and gender that could influence promotion, including the length of time it takes to be promoted. Through this analysis, we examined promotion odds ratios and percentage difference in relative odds of promotion, based on DOD data.

¹³The GS pay plan includes positions that promote at one-grade intervals, such as GS-8 to GS-9, and two-grade intervals, such as GS-7 to GS-9. According to OPM's *Introduction to the Position Classification Standards* (Aug. 2009), employees in occupations covering one-grade interval work generally progress by one-grade increments—i.e., from GS-1 to GS-2, then to GS-3, etc. Other occupations follow a two-grade pattern up to GS-11, such as GS-5 to GS-7, and GS-9 to GS-11. Grades from GS-11 through GS-15 follow a one-grade pattern. In the General Schedule, professional and administrative occupation series generally follow a two-grade interval pattern up to GS-11, while technical or clerical work typically associated with and supportive of a professional or administrative occupations follow one-grade intervals generally from GS-2 up to GS-8, though some jobs in some occupations series may be at higher grades. Certain occupation series may include positions that progress at either one- or two-grade interval work. Agencies have the authority and responsibility to determine the appropriate grade intervals for the different types of work that may be associated with the same occupation series. Our promotion analysis does not distinguish between one- or two-grade promotions for GS-7/8 and GS-9/10, given the small number of employees in the one-interval grades.

¹⁴Duration analysis is a statistical method for analyzing various event occurrences and event timing, used when the relevant variables take the form of a duration, or the time elapsed, until a certain event occurs (e.g., number of years until promotion). Duration analysis allows an estimate of the probability or odds of exiting the initial state within a short interval, conditional on having been in the state up to the starting time of the interval (e.g., the probability of being promoted, conditional on not having been promoted at the time the data were observed).

We also conducted descriptive analysis of promotion rates without controlling for any factors by calculating the number of newly elevated employees in a higher grade in the following fiscal-year quarter divided by the number of employees in the given grade in the end of the fiscal-year quarter. For additional explanation of our specific analytical approaches and characteristics in the models to control for differences, and the results of these analyses, see appendixes XII and XIII.

Limitations and Other Considerations for Demographic and Promotion Data Analysis

Our analyses did not capture all considerations for representation and promotion in the DOD federal civilian workforce. For example, our analysis of representation by GS grade level and at the executive level and of promotion are limited to the GS and ES pay plans. Additionally, our promotion analysis does not explain the reasons for differences in promotion outcomes, which may result from various unobservable factors. First, our descriptive analysis does not account for any factors besides racial and ethnic group, or gender that may affect promotion rates. For example, if employees of a certain racial or ethnic group or gender are employed in occupations with limited promotion opportunities, examining promotion rates without accounting for occupation may suggest that promotion rates for that group are lower than another group. Likewise, although our statistical analyses controlled for a range of factors, they may be limited by the following or other factors.

- Differences among pay plans and departments. Our analyses of representation and promotion by grade and executive level are limited to employees assigned to the GS and ES federal civilian pay-plan codes in the DOD data. The GS pay plan accounts for the majority of DOD civilian employees, but a large number of DOD civilian employees are assigned to other OPM pay-plan codes, such as for certain technical positions and for the Federal Wage System, that may consist of different grade structures or career progression opportunities. Additionally, the military departments have different levels of participation in the GS and other pay plans, and some pay plans are specific to one or more military departments. We did not analyze demographic representation or promotions specific to these other pay plans. As such, we do not account for any differences among the departments. See appendix III for a list of the OPM pay plans associated with DOD civilian employees in the data we analyzed as of fiscal year 2021.
- Unobservable factors. Our statistical promotion analyses took into account a variety of factors that may help explain some of the differences in odds of promotion, such as characteristics of the individual employees (e.g., employees' time in each GS grade before promotion), occupation, and fiscal years. However, we did not take into account various

unobservable factors, such as employees' skills, motivation, performance, or abilities that may cause differences in odds of promotion.

- Occupation segmentation. We controlled for employee occupation (by OPM occupational group and family) to help estimate the statistical relationship between promotion outcomes and racial or ethnic group status and gender that exists beyond any statistical relationship between occupation and promotion outcomes. In other words, by controlling for occupation, we accounted for whether certain occupations have more limited promotion potential. However, controlling for occupation may have prevented us from considering any differences in promotion outcomes due to systematic differences in occupation distribution or segmentation across various racial or ethnic groups and by gender. If historically disadvantaged racial or ethnic groups or women tend to be segmented in occupations with relatively limited promotion potential, we might have observed lower odds of promotion for those groups compared with White employees or men, respectively, if we had not controlled for occupation. Our analysis may include employees who may have reached the maximum grade for their particular occupation and may therefore have no remaining promotion potential in that occupation. See appendix XIII for the results of our model comparing promotion outcomes for women as compared to men and for historically disadvantaged groups overall as compared to White employees, which shows how we controlled for characteristics of the individual employees relevant to promotion including occupation for all of our analyses.
- Types of promotion. By controlling for occupation, we controlled for situations where some occupations may be more likely to have career-ladder (i.e., noncompetitive) than competitive promotions.¹⁵ In addition, by analyzing promotions separately by grade level while controlling for occupation, we controlled for situations where the promotion structure may have changed from noncompetitive to competitive. However, our estimates do not explicitly differentiate between noncompetitive and competitive promotions. Career-ladder promotions tend to be more likely than competitive promotions, and we are not accounting for this difference. The effect of the promotion type could decrease or increase our estimates of odds of promotion.
- Promotion applicants and eligibility. We accounted for the time that all employees spent in each grade before promotion. However, we did not account for whether an employee had applied or was eligible for promotion. Thus, our estimates are based on the individuals in the

¹⁵Career-ladder promotions are noncompetitive until an employee reaches the full performance level for the occupation, after which further promotions become competitive.

original pay plan and grade, not on applicants for promotion or those eligible for promotion.

- Differences in attrition. While our adjusted analysis of promotions accounted for several factors that may be related to an employee's prospects for promotion, there may be some residual differences in promotion prospects for employees who left DOD relative to those who stayed. However, because we controlled for a variety of factors that may affect the odds of promotion, any residual differences between employees who left and those who stayed would be unrelated to these factors. In particular, we controlled for racial or ethnic group status and gender, so residual differences between employees who left and those who stayed would be unrelated to these characteristics. Behavioral motivations and outcomes related to attrition may influence racial or ethnic groups and women differently than White employees and men, respectively. The potential existence of differential trends related to attrition could be one explanation for differences in odds of promotion.
- Budget constraints. The specific number of promotion slots available each year may vary as a result of annual budget constraints. We controlled for some aspects of possible budget constraints by including control variables for each fiscal year, which would be relevant if promotion opportunities were affected by budget constraints that varied across fiscal years. However, our data do not capture the specific number of promotion slots available each year. In addition, our estimates do not capture the extent to which fiscal year budget constraints affected promotion opportunities differently across occupations or DOD components.

Any of these unobservable factors could decrease or increase our estimates of promotion odds. Thus, our analyses do not establish a causal relationship between demographic characteristics and promotion outcomes.

DOD Policies and Plans for Barrier Analysis

For our third objective, we obtained DOD diversity-related policies, including for equal employment opportunity (EEO), to assess the extent to which they include guidance for barrier analysis—including identifying potential barriers, addressing identified barriers, and tracking progress to eliminating such barriers. In consultation with DOD officials, we identified the following three policies as the main policies that provide department-wide organizations, programs, and practices for diversity at DOD: 1) Department of Defense Directive 1020.02E, Diversity Management and Equal Opportunity in the DOD (June 8, 2015) (incorporating change 2, effective June 1, 2018); 2) Department of Defense Instruction 1020.05, DOD Diversity and Inclusion Management Program (Sept. 9, 2020); and

3) Department of Defense Directive 1440.1, The DOD Civilian Equal Employment Opportunity (EEO) Program, (May 21, 1987) (incorporating through change 3, Apr. 17, 1992; certified current as of Nov. 21, 2003).

We also analyzed implementation of DOD barrier analysis included in available annual reports from the military departments and other DOD components to the U.S. Equal Employment Opportunity Commission (EEOC) for fiscal years 2018 through 2021 to understand the types of potential barriers identified in response to federal EEO reporting requirements.¹⁶ We also reviewed the DOD and military department self-assessments required by Executive Order 14035 to understand the types of potential barriers DOD identified in response to those requirements.¹⁷ We reviewed relevant laws and regulations, including barrier analysis requirements in EEOC Management Directive 715 and Executive Order 14035; priorities laid out in DOD's 2012 and 2022 diversity strategic plans; and requirements in the government-wide diversity strategic plans from 2011, 2016, and 2022.¹⁸ We compared DOD's diversity policies and other oversight mechanisms for barrier analysis at the department with the goals and priorities identified in DOD diversity strategic plans and relevant principles in *Standards for Internal Control in the Federal*

¹⁶Equal Employment Opportunity Commission, *Equal Employment Opportunity Management Directive 715 (EEO MD-715)* (Oct. 1, 2003) requires federal agencies, including the military departments and other DOD components, to report annually on the status of their EEO programs, including efforts to identify, analyze, address, and track barriers to equal employment. We obtained MD-715 reports from the three military departments and other DOD components. Though not all departments and components provided us reports for every fiscal year, we analyzed reports from all three military departments for at least 3 years, and for 16 other DOD components. We did not analyze reports from defense intelligence agencies not required to publicly report workforce data. For information on DOD components that are part of the Intelligence Community, see our past work examining those MD-715 reports in GAO, *Intelligence Community: Additional Actions Needed to Strengthen Workforce Diversity Planning and Oversight*, [GAO-21-83](#) (Washington, D.C.: Dec. 17, 2020).

¹⁷Exec. Order No. 14035, Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce, 86 Fed. Reg. 34593 (June 25, 2021). See appendix II for other requirements in the executive order.

¹⁸Equal Employment Opportunity Commission, *EEO MD-715* (Oct. 1, 2003); Exec. Order No. 14035, 86 Fed. Reg. 34593 (June 25, 2021); Department of Defense, *Diversity and Inclusion Strategic Plan 2012-2017* (April 2012) and *Department of Defense Diversity, Equity, Inclusion, and Accessibility Strategic Plan, Fiscal Years 2022-2023* (Sept. 30, 2022); Office of Personnel Management, *Government-Wide Diversity and Inclusion Strategic Plan 2011* and *Governmentwide Inclusive Diversity Strategic Plan 2016* (July 2016); The White House, *Government-Wide Strategic Plan to Advance Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce* (Nov. 2021).

Government and related practices from other relevant past GAO work.¹⁹ We determined that the control environment, control activities, and information and communication components of internal control were significant to this objective, along with the underlying principles relevant to DOD's oversight of barriers in policies and plans. We specifically compared the principles that management should establish an organizational structure, assign responsibility, and delegate authority to achieve objectives; design control activities to achieve and track its objectives; implement control activities through policies; and use and communicate the necessary quality information to achieve objectives.

Finally, we discussed our analysis with relevant officials, including from DOD and military department-level offices with responsibilities for diversity, EEO, and civilian personnel. These included officials from the Office of the Under Secretary of Defense for Personnel and Readiness, including the Office for Diversity, Equity, and Inclusion; the Diversity Management Operations Center; and the Defense Civilian Personnel Advisory Service. We interviewed diversity, EEO, and civilian personnel officials from the Departments of the Army, Navy, and Air Force. Finally, we also interviewed officials with EEO and diversity, equity, inclusion, and accessibility (DEIA) responsibilities at EEOC and OPM to understand the various requirements for federal agencies, including for annual MD-715 reporting, executive order requirements for DEIA, and federal-agency responsibilities under the government-wide strategic plan including DOD and its components.

We conducted this performance audit from July 2021 to June 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

¹⁹GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014); *Diversity Management: Expert-Identified Leading Practices and Agency Examples*, [GAO-05-90](#) (Washington, D.C.: Jan. 14, 2005).

Appendix II: Federal Agency Responsibilities under Executive Order 14035

In June 2021, Executive Order 14035 on Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce directed agencies to conduct a preliminary assessment of their diversity, equity, inclusion, and accessibility (DEIA) efforts by October 2021 and develop a strategic plan that identifies actions to advance DEIA in the workforce, and remove any barriers.¹ Agencies are responsible for reporting annually on progress in implementing their strategic plans, as well as a number of other requirements listed in the table below.

Table 2: Overview of Department of Defense Responsibilities under Executive Order 14035

Responsibility	Description
Make DEIA a priority component of agency agenda and strategic planning	Make advancing diversity, equity, inclusion, and accessibility (DEIA) a priority component of the agency's management agenda and agency strategic planning. Implement the government-wide DEIA Plan and such other related guidance as issued by the Office of Personnel Management (OPM) of the Office of Management and Budget (OMB).
Preliminary assessment	By October 4, 2021, submit to the Assistant to the President for Domestic Policy (APDP), OPM, and OMB a preliminary assessment of the current state of DEIA in the agency's human resources practices and workforce composition.
Agency DEIA Strategic Plan	By March 23, 2022, develop and submit to the APDP, OPM, and OMB a DEIA strategic plan that identifies actions to advance DEIA in the workforce, and remove any potential barriers to DEIA in the workforce identified in the preliminary assessment. The plans should include quarterly goals and actions to advance DEIA initiatives in the agency's workforce and workplace culture.
Annual progress reports	On an annual basis, report to the President on the status of the agency's efforts to advance DEIA within the agency, and the agency's success in implementing the Agency DEIA Strategic Plan. Make available to the general public information on the agency's efforts to advance DEIA in the agency's workforce.
Provide resources to implement the Agency DEIA Strategic Plan	Oversee, and provide resources and staffing to support, the implementation of the Agency DEIA Strategic Plan.
Enhance DEIA	Enhance DEIA within the agency, in collaboration with the agency's senior officials and consistent with applicable law and merit system principles.
Seek opportunities to establish a Chief Diversity and Inclusion Officer	Seek opportunities to establish a position of chief diversity officer or diversity and inclusion officer (as distinct from an equal employment opportunity officer), with sufficient seniority to coordinate efforts to promote DEIA within the agency.
Consider hiring DEIA experts	Strongly consider for employment, to the extent permitted by applicable law, qualified applicants of any background who have advanced DEIA in the workplace.
Integrate DEIA into broader agency planning	In coordination with the OMB, seek opportunities to ensure alignment across various organizational performance planning requirements and efforts by integrating the Agency DEIA Strategic Plan and DEIA goals into certain broader agency strategic and performance planning efforts.

¹Exec. Order. No. 14035, *Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce*, 86 Fed. Reg. 34593 (June 25, 2021). The Executive Order required agencies to develop a strategic plan within 120 days after the issuance of the government-wide plan, which was due by and issued on November 23, 2021. Thus, the deadline for agency plans was March 23, 2022.

**Appendix II: Federal Agency Responsibilities
under Executive Order 14035**

Responsibility	Description
Take a data-driven approach to advancing DEIA	Take a data-driven approach to advancing policies that promote DEIA within the agency's workforce, while protecting the privacy of employees and safeguarding all personally identifiable information and protected health information.
Measure workforce demographic representation and trends	Using federal standards governing the collection, use, and analysis of demographic data, measure demographic representation and trends related to diversity in the agency's overall workforce composition, senior workforce composition, employment applications, hiring decisions, promotions, pay and compensation, professional development programs, and attrition rates.
Implement revised demographic data collection guidance	Implement any revised demographic data collection guidance issued under the order to expand the collection of voluntarily self-reported demographic data, once any such guidance is issued, and take steps to ensure that data collection and analysis practices allow for the capture or presence of multiple attributes and identities to ensure an intersectional analysis.
Increase DEIA on advisory groups	Collect and analyze voluntarily self-reported demographic data regarding the membership of advisory committees, commissions, and boards in a manner consistent with applicable law, and with statistical standards where applicable.
Measure and report progress in promoting paid internships	As part of the annual reporting process on the status of agency DEIA efforts, measure and report on the agency's progress with respect to guidance on promoting paid internships and similar programs in the federal government.
Measure and report on agency Partnership Initiative progress	Work with the Office of Science and Technology Policy, OPM, and OMB to make employment, internship, fellowship, and apprenticeship opportunities available through the Partnerships Initiative, and take steps to enhance recruitment efforts through the initiative as part of the agency's overall recruitment efforts. Measure and report on the agency's progress on carrying out this responsibility as part of the annual reporting process.
Implement guidance on professional development and advancement	Implement guidance for tracking demographic data relating to participation in leadership and professional development programs and development opportunities, and use the collected data to identify ways to improve outreach and recruitment for professional development programs, consistent with merit system principles. Address any barriers to access to or participation in such programs faced by members of underserved communities.
Implement DEIA training and learning	Take steps to implement or increase the availability and use of DEIA training programs for employees, managers, and leadership. Such training programs should enable employees, managers, and leaders to have knowledge of systemic and institutional racism and bias against underserved communities, be supported in building skillsets to promote respectful and inclusive workplaces and eliminate workplace harassment, have knowledge of agency accessibility practices, and have increased understanding of implicit and unconscious bias.
Maximize agency workplace accessibility	Maximize the accessibility of the physical environment of the agency's workplaces, consistent with applicable law and the availability of appropriations, to reduce the need for reasonable accommodations, and provide periodic notice to all employees that complaints concerning accessibility barriers in federal buildings can be filed with the Access Board.
Ensure equitable support services for LGBTQ+ employees	In coordination with OPM, ensure that existing employee support services equitably serve lesbian, gay, bisexual, transgender, queer, and others (LGBTQ+) employees, including, as appropriate, through the provision of supportive services for transgender and gender nonconforming and nonbinary employees who wish to legally, medically, or socially transition.
Ensure equitable access to benefits for LGBTQ+ employees	In coordination with OPM, ensure that the federal government equitably provides insurance coverage options and employee benefits for LGBTQ+ employees (including beneficiaries and eligible dependents), LGBTQ+ beneficiaries, and LGBTQ+ eligible dependents, including long-term care insurance, sick leave, and life insurance. This includes ensuring that federal benefits, programs, and services recognize the diversity of family structures.
Foster an inclusive environment for all genders	In coordination with OPM, take steps to foster an inclusive environment where all employees' gender identities are respected, such as including, where applicable, nonbinary gender marker and pronoun options in federal hiring, employment, and benefits enrollment forms.

**Appendix II: Federal Agency Responsibilities
under Executive Order 14035**

Responsibility	Description
Update agency identification standards	In consultation with OPM, update federal employee identification standards to include non-binary gender markers where gender markers are required in employee systems and profiles, and take steps to reduce any unnecessary administrative burden for transgender and gender nonconforming and nonbinary employees to update their gender markers and pronouns in employee systems and profiles, where applicable.
Explore opportunities to expand the availability of gender nonbinary facilities	Explore opportunities to expand the availability of gender nonbinary facilities and restrooms in federally owned and leased workplaces.

Source: GAO analysis of Executive Order 14035 on Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce (DEIA). | GAO-23-105284

Appendix III: DOD Civilian Workforce by Federal Pay-Plan Code, Fiscal Year 2021

Federal civilian employees, including at the Department of Defense (DOD), work in a variety of jobs and associated pay plans, with different requirements, skills, and functions. We analyzed DOD data to identify the number and percentage of employees in each pay-plan code, and the Office of Personnel Management (OPM) explanation of each code. Although the majority of DOD civilian employees are a part of the General Schedule, a large portion of the workforce are represented in other pay plans, including certain pay plans unique to the military departments, as shown in table 3. For example, in fiscal year 2021, about 62 percent of DOD employees were categorized in the GS pay plan of the General Schedule, with about 12 percent in the WG pay-plan code in the Federal Wage System, the next most-populous pay-plan code. The remaining 190,923 employees were associated with about 60 other pay plans.

Table 3: Total DOD Civilian Employees and Their Associated Pay-Plan Codes, Fiscal Year 2021

Pay-plan code	OPM explanation	Number of employees in pay plan	Percent of DOD workforce
GS	General Schedule (Ch. 51, 5 U.S.C.)	456,267	61.84
WG	Nonsupervisory pay schedules—Federal Wage System	90,578	12.28
NH	Business Management and Technical Management Professional - DOD Acquisition Workforce Demonstration Project ^a	48,500	6.57
GG	Grades similar to General Schedule	26,176	3.55
ND	Demonstration Scientific and Engineering ^b	17,371	2.35
WS	Supervisory pay schedules—Federal Wage System	12,964	1.76
DB	Demonstration Engineers and Scientists ^a	9,933	1.35
WL	Leader pay schedules—Federal Wage System	9,553	1.29
NT	Demonstration Administrative and Technical ^b	9,519	1.29
DP	Demonstration Professional ^b	7,236	0.98
AD	Administratively determined rates not elsewhere specified	6,111	0.83
WM	Maritime pay schedules—5 U.S.C. § 5348	5,734	0.78
NO	Administrative Specialist/Professional ^c	5,115	0.69
DR	Demonstration Air Force Scientist and Engineer ^d	3,426	0.46
WT	Apprentices and Shop Trainees—Federal Wage System	3,280	0.44
DE	Demonstration Engineers and Scientists Technicians ^a	2,698	0.37
GP	General Schedule physicians, podiatrists, and dentists paid market pay under 38 U.S.C. § 7431(c)	2,192	0.30
NM	Supervisors and Managers ^e	2,162	0.29
NP	Science and Engineering Professional ^c	1,855	0.25
DA	Demonstration Administrative ^b	1,594	0.22
DJ	Demonstration Administrative ^a	1,526	0.21

**Appendix III: DOD Civilian Workforce by
Federal Pay-Plan Code, Fiscal Year 2021**

Pay-plan code	OPM explanation	Number of employees in pay plan	Percent of DOD workforce
WD	Production facilitating nonsupervisory—Federal Wage System	1,378	0.19
DS	Demonstration Specialist ^b	1,341	0.18
WY	Navigational Lock and Dam Operation and Maintenance Positions in the U.S. Army Corps of Engineers—non-supervisory—Federal Wage System ^f	1,324	0.18
ES	Senior Executive Service (SES)	1,173	0.16
NJ	Technical Management Support DOD Acquisition Workforce Demonstration Project ^a	1,172	0.16
WB	Wage positions under the Federal Wage System not otherwise designated	1,148	0.16
DO	Business Management and Professional Career Path, Air Force Research Laboratory ^d	900	0.12
NR	Science and Engineering Technical ^c	862	0.12
NK	Administration Support DOD Acquisition Workforce Demonstration Project ^a	730	0.1
DT	Demonstration Technician ^b	554	0.08
NG	Demonstration General Support ^b	467	0.06
DK	Demonstration General Support ^b	340	0.05
DG	Demonstration General ^b	327	0.04
XH	Floating Plant (Other than Hopper Dredge) Schedule—Federal Wage System ^f	293	0.04
XF	Floating Plant (Other than Hopper Dredge) Schedule—Nonsupervisory—Federal Wage System ^f	278	0.04
NC	Administrative Support ^c	203	0.03
WA	Navigation Lock and Dam Operation and Maintenance Positions in the U.S. Army Corps of Engineers—supervisory—Federal Wage System ^f	181	0.02
GL	General Schedule employees in grades 3 through 10 paid a law enforcement officer special base rate under Section 403 of the Federal Law Enforcement Pay Reform Act of 1990	155	0.02
IP	Senior Intelligence Professional (SIP) Program ^a	144	0.02
DU	Mission Support Career Path, Air Force Research Laboratory ^d	130	0.02
EE	Expert (Other). Use when the individual is appointed under authorities similar to 5 U.S.C. § 3109 (i.e., exempt from civil service requirements for competitive examination, job classification, and General Schedule pay) as an expert. Do not use when the appointment as an expert is solely for service as an advisory committee member	125	0.02
SL	Senior Level Positions	120	0.02
ST	Scientific and professional (5 U.S.C. § 3104)	120	0.02
WJ	Hopper Dredge Schedule—Federal Wage System ^f	104	0.01
WN	Production facilitating supervisory—Federal Wage System	83	0.01

**Appendix III: DOD Civilian Workforce by
Federal Pay-Plan Code, Fiscal Year 2021**

Pay-plan code	OPM explanation	Number of employees in pay plan	Percent of DOD workforce
IE	Senior Intelligence Executive Service (SIES) Program ^a	75	0.01
WK	Hopper Dredge Schedule—nonsupervisory—Federal Wage System ^f	60	0.01
WU	Aircraft, Electronic Equipment, and Optical Instrument Overhaul and Repair in Puerto Rico—nonsupervisory—Federal Wage System	36	0.00
WO	Navigational Lock and Dam Operation and Maintenance Positions in the U.S. Army Corps of Engineers—leader—Federal Wage System ^f	29	0.00
CA	Board of Contract Appeals	25	0.00
XG	Floating Plant (Other than Hopper Dredge) Schedule—Leader—Federal Wage System ^f	24	0.00
EX	Executive pay (Subch. II, ch. 53, 5 U.S.C.)	23	0.00
XR	Non-Supervisory U.S. Army Corps of Engineers prevailing rate system positions at the four flood control dams (also known as reservoir projects) in the Vicksburg District of the Mississippi Valley Division.	22	0.00
DX	Technician Career Path, Air Force Research Laboratory ^d	19	0.00
SR	Statutory rates not elsewhere specified	4	0.00
EF	Consultant (5 U.S.C. § 3109). Use when the individual is appointed under 5 U.S.C. § 3109 as consultant. Do not use when the appointment as a consultant is solely for service as an advisory committee member	2	0.00
TP	Teaching Positions Code is for use by the Department of Defense Education Activity only	2	0.00
WQ	Aircraft, Electronic Equipment, and Optical Instrument Overhaul and Repair in Puerto Rico—supervisory—Federal Wage System	2	0.00
GM	Employees covered by the Performance Management and Recognition System (PMRS) termination provisions	1	0.00
IG	Inspectors General in establishments (as defined in section 12 of the Inspector General Act of 1978) whose rate of basic pay is set at level III of the Executive Schedule plus 3 percent under section 3(e) of the Inspector General Act of 1978 (See amendments made by section 4(a) of the Inspector General Reform Act of 2008)	1	0.00
XT	Leader U.S. Army Corps of Engineers prevailing rate system positions at the four flood control dams (also known as reservoir projects) in the Vicksburg District of the Mississippi Valley Division.	1	0.00
Total		737,768	100.00

Source: GAO analysis of Department of Defense (DOD) data and Office of Personnel Management (OPM) information. | GAO-23-105284

Notes: Data shown includes appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees as of the end of the fiscal year in the three military departments and across the other DOD components, including defense agencies and field activities unless not reported in the data. Percentages under 0.01 percent do not show due to rounding and thus may not appear to total 100.

**Appendix III: DOD Civilian Workforce by
Federal Pay-Plan Code, Fiscal Year 2021**

^aCode is for use by the Department of Defense, Department of the Air Force, Department of the Army, and Department of the Navy only (i.e., not for use by other departments or agencies).

^bCode is for use by the Department of the Navy only.

^cCode is for use by the Department of the Navy only for the Naval Research Laboratory and similar pay demonstration projects.

^dCode is for use by the Department of the Air Force only.

^eCode is for use by the Department of the Navy only for the Space and Naval Warfare Systems Center and similar pay demonstration projects.

^fCode is for use by the Department of the Army only.

Appendix IV: Representation of DOD Civilian New Hires Generally Remained Unchanged

We analyzed Department of Defense (DOD) data for federal civilian employees—women versus men, and employees from historically disadvantaged racial or ethnic groups (historically disadvantaged groups) versus White employees—hired to DOD from fiscal year 2012 through fiscal year 2021.¹ We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD’s data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013.² If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.³

DOD hired 488,621 civilian employees over the 10 years of data we analyzed. Of those, the Army hired the largest percentage (33.70 percent), and the other DOD components hired the smallest (13.17 percent). Table 4 depicts additional details pertaining to new hires by military department, the other DOD components, and the total DOD federal civilian workforce from fiscal year 2012 through fiscal year 2021.

¹DOD consists of dozens of components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See, Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency.

²Our analysis of the DOD civilian workforce includes appropriated-fund, civilian employees of the federal government. Based on the DOD transaction data we used, we were unable to limit our analysis to particular work schedules (e.g., 40-hour workweek). The DOD data we analyzed includes demographic information based on Office of Personnel Management (OPM) data standards, which defines sex as female and male. In this report, we use gender terms of “women” and “men” to describe female and male employees. Historically disadvantaged racial or ethnic groups include the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Native Alaskan, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic group changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

³For example, if a civilian employee left DOD prior to fiscal year 2012 and then was rehired in 2013 we captured that employee as a new hire in 2013. If an employee was newly hired in the last quarter of fiscal year 2012, left DOD, and was hired again in 2020, we count that new hire only in 2012.

**Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged**

Table 4: Representation of DOD Civilian New Hires by Military Department and the Other DOD Components, Fiscal Years 2012–2021

Fiscal year	Army		Navy		Air Force		Other DOD components		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2012	19,630	37.68	12,449	23.89	11,490	22.05	8,534	16.38	52,103	100.00
2013	12,073	36.14	9,278	27.78	6,579	19.70	5,474	16.39	33,404	100.00
2014	9,655	35.94	6,631	24.68	6,173	22.98	4,407	16.40	26,866	100.00
2015	17,294	30.66	15,060	26.70	16,738	29.68	7,305	12.95	56,397	100.00
2016	13,121	26.98	15,965	32.82	14,704	30.23	4,850	9.97	48,640	100.00
2017	15,830	36.07	11,346	25.85	11,067	25.22	5,641	12.85	43,884	100.00
2018	20,203	34.13	14,864	25.11	17,636	29.79	6,498	10.98	59,201	100.00
2019	17,295	33.62	14,226	27.65	14,069	27.35	5,854	11.38	51,444	100.00
2020	20,172	33.61	16,514	27.52	15,753	26.25	7,578	12.63	60,017	100.00
2021	19,409	34.25	15,824	27.93	13,199	23.29	8,233	14.53	56,665	100.00
Total	164,682	33.70	132,157	27.05	127,408	26.08	64,374	13.17	488,621	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Other DOD components include defense agencies and field activities unless not publicly reported in the data. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD’s data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

We also found that little has changed in the representation of women and employees from historically disadvantaged groups at DOD from fiscal year 2012 through fiscal year 2021.

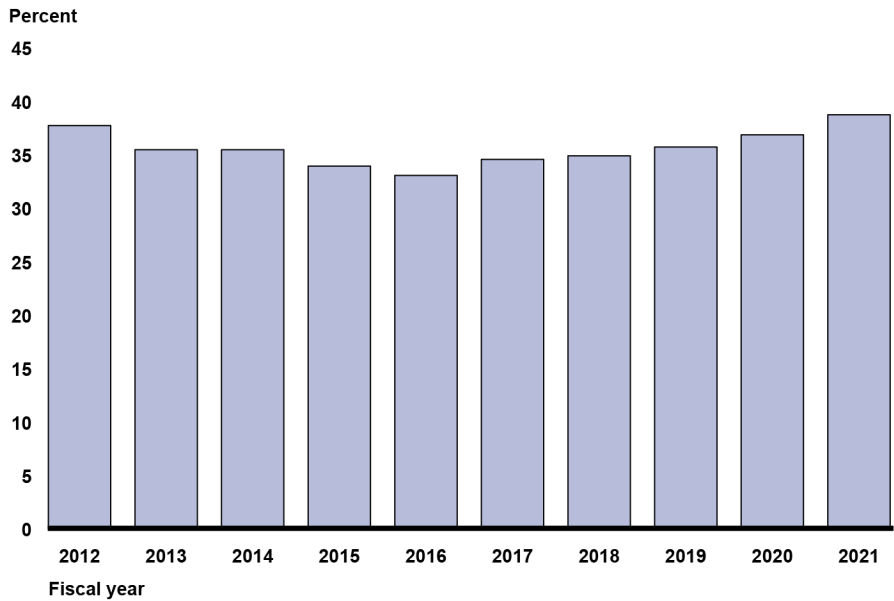
**Representation of Women
Hired to the DOD Civilian
Workforce Remained
Generally Unchanged**

**Women Generally Represent
about a Third of All DOD New
Hires**

We found that about a third of all new hires to DOD’s federal civilian workforce annually from fiscal year 2012 through fiscal year 2021 were women, as shown in figure 19. Additionally, of the total 488,621 new hires to DOD over all 10 years we analyzed, 174,194 (35.65 percent) were women. The remainder—314,427 new hires (64.35 percent)—were men.

Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged

Figure 19: Representation of Women among DOD Civilian New Hires, Fiscal Years 2012–2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, federal civilian employees irrespective of work schedules. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Representation of Women
Hired to DOD below Federal
Civilian Workforce Level

We found that representation of women among DOD civilian new hires (34.9 percent) was about 9.5 percentage points below that of the total federal civilian workforce (about 44.4 percent) when we compared our analysis of DOD new hires to OPM-reported data for fiscal years 2012

through 2018—the most recent year available for this review.⁴ Across the military departments over this 7-year period, representation of women ranged from a low of 27.5 percent in the Navy (about 16.9 percentage points lower) to a high of 36.1 in the Army (about 8.3 percentage points lower). The other DOD components hired a percentage of women (50.0 percent) that was 5.6 percentage points above that of the total federal civilian workforce.

We did not analyze the effects of hiring women or men among the veteran population, but appendix IX provides additional details pertaining to veteran status by gender at DOD.

Representation of Historically Disadvantaged Groups among DOD New Hires Remained Generally Unchanged

Historically Disadvantaged
Groups Represent about a
Fourth of DOD New Hires

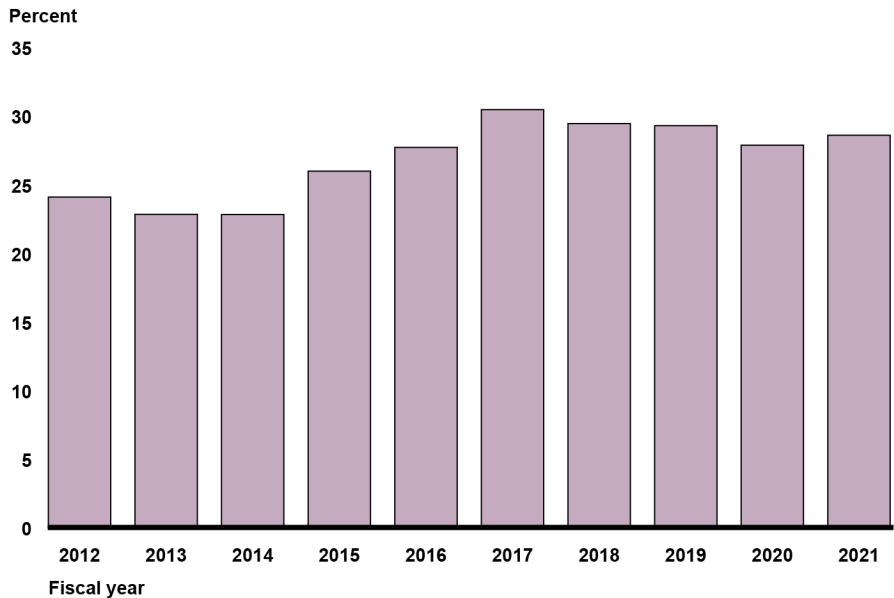
We found that about 23 to 30 percent of all new hires to DOD's civilian workforce annually from fiscal year 2012 through fiscal year 2021 were from historically disadvantaged groups, as shown in figure 20. Additionally, of the total 488,621 civilian new hires to DOD over the 10

⁴We analyzed federal workforce data reported in Office of Personnel Management (OPM) Federal Equal Opportunity Recruitment Program reports. Because OPM's report only includes the numbers of instances for which new hires were women as well as those who specified a race or ethnicity (and excluded instances for which gender, race or ethnicity was unspecified), we calculated the number of men separately. To do this, we added the numbers for all races and ethnicities over the 7-year period, excluding instances for which a race or ethnicity was unspecified, and subtracted the number of women across the same period. Specifically, to obtain the number of new hires that were men (491,739) from fiscal years 2012–2018, we took the sum of the instances for which a new hire's race or ethnicity over that same period was specified (884,872) and subtracted from it the number of new hires that were women (331,190). To calculate the percentages of women newly hired to the federal workforce that year (44.4 percent), we divided the number of new hires that were women by the total number of new hires. The federal workforce data in OPM's report excludes agency transfers and includes only permanent employees in non-postal federal executive branch agencies participating in OPM's Enterprise Human Resources Integration-Statistical Data Mart. Additionally, it includes workers in all pay plans including General Schedule and equivalently graded pay plans, other white-collar pay plans, the Senior Executive Service, and blue-collar pay plans. In our analysis of DOD data, we include full-time (i.e., 40-hour workweek) employees in all pay plans irrespective of their positions as permanent or other types of employees.

**Appendix IV: Representation of DOD Civilian
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years of data we analyzed, 133,103 employees (27.24 percent) were from these groups. The remainder—352,007 (72.04 percent)—were White.⁵

Figure 20: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups among DOD Civilian New Hires, Fiscal Years 2012–2021



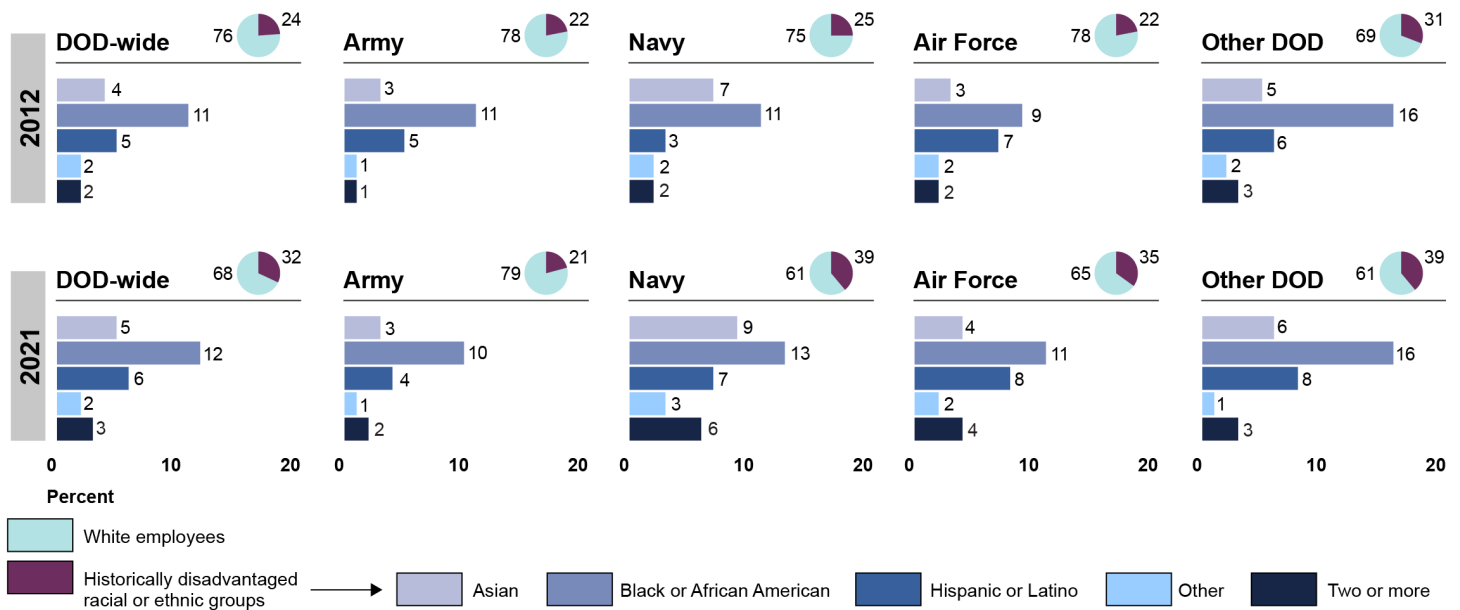
Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD’s data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

⁵Totals do not add to 100 percent because the data included 3,511 instances of new hires (0.72 percent) for which race or ethnicity was unspecified in our analysis of DOD’s data.

Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged

Figure 21: Representation of DOD Civilian New Hires by Race or Ethnicity, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Our analysis includes the following Office of Personnel Management (OPM) categories: Black or African American, Hispanic or Latino, Asian, and two or more races. It also includes OPM's categories for American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander but, given their small workforce populations, we combined them into a single category that we labeled as "other." White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Representation among New Hires to DOD below Federal Civilian Workforce

We found representation of historically disadvantaged groups among DOD civilian new hires (26.6 percent) was about 10.8 percentage points below that of the total federal civilian workforce (about 37.4) when we compared our analysis of DOD to OPM-reported data for fiscal years

**Appendix IV: Representation of DOD Civilian
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2012 through 2018—the most recent year available during our review.⁶ Across the military departments and other DOD components over this 7-year period, representation of historically disadvantaged groups ranged from a low of 28.8 percent in the Army (about 8.6 percentage points lower) to a high of 51.2 percent in the other DOD components (13.8 percentage points higher).

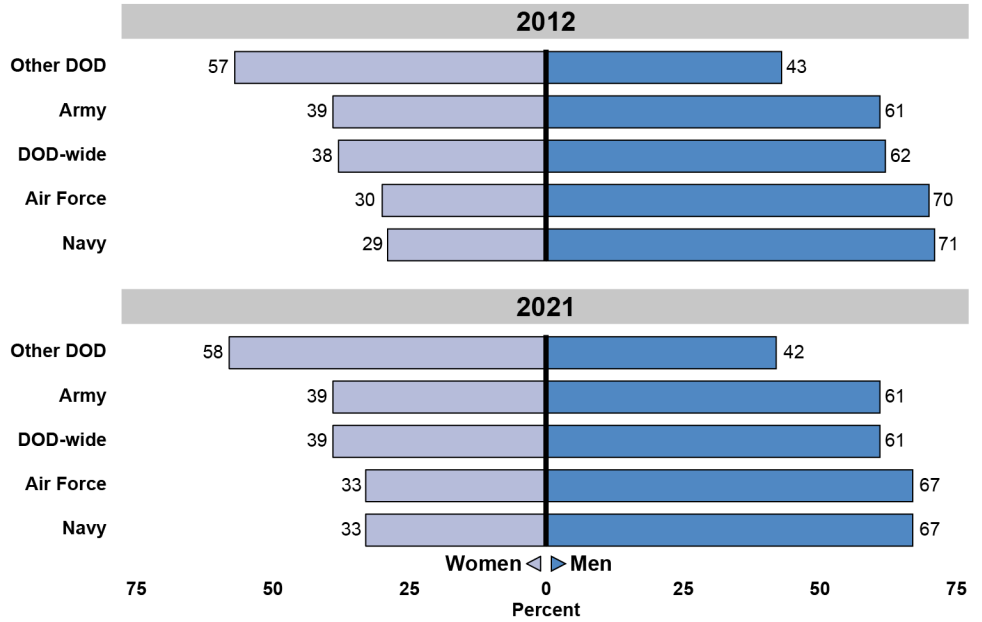
**Representation of New
Hires by Gender and
Racial or Ethnic Group in
the Military Departments
and Other DOD
Components Generally
Remained Unchanged**

The figures and tables below depict representation of civilian employees hired to military departments or the other DOD components by gender (women and men) or by race or ethnicity in fiscal years 2012 and 2021.

⁶We analyzed federal workforce data reported in OPM Federal Equal Opportunity Recruitment Program reports. Historically disadvantaged racial or ethnic groups include the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Native Alaskan, Native Hawaiian or Other Pacific Islander, and two or more races. We calculated OPM's number of new hires from historically disadvantaged racial or ethnic groups by summing all instances for which all but White employees specified a race or ethnicity. Because OPM's report does not reflect instances (if any) for which race or ethnicity was unspecified, we also excluded such instances in our calculations. Specifically, we obtained the percent of the new hire population that was from historically disadvantage racial or ethnic groups from fiscal years 2012–2018 (37.4) by dividing the number of new hires from that group (331,190) by the total number of new hires that also includes White employees (884,872). The federal workforce data in OPM's report excludes agency transfers and includes only permanent employees in non-postal federal executive branch agencies participating in OPM's Enterprise Human Resources Integration-Statistical Data Mart. Additionally, it includes workers in all pay plans including General Schedule and equivalently graded pay plans, other white-collar pay plans, the Senior Executive Service, and blue-collar pay plans. In our analysis of DOD data, we include full-time (i.e., 40-hour workweek) employees in all pay plans irrespective of their positions as permanent or other types of employees.

Appendix IV: Representation of DOD Civilian
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Figure 22: Representation of Women and Men among Civilian New Hires across DOD, the Military Departments, and the Other DOD Components, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 5: Representation of Army Civilian New Hires by Gender, Fiscal Years 2012–2021

Fiscal year	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	7,664	39.04	11,966	60.96	19,630	100.00
2013	4,112	34.06	7,961	65.94	12,073	100.00
2014	3,311	34.29	6,344	65.71	9,655	100.00
2015	6,482	37.48	10,812	62.52	17,294	100.00
2016	4,575	34.87	8,546	65.13	13,121	100.00
2017	5,782	36.53	10,048	63.47	15,830	100.00
2018	7,024	34.77	13,179	65.23	20,203	100.00
2019	6,118	35.37	11,177	64.63	17,295	100.00

**Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged**

Fiscal year	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
2020	7,266	36.02	12,906	63.98	20,172	100.00
2021	7,548	38.89	11,861	61.11	19,409	100.00
Total	59,882	36.36	104,800	63.64	164,682	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 6: Representation of Navy Civilian New Hires by Gender, Fiscal Years 2012–2021

Fiscal year	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	3,371	29.34	8,119	70.66	11,490	100.00
2013	1,729	26.28	4,850	73.72	6,579	100.00
2014	1,456	23.59	4,717	76.41	6,173	100.00
2015	4,154	24.82	12,584	75.18	16,738	100.00
2016	3,955	26.90	10,749	73.10	14,704	100.00
2017	3,163	28.58	7,904	71.42	11,067	100.00
2018	5,391	30.57	12,245	69.43	17,636	100.00
2019	4,427	31.47	9,642	68.53	14,069	100.00
2020	5,031	31.94	10,722	68.06	15,753	100.00
2021	4,322	32.74	8,877	67.26	13,199	100.00
Total	36,999	29.04	90,409	70.96	127,408	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 7: Representation of Air Force Civilian New Hires by Gender, Fiscal Years 2012–2021

Fiscal year	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	3,745	30.08	8,704	69.92	12,449	100.00
2013	2,732	29.45	6,546	70.55	9,278	100.00

**Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged**

Fiscal year	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
2014	1,998	30.13	4,633	69.87	6,631	100.00
2015	4,641	30.82	10,419	69.18	15,060	100.00
2016	4,871	30.51	11,094	69.49	15,965	100.00
2017	3,378	29.77	7,968	70.23	11,346	100.00
2018	4,961	33.38	9,903	66.62	14,864	100.00
2019	4,568	32.11	9,658	67.89	14,226	100.00
2020	5,633	34.11	10,881	65.89	16,514	100.00
2021	5,279	33.36	10,545	66.64	15,824	100.00
Total	41,806	31.63	90,351	68.37	132,157	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 8: Representation of the Other DOD Components' Civilian New Hires by Gender, Fiscal Years 2012–2021

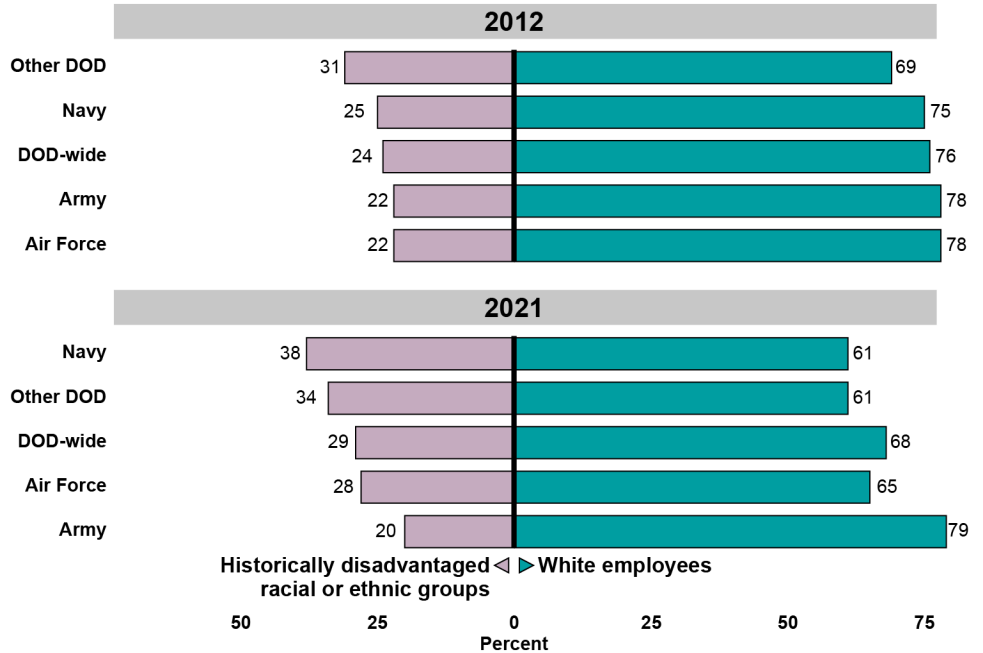
Fiscal year	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	4,842	56.74	3,692	43.26	8,534	100.00
2013	3,252	59.41	2,222	40.59	5,474	100.00
2014	2,746	62.31	1,661	37.69	4,407	100.00
2015	3,821	52.31	3,484	47.69	7,305	100.00
2016	2,649	54.62	2,201	45.38	4,850	100.00
2017	2,811	49.83	2,830	50.17	5,641	100.00
2018	3,246	49.95	3,252	50.05	6,498	100.00
2019	3,227	55.12	2,627	44.88	5,854	100.00
2020	4,148	54.74	3,430	45.26	7,578	100.00
2021	4,765	57.88	3,468	42.12	8,233	100.00
Total	35,507	55.16	28,867	44.84	64,374	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

**Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged**

Figure 23: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees among Civilian New Hires across DOD, the Military Departments, and the Other DOD Components, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 9: Representation of Army Civilian New Hires by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups		White		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	4,261	21.71	15,369	78.29	19,630	100.00
2013	2,262	18.74	9,811	81.26	12,073	100.00
2014	1,777	18.40	7,878	81.60	9,655	100.00
2015	3,252	18.80	14,042	81.20	17,294	100.00

**Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged**

Fiscal year	Historically disadvantaged racial or ethnic groups		White		Total	
	Number	Percent	Number	Percent	Number	Percent
2016	2,873	21.90	10,248	78.10	13,121	100.00
2017	4,537	28.66	11,293	71.34	15,830	100.00
2018	5,161	25.55	15,042	74.45	20,203	100.00
2019	4,062	23.49	13,194	76.29	17,295	100.00
2020	3,851	19.09	16,246	80.54	20,172	100.00
2021	3,937	20.28	15,373	79.21	19,409	100.00
Total	35,973	21.84	128,496	78.03	164,682	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 10: Representation of Navy Civilian New Hires by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups		White		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	2,915	25.37	8,575	74.63	11,490	100.00
2013	1,642	24.96	4,937	75.04	6,579	100.00
2014	1,310	21.22	4,863	78.78	6,173	100.00
2015	4,813	28.75	11,925	71.25	16,738	100.00
2016	4,618	31.41	10,086	68.59	14,704	100.00
2017	3,589	32.43	7,478	67.57	11,067	100.00
2018	6,076	34.45	11,558	65.54	17,636	100.00
2019	5,006	35.58	8,956	63.66	14,069	100.00
2020	5,989	38.02	9,592	60.89	15,753	100.00
2021	4,998	37.87	8,015	60.72	13,199	100.00
Total	40,956	32.15	85,985	67.49	127,408	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances

**Appendix IV: Representation of DOD Civilian
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where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 11: Representation of Air Force Civilian New Hires by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups		White		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	2,762	22.19	9,687	77.81	12,449	100.00
2013	2,062	22.22	7,216	77.78	9,278	100.00
2014	1,519	22.91	5,112	77.09	6,631	100.00
2015	4,054	26.92	11,006	73.08	15,060	100.00
2016	4,300	26.93	11,665	73.07	15,965	100.00
2017	3,045	26.84	8,301	73.16	11,346	100.00
2018	3,857	25.95	11,006	74.04	14,864	100.00
2019	3,933	27.65	10,065	70.75	14,226	100.00
2020	4,416	26.74	11,092	67.17	16,514	100.00
2021	4,431	28.00	10,268	64.89	15,824	100.00
Total	34,379	26.01	95,418	72.20	132,157	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Table 12: Representation of the Other DOD Components' Civilian New Hires by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups		White		Total	
	Number	Percent	Number	Percent	Number	Percent
2012	2,604	30.51	5,930	69.49	8,534	100.00
2013	1,652	30.18	3,822	69.82	5,474	100.00
2014	1,518	34.45	2,889	65.55	4,407	100.00
2015	2,516	34.44	4,789	65.56	7,305	100.00

**Appendix IV: Representation of DOD Civilian
New Hires Generally Remained Unchanged**

Fiscal year	Historically disadvantaged racial or ethnic groups		White		Total	
	Number	Percent	Number	Percent	Number	Percent
2016	1,672	34.47	3,178	65.53	4,850	100.00
2017	2,183	38.70	3,457	61.28	5,641	100.00
2018	2,320	35.70	4,177	64.28	6,498	100.00
2019	2,058	35.16	3,761	64.25	5,854	100.00
2020	2,451	32.34	5,057	66.73	7,578	100.00
2021	2,821	34.26	5,048	61.31	8,233	100.00
Total	21,795	33.86	42,108	65.41	64,374	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, federal civilian employees irrespective of work schedules. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified. We identified new hires based on the first time an employee was identified as hired. For example, if an employee was identified in DOD's data as hired in fiscal year 2013, then we captured that employee as a new hire in 2013. If that same employee subsequently left DOD and was hired again in fiscal year 2020, we counted that new hire only in 2013.

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

We analyzed Department of Defense (DOD) data for federal civilian employees who left DOD from fiscal year 2012 through fiscal year 2021.¹ We identified attrition as instances during which employees—women versus men and employees from historically disadvantaged racial or ethnic groups (historically disadvantaged groups) versus White employees—no longer appeared in DOD employment records in the following four quarters.² As a result, our analysis may not include employees who left DOD after the first quarter of 2021, and later returned in fiscal year 2022 (or during the last of the four quarters that followed). Although DOD collects information relative to why civilian employees left (e.g., retirement, death, termination, and other reasons), we did not separately examine or analyze those reasons for this review.

We found that a total of 514,700 civilian employees left DOD in the 10 years of data we analyzed. Of those, the greatest number (200,519) left the Army and the lowest number (73,916) left the other DOD components. Table 13 depicts additional data pertaining to federal civilian employees who left DOD from fiscal year 2012 through fiscal year 2021.

¹DOD consists of dozens of components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency.

²We examined attrition rates from DOD's appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian workforce. The DOD data we analyzed includes demographic information based on Office of Personnel Management (OPM) data standards, which defines sex as female and male. In this report, we use gender terms of "women" and "men" to describe female and male employees. Historically disadvantaged racial or ethnic groups include the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Native Alaskan, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

Table 13: Representation of Employees Who Left the DOD Civilian Workforce, by Military Department and the Other DOD Components, Fiscal Years 2012–2021

Fiscal year	Army		Navy		Air Force		Other DOD components		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2012	20,967	43.58	9,428	19.60	11,753	24.43	5,966	12.40	48,114	100.00
2013	22,168	46.13	9,413	19.59	10,419	21.68	6,059	12.61	48,059	100.00
2014	18,960	40.99	9,555	20.66	10,830	23.41	6,910	14.94	46,255	100.00
2015	19,175	41.01	9,824	21.01	10,990	23.50	6,769	14.48	46,758	100.00
2016	19,604	30.29	13,506	20.86	24,544	37.92	7,077	10.93	64,731	100.00
2017	19,074	37.90	10,457	20.78	11,924	23.69	8,871	17.63	50,326	100.00
2018	21,060	39.36	12,407	23.19	12,885	24.08	7,153	13.37	53,505	100.00
2019	21,739	36.77	11,586	19.60	15,235	25.77	10,565	17.87	59,125	100.00
2020	19,169	37.54	9,631	18.86	13,575	26.59	8,682	17.00	51,057	100.00
2021	18,603	39.78	9,321	19.93	12,982	27.76	5,864	12.54	46,770	100.00
Total	200,519	38.96	105,128	20.43	135,137	26.26	73,916	14.36	514,700	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

We also found that while women generally left DOD at higher rates than men, employees from historically disadvantaged groups and White employees generally left DOD at rates that were somewhat similar, according to our analysis of the DOD data available for this review.³

Women Generally Left DOD at Rates Higher than Men

Women left DOD's civilian workforce at a rate at least 3 percentage points higher than that of their male counterparts every year from fiscal year 2012 through fiscal year 2021. For example, 21,411 of DOD's 236,609 women (9.05 percent) left DOD in fiscal year 2020—the most recent year available for this review for which we could examine employment records inclusive of each of the four quarters that followed. In comparison, 29,646

³To calculate attrition rates, we divided the number of employees (e.g., women or employees from historically disadvantaged racial or ethnic groups) who left a given workforce by the total number of employees in that same workforce. For example, to calculate the attrition rate for women in fiscal year 2012 (9.18 percent), we took the number of women who left DOD in fiscal year 2012 (21,863) divided by the total number of women in that workforce as of the fourth quarter of that same fiscal year (238,055).

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of DOD’s 501,794 men (5.91 percent) left DOD that same year. That is, the attrition rate of women was 3.14 percentage points higher than that of their male counterparts. Table 14 depicts additional details pertaining to women and men who left the DOD civilian workforce from fiscal year 2012 through fiscal year 2021.

Table 14: Representation of Employees Who Left the DOD Civilian Workforce by Gender, Fiscal Years 2012–2021

Fiscal year	Women			Men			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	21,863	238,055	9.18%	26,251	483,677	5.43%	48,114	721,732	6.67%
2013	21,241	227,877	9.32%	26,818	469,671	5.71%	48,059	697,548	6.89%
2014	20,149	224,382	8.98%	26,106	466,923	5.59%	46,255	691,305	6.69%
2015	20,303	225,134	9.02%	26,455	475,400	5.56%	46,758	700,534	6.67%
2016	25,605	223,907	11.44%	39,126	480,426	8.14%	64,731	704,333	9.19%
2017	21,265	223,148	9.53%	29,061	479,491	6.06%	50,326	702,639	7.16%
2018	22,362	225,340	9.92%	31,143	485,920	6.41%	53,505	711,260	7.52%
2019	24,942	232,310	10.74%	34,183	496,352	6.89%	59,125	728,662	8.11%
2020	21,411	236,609	9.05%	29,646	501,794	5.91%	51,057	738,403	6.91%
2021	19,854	236,861	8.38%	26,916	500,907	5.37%	46,770	737,768	6.34%
Total	218,995	2,293,623	9.55%	295,705	4,840,561	6.11%	514,700	7,134,184	7.21%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Employees from Historically Disadvantaged Groups and White Employees Generally Left DOD at Similar Rates

Employees from historically disadvantaged groups left DOD’s civilian workforce at rates comparable to that of their White counterparts every year from fiscal year 2012 through fiscal year 2021—an average of about 7 percent over the 10 years we analyzed. For example, 17,059 of DOD’s 241,651 employees from historically disadvantaged groups (7.06 percent) left DOD in fiscal year 2020—the most recent year available for this review for which we could examine employment records inclusive of each of the four quarters that followed. In comparison, 33,998 of DOD’s 493,412 White employees (6.89 percent) left DOD that same year. That is, the attrition rates between the two groups were similar. Table 15 depicts additional details pertaining to employees who left the DOD

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civilian workforce from each of these groups from fiscal year 2012 through fiscal year 2021.

Table 15: Representation of Employees Who Left the DOD Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups			White			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	13,861	223,410	6.20%	34,253	496,155	6.90%	48,114	721,732	6.67%
2013	13,703	217,498	6.30%	34,356	477,913	7.19%	48,059	697,548	6.89%
2014	13,173	218,058	6.04%	33,082	471,108	7.02%	46,255	691,305	6.69%
2015	14,092	222,220	6.34%	32,666	476,147	6.86%	46,758	700,534	6.67%
2016	18,710	224,245	8.34%	46,021	477,912	9.63%	64,731	704,333	9.19%
2017	15,708	227,577	6.90%	34,618	472,919	7.32%	50,326	702,639	7.16%
2018	16,838	231,796	7.26%	36,667	477,485	7.68%	53,505	711,260	7.52%
2019	19,742	238,361	8.28%	39,383	488,012	8.07%	59,125	728,662	8.11%
2020	17,059	241,651	7.06%	33,998	493,412	6.89%	51,057	738,403	6.91%
2021	16,298	240,660	6.77%	30,472	492,721	6.18%	46,770	737,768	6.34%
Total	159,184	2,285,476	6.97%	355,516	4,823,784	7.37%	514,700	7,134,184	7.21%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Historically disadvantaged racial or ethnic groups include the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 16: Representation of Employees Who Left the DOD Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

	Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
	White	Number left	34,253	34,356	33,082	32,666	46,021	34,618	36,667	39,383	33,998	30,472
Workforce		496,155	477,913	471,108	476,147	477,912	472,919	477,485	488,012	493,412	492,721	4,823,784
Attrition rate		6.90%	7.19%	7.02%	6.86%	9.63%	7.32%	7.68%	8.07%	6.89%	6.18%	7.37%

**Appendix V: Representation of Civilian
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	Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Black or African American	Number left	7,193	7,184	6,784	7,226	9,341	7,895	8,458	9,873	8,522	7,589	80,065
	Workforce	111,428	107,901	107,050	108,442	108,501	109,008	109,483	111,259	111,080	109,087	1,093,239
	Attrition rate	6.46%	6.66%	6.34%	6.66%	8.61%	7.24%	7.73%	8.87%	7.67%	6.96%	7.32%
Hispanic or Latino	Number left	3,099	3,055	3,003	3,183	4,133	3,582	3,961	4,615	4,039	4,262	36,932
	Workforce	49,568	48,675	49,058	50,076	50,979	52,188	53,849	55,738	57,020	56,986	524,137
	Attrition rate	6.25%	6.28%	6.12%	6.36%	8.11%	6.86%	7.36%	8.28%	7.08%	7.48%	7.05%
Asian	Number left	1,953	1,880	1,844	2,076	3,059	2,372	2,314	2,807	2,350	2,311	22,966
	Workforce	37,856	36,751	36,989	37,739	38,074	38,876	39,765	40,971	41,834	42,138	390,993
	Attrition rate	5.16%	5.12%	4.99%	5.50%	8.03%	6.10%	5.82%	6.85%	5.62%	5.48%	5.87%
Other races	Number left	774	718	700	645	834	720	805	851	766	799	7,612
	Workforce	11,241	10,814	10,954	11,138	11,119	11,233	11,524	12,115	12,475	12,570	115,183
	Attrition rate	6.89%	6.64%	6.39%	5.79%	7.50%	6.41%	6.99%	7.02%	6.14%	6.36%	6.61%
Two or more races	Number left	842	866	842	962	1,343	1,139	1,300	1,596	1,382	1,337	11,609
	Workforce	13,317	13,357	14,007	14,825	15,572	16,272	17,175	18,278	19,242	19,879	161,924
	Attrition rate	6.32%	6.48%	6.01%	6.49%	8.62%	7.00%	7.57%	8.73%	7.18%	6.73%	7.17%
Total	Number left	48,114	48,059	46,255	46,758	64,731	50,326	53,505	59,125	51,057	46,770	514,700
	Workforce	721,732	697,548	691,305	700,534	704,333	702,639	711,260	728,662	738,403	737,768	7,134,184
	Attrition rate	6.67%	6.89%	6.69%	6.67%	9.19%	7.16%	7.52%	8.11%	6.91%	6.34%	7.21%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

Representation of Civilian Employees Who Left the Military Departments or Other DOD Components Varied but Generally Remained Unchanged

The tables that follow depict representations of civilian employees who left the military departments or other DOD components by gender (women and men) or by race or ethnicity from fiscal year 2012 through fiscal year 2021.

Table 17: Representation of Employees Who Left the Army Civilian Workforce by Gender, Fiscal Years 2012–2021

Fiscal year	Women			Men			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	9,900	95,810	10.33%	11,067	173,181	6.39%	20,967	268,991	7.79%
2013	10,258	89,520	11.46%	11,910	164,495	7.24%	22,168	254,015	8.73%
2014	8,606	86,529	9.95%	10,354	161,643	6.41%	18,960	248,172	7.64%
2015	8,681	85,401	10.16%	10,494	160,084	6.56%	19,175	245,485	7.81%
2016	8,832	85,184	10.37%	10,772	159,151	6.77%	19,604	244,335	8.02%
2017	8,604	83,669	10.28%	10,470	157,934	6.63%	19,074	241,603	7.89%
2018	8,969	83,907	10.69%	12,091	159,199	7.59%	21,060	243,106	8.66%
2019	9,659	85,021	11.36%	12,080	161,944	7.46%	21,739	246,965	8.80%
2020	8,415	85,495	9.84%	10,754	162,954	6.60%	19,169	248,449	7.72%
2021	8,076	83,826	9.63%	10,527	162,626	6.47%	18,603	246,452	7.55%
Total	90,000	864,362	10.41%	110,519	1,623,211	6.81%	200,519	2,487,573	8.06%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 18: Representation of Employees Who Left the Navy Civilian Workforce by Gender, Fiscal Years 2012–2021

Fiscal year	Women			Men			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	3,893	55,995	6.95%	5,535	139,885	3.96%	9,428	195,880	4.81%
2013	3,910	53,884	7.26%	5,503	136,672	4.03%	9,413	190,556	4.94%
2014	3,872	52,533	7.37%	5,683	137,010	4.15%	9,555	189,543	5.04%
2015	3,816	54,179	7.04%	6,008	144,638	4.15%	9,824	198,817	4.94%

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Fiscal year	Women			Men			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2016	5,105	55,223	9.24%	8,401	149,382	5.62%	13,506	204,605	6.60%
2017	3,941	54,677	7.21%	6,516	149,011	4.37%	10,457	203,688	5.13%
2018	4,930	56,773	8.68%	7,477	153,886	4.86%	12,407	210,659	5.89%
2019	4,357	59,565	7.31%	7,229	159,443	4.53%	11,586	219,008	5.29%
2020	3,688	61,226	6.02%	5,943	162,557	3.66%	9,631	223,783	4.30%
2021	3,731	61,390	6.08%	5,590	162,223	3.45%	9,321	223,613	4.17%
Total	41,243	565,445	7.29%	63,885	1,494,707	4.27%	105,128	2,060,152	5.10%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 19: Representation of Employees Who Left the Air Force Civilian Workforce by Gender, Fiscal Years 2012–2021

Fiscal year	Women			Men			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	5,142	47,266	10.88%	6,611	121,058	5.46%	11,753	168,324	6.98%
2013	4,039	46,292	8.73%	6,380	119,270	5.35%	10,419	165,562	6.29%
2014	4,331	44,924	9.64%	6,499	117,231	5.54%	10,830	162,155	6.68%
2015	4,429	45,395	9.76%	6,561	119,153	5.51%	10,990	164,548	6.68%
2016	8,044	45,746	17.58%	16,500	120,901	13.65%	24,544	166,647	14.73%
2017	4,681	44,999	10.40%	7,243	120,168	6.03%	11,924	165,167	7.22%
2018	4,897	46,199	10.60%	7,988	120,932	6.61%	12,885	167,131	7.71%
2019	5,699	47,490	12.00%	9,536	121,277	7.86%	15,235	168,767	9.03%
2020	5,221	49,201	10.61%	8,354	122,542	6.82%	13,575	171,743	7.90%
2021	5,144	49,788	10.33%	7,838	122,770	6.38%	12,982	172,558	7.52%
Total	51,627	467,300	11.05%	83,510	1,205,302	6.93%	135,137	1,672,602	8.08%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

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Table 20: Representation of Employees Who Left the Other DOD Components' Civilian Workforce by Gender, Fiscal Years 2012–2021

Fiscal year	Women			Men			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	2,928	38,984	7.51%	3,038	49,553	6.13%	5,966	88,537	6.74%
2013	3,034	38,181	7.95%	3,025	49,234	6.14%	6,059	87,415	6.93%
2014	3,340	40,396	8.27%	3,570	51,039	6.99%	6,910	91,435	7.56%
2015	3,377	40,159	8.41%	3,392	51,525	6.58%	6,769	91,684	7.38%
2016	3,624	37,754	9.60%	3,453	50,992	6.77%	7,077	88,746	7.97%
2017	4,039	39,803	10.15%	4,832	52,378	9.23%	8,871	92,181	9.62%
2018	3,566	38,461	9.27%	3,587	51,903	6.91%	7,153	90,364	7.92%
2019	5,227	40,234	12.99%	5,338	53,688	9.94%	10,565	93,922	11.25%
2020	4,087	40,687	10.04%	4,595	53,741	8.55%	8,682	94,428	9.19%
2021	2,903	41,857	6.94%	2,961	53,288	5.56%	5,864	95,145	6.16%
Total	36,125	396,516	9.11%	37,791	517,341	7.30%	73,916	913,857	8.09%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 21: Representation of Employees Who Left the Army Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups			White			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	6,086	85,931	7.08%	14,881	183,005	8.13%	20,967	268,991	7.79%
2013	6,364	81,677	7.79%	15,804	172,289	9.17%	22,168	254,015	8.73%
2014	5,470	79,944	6.84%	13,490	168,172	8.02%	18,960	248,172	7.64%
2015	5,783	78,873	7.33%	13,392	166,557	8.04%	19,175	245,485	7.81%
2016	5,911	79,047	7.48%	13,693	165,231	8.29%	19,604	244,335	8.02%
2017	6,080	79,198	7.68%	12,994	162,354	8.00%	19,074	241,603	7.89%
2018	6,992	79,823	8.76%	14,068	163,230	8.62%	21,060	243,106	8.66%
2019	7,388	80,732	9.15%	14,351	166,167	8.64%	21,739	246,965	8.80%
2020	6,449	79,728	8.09%	12,720	168,632	7.54%	19,169	248,449	7.72%

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Fiscal year	Historically disadvantaged racial or ethnic groups			White			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2021	6,504	77,242	8.42%	12,099	169,058	7.16%	18,603	246,452	7.55%
Total	63,027	802,195	7.86%	137,492	1,684,695	8.16%	200,519	2,487,573	8.06%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 22: Representation of Employees Who Left the Army Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

	Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
	White	Number left	14,881	15,804	13,490	13,392	13,693	12,994	14,068	14,351	12,720	12,099
Workforce		183,005	172,289	168,172	166,557	165,231	162,354	163,230	166,167	168,632	169,058	1,684,695
Attrition rate		8.13%	9.17%	8.02%	8.04%	8.29%	8.00%	8.62%	8.64%	7.54%	7.16%	8.16%
Black or African American	Number left	3,349	3,460	2,953	3,098	3,219	3,103	3,663	3,917	3,326	3,080	33,168
	Workforce	45,517	42,885	41,614	40,869	40,621	40,206	40,028	40,176	39,293	37,502	408,711
	Attrition rate	7.36%	8.07%	7.10%	7.58%	7.92%	7.72%	9.15%	9.75%	8.46%	8.21%	8.12%
Hispanic or Latino	Number left	1,466	1,515	1,351	1,443	1,437	1,481	1,767	1,758	1,658	1,947	15,823
	Workforce	21,695	20,965	20,634	20,379	20,533	20,804	21,215	21,508	21,344	20,853	209,930
	Attrition rate	6.76%	7.23%	6.55%	7.08%	7.00%	7.12%	8.33%	8.17%	7.77%	9.34%	7.54%
Asian	Number left	582	677	552	600	609	831	748	857	670	686	6,812
	Workforce	10,195	9,699	9,425	9,332	9,421	9,526	9,719	9,893	9,891	9,848	96,949
	Attrition rate	5.71%	6.98%	5.86%	6.43%	6.46%	8.72%	7.70%	8.66%	6.77%	6.97%	7.03%
Other races	Number left	330	348	298	273	268	244	303	303	291	291	2,949

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

Fiscal year		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
	Workforce	3,776	3,503	3,507	3,413	3,397	3,396	3,453	3,495	3,471	3,366	34,777
	Attrition rate	8.74%	9.93%	8.50%	8.00%	7.89%	7.18%	8.77%	8.67%	8.38%	8.65%	8.48%
Two or more races	Number left	359	364	316	369	378	421	511	553	504	500	4,275
	Workforce	4,748	4,625	4,764	4,880	5,075	5,266	5,408	5,660	5,729	5,673	51,828
	Attrition rate	7.56%	7.87%	6.63%	7.56%	7.45%	7.99%	9.45%	9.77%	8.80%	8.81%	8.25%
Total	Number left	20,967	22,168	18,960	19,175	19,604	19,074	21,060	21,739	19,169	18,603	200,519
	Workforce	268,991	254,015	248,172	245,485	244,335	241,603	243,106	246,965	248,449	246,452	2,487,573
	Attrition rate	7.79%	8.73%	7.64%	7.81%	8.02%	7.89%	8.66%	8.80%	7.72%	7.55%	8.06%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 23: Representation of Employees Who Left the Navy Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups			White			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	2,928	61,769	4.74%	6,500	132,151	4.92%	9,428	195,880	4.81%
2013	2,781	60,545	4.59%	6,632	128,079	5.18%	9,413	190,556	4.94%
2014	2,830	60,215	4.70%	6,725	127,391	5.28%	9,555	189,543	5.04%
2015	3,065	63,565	4.82%	6,759	133,312	5.07%	9,824	198,817	4.94%
2016	4,284	65,952	6.50%	9,222	136,707	6.75%	13,506	204,605	6.60%
2017	3,312	66,171	5.01%	7,145	135,598	5.27%	10,457	203,688	5.13%
2018	3,529	69,568	5.07%	8,878	139,318	6.37%	12,407	210,659	5.89%
2019	4,072	73,311	5.55%	7,514	143,880	5.22%	11,586	219,008	5.29%
2020	3,428	76,057	4.51%	6,203	145,877	4.25%	9,631	223,783	4.30%
2021	3,399	76,630	4.44%	5,922	145,144	4.08%	9,321	223,613	4.17%
Total	33,628	673,783	4.99%	71,500	1,367,457	5.23%	105,128	2,060,152	5.10%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 24: Representation of Employees Who Left the Navy Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

	Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
White	Number left	6,500	6,632	6,725	6,759	9,222	7,145	8,878	7,514	6,203	5,922	71,500
	Workforce	132,151	128,079	127,391	133,312	136,707	135,598	139,318	143,880	145,877	145,144	1,367,457
	Attrition rate	4.92%	5.18%	5.28%	5.07%	6.75%	5.27%	6.37%	5.22%	4.25%	4.08%	5.23%
Black or African American	Number left	1,279	1,298	1,272	1,404	2,063	1,525	1,597	1,859	1,554	1,419	15,270
	Workforce	26,353	25,847	25,429	26,885	27,612	27,334	28,105	29,088	29,672	29,328	275,653
	Attrition rate	4.85%	5.02%	5.00%	5.22%	7.47%	5.58%	5.68%	6.39%	5.24%	4.84%	5.54%
Hispanic or Latino	Number left	518	502	485	553	756	572	617	778	588	683	6,052
	Workforce	9,668	9,497	9,622	10,326	10,988	11,238	12,243	13,068	13,779	14,120	114,549
	Attrition rate	5.36%	5.29%	5.04%	5.36%	6.88%	5.09%	5.04%	5.95%	4.27%	4.84%	5.28%
Asian	Number left	787	642	701	754	988	777	839	871	772	780	7,911
	Workforce	17,967	17,465	17,279	17,877	18,417	18,497	19,297	20,118	20,622	20,691	188,230
	Attrition rate	4.38%	3.68%	4.06%	4.22%	5.36%	4.20%	4.35%	4.33%	3.74%	3.77%	4.20%
Other races	Number left	186	162	179	158	185	214	206	215	224	241	1,970
	Workforce	4,065	3,963	3,933	4,118	4,222	4,211	4,513	5,024	5,321	5,348	44,718
	Attrition rate	4.58%	4.09%	4.55%	3.84%	4.38%	5.08%	4.56%	4.28%	4.21%	4.51%	4.41%
Two or more races	Number left	158	177	193	196	292	224	270	349	290	276	2,425
	Workforce	3,716	3,773	3,952	4,359	4,713	4,891	5,410	6,013	6,663	7,143	50,633
	Attrition rate	4.25%	4.69%	4.88%	4.50%	6.20%	4.58%	4.99%	5.80%	4.35%	3.86%	4.79%
Total	Number left	9,428	9,413	9,555	9,824	13,506	10,457	12,407	11,586	9,631	9,321	105,128
	Workforce	195,880	190,556	189,543	198,817	204,605	203,688	210,659	219,008	223,783	223,613	2,060,152
	Attrition rate	4.81%	4.94%	5.04%	4.94%	6.60%	5.13%	5.89%	5.29%	4.30%	4.17%	5.10%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity.

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 25: Representation of Employees Who Left the Air Force Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups			White			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	2,889	43,949	6.57%	8,864	124,257	7.13%	11,753	168,324	6.98%
2013	2,571	43,612	5.90%	7,848	121,827	6.44%	10,419	165,562	6.29%
2014	2,634	43,081	6.11%	8,196	118,964	6.89%	10,830	162,155	6.68%
2015	2,814	44,441	6.33%	8,176	119,980	6.81%	10,990	164,548	6.68%
2016	5,897	45,680	12.91%	18,647	120,836	15.43%	24,544	166,647	14.73%
2017	3,193	46,100	6.93%	8,731	118,940	7.34%	11,924	165,167	7.22%
2018	3,561	47,117	7.56%	9,324	119,902	7.78%	12,885	167,131	7.71%
2019	4,415	48,175	9.16%	10,820	120,267	9.00%	15,235	168,767	9.03%
2020	3,976	49,573	8.02%	9,599	120,881	7.94%	13,575	171,743	7.90%
2021	4,032	50,272	8.02%	8,950	120,071	7.45%	12,982	172,558	7.52%
Total	35,982	462,000	7.79%	99,155	1,205,925	8.22%	135,137	1,672,602	8.08%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees who left DOD. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 26: Representation of Employees Who Left the Air Force Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
		White	Number left	8,864	7,848	8,196	8,176	18,647	8,731	9,324	10,820	9,599
	Workforce	124,257	121,827	118,964	119,980	120,836	118,940	119,902	120,267	120,881	120,071	1,205,925

**Appendix V: Representation of Civilian
Employees Who Left DOD Generally Remained
Unchanged**

	Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
	Attrition rate	7.13%	6.44%	6.89%	6.81%	15.43%	7.34%	7.78%	9.00%	7.94%	7.45%	8.22%
Black or African American	Number left	1,388	1,216	1,245	1,326	2,564	1,486	1,609	1,983	1,777	1,764	16,358
	Workforce	19,953	19,716	19,339	19,721	20,211	20,280	20,688	20,863	21,155	21,089	203,015
	Attrition rate	6.96%	6.17%	6.44%	6.72%	12.69%	7.33%	7.78%	9.50%	8.40%	8.36%	8.06%
Hispanic or Latino	Number left	794	719	770	792	1,474	920	1,026	1,304	1,183	1,204	10,186
	Workforce	13,096	13,058	12,828	13,293	13,574	13,735	14,016	14,531	15,167	15,300	138,598
	Attrition rate	6.06%	5.51%	6.00%	5.96%	10.86%	6.70%	7.32%	8.97%	7.80%	7.87%	7.35%
Asian	Number left	311	292	277	326	1,071	358	382	499	469	484	4,469
	Workforce	5,255	5,196	5,175	5,446	5,646	5,718	5,816	5,995	6,214	6,477	56,938
	Attrition rate	5.92%	5.62%	5.35%	5.99%	18.97%	6.26%	6.57%	8.32%	7.55%	7.47%	7.85%
Other races	Number left	177	135	135	136	274	140	199	212	159	182	1,749
	Workforce	2,387	2,356	2,353	2,397	2,432	2,440	2,454	2,502	2,541	2,727	24,589
	Attrition rate	7.42%	5.73%	5.74%	5.67%	11.27%	5.74%	8.11%	8.47%	6.26%	6.67%	7.11%
Two or more races	Number left	219	209	207	234	514	289	345	417	388	398	3,220
	Workforce	3,258	3,286	3,386	3,584	3,817	3,927	4,143	4,284	4,496	4,679	38,860
	Attrition rate	6.72%	6.36%	6.11%	6.53%	13.47%	7.36%	8.33%	9.73%	8.63%	8.51%	8.29%
Total	Number left	11,753	10,419	10,830	10,990	24,544	11,924	12,885	15,235	13,575	12,982	135,137
	Workforce	168,324	165,562	162,155	164,548	166,647	165,167	167,131	168,767	171,743	172,558	1,672,602
	Attrition rate	6.98%	6.29%	6.68%	6.68%	14.73%	7.22%	7.71%	9.03%	7.90%	7.52%	8.08%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the "other races" category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

Table 27: Representation of Employees Who Left the Other DOD Components' Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year	Historically disadvantaged racial or ethnic groups			White			Total		
	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate	Number left	Workforce	Attrition rate
2012	1,958	31,761	6.16%	4,008	56,742	7.06%	5,966	88,537	6.74%
2013	1,987	31,664	6.28%	4,072	55,718	7.31%	6,059	87,415	6.93%
2014	2,239	34,818	6.43%	4,671	56,581	8.26%	6,910	91,435	7.56%
2015	2,430	35,341	6.88%	4,339	56,298	7.71%	6,769	91,684	7.38%
2016	2,618	33,566	7.80%	4,459	55,138	8.09%	7,077	88,746	7.97%
2017	3,123	36,108	8.65%	5,748	56,027	10.26%	8,871	92,181	9.62%
2018	2,756	35,288	7.81%	4,397	55,035	7.99%	7,153	90,364	7.92%
2019	3,867	36,143	10.70%	6,698	57,698	11.61%	10,565	93,922	11.25%
2020	3,206	36,293	8.83%	5,476	58,022	9.44%	8,682	94,428	9.19%
2021	2,363	36,516	6.47%	3,501	58,448	5.99%	5,864	95,145	6.16%
Total	26,547	347,498	7.64%	47,369	565,707	8.37%	73,916	913,857	8.09%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Table 28: Representation of Employees Who Left the Other DOD Components' Civilian Workforce by Race or Ethnicity, Fiscal Years 2012–2021

	Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
	White	Number left	4,008	4,072	4,671	4,339	4,459	5,748	4,397	6,698	5,476	3,501
Workforce		56,742	55,718	56,581	56,298	55,138	56,027	55,035	57,698	58,022	58,448	565,707
Attrition rate		7.06%	7.31%	8.26%	7.71%	8.09%	10.26%	7.99%	11.61%	9.44%	5.99%	8.37%
Black or African American	Number left	1,177	1,210	1,314	1,398	1,495	1,781	1,589	2,114	1,865	1,326	15,269
	Workforce	19,605	19,453	20,668	20,967	20,057	21,188	20,662	21,132	20,960	21,168	205,860

Appendix V: Representation of Civilian Employees Who Left DOD Generally Remained Unchanged

	Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
	Attrition rate	6.00%	6.22%	6.36%	6.67%	7.45%	8.41%	7.69%	10.00%	8.90%	6.26%	7.42%
Hispanic or Latino	Number left	321	319	397	395	466	609	551	775	610	428	4,871
	Workforce	5,109	5,155	5,974	6,078	5,884	6,411	6,375	6,631	6,730	6,713	61,060
	Attrition rate	6.28%	6.19%	6.65%	6.50%	7.92%	9.50%	8.64%	11.69%	9.06%	6.38%	7.98%
Asian	Number left	273	269	314	396	391	406	345	580	439	361	3,774
	Workforce	4,439	4,391	5,110	5,084	4,590	5,135	4,933	4,965	5,107	5,122	48,876
	Attrition rate	6.15%	6.13%	6.14%	7.79%	8.52%	7.91%	6.99%	11.68%	8.60%	7.05%	7.72%
Other races	Number left	81	73	88	78	107	122	97	121	92	85	944
	Workforce	1,013	992	1,161	1,210	1,068	1,186	1,104	1,094	1,142	1,129	11,099
	Attrition rate	8.00%	7.36%	7.58%	6.45%	10.02%	10.29%	8.79%	11.06%	8.06%	7.53%	8.51%
Two or more races	Number left	106	116	126	163	159	205	174	277	200	163	1,689
	Workforce	1,595	1,673	1,905	2,002	1,967	2,188	2,214	2,321	2,354	2,384	20,603
	Attrition rate	6.65%	6.93%	6.61%	8.14%	8.08%	9.37%	7.86%	11.93%	8.50%	6.84%	8.20%
Total	Number left	5,966	6,059	6,910	6,769	7,077	8,871	7,153	10,565	8,682	5,864	73,916
	Workforce	88,537	87,415	91,435	91,684	88,746	92,181	90,364	93,922	94,428	95,145	913,857
	Attrition rate	6.74%	6.93%	7.56%	7.38%	7.97%	9.62%	7.92%	11.25%	9.19%	6.16%	8.09%

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the "other races" category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. We excluded instances for which race or ethnicity were unspecified. Numbers of workforce by race or ethnicity may not align with total workforce due to unspecified race or ethnicity. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We identified attrition as instances during which employees no longer appeared in DOD employment records in the following four quarters. As a result, our analysis may not include employees who left DOD after the first quarter of fiscal year 2021 and later returned in 2022 (or during the last of the four quarters that followed).

Appendix VI: Representation of DOD Civilian Employees by Race or Ethnicity Generally Remained Unchanged

We examined demographic composition of the Department of Defense (DOD) federal civilian workforce by racial or ethnic group categories identified in Office of Personnel Management (OPM) data standards from fiscal year 2012 through fiscal year 2021. Our analysis of DOD data as depicted in tables 29 through 33 indicate that little has changed over the last decade. Representation of Black or African American employees and White employees at DOD slightly decreased while that of all other racial or ethnic groups slightly increased in fiscal year 2021 compared to fiscal year 2012.¹

Table 29: Representation of DOD Civilians by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
		2012	Number	496,155	111,428	49,568	37,856	11,241	13,317
	Percent	68.75	15.44	6.87	5.25	1.56	1.85	0.30	100.00
2013	Number	477,913	107,901	48,675	36,751	10,814	13,357	2,137	697,548
	Percent	68.51	15.47	6.98	5.27	1.55	1.91	0.31	100.00
2014	Number	471,108	107,050	49,058	36,989	10,954	14,007	2,139	691,305
	Percent	68.15	15.49	7.10	5.35	1.58	2.03	0.31	100.00
2015	Number	476,147	108,442	50,076	37,739	11,138	14,825	2,167	700,534
	Percent	67.97	15.48	7.15	5.39	1.59	2.12	0.31	100.00
2016	Number	477,912	108,501	50,979	38,074	11,119	15,572	2,176	704,333
	Percent	67.85	15.40	7.24	5.41	1.58	2.21	0.31	100.00
2017	Number	472,919	109,008	52,188	38,876	11,233	16,272	2,143	702,639
	Percent	67.31	15.51	7.43	5.53	1.60	2.32	0.30	100.00
2018	Number	477,485	109,483	53,849	39,765	11,524	17,175	1,979	711,260
	Percent	67.13	15.39	7.57	5.59	1.62	2.41	0.28	100.00
2019	Number	488,012	111,259	55,738	40,971	12,115	18,278	2,289	728,662
	Percent	66.97	15.27	7.65	5.62	1.66	2.51	0.31	100.00
2020	Number	493,412	111,080	57,020	41,834	12,475	19,242	3,340	738,403
	Percent	66.82	15.04	7.72	5.67	1.69	2.61	0.45	100.00

¹DOD consists of dozens of components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency.

**Appendix VI: Representation of DOD Civilian
Employees by Race or Ethnicity Generally
Remained Unchanged**

Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
2021	Number	492,721	109,087	56,986	42,138	12,570	19,879	4,387	737,768
	Percent	66.79	14.79	7.72	5.71	1.70	2.69	0.59	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Table 30: Representation of Army Civilians by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
2012	Number	183,005	45,517	21,695	10,195	3,776	4,748	55	268,991
	Percent	68.03	16.92	8.07	3.79	1.40	1.77	0.02	100.00
2013	Number	172,289	42,885	20,965	9,699	3,503	4,625	49	254,015
	Percent	67.83	16.88	8.25	3.82	1.38	1.82	0.02	100.00
2014	Number	168,172	41,614	20,634	9,425	3,507	4,764	56	248,172
	Percent	67.76	16.77	8.31	3.80	1.41	1.92	0.02	100.00
2015	Number	166,557	40,869	20,379	9,332	3,413	4,880	55	245,485
	Percent	67.85	16.65	8.30	3.80	1.39	1.99	0.02	100.00
2016	Number	165,231	40,621	20,533	9,421	3,397	5,075	57	244,335
	Percent	67.62	16.63	8.40	3.86	1.39	2.08	0.02	100.00
2017	Number	162,354	40,206	20,804	9,526	3,396	5,266	51	241,603
	Percent	67.20	16.64	8.61	3.94	1.41	2.18	0.02	100.00
2018	Number	163,230	40,028	21,215	9,719	3,453	5,408	53	243,106
	Percent	67.14	16.47	8.73	4.00	1.42	2.22	0.02	100.00
2019	Number	166,167	40,176	21,508	9,893	3,495	5,660	66	246,965
	Percent	67.28	16.27	8.71	4.01	1.42	2.29	0.03	100.00
2020	Number	168,632	39,293	21,344	9,891	3,471	5,729	89	248,449
	Percent	67.87	15.82	8.59	3.98	1.40	2.31	0.04	100.00
2021	Number	169,058	37,502	20,853	9,848	3,366	5,673	152	246,452
	Percent	68.60	15.22	8.46	4.00	1.37	2.30	0.06	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given

**Appendix VI: Representation of DOD Civilian
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their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Table 31: Representation of Navy Civilians by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
2012	Number	132,151	26,353	9,668	17,967	4,065	3,716	1,960	195,880
	Percent	67.47	13.45	4.94	9.17	2.08	1.90	1.00	100.00
2013	Number	128,079	25,847	9,497	17,465	3,963	3,773	1,932	190,556
	Percent	67.21	13.56	4.98	9.17	2.08	1.98	1.01	100.00
2014	Number	127,391	25,429	9,622	17,279	3,933	3,952	1,937	189,543
	Percent	67.21	13.42	5.08	9.12	2.07	2.09	1.02	100.00
2015	Number	133,312	26,885	10,326	17,877	4,118	4,359	1,940	198,817
	Percent	67.05	13.52	5.19	8.99	2.07	2.19	0.98	100.00
2016	Number	136,707	27,612	10,988	18,417	4,222	4,713	1,946	204,605
	Percent	66.82	13.50	5.37	9.00	2.06	2.30	0.95	100.00
2017	Number	135,598	27,334	11,238	18,497	4,211	4,891	1,919	203,688
	Percent	66.57	13.42	5.52	9.08	2.07	2.40	0.94	100.00
2018	Number	139,318	28,105	12,243	19,297	4,513	5,410	1,773	210,659
	Percent	66.13	13.34	5.81	9.16	2.14	2.57	0.84	100.00
2019	Number	143,880	29,088	13,068	20,118	5,024	6,013	1,817	219,008
	Percent	65.70	13.28	5.97	9.19	2.29	2.75	0.83	100.00
2020	Number	145,877	29,672	13,779	20,622	5,321	6,663	1,849	223,783
	Percent	65.19	13.26	6.16	9.22	2.38	2.98	0.83	100.00
2021	Number	145,144	29,328	14,120	20,691	5,348	7,143	1,839	223,613
	Percent	64.91	13.12	6.31	9.25	2.39	3.19	0.82	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Table 32: Representation of Air Force Civilians by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
2012	Number	124,257	19,953	13,096	5,255	2,387	3,258	118	168,324
	Percent	73.82	11.85	7.78	3.12	1.42	1.94	0.07	100.00

Appendix VI: Representation of DOD Civilian Employees by Race or Ethnicity Generally Remained Unchanged

Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
2013	Number	121,827	19,716	13,058	5,196	2,356	3,286	123	165,562
	Percent	73.58	11.91	7.89	3.14	1.42	1.98	0.07	100.00
2014	Number	118,964	19,339	12,828	5,175	2,353	3,386	110	162,155
	Percent	73.36	11.93	7.91	3.19	1.45	2.09	0.07	100.00
2015	Number	119,980	19,721	13,293	5,446	2,397	3,584	127	164,548
	Percent	72.91	11.98	8.08	3.31	1.46	2.18	0.08	100.00
2016	Number	120,836	20,211	13,574	5,646	2,432	3,817	131	166,647
	Percent	72.51	12.13	8.15	3.39	1.46	2.29	0.08	100.00
2017	Number	118,940	20,280	13,735	5,718	2,440	3,927	127	165,167
	Percent	72.01	12.28	8.32	3.46	1.48	2.38	0.08	100.00
2018	Number	119,902	20,688	14,016	5,816	2,454	4,143	112	167,131
	Percent	71.74	12.38	8.39	3.48	1.47	2.48	0.07	100.00
2019	Number	120,267	20,863	14,531	5,995	2,502	4,284	325	168,767
	Percent	71.26	12.36	8.61	3.55	1.48	2.54	0.19	100.00
2020	Number	120,881	21,155	15,167	6,214	2,541	4,496	1,289	171,743
	Percent	70.38	12.32	8.83	3.62	1.48	2.62	0.75	100.00
2021	Number	120,071	21,089	15,300	6,477	2,727	4,679	2,215	172,558
	Percent	69.58	12.22	8.87	3.75	1.58	2.71	1.28	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Table 33: Representation of Other DOD Components’ Civilians by Race or Ethnicity, Fiscal Years 2012–2021

Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
2012	Number	56,742	19,605	5,109	4,439	1,013	1,595	34	88,537
	Percent	64.09	22.14	5.77	5.01	1.14	1.80	0.04	100.00
2013	Number	55,718	19,453	5,155	4,391	992	1,673	33	87,415
	Percent	63.74	22.25	5.90	5.02	1.13	1.91	0.04	100.00
2014	Number	56,581	20,668	5,974	5,110	1,161	1,905	36	91,435
	Percent	61.88	22.60	6.53	5.59	1.27	2.08	0.04	100.00
2015	Number	56,298	20,967	6,078	5,084	1,210	2,002	45	91,684
	Percent	61.40	22.87	6.63	5.55	1.32	2.18	0.05	100.00

**Appendix VI: Representation of DOD Civilian
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Fiscal year		White	Black or African American	Hispanic or Latino	Asian	Other races	Two or more races	Unspecified	Total
2016	Number	55,138	20,057	5,884	4,590	1,068	1,967	42	88,746
	Percent	62.13	22.60	6.63	5.17	1.20	2.22	0.05	100.00
2017	Number	56,027	21,188	6,411	5,135	1,186	2,188	46	92,181
	Percent	60.78	22.99	6.95	5.57	1.29	2.37	0.05	100.00
2018	Number	55,035	20,662	6,375	4,933	1,104	2,214	41	90,364
	Percent	60.90	22.87	7.05	5.46	1.22	2.45	0.05	100.00
2019	Number	57,698	21,132	6,631	4,965	1,094	2,321	81	93,922
	Percent	61.43	22.50	7.06	5.29	1.16	2.47	0.09	100.00
2020	Number	58,022	20,960	6,730	5,107	1,142	2,354	113	94,428
	Percent	61.45	22.20	7.13	5.41	1.21	2.49	0.12	100.00
2021	Number	58,448	21,168	6,713	5,122	1,129	2,384	181	95,145
	Percent	61.43	22.25	7.06	5.38	1.19	2.51	0.19	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

We examined the demographic composition of the Department of Defense (DOD) federal civilian workforce in each of the military departments and across the other DOD components in the General Schedule (GS) and Senior Executive Service (SES). The GS covers the majority of civilian white-collar federal employees (i.e., professional, technical, administrative, and clerical positions), according to the Office of Personnel Management (OPM). The GS has 15 grades that range from GS-1, the lowest, to GS-15, the highest. Agencies establish or classify the grade of each job based on the level of difficulty, responsibility, and qualifications required. Individuals with a high school diploma and no additional experience typically qualify for GS-2 positions, those with a bachelor's degree for GS-5, and those with a master's degree for GS-9. The SES includes most managerial, supervisory, and policy positions classified above grade GS-15, or equivalent positions in the executive branch of the federal government, according to OPM.¹

We analyzed the composition of the GS and SES workforce by gender (women or men) and by racial or ethnic composition (historically disadvantaged racial or ethnic groups or White employees) for fiscal years 2012 and 2021.² For ease in reporting across various GS grades, the data in the tables that follow are grouped according to the general education and experience levels established by OPM standards.³

¹According to OPM, SES staff are at the level just below presidential appointees. Per the Civil Service Reform Act of 1978, the SES was established to "...ensure that the executive management of the government of the United States is responsive to the needs, policies, and goals of the nation and otherwise is of the highest quality."

²DOD consists of dozens of components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency.

³Our analysis of DOD civilian employees in the GS federal pay system is limited to those in the GS pay-plan code, so excludes pay-plan codes GM, GL, GP, and GR, the latter of which were associated with 2,348 additional employees (0.32 percent of the total DOD civilian workforce) in fiscal year 2021. Our analysis of DOD executive-level employees includes only those in the SES, which is identified by the ES pay-plan code. The ES pay-plan code excludes political appointees or other special senior-level positions in other pay plans.

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Department of the Army

Table 34: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Army Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	9,438	48.68	9,943	51.29	5	0.03	19,386	100.00
GS-6	4,948	41.61	6,941	58.37	2	0.02	11,891	100.00
GS-7/8	9,653	38.60	15,344	61.36	8	0.03	25,005	100.00
GS-9/10	9,419	36.30	16,523	63.68	4	0.02	25,946	100.00
GS-11	11,288	32.81	23,105	67.17	7	0.02	34,400	100.00
GS-12	11,460	30.54	26,060	69.44	7	0.02	37,527	100.00
GS-13	7,112	27.06	19,159	72.91	7	0.03	26,278	100.00
GS-14	2,133	23.43	6,971	76.57	-	-	9,104	100.00
GS-15	521	18.03	2,367	81.90	2	0.07	2,890	100.00
SES	33	12.45	232	87.55	-	-	265	100.00
Total	66,005	34.25	126,645	65.72	42	0.02	192,692	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. We use a "-" to indicate null or no value. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 35: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Army Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	3,962	45.33	4,779	54.67	-	-	8,741	100.00
GS-6	4,400	40.36	6,498	59.60	4	0.04	10,902	100.00
GS-7/8	7,795	36.84	13,343	63.05	23	0.11	21,161	100.00
GS-9/10	8,888	36.56	15,407	63.37	19	0.08	24,314	100.00
GS-11	10,424	33.82	20,384	66.14	11	0.04	30,819	100.00

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	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-12	11,791	32.33	24,671	67.64	11	0.03	36,473	100.00
GS-13	7,287	28.39	18,375	71.60	1	0.00	25,663	100.00
GS-14	2,247	25.93	6,418	74.07	-	-	8,665	100.00
GS-15	538	21.01	2,023	78.99	-	-	2,561	100.00
SES	38	14.29	228	85.71	-	-	266	100.00
Total	57,370	33.83	112,126	66.13	69	0.04	169,565	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. We use a “-” to indicate null or no value. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 36: Representation of Women and Men in the Army Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	12,432	64.13	6,954	35.87	19,386	100.00
GS-6	7,376	62.03	4,515	37.97	11,891	100.00
GS-7/8	12,581	50.31	12,424	49.69	25,005	100.00
GS-9/10	11,943	46.03	14,003	53.97	25,946	100.00
GS-11	14,354	41.73	20,046	58.27	34,400	100.00
GS-12	12,616	33.62	24,911	66.38	37,527	100.00
GS-13	7,852	29.88	18,426	70.12	26,278	100.00
GS-14	2,439	26.79	6,665	73.21	9,104	100.00
GS-15	705	24.39	2,185	75.61	2,890	100.00
SES	53	20.00	212	80.00	265	100.00
Total	82,351	42.74	110,341	57.26	192,692	100.00

Source: GAO analysis of the Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay plans (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay plans, as well as applicants external to DOD can be accepted into

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 37: Representation of Women and Men in the Army Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	6,062	69.35	2,679	30.65	8,741	100.00
GS-6	6,006	55.09	4,896	44.91	10,902	100.00
GS-7/8	9,520	44.99	11,641	55.01	21,161	100.00
GS-9/10	9,975	41.03	14,339	58.97	24,314	100.00
GS-11	12,452	40.40	18,367	59.60	30,819	100.00
GS-12	13,048	35.77	23,425	64.23	36,473	100.00
GS-13	8,219	32.03	17,444	67.97	25,663	100.00
GS-14	2,514	29.01	6,151	70.99	8,665	100.00
GS-15	698	27.25	1,863	72.75	2,561	100.00
SES	59	22.18	207	77.82	266	100.00
Total	68,553	40.43	101,012	59.57	169,565	100.00

Source: GAO analysis of the Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Department of the Navy

Table 38: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Navy Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	4,919	49.96	4,823	48.98	104	1.06	9,846	100.00
GS-6	2,356	48.61	2,442	50.38	49	1.01	4,847	100.00
GS-7/8	5,218	41.40	7,219	57.28	166	1.32	12,603	100.00
GS-9/10	4,422	37.54	7,241	61.47	116	0.98	11,779	100.00
GS-11	5,904	31.94	12,413	67.16	167	0.90	18,484	100.00

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-12	8,106	28.10	20,448	70.89	291	1.01	28,845	100.00
GS-13	4,220	23.01	13,987	76.26	133	0.73	18,340	100.00
GS-14	1,253	19.31	5,204	80.18	33	0.51	6,490	100.00
GS-15	463	14.02	2,820	85.38	20	0.61	3,303	100.00
SES	39	12.26	278	87.42	1	0.31	318	100.00
Total	36,900	32.13	76,875	66.93	1,080	0.94	114,855	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 39: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Navy Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	2,833	53.82	2,359	44.81	72	1.37	5,264	100.00
GS-6	2,119	51.32	1,970	47.71	40	0.97	4,129	100.00
GS-7/8	5,187	43.71	6,542	55.12	139	1.17	11,868	100.00
GS-9/10	4,997	42.41	6,679	56.68	107	0.91	11,783	100.00
GS-11	7,196	38.23	11,491	61.04	137	0.73	18,824	100.00
GS-12	11,132	33.85	21,529	65.46	230	0.70	32,891	100.00
GS-13	5,867	27.16	15,594	72.19	140	0.65	21,601	100.00
GS-14	1,494	24.74	4,502	74.54	44	0.73	6,040	100.00
GS-15	460	17.97	2,084	81.41	16	0.63	2,560	100.00
SES	38	12.50	261	85.86	5	1.64	304	100.00
Total	41,323	35.85	73,011	63.34	930	0.81	115,264	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 40: Representation of Women and Men in the Navy Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	5,396	54.80	4,450	45.20	9,846	100.00
GS-6	2,728	56.28	2,119	43.72	4,847	100.00
GS-7/8	5,496	43.61	7,107	56.39	12,603	100.00
GS-9/10	4,695	39.86	7,084	60.14	11,779	100.00
GS-11	6,697	36.23	11,787	63.77	18,484	100.00
GS-12	8,989	31.16	19,856	68.84	28,845	100.00
GS-13	5,288	28.83	13,052	71.17	18,340	100.00
GS-14	1,716	26.44	4,774	73.56	6,490	100.00
GS-15	742	22.46	2,561	77.54	3,303	100.00
SES	67	21.07	251	78.93	318	100.00
Total	41,814	36.41	73,041	63.59	114,855	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay plan-codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 41: Representation of Women and Men in the Navy Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	2,939	55.83	2,325	44.17	5,264	100.00
GS-6	2,072	50.18	2,057	49.82	4,129	100.00
GS-7/8	4,831	40.71	7,037	59.29	11,868	100.00
GS-9/10	4,445	37.72	7,338	62.28	11,783	100.00
GS-11	6,515	34.61	12,309	65.39	18,824	100.00
GS-12	9,241	28.10	23,650	71.90	32,891	100.00

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-13	5,939	27.49	15,662	72.51	21,601	100.00
GS-14	1,629	26.97	4,411	73.03	6,040	100.00
GS-15	659	25.74	1,901	74.26	2,560	100.00
SES	94	30.92	210	69.08	304	100.00
Total	38,364	33.28	76,900	66.72	115,264	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Department of the Air Force

Table 42: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Air Force Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	3,217	42.29	4,380	57.58	10	0.13	7,607	100.00
GS-6	2,155	39.27	3,321	60.51	12	0.22	5,488	100.00
GS-7/8	3,916	34.33	7,478	65.55	14	0.12	11,408	100.00
GS-9/10	4,691	29.20	11,361	70.72	12	0.07	16,064	100.00
GS-11	5,762	26.15	16,254	73.77	16	0.07	22,032	100.00
GS-12	6,196	24.02	19,584	75.93	12	0.05	25,792	100.00
GS-13	3,092	19.00	13,173	80.96	5	0.03	16,270	100.00
GS-14	762	15.25	4,234	84.75	-	-	4,996	100.00
GS-15	215	12.71	1,477	87.29	-	-	1,692	100.00
SES	21	11.60	160	88.40	-	-	181	100.00
Total	30,027	26.92	81,422	73.00	81	0.07	111,530	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. We use a "-" to indicate null or no value. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay plan-codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 43: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Air Force Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	2,182	46.54	2,393	51.05	113	2.41	4,688	100.00
GS-6	1,636	40.71	2,285	56.85	98	2.44	4,019	100.00
GS-7/8	4,360	37.52	7,053	60.69	209	1.80	11,622	100.00
GS-9/10	5,261	33.70	10,107	64.75	242	1.55	15,610	100.00
GS-11	6,189	29.89	14,308	69.09	211	1.02	20,708	100.00
GS-12	6,957	28.34	17,287	70.42	303	1.23	24,547	100.00
GS-13	3,706	25.01	10,951	73.89	164	1.11	14,821	100.00
GS-14	949	21.96	3,337	77.23	35	0.81	4,321	100.00
GS-15	197	17.83	897	81.18	11	1.00	1,105	100.00
SES	26	14.69	149	84.18	2	1.13	177	100.00
Total	31,463	30.96	68,767	67.67	1,388	1.37	101,618	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

Table 44: Representation of Women and Men in the Air Force Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	5,290	69.54	2,317	30.46	7,607	100.00
GS-6	3,016	54.96	2,472	45.04	5,488	100.00
GS-7/8	5,362	47.00	6,046	53.00	11,408	100.00
GS-9/10	5,950	37.04	10,114	62.96	16,064	100.00
GS-11	7,439	33.76	14,593	66.24	22,032	100.00
GS-12	8,294	32.16	17,498	67.84	25,792	100.00
GS-13	3,898	23.96	12,372	76.04	16,270	100.00
GS-14	1,107	22.16	3,889	77.84	4,996	100.00
GS-15	339	20.04	1,353	79.96	1,692	100.00
SES	46	25.41	135	74.59	181	100.00
Total	40,741	36.53	70,789	63.47	111,530	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 45: Representation of Women and Men in the Department of the Air Force Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	3,463	73.87	1,225	26.13	4,688	100.00
GS-6	2,324	57.83	1,695	42.17	4,019	100.00
GS-7/8	4,819	41.46	6,803	58.54	11,622	100.00
GS-9/10	6,081	38.96	9,529	61.04	15,610	100.00
GS-11	6,851	33.08	13,857	66.92	20,708	100.00
GS-12	8,394	34.20	16,153	65.80	24,547	100.00
GS-13	4,076	27.50	10,745	72.50	14,821	100.00
GS-14	1,077	24.92	3,244	75.08	4,321	100.00
GS-15	245	22.17	860	77.83	1,105	100.00
SES	53	29.94	124	70.06	177	100.00
Total	37,383	36.79	64,235	63.21	101,618	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Other DOD Components

Table 46: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Other DOD Components' Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	2,436	45.93	2,865	54.02	3	0.06	5,304	100.00
GS-6	2,070	42.27	2,827	57.73	-	-	4,897	100.00
GS-7/8	2,953	44.35	3,706	55.65	-	-	6,659	100.00
GS-9/10	1,950	41.16	2,788	58.84	-	-	4,738	100.00
GS-11	4,655	36.29	8,166	63.67	5	0.04	12,826	100.00
GS-12	5,979	33.55	11,838	66.42	5	0.03	17,822	100.00
GS-13	3,827	31.51	8,319	68.49	-	-	12,146	100.00
GS-14	1,590	27.08	4,277	72.84	5	0.09	5,872	100.00
GS-15	652	19.35	2,716	80.59	2	0.06	3,370	100.00
SES	57	11.95	419	87.84	1	0.21	477	100.00
Total	26,169	35.31	47,921	64.66	21	0.03	74,111	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. We use a "-" to indicate null or no value. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

Table 47: Representation of Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Other DOD Components' Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	1,913	47.62	2,083	51.85	21	0.52	4,017	100.00
GS-6	2,070	45.26	2,484	54.31	20	0.44	4,574	100.00
GS-7/8	2,401	43.94	3,052	55.86	11	0.20	5,464	100.00
GS-9/10	1,983	45.59	2,354	54.11	13	0.30	4,350	100.00
GS-11	4,907	39.42	7,516	60.38	25	0.20	12,448	100.00
GS-12	7,143	39.44	10,953	60.47	17	0.09	18,113	100.00
GS-13	4,560	36.34	7,976	63.56	12	0.10	12,548	100.00
GS-14	1,987	32.53	4,112	67.32	9	0.15	6,108	100.00
GS-15	731	24.82	2,209	75.01	5	0.17	2,945	100.00
SES	75	17.61	348	81.69	3	0.70	426	100.00
Total	27,770	39.12	43,087	60.69	136	0.19	70,993	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 48: Representation of Women and Men in the Other DOD Components' Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2012

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	3,608	68.02	1,696	31.98	5,304	100.00
GS-6	3,158	64.49	1,739	35.51	4,897	100.00
GS-7/8	4,085	61.35	2,574	38.65	6,659	100.00
GS-9/10	2,368	49.98	2,370	50.02	4,738	100.00
GS-11	5,942	46.33	6,884	53.67	12,826	100.00
GS-12	7,955	44.64	9,867	55.36	17,822	100.00
GS-13	4,997	41.14	7,149	58.86	12,146	100.00

Appendix VII: Representation of DOD Civilian Employees in the General Schedule and Senior Executive Service

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-14	2,152	36.65	3,720	63.35	5,872	100.00
GS-15	1,041	30.89	2,329	69.11	3,370	100.00
SES	125	26.21	352	73.79	477	100.00
Total	35,431	47.81	38,680	52.19	74,111	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Table 49: Representation of Women and Men in the Other DOD Components' Civilian Workforce by General Schedule (GS) Grade and the Senior Executive Service (SES), Fiscal Year 2021

	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
GS-1 through 5	2,939	73.16	1,078	26.84	4,017	100.00
GS-6	3,018	65.98	1,556	34.02	4,574	100.00
GS-7/8	3,236	59.22	2,228	40.78	5,464	100.00
GS-9/10	2,147	49.36	2,203	50.64	4,350	100.00
GS-11	5,371	43.15	7,077	56.85	12,448	100.00
GS-12	8,184	45.18	9,929	54.82	18,113	100.00
GS-13	5,449	43.43	7,099	56.57	12,548	100.00
GS-14	2,453	40.16	3,655	59.84	6,108	100.00
GS-15	998	33.89	1,947	66.11	2,945	100.00
SES	143	33.57	283	66.43	426	100.00
Total	33,938	47.80	37,055	52.20	70,993	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Our analysis does not include the small number of DOD employees in GS-equivalent pay-plan codes (e.g., GM, GL, GP, and GR) or other senior-level positions such as political appointees or senior-level technical positions. DOD employees from other pay-plan codes, as well as applicants external to DOD can be accepted into the SES or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Representation of Historically Disadvantaged Racial or Ethnic Groups at DOD Generally Greatest in Lower Half of the United States and for Women Varied

We analyzed Department of Defense (DOD) federal civilian workforce data based on the location of employees' duty stations to determine percentages of women and employees from historically disadvantaged racial or ethnic groups (historically disadvantaged groups) in each U.S. state and in the District of Columbia in fiscal year 2021, the most recent data available for this review.¹ In general, we found representation of DOD employees from historically disadvantaged groups was greater in the lower half of the United States (compared with the upper half) and that geographic representation of women varied.²

Representation of Historically Disadvantaged Groups at DOD Generally Greatest in Lower Half of the United States

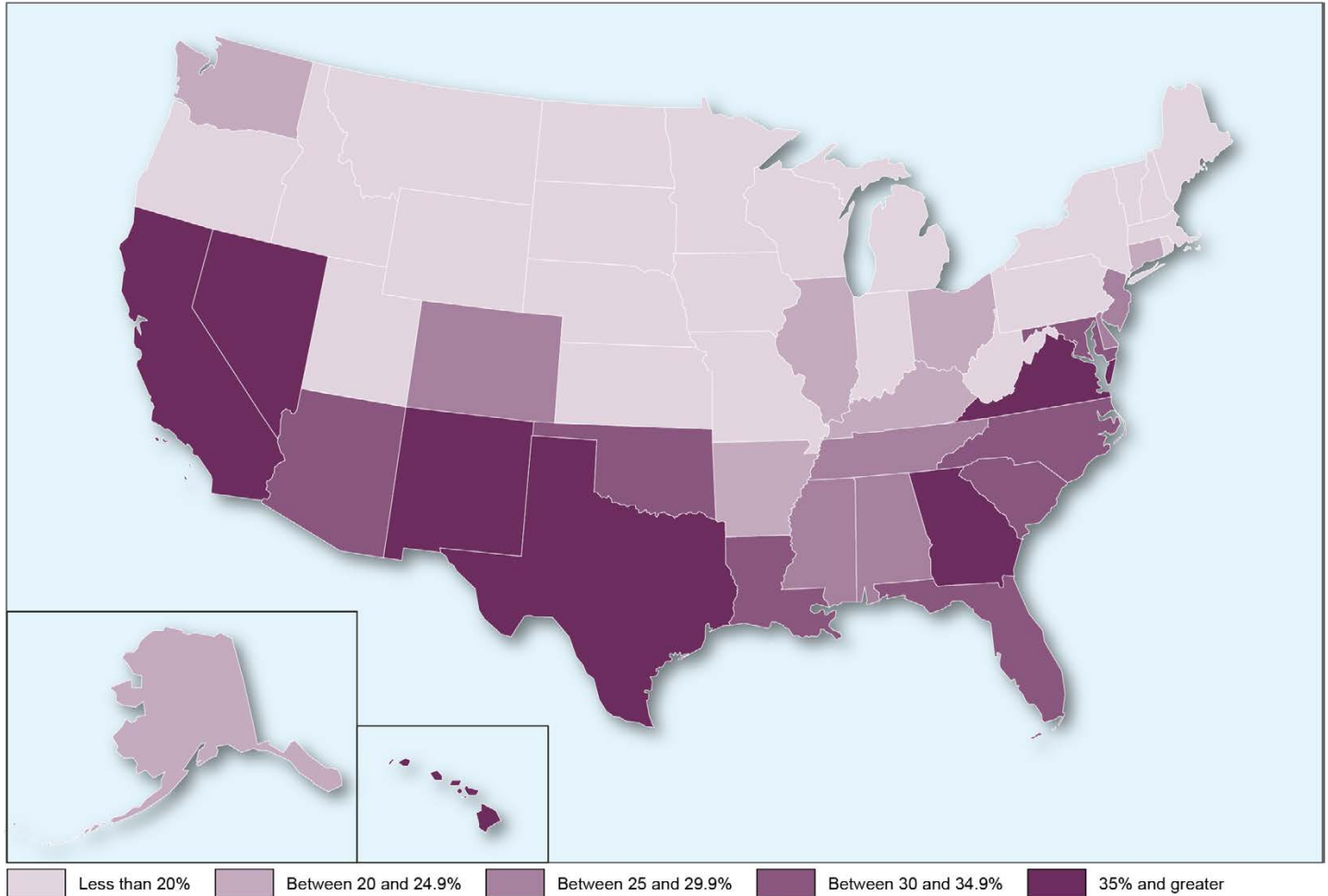
We found more representation of employees from historically disadvantaged groups in duty stations located in the lower half of the United States and, in general, less representation in northern states in fiscal year 2021, according to DOD data we analyzed. Figure 24 and table 50 depict this representation and other details by state and the District of Columbia in fiscal year 2021.

¹DOD consists of dozens of components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency.

²Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Native Alaskan, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 24: Representation of DOD Civilian Employees from Historically Disadvantaged Racial or Ethnic Groups by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

Table 50: Representation of DOD Civilian Employees by Race or Ethnicity, and by State and the District of Columbia, Fiscal Year 2021

State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
VA	38,503	40.18	56,869	59.34	461	0.48	95,833	100.00
CA	28,308	44.76	33,996	53.75	947	1.50	63,251	100.00
TX	22,457	46.98	25,079	52.47	261	0.55	47,797	100.00
MD	15,264	32.67	31,321	67.04	138	0.30	46,723	100.00
GA	13,071	38.87	20,427	60.74	133	0.40	33,631	100.00
FL	10,220	30.93	22,541	68.21	285	0.86	33,046	100.00
WA	6,914	23.01	23,000	76.53	138	0.46	30,052	100.00
OH	5,321	20.11	20,978	79.30	156	0.59	26,455	100.00
OK	7,621	30.02	17,530	69.06	234	0.92	25,385	100.00
PA	4,424	17.52	20,769	82.23	65	0.26	25,258	100.00
AL	7,113	29.94	16,604	69.90	38	0.16	23,755	100.00
HI	17,217	74.61	5,749	24.91	110	0.48	23,076	100.00
NC	6,681	32.15	14,041	67.57	59	0.28	20,781	100.00
UT	2,187	13.88	13,386	84.93	189	1.20	15,762	100.00
DC	5,191	39.19	7,998	60.38	57	0.43	13,246	100.00
IL	2,440	20.02	9,695	79.55	52	0.43	12,187	100.00
IN	2,127	18.33	9,453	81.47	23	0.20	11,603	100.00
CO	3,016	26.68	8,184	72.41	103	0.91	11,303	100.00
NY	1,946	17.92	8,884	81.80	30	0.28	10,860	100.00
SC	3,657	34.89	6,768	64.57	57	0.54	10,482	100.00
NJ	2,783	27.03	7,461	72.46	53	0.51	10,297	100.00
MI	1,774	18.87	7,622	81.09	3	0.03	9,399	100.00
KY	2,027	22.44	7,005	77.54	2	0.02	9,034	100.00
MS	2,314	25.83	6,581	73.47	62	0.69	8,957	100.00
AZ	2,829	31.92	5,964	67.28	71	0.80	8,864	100.00
ME	461	5.33	8,154	94.35	27	0.31	8,642	100.00
MO	1,168	15.60	6,310	84.27	10	0.13	7,488	100.00
KS	1,317	19.68	5,358	80.08	16	0.24	6,691	100.00
NM	2,636	40.70	3,780	58.37	60	0.93	6,476	100.00
MA	974	15.21	5,345	83.46	85	1.33	6,404	100.00
LA	1,888	31.74	4,028	67.72	32	0.54	5,948	100.00
TN	1,580	27.57	4,138	72.22	12	0.21	5,730	100.00
RI	752	14.89	4,255	84.27	42	0.83	5,049	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
AK	1,139	22.97	3,762	75.88	57	1.15	4,958	100.00
NE	535	13.66	3,350	85.52	32	0.82	3,917	100.00
AR	761	22.32	2,636	77.32	12	0.35	3,409	100.00
NV	1,011	37.89	1,610	60.34	47	1.76	2,668	100.00
OR	312	11.93	2,302	88.00	2	0.08	2,616	100.00
CT	510	20.47	1,969	79.04	12	0.48	2,491	100.00
WI	245	10.62	2,058	89.25	3	0.13	2,306	100.00
MN	270	11.88	1,992	87.68	10	0.44	2,272	100.00
WV	72	4.44	1,544	95.31	4	0.25	1,620	100.00
ND	167	10.42	1,422	88.71	14	0.87	1,603	100.00
ID	184	12.82	1,236	86.13	15	1.05	1,435	100.00
IA	99	7.28	1,260	92.65	1	0.07	1,360	100.00
DE	386	29.29	915	69.42	17	1.29	1,318	100.00
MT	113	8.94	1,141	90.27	10	0.79	1,264	100.00
SD	97	7.93	1,116	91.25	10	0.82	1,223	100.00
WY	148	14.19	883	84.66	12	1.15	1,043	100.00
NH	71	8.09	799	91.00	8	0.91	878	100.00
VT	28	6.54	397	92.76	3	0.70	428	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

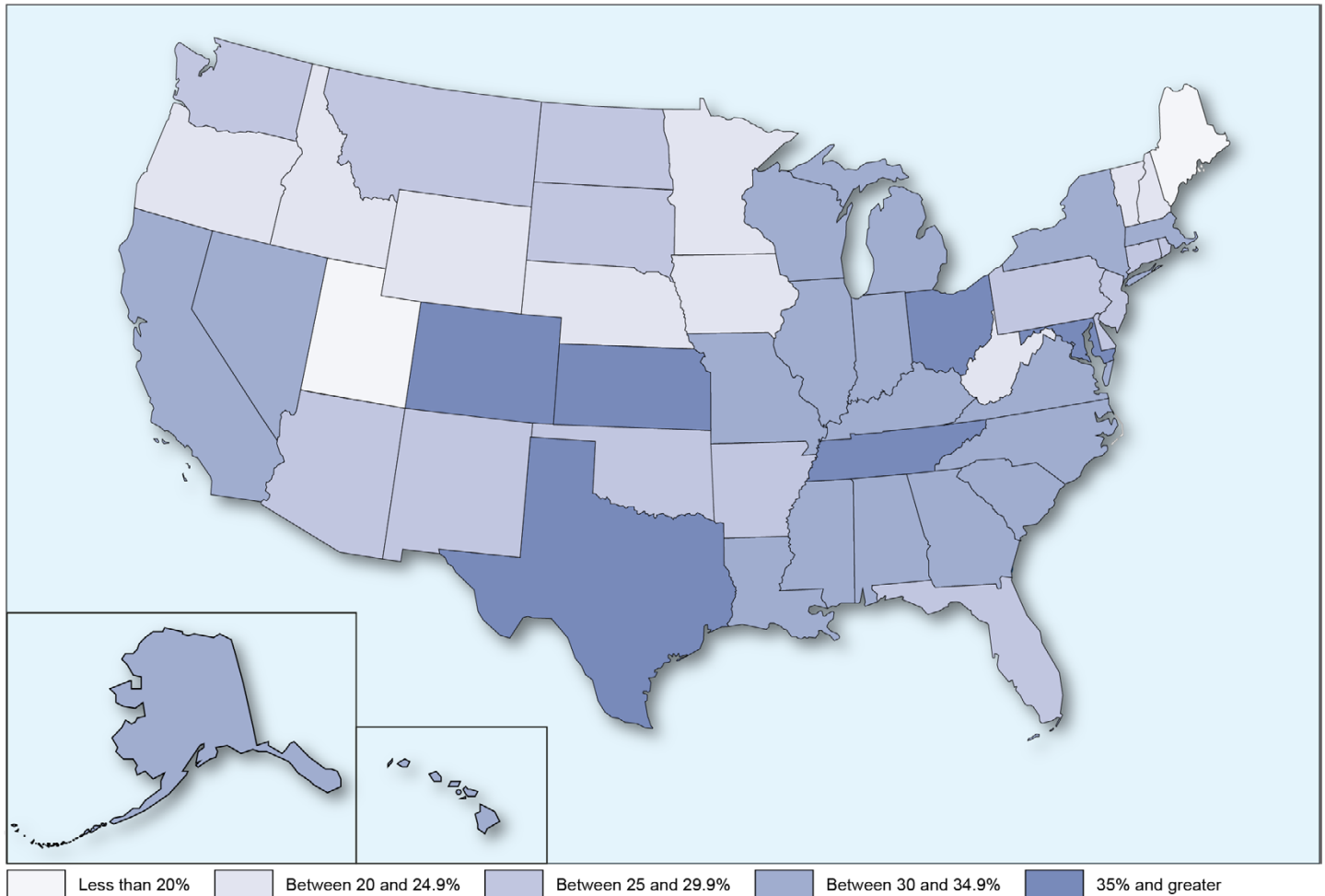
Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Representation of Women at DOD Varied by U.S. State or the District of Columbia

Representation of women at DOD varied by state or the District of Columbia in fiscal year 2021, according to the DOD data we analyzed. For example, representation of women across DOD was lowest in Maine and Nevada, and highest in Colorado, Kansas, Maryland, Ohio, Tennessee, and Texas. Figure 25 and table 51 depict representation of women and other details by state and the District of Columbia in fiscal year 2021.

Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021

Figure 25: Representation of Women in the DOD Civilian Workforce by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Table 51. Representation of DOD Civilian Employees by Gender, and by State and the District of Columbia, Fiscal Year 2021

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
VA	33,025	34.46	62,808	65.54	95,833	100.00
CA	19,095	30.19	44,156	69.81	63,251	100.00
TX	17,179	35.94	30,618	64.06	47,797	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
MD	18,391	39.36	28,332	60.64	46,723	100.00
GA	11,247	33.44	22,384	66.56	33,631	100.00
FL	9,477	28.68	23,569	71.32	33,046	100.00
WA	8,369	27.85	21,683	72.15	30,052	100.00
OH	9,937	37.56	16,518	62.44	26,455	100.00
OK	6,364	25.07	19,021	74.93	25,385	100.00
PA	7,560	29.93	17,698	70.07	25,258	100.00
AL	8,029	33.80	15,726	66.20	23,755	100.00
HI	6,929	30.03	16,147	69.97	23,076	100.00
NC	7,204	34.67	13,577	65.33	20,781	100.00
UT	3,114	19.76	12,648	80.24	15,762	100.00
DC	4,814	36.34	8,432	63.66	13,246	100.00
IL	4,142	33.99	8,045	66.01	12,187	100.00
IN	3,962	34.15	7,641	65.85	11,603	100.00
CO	4,088	36.17	7,215	63.83	11,303	100.00
NY	3,773	34.74	7,087	65.26	10,860	100.00
SC	3,558	33.94	6,924	66.06	10,482	100.00
NJ	2,731	26.52	7,566	73.48	10,297	100.00
MI	2,978	31.68	6,421	68.32	9,399	100.00
KY	2,956	32.72	6,078	67.28	9,034	100.00
MS	2,816	31.44	6,141	68.56	8,957	100.00
AZ	2,430	27.41	6,434	72.59	8,864	100.00
ME	1,592	18.42	7,050	81.58	8,642	100.00
MO	2,394	31.97	5,094	68.03	7,488	100.00
KS	2,383	35.62	4,308	64.38	6,691	100.00
NM	1,885	29.11	4,591	70.89	6,476	100.00
MA	2,060	32.17	4,344	67.83	6,404	100.00
LA	1,912	32.15	4,036	67.85	5,948	100.00
TN	2,085	36.39	3,645	63.61	5,730	100.00
RI	1,313	26.01	3,736	73.99	5,049	100.00
AK	1,714	34.57	3,244	65.43	4,958	100.00
NE	958	24.46	2,959	75.54	3,917	100.00
AR	906	26.58	2,503	73.42	3,409	100.00
NV	890	33.36	1,778	66.64	2,668	100.00
OR	642	24.54	1,974	75.46	2,616	100.00
CT	672	26.98	1,819	73.02	2,491	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
WI	697	30.23	1,609	69.77	2,306	100.00
MN	555	24.43	1,717	75.57	2,272	100.00
WV	366	22.59	1,254	77.41	1,620	100.00
ND	479	29.88	1,124	70.12	1,603	100.00
ID	317	22.09	1,118	77.91	1,435	100.00
IA	308	22.65	1,052	77.35	1,360	100.00
DE	376	28.53	942	71.47	1,318	100.00
MT	359	28.40	905	71.60	1,264	100.00
SD	326	26.66	897	73.34	1,223	100.00
WY	258	24.74	785	75.26	1,043	100.00
NH	216	24.60	662	75.40	878	100.00
VT	94	21.96	334	78.04	428	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

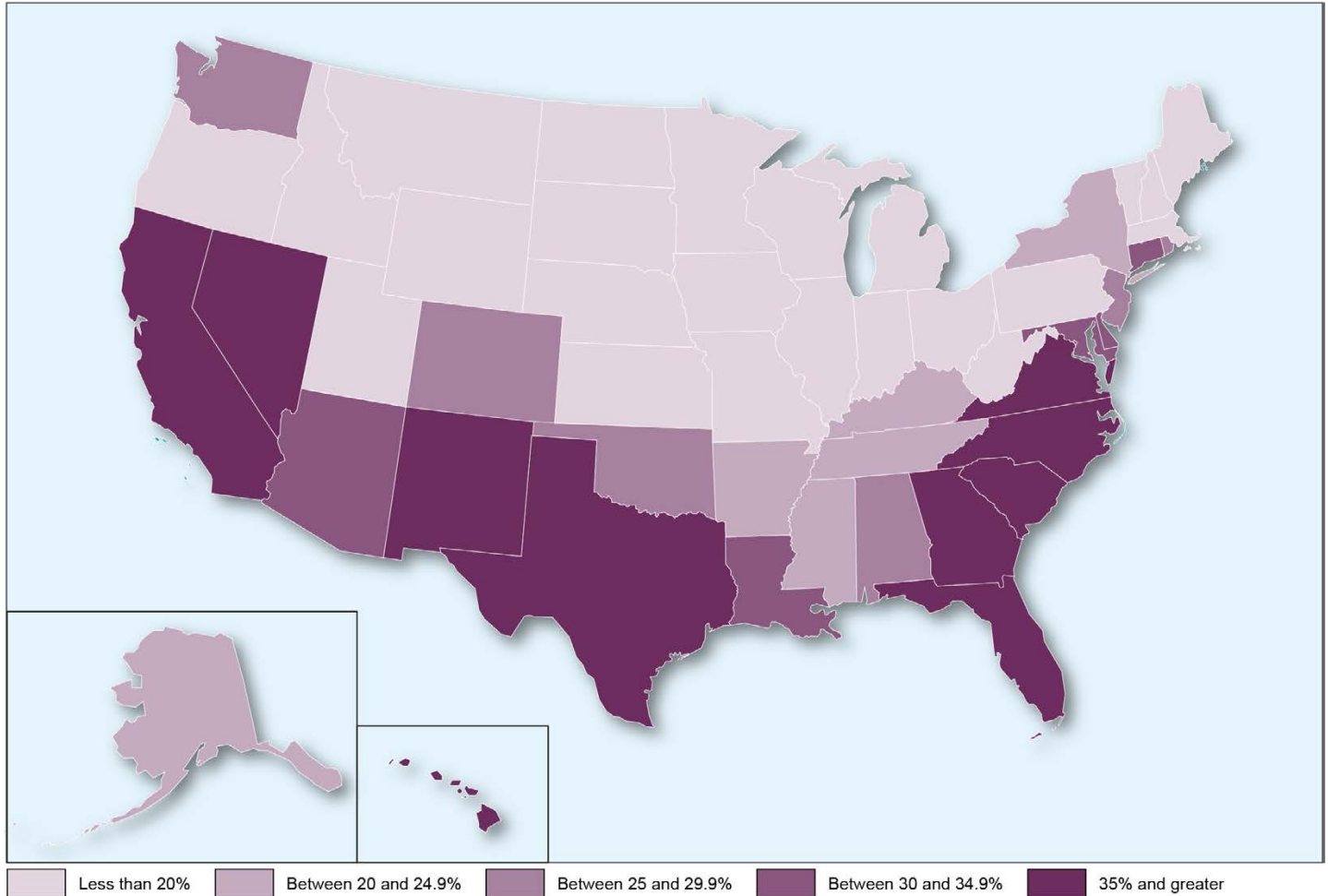
Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

**Representation in the
Military Departments and
Other DOD Components
by Racial or Ethnic Group
and Gender by State and
the District of Columbia**

The figures and tables that follow depict representation of federal civilian employees at the military departments and other DOD components in each U.S. state and the District of Columbia by race or ethnicity or by gender (women and men) in fiscal year 2021.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 26: Representation of Army Civilian Employees from Historically Disadvantaged Racial or Ethnic Groups by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

Table 52: Representation of Army Civilian Employees by Race or Ethnicity, and by State and the District of Columbia, Fiscal Year 2021

State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TX	11,620	47.48	12,851	52.51	1	0.00	24,472	100.00
AL	5,273	29.17	12,805	70.83	0	0.00	18,078	100.00
VA	6,884	39.47	10,557	60.52	2	0.01	17,443	100.00
MD	5,113	30.61	11,587	69.38	1	0.01	16,701	100.00
GA	5,536	45.31	6,681	54.69	0	0.00	12,217	100.00
CA	3,671	40.57	5,371	59.35	7	0.08	9,049	100.00
KY	1,936	22.63	6,618	77.35	2	0.02	8,556	100.00
PA	853	10.32	7,410	89.67	1	0.01	8,264	100.00
NC	2,839	35.92	5,065	64.08	0	0.00	7,904	100.00
WA	2,250	29.49	5,376	70.46	4	0.05	7,630	100.00
MI	1,413	19.57	5,805	80.40	2	0.03	7,220	100.00
IL	1,276	18.02	5,794	81.81	12	0.17	7,082	100.00
NY	1,397	20.03	5,576	79.97	0	0.00	6,973	100.00
HI	4,394	68.83	1,990	31.17	0	0.00	6,384	100.00
KS	1,104	19.87	4,453	80.13	0	0.00	5,557	100.00
OK	1,527	27.59	4,006	72.38	2	0.04	5,535	100.00
MO	826	14.99	4,685	85.01	0	0.00	5,511	100.00
NJ	1,566	28.88	3,854	71.07	3	0.06	5,423	100.00
CO	1,209	28.91	2,971	71.04	2	0.05	4,182	100.00
FL	1,569	38.47	2,510	61.53	0	0.00	4,079	100.00
AZ	1,151	30.04	2,679	69.93	1	0.03	3,831	100.00
MS	901	24.36	2,789	75.42	8	0.22	3,698	100.00
SC	1,612	46.02	1,890	53.95	1	0.03	3,503	100.00
LA	1,023	30.38	2,341	69.53	3	0.09	3,367	100.00
TN	783	24.28	2,441	75.69	1	0.03	3,225	100.00
AK	501	21.41	1,837	78.50	2	0.09	2,340	100.00
AR	539	23.39	1,761	76.43	4	0.17	2,304	100.00
NM	1,179	51.51	1,110	48.49	0	0.00	2,289	100.00
OR	273	12.45	1,920	87.55	0	0.00	2,193	100.00
MA	293	13.47	1,879	86.35	4	0.18	2,176	100.00
IN	248	12.22	1,780	87.73	1	0.05	2,029	100.00
UT	229	11.81	1,637	84.42	73	3.76	1,939	100.00
WI	184	10.15	1,628	89.85	0	0.00	1,812	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

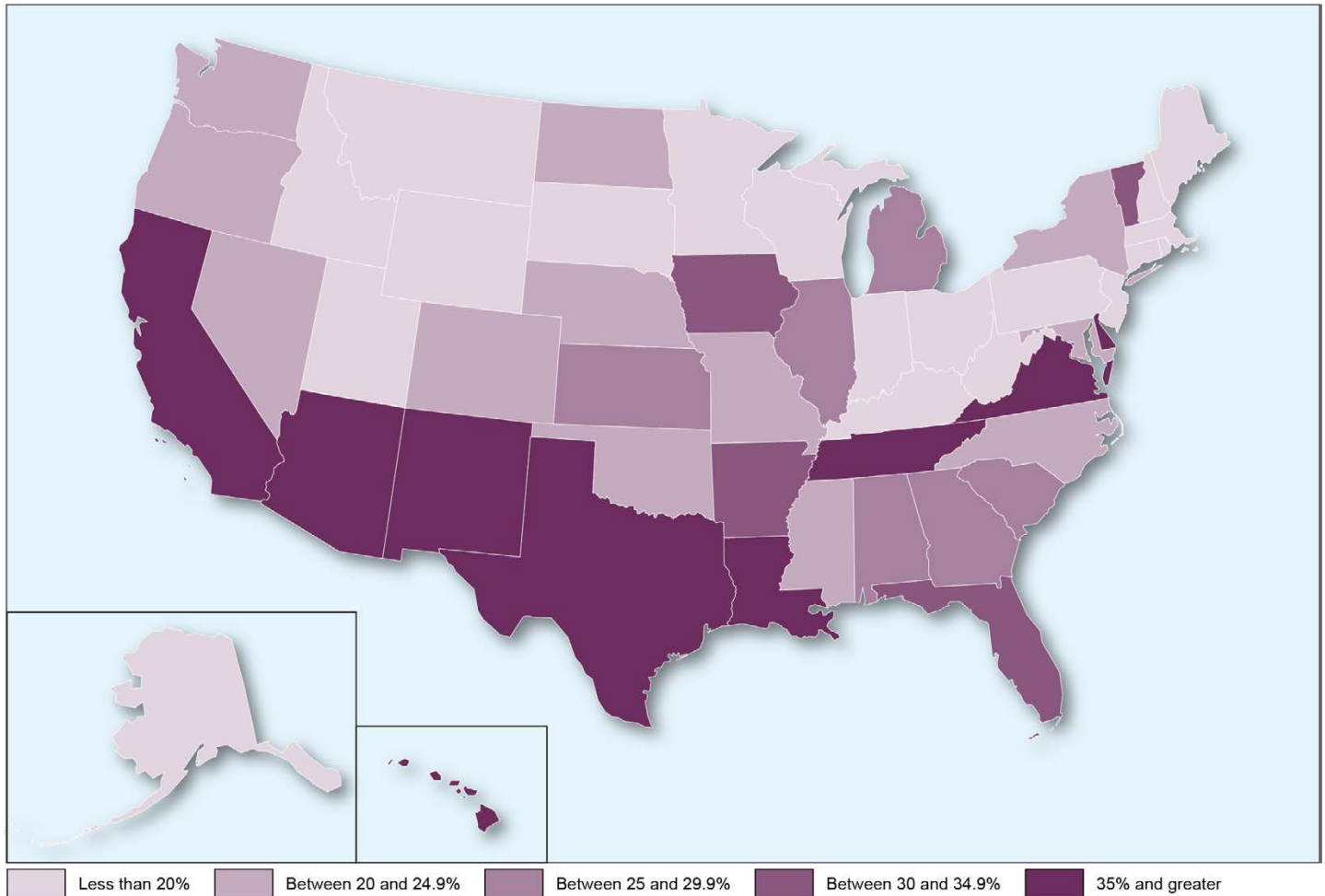
State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
OH	199	12.74	1,362	87.20	1	0.06	1,562	100.00
MN	184	13.22	1,205	86.57	3	0.22	1,392	100.00
NE	125	9.89	1,138	90.03	1	0.08	1,264	100.00
WV	52	4.19	1,186	95.65	2	0.16	1,240	100.00
DC	551	45.84	651	54.16	0	0.00	1,202	100.00
IA	71	7.20	914	92.70	1	0.10	986	100.00
ID	78	11.59	595	88.41	0	0.00	673	100.00
CT	182	33.64	359	66.36	0	0.00	541	100.00
SD	31	6.20	469	93.80	0	0.00	500	100.00
MT	28	5.66	465	93.94	2	0.40	495	100.00
ND	20	4.18	458	95.82	0	0.00	478	100.00
NV	176	37.53	292	62.26	1	0.21	469	100.00
NH	27	6.11	413	93.44	2	0.45	442	100.00
ME	14	4.86	274	95.14	0	0.00	288	100.00
WY	21	8.20	235	91.80	0	0.00	256	100.00
DE	70	30.17	161	69.40	1	0.43	232	100.00
VT	14	6.28	208	93.27	1	0.45	223	100.00
RI	56	26.54	155	73.46	0	0.00	211	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 27: Representation of Navy Civilian Employees from Historically Disadvantaged Racial or Ethnic Groups by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

Table 53: Representation of Navy Civilian Employees by Race or Ethnicity, and by State and the District of Columbia, Fiscal Year 2021

State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
VA	18,731	38.53	29,570	60.83	311	0.64	48,612	100.00
CA	17,623	44.90	20,897	53.24	731	1.86	39,251	100.00
WA	4,007	20.00	15,911	79.43	113	0.56	20,031	100.00
MD	4,397	24.14	13,734	75.42	80	0.44	18,211	100.00
FL	4,441	31.81	9,419	67.47	100	0.72	13,960	100.00
HI	10,550	78.18	2,861	21.20	83	0.62	13,494	100.00
DC	3,917	37.06	6,608	62.53	43	0.41	10,568	100.00
NC	1,750	22.28	6,065	77.22	39	0.50	7,854	100.00
PA	1,508	19.41	6,223	80.08	40	0.51	7,771	100.00
ME	397	5.35	6,994	94.30	26	0.35	7,417	100.00
SC	1,241	26.86	3,356	72.62	24	0.52	4,621	100.00
RI	646	14.03	3,915	85.05	42	0.91	4,603	100.00
IN	417	9.27	4,070	90.52	9	0.20	4,496	100.00
GA	1,335	29.71	3,133	69.73	25	0.56	4,493	100.00
MS	604	22.80	2,028	76.56	17	0.64	2,649	100.00
NJ	462	18.58	2,008	80.74	17	0.68	2,487	100.00
TX	594	38.27	926	59.66	32	2.06	1,552	100.00
TN	609	43.88	770	55.48	9	0.65	1,388	100.00
CT	161	12.95	1,072	86.24	10	0.80	1,243	100.00
IL	295	28.12	748	71.31	6	0.57	1,049	100.00
LA	347	40.82	497	58.47	6	0.71	850	100.00
AZ	252	39.19	373	58.01	18	2.80	643	100.00
NV	65	20.97	241	77.74	4	1.29	310	100.00
MO	43	23.24	141	76.22	1	0.54	185	100.00
OK	39	23.08	127	75.15	3	1.78	169	100.00
MA	24	15.29	131	83.44	2	1.27	157	100.00
NY	32	22.54	109	76.76	1	0.70	142	100.00
NM	58	42.34	75	54.74	4	2.92	137	100.00
OH	25	18.38	111	81.62	0	0.00	136	100.00
CO	30	23.44	97	75.78	1	0.78	128	100.00
AL	32	26.02	91	73.98	0	0.00	123	100.00
WI	15	18.07	67	80.72	1	1.20	83	100.00
ID	10	13.51	63	85.14	1	1.35	74	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

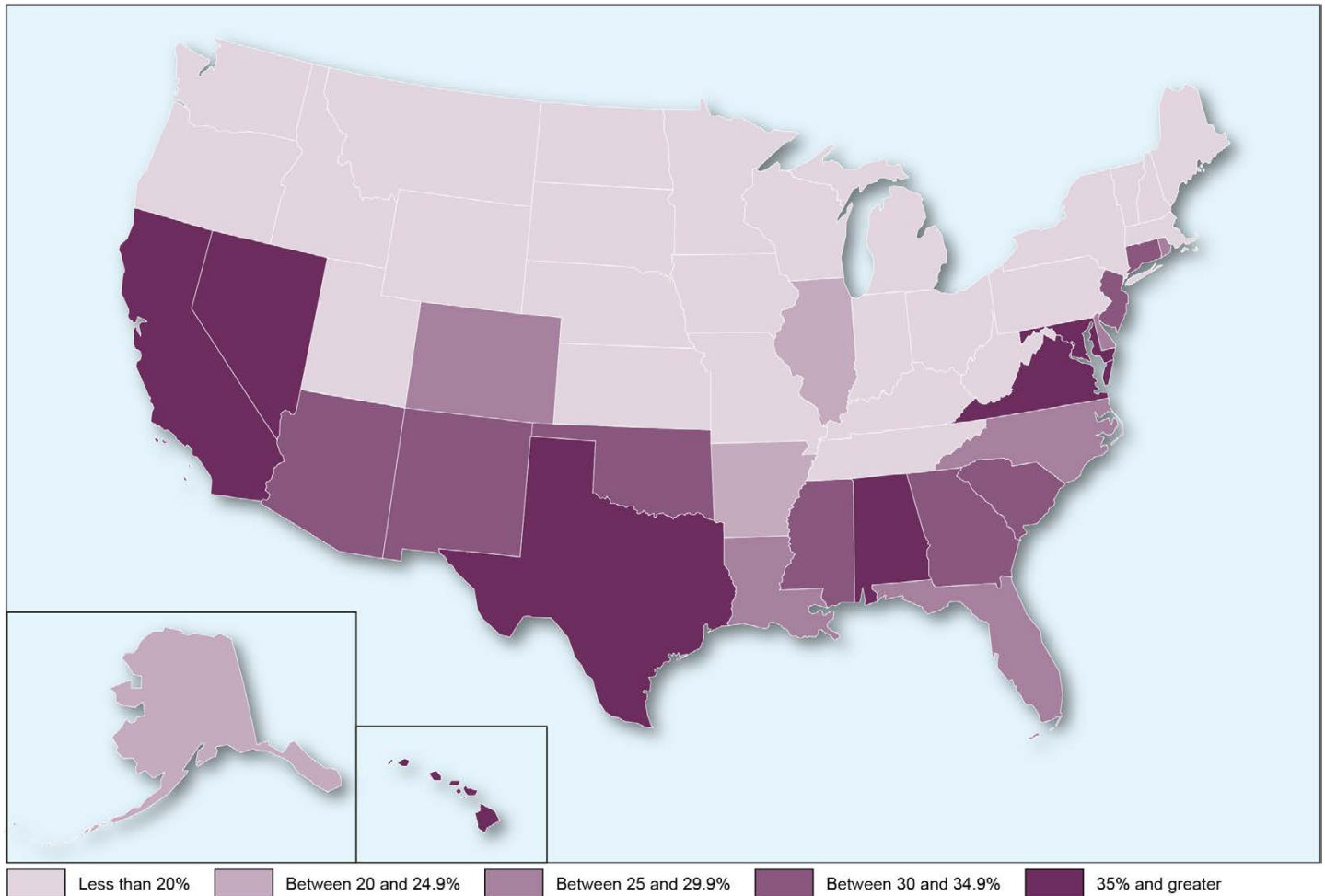
State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
UT	10	15.63	53	82.81	1	1.56	64	100.00
MI	12	27.27	32	72.73	0	0.00	44	100.00
NE	9	24.32	28	75.68	0	0.00	37	100.00
MN	4	13.33	26	86.67	0	0.00	30	100.00
OR	6	21.43	22	78.57	0	0.00	28	100.00
KY	0	0.00	28	100.00	0	0.00	28	100.00
NH	3	16.67	15	83.33	0	0.00	18	100.00
AR	3	30.00	7	70.00	0	0.00	10	100.00
IA	3	30.00	7	70.00	0	0.00	10	100.00
KS	2	25.00	6	75.00	0	0.00	8	100.00
AK	1	12.50	7	87.50	0	0.00	8	100.00
WV	0	0.00	7	100.00	0	0.00	7	100.00
MT	1	16.67	5	83.33	0	0.00	6	100.00
DE	3	60.00	2	40.00	0	0.00	5	100.00
ND	1	20.00	4	80.00	0	0.00	5	100.00
SD	0	0.00	3	100.00	0	0.00	3	100.00
VT	1	33.33	2	66.67	0	0.00	3	100.00
WY	0	0.00	2	100.00	0	0.00	2	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 28: Representation of Air Force Civilian Employees from Historically Disadvantaged Racial or Ethnic Groups by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

Table 54: Representation of Air Force Civilian Employees by Race or Ethnicity, and by State or the District of Columbia, Fiscal Year 2021

State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
OK	5,490	30.49	12,288	68.24	229	1.27	18,007	100.00
TX	8,275	47.07	9,081	51.65	226	1.29	17,582	100.00
OH	2,453	15.64	13,089	83.46	141	0.90	15,683	100.00
GA	5,108	33.92	9,849	65.39	104	0.69	15,061	100.00
FL	3,511	26.73	9,442	71.89	181	1.38	13,134	100.00
UT	1,745	13.96	10,641	85.16	110	0.88	12,496	100.00
CA	4,284	42.90	5,499	55.06	204	2.04	9,987	100.00
VA	2,331	36.25	4,000	62.21	99	1.54	6,430	100.00
CO	1,492	25.62	4,232	72.66	100	1.72	5,824	100.00
NM	1,270	33.85	2,426	64.66	56	1.49	3,752	100.00
AZ	1,099	32.30	2,252	66.18	52	1.53	3,403	100.00
MA	520	15.61	2,733	82.02	79	2.37	3,332	100.00
MD	1,424	47.04	1,561	51.57	42	1.39	3,027	100.00
IL	592	20.39	2,280	78.51	32	1.10	2,904	100.00
NE	389	15.29	2,124	83.49	31	1.22	2,544	100.00
MS	745	30.42	1,667	68.07	37	1.51	2,449	100.00
AK	582	23.83	1,806	73.96	54	2.21	2,442	100.00
AL	821	36.80	1,377	61.72	33	1.48	2,231	100.00
NY	246	12.21	1,745	86.64	23	1.14	2,014	100.00
SC	673	33.45	1,307	64.96	32	1.59	2,012	100.00
NJ	625	32.38	1,272	65.91	33	1.71	1,930	100.00
HI	1,323	72.30	486	26.56	21	1.15	1,830	100.00
NV	727	40.75	1,017	57.01	40	2.24	1,784	100.00
LA	453	28.63	1,106	69.91	23	1.45	1,582	100.00
WA	264	19.31	1,085	79.37	18	1.32	1,367	100.00
NC	329	27.81	839	70.92	15	1.27	1,183	100.00
MO	137	11.71	1,024	87.52	9	0.77	1,170	100.00
ND	136	12.89	905	85.78	14	1.33	1,055	100.00
AR	208	20.17	815	79.05	8	0.78	1,031	100.00
DE	290	28.97	695	69.43	16	1.60	1,001	100.00
KS	165	17.57	759	80.83	15	1.60	939	100.00
TN	129	13.80	804	85.99	2	0.21	935	100.00
PA	122	13.23	782	84.82	18	1.95	922	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

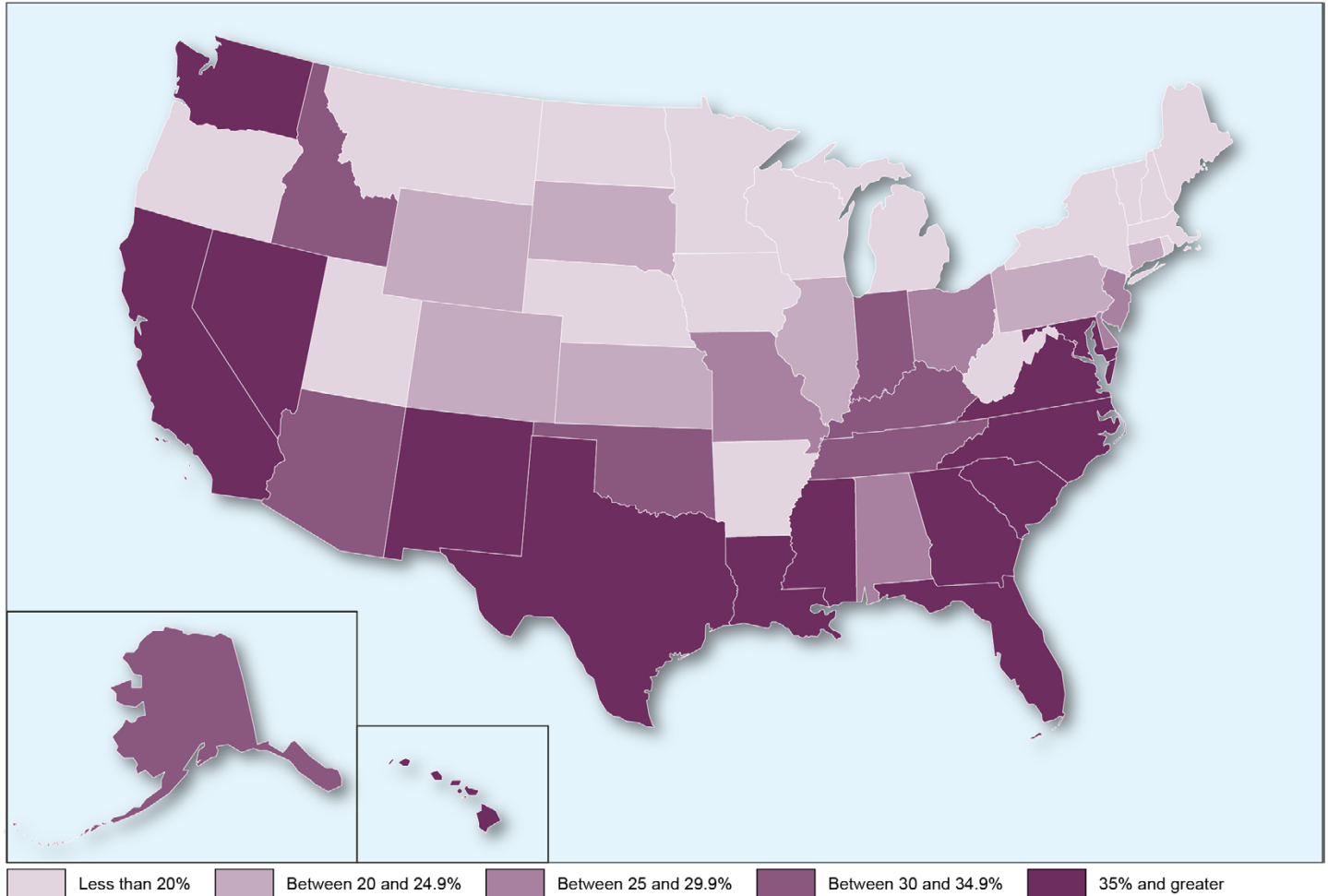
State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
WY	122	16.03	627	82.39	12	1.58	761	100.00
DC	388	51.39	357	47.28	10	1.32	755	100.00
IN	55	7.46	677	91.86	5	0.68	737	100.00
MT	80	10.88	647	88.03	8	1.09	735	100.00
SD	61	8.78	624	89.78	10	1.44	695	100.00
MN	70	10.07	618	88.92	7	1.01	695	100.00
MI	90	13.64	570	86.36	0	0.00	660	100.00
ID	86	13.11	556	84.76	14	2.13	656	100.00
OR	31	8.38	337	91.08	2	0.54	370	100.00
WV	13	3.92	317	95.48	2	0.60	332	100.00
WI	31	10.20	272	89.47	1	0.33	304	100.00
IA	14	4.90	272	95.10	0	0.00	286	100.00
NH	17	6.88	224	90.69	6	2.43	247	100.00
KY	21	9.05	211	90.95	0	0.00	232	100.00
ME	5	2.72	179	97.28	0	0.00	184	100.00
VT	11	6.40	159	92.44	2	1.16	172	100.00
CT	53	32.92	108	67.08	0	0.00	161	100.00
RI	34	24.29	106	75.71	0	0.00	140	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 29: Representation of Other DOD Components' Civilian Employees from Historically Disadvantaged Racial or Ethnic Groups by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

Table 55: Representation of Other DOD Components' Civilian Employees by Race or Ethnicity, and by State or the District of Columbia, Fiscal Year 2021

State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
VA	10,557	45.22	12,742	54.57	49	0.21	23,348	100.00
OH	2,644	29.14	6,416	70.71	14	0.15	9,074	100.00
MD	4,330	49.29	4,439	50.54	15	0.17	8,784	100.00
PA	1,941	23.38	6,354	76.54	6	0.07	8,301	100.00
CA	2,730	55.00	2,229	44.90	5	0.10	4,964	100.00
IN	1,407	32.41	2,926	67.40	8	0.18	4,341	100.00
TX	1,968	46.96	2,221	52.99	2	0.05	4,191	100.00
NC	1,763	45.91	2,072	53.96	5	0.13	3,840	100.00
AL	987	29.70	2,331	70.15	5	0.15	3,323	100.00
FL	699	37.32	1,170	62.47	4	0.21	1,873	100.00
GA	1,092	58.71	764	41.08	4	0.22	1,860	100.00
NY	271	15.66	1,454	84.00	6	0.35	1,731	100.00
OK	565	33.75	1,109	66.25	0	0.00	1,674	100.00
MI	259	17.56	1,215	82.37	1	0.07	1,475	100.00
HI	950	69.44	412	30.12	6	0.44	1,368	100.00
UT	203	16.07	1,055	83.53	5	0.40	1,263	100.00
CO	285	24.38	884	75.62	0	0.00	1,169	100.00
IL	277	24.05	873	75.78	2	0.17	1,152	100.00
WA	393	38.38	628	61.33	3	0.29	1,024	100.00
AZ	327	33.13	660	66.87	0	0.00	987	100.00
ME	45	5.98	707	93.89	1	0.13	753	100.00
MA	137	18.54	602	81.46	0	0.00	739	100.00
DC	335	46.46	382	52.98	4	0.55	721	100.00
MO	162	26.05	460	73.95	0	0.00	622	100.00
CT	114	20.88	430	78.75	2	0.37	546	100.00
NJ	130	28.45	327	71.55	0	0.00	457	100.00
SC	131	37.86	215	62.14	0	0.00	346	100.00
NM	129	43.29	169	56.71	0	0.00	298	100.00
KY	70	32.11	148	67.89	0	0.00	218	100.00
KS	46	24.60	140	74.87	1	0.53	187	100.00
TN	59	32.42	123	67.58	0	0.00	182	100.00
NH	24	14.04	147	85.96	0	0.00	171	100.00
AK	55	32.74	112	66.67	1	0.60	168	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

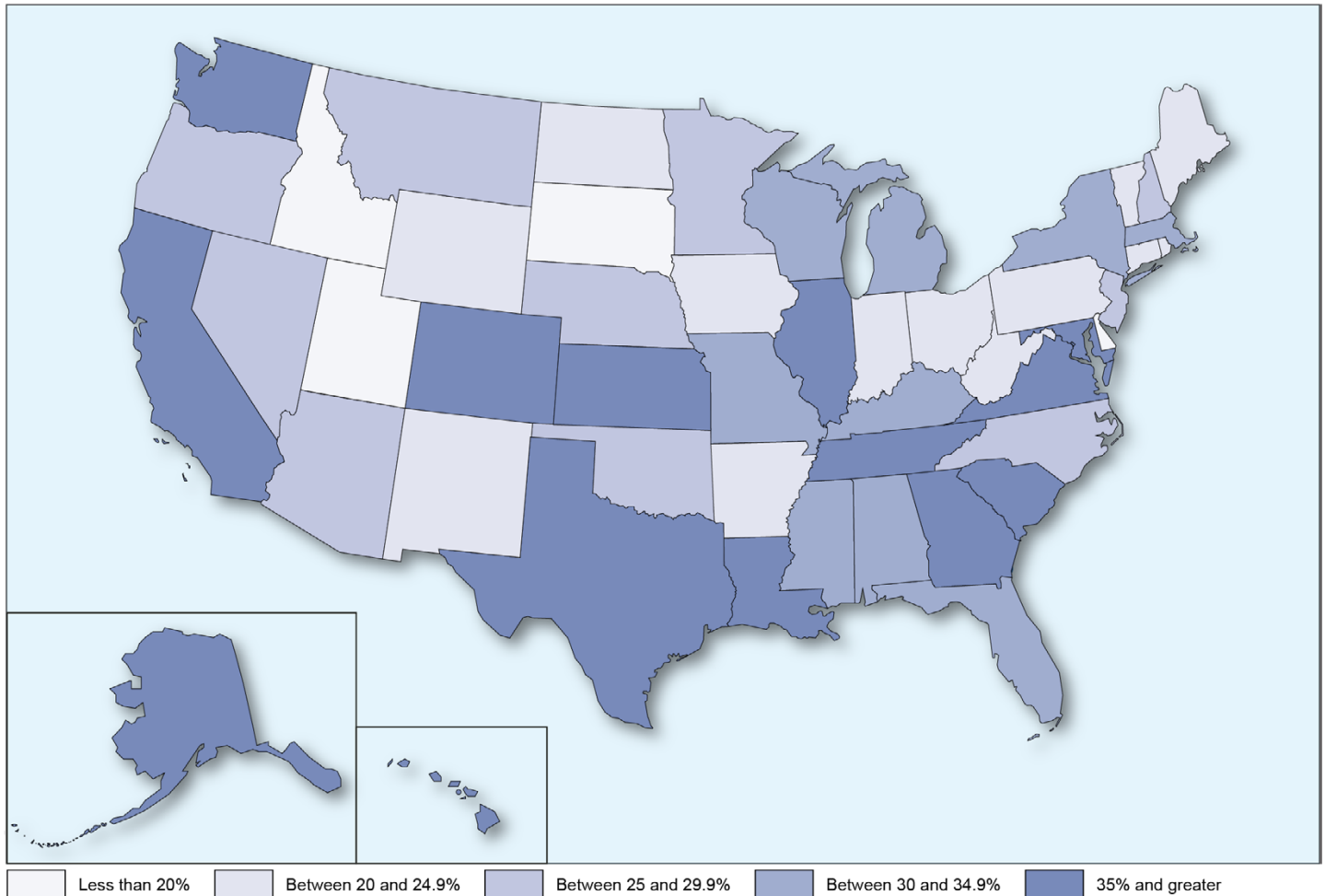
State	Historically disadvantaged racial or ethnic groups		White		Unspecified		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
MS	64	39.75	97	60.25	0	0.00	161	100.00
MN	12	7.74	143	92.26	0	0.00	155	100.00
LA	65	43.62	84	56.38	0	0.00	149	100.00
WI	15	14.02	91	85.05	1	0.93	107	100.00
NV	43	40.95	60	57.14	2	1.90	105	100.00
RI	16	16.84	79	83.16	0	0.00	95	100.00
DE	23	28.75	57	71.25	0	0.00	80	100.00
IA	11	14.10	67	85.90	0	0.00	78	100.00
NE	12	16.67	60	83.33	0	0.00	72	100.00
ND	10	15.38	55	84.62	0	0.00	65	100.00
AR	11	17.19	53	82.81	0	0.00	64	100.00
WV	7	17.07	34	82.93	0	0.00	41	100.00
ID	10	31.25	22	68.75	0	0.00	32	100.00
VT	2	6.67	28	93.33	0	0.00	30	100.00
MT	4	14.29	24	85.71	0	0.00	28	100.00
OR	2	8.00	23	92.00	0	0.00	25	100.00
SD	5	20.00	20	80.00	0	0.00	25	100.00
WY	5	20.83	19	79.17	0	0.00	24	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 30: Representation of Women in the Army Civilian Workforce by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Table 56: Representation of Army Civilian Employees by Gender, and by State and the District of Columbia, Fiscal Year 2021

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
TX	9,490	38.78	14,982	61.22	24,472	100.00
AL	5,935	32.83	12,143	67.17	18,078	100.00
VA	6,579	37.72	10,864	62.28	17,443	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
MD	6,140	36.76	10,561	63.24	16,701	100.00
GA	5,449	44.60	6,768	55.40	12,217	100.00
CA	3,385	37.41	5,664	62.59	9,049	100.00
KY	2,830	33.08	5,726	66.92	8,556	100.00
PA	1,854	22.43	6,410	77.57	8,264	100.00
NC	2,263	28.63	5,641	71.37	7,904	100.00
WA	3,078	40.34	4,552	59.66	7,630	100.00
MI	2,276	31.52	4,944	68.48	7,220	100.00
IL	2,481	35.03	4,601	64.97	7,082	100.00
NY	2,221	31.85	4,752	68.15	6,973	100.00
HI	2,778	43.52	3,606	56.48	6,384	100.00
KS	2,021	36.37	3,536	63.63	5,557	100.00
OK	1,654	29.88	3,881	70.12	5,535	100.00
MO	1,803	32.72	3,708	67.28	5,511	100.00
NJ	1,403	25.87	4,020	74.13	5,423	100.00
CO	1,709	40.87	2,473	59.13	4,182	100.00
FL	1,302	31.92	2,777	68.08	4,079	100.00
AZ	1,149	29.99	2,682	70.01	3,831	100.00
MS	1,114	30.12	2,584	69.88	3,698	100.00
SC	1,358	38.77	2,145	61.23	3,503	100.00
LA	1,221	36.26	2,146	63.74	3,367	100.00
TN	1,208	37.46	2,017	62.54	3,225	100.00
AK	832	35.56	1,508	64.44	2,340	100.00
AR	570	24.74	1,734	75.26	2,304	100.00
NM	532	23.24	1,757	76.76	2,289	100.00
OR	563	25.67	1,630	74.33	2,193	100.00
MA	698	32.08	1,478	67.92	2,176	100.00
IN	477	23.51	1,552	76.49	2,029	100.00
UT	335	17.28	1,604	82.72	1,939	100.00
WI	570	31.46	1,242	68.54	1,812	100.00
OH	328	21.00	1,234	79.00	1,562	100.00
MN	372	26.72	1,020	73.28	1,392	100.00
NE	354	28.01	910	71.99	1,264	100.00
WV	293	23.63	947	76.37	1,240	100.00
DC	471	39.18	731	60.82	1,202	100.00
IA	202	20.49	784	79.51	986	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

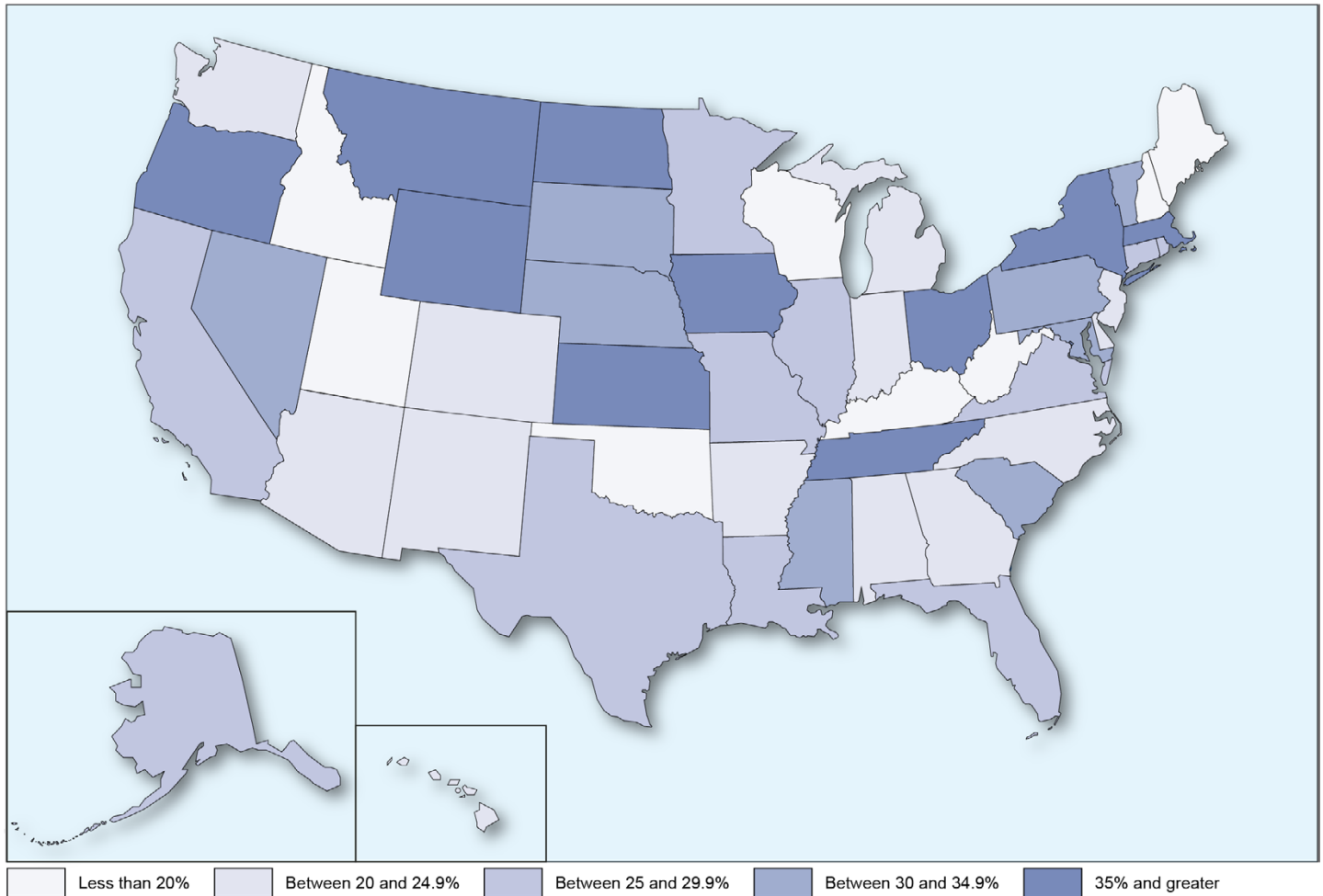
State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
ID	115	17.09	558	82.91	673	100.00
CT	115	21.26	426	78.74	541	100.00
SD	79	15.80	421	84.20	500	100.00
MT	131	26.46	364	73.54	495	100.00
ND	106	22.18	372	77.82	478	100.00
NV	128	27.29	341	72.71	469	100.00
NH	119	26.92	323	73.08	442	100.00
ME	61	21.18	227	78.82	288	100.00
WY	55	21.48	201	78.52	256	100.00
DE	41	17.67	191	82.33	232	100.00
VT	51	22.87	172	77.13	223	100.00
RI	50	23.70	161	76.30	211	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 31: Representation of Women in the Navy Civilian Workforce by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Table 57: Representation of Navy Civilian Employees by Gender, and by State and the District of Columbia, Fiscal Year 2021

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
VA	13,621	28.02	34,991	71.98	48,612	100.00
CA	10,911	27.80	28,340	72.20	39,251	100.00
WA	4,516	22.55	15,515	77.45	20,031	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
MD	6,308	34.64	11,903	65.36	18,211	100.00
FL	3,817	27.34	10,143	72.66	13,960	100.00
HI	3,203	23.74	10,291	76.26	13,494	100.00
DC	3,764	35.62	6,804	64.38	10,568	100.00
NC	1,949	24.82	5,905	75.18	7,854	100.00
PA	2,421	31.15	5,350	68.85	7,771	100.00
ME	1,074	14.48	6,343	85.52	7,417	100.00
SC	1,412	30.56	3,209	69.44	4,621	100.00
RI	1,187	25.79	3,416	74.21	4,603	100.00
IN	1,023	22.75	3,473	77.25	4,496	100.00
GA	997	22.19	3,496	77.81	4,493	100.00
MS	862	32.54	1,787	67.46	2,649	100.00
NJ	577	23.20	1,910	76.80	2,487	100.00
TX	438	28.22	1,114	71.78	1,552	100.00
TN	578	41.64	810	58.36	1,388	100.00
CT	337	27.11	906	72.89	1,243	100.00
IL	308	29.36	741	70.64	1,049	100.00
LA	214	25.18	636	74.82	850	100.00
AZ	148	23.02	495	76.98	643	100.00
NV	96	30.97	214	69.03	310	100.00
MO	47	25.41	138	74.59	185	100.00
OK	24	14.20	145	85.80	169	100.00
MA	57	36.31	100	63.69	157	100.00
NY	51	35.92	91	64.08	142	100.00
NM	32	23.36	105	76.64	137	100.00
OH	65	47.79	71	52.21	136	100.00
CO	29	22.66	99	77.34	128	100.00
AL	29	23.58	94	76.42	123	100.00
WI	12	14.46	71	85.54	83	100.00
ID	14	18.92	60	81.08	74	100.00
UT	11	17.19	53	82.81	64	100.00
MI	10	22.73	34	77.27	44	100.00
NE	12	32.43	25	67.57	37	100.00
MN	8	26.67	22	73.33	30	100.00
OR	11	39.29	17	60.71	28	100.00
KY	4	14.29	24	85.71	28	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

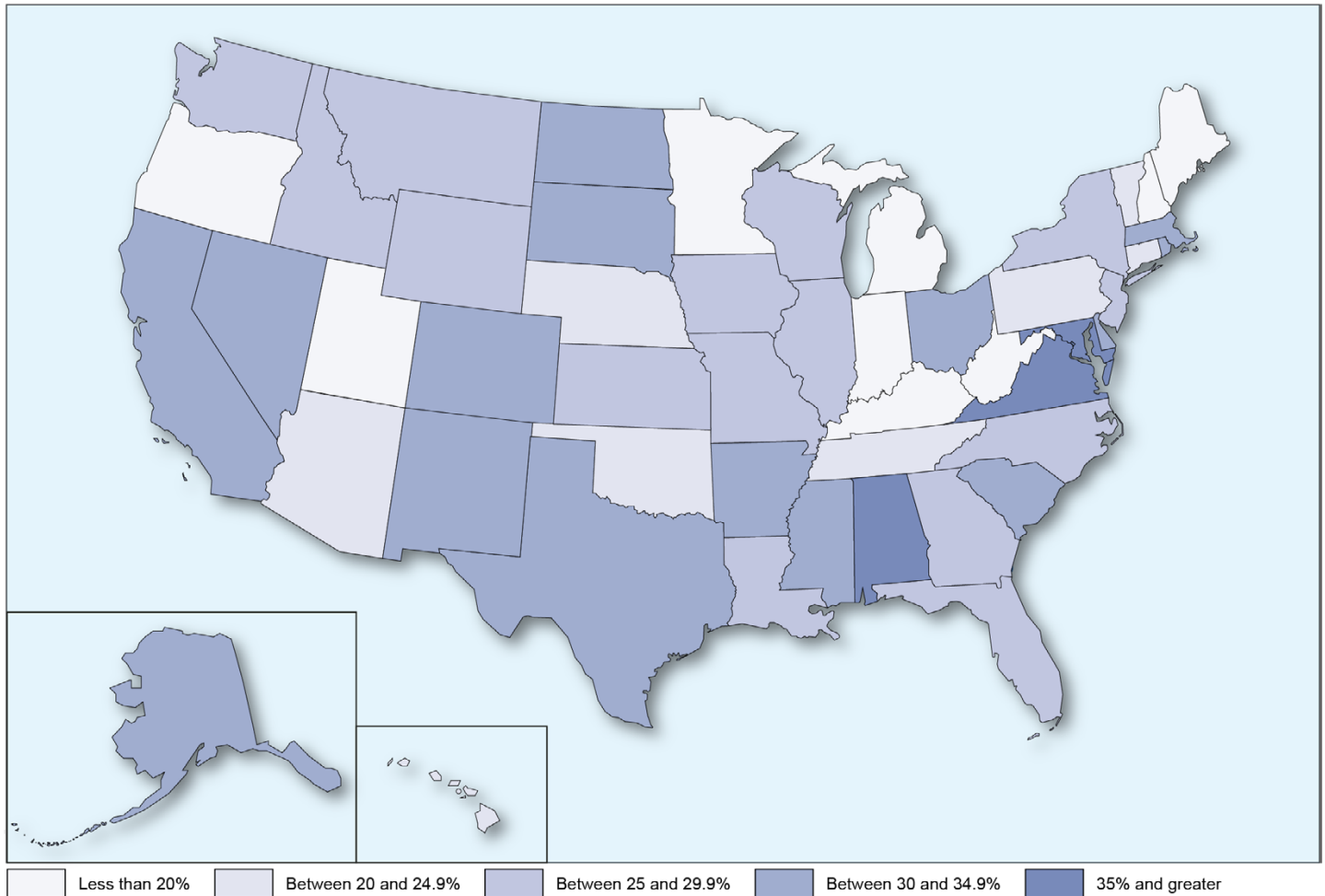
State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
NH	3	16.67	15	83.33	18	100.00
IA	4	40.00	6	60.00	10	100.00
AR	2	20.00	8	80.00	10	100.00
KS	5	62.50	3	37.50	8	100.00
AK	2	25.00	6	75.00	8	100.00
WV	1	14.29	6	85.71	7	100.00
MT	4	66.67	2	33.33	6	100.00
ND	2	40.00	3	60.00	5	100.00
DE	1	20.00	4	80.00	5	100.00
VT	1	33.33	2	66.67	3	100.00
SD	1	33.33	2	66.67	3	100.00
WY	1	50.00	1	50.00	2	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 32: Representation of Women in the Air Force Civilian Workforce by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

Table 58: Representation of Air Force Civilian Employees by Gender, and by State and the District of Columbia, Fiscal Year 2021

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
OK	4,191	23.27	13,816	76.73	18,007	100.00
TX	5,656	32.17	11,926	67.83	17,582	100.00
OH	5,123	32.67	10,560	67.33	15,683	100.00
GA	4,056	26.93	11,005	73.07	15,061	100.00
FL	3,649	27.78	9,485	72.22	13,134	100.00
UT	2,441	19.53	10,055	80.47	12,496	100.00
CA	2,996	30.00	6,991	70.00	9,987	100.00
VA	2,386	37.11	4,044	62.89	6,430	100.00
CO	1,936	33.24	3,888	66.76	5,824	100.00
NM	1,220	32.52	2,532	67.48	3,752	100.00
AZ	787	23.13	2,616	76.87	3,403	100.00
MA	1,030	30.91	2,302	69.09	3,332	100.00
MD	1,194	39.44	1,833	60.56	3,027	100.00
IL	839	28.89	2,065	71.11	2,904	100.00
NE	558	21.93	1,986	78.07	2,544	100.00
MS	771	31.48	1,678	68.52	2,449	100.00
AK	811	33.21	1,631	66.79	2,442	100.00
AL	838	37.56	1,393	62.44	2,231	100.00
NY	517	25.67	1,497	74.33	2,014	100.00
SC	651	32.36	1,361	67.64	2,012	100.00
NJ	567	29.38	1,363	70.62	1,930	100.00
HI	426	23.28	1,404	76.72	1,830	100.00
NV	621	34.81	1,163	65.19	1,784	100.00
LA	418	26.42	1,164	73.58	1,582	100.00
WA	376	27.51	991	72.49	1,367	100.00
NC	339	28.66	844	71.34	1,183	100.00
MO	294	25.13	876	74.87	1,170	100.00
ND	340	32.23	715	67.77	1,055	100.00
AR	314	30.46	717	69.54	1,031	100.00
DE	305	30.47	696	69.53	1,001	100.00
KS	279	29.71	660	70.29	939	100.00
TN	219	23.42	716	76.58	935	100.00
PA	208	22.56	714	77.44	922	100.00
WY	196	25.76	565	74.24	761	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

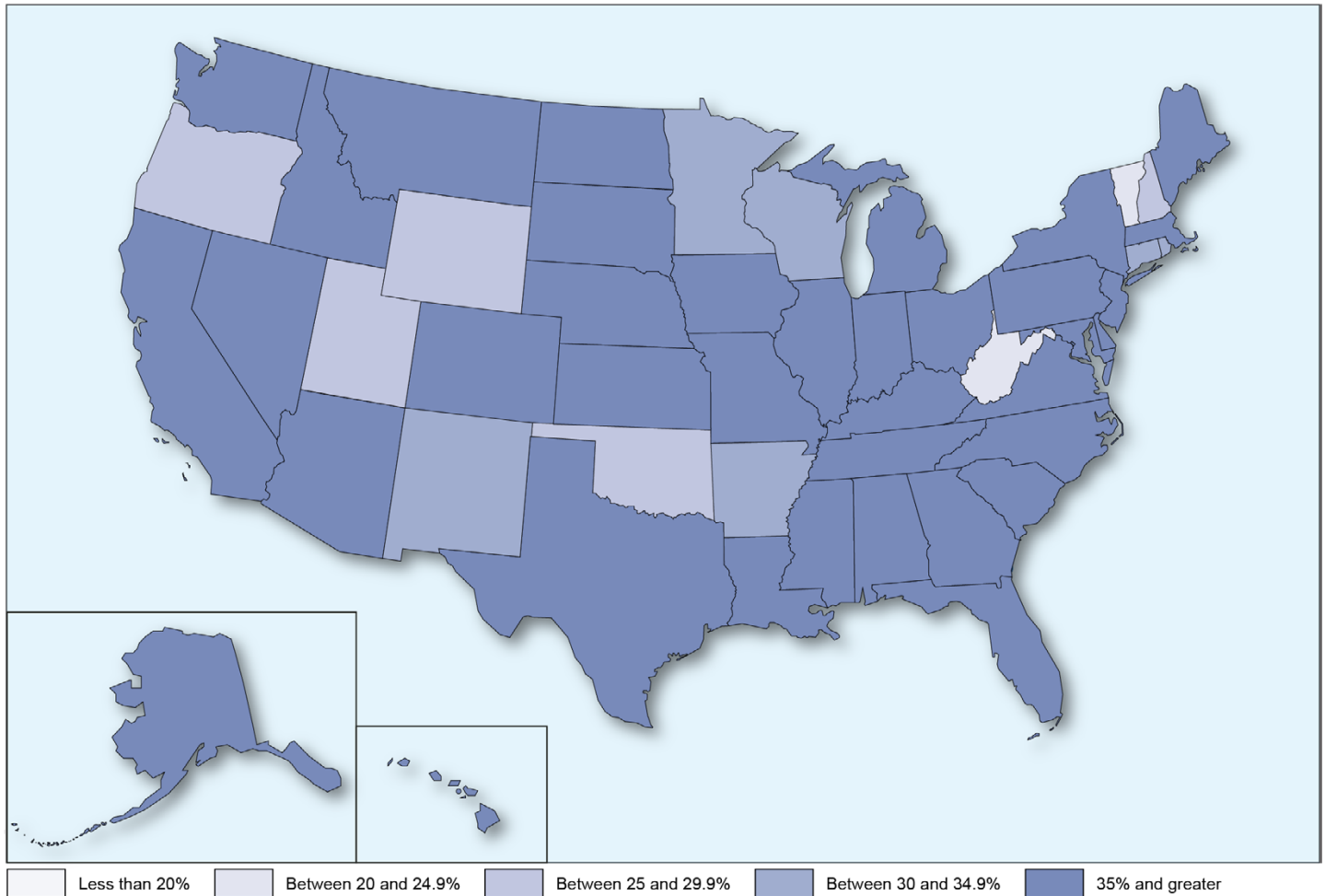
State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
DC	300	39.74	455	60.26	755	100.00
IN	142	19.27	595	80.73	737	100.00
MT	211	28.71	524	71.29	735	100.00
SD	236	33.96	459	66.04	695	100.00
MN	125	17.99	570	82.01	695	100.00
MI	124	18.79	536	81.21	660	100.00
ID	172	26.22	484	73.78	656	100.00
OR	61	16.49	309	83.51	370	100.00
WV	63	18.98	269	81.02	332	100.00
WI	80	26.32	224	73.68	304	100.00
IA	72	25.17	214	74.83	286	100.00
NH	44	17.81	203	82.19	247	100.00
KY	37	15.95	195	84.05	232	100.00
ME	28	15.22	156	84.78	184	100.00
VT	36	20.93	136	79.07	172	100.00
CT	38	23.60	123	76.40	161	100.00
RI	43	30.71	97	69.29	140	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix VIII: DOD Civilian Employee Representation by State and the District of Columbia in Fiscal Year 2021

Figure 33: Representation of Women in the Other DOD Components' Civilian Workforce by State and the District of Columbia, Fiscal Year 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

Table 59: Representation of Other DOD Components' Civilian Employees by Gender, and by State and the District of Columbia, Fiscal Year 2021

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
VA	10,439	44.71	12,909	55.29	23,348	100.00
OH	4,421	48.72	4,653	51.28	9,074	100.00
MD	4,749	54.06	4,035	45.94	8,784	100.00
PA	3,077	37.07	5,224	62.93	8,301	100.00
CA	1,803	36.32	3,161	63.68	4,964	100.00
IN	2,320	53.44	2,021	46.56	4,341	100.00
TX	1,595	38.06	2,596	61.94	4,191	100.00
NC	2,653	69.09	1,187	30.91	3,840	100.00
AL	1,227	36.92	2,096	63.08	3,323	100.00
FL	709	37.85	1,164	62.15	1,873	100.00
GA	745	40.05	1,115	59.95	1,860	100.00
NY	984	56.85	747	43.15	1,731	100.00
OK	495	29.57	1,179	70.43	1,674	100.00
MI	568	38.51	907	61.49	1,475	100.00
HI	522	38.16	846	61.84	1,368	100.00
UT	327	25.89	936	74.11	1,263	100.00
CO	414	35.41	755	64.59	1,169	100.00
IL	514	44.62	638	55.38	1,152	100.00
WA	399	38.96	625	61.04	1,024	100.00
AZ	346	35.06	641	64.94	987	100.00
ME	429	56.97	324	43.03	753	100.00
MA	275	37.21	464	62.79	739	100.00
DC	279	38.70	442	61.30	721	100.00
MO	250	40.19	372	59.81	622	100.00
CT	182	33.33	364	66.67	546	100.00
NJ	184	40.26	273	59.74	457	100.00
SC	137	39.60	209	60.40	346	100.00
NM	101	33.89	197	66.11	298	100.00
KY	85	38.99	133	61.01	218	100.00
KS	78	41.71	109	58.29	187	100.00
TN	80	43.96	102	56.04	182	100.00
NH	50	29.24	121	70.76	171	100.00
AK	69	41.07	99	58.93	168	100.00
MS	69	42.86	92	57.14	161	100.00

**Appendix VIII: DOD Civilian Employee
Representation by State and the District of
Columbia in Fiscal Year 2021**

State	Women		Men		Total	
	Number	Percent	Number	Percent	Number	Percent
MN	50	32.26	105	67.74	155	100.00
LA	59	39.60	90	60.40	149	100.00
WI	35	32.71	72	67.29	107	100.00
NV	45	42.86	60	57.14	105	100.00
RI	33	34.74	62	65.26	95	100.00
DE	29	36.25	51	63.75	80	100.00
IA	30	38.46	48	61.54	78	100.00
NE	34	47.22	38	52.78	72	100.00
ND	31	47.69	34	52.31	65	100.00
AR	20	31.25	44	68.75	64	100.00
WV	9	21.95	32	78.05	41	100.00
ID	16	50.00	16	50.00	32	100.00
VT	6	20.00	24	80.00	30	100.00
MT	13	46.43	15	53.57	28	100.00
SD	10	40.00	15	60.00	25	100.00
OR	7	28.00	18	72.00	25	100.00
WY	6	25.00	18	75.00	24	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by duty station location. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix IX: Representation of Veterans in the DOD Civilian Workforce

We analyzed Department of Defense (DOD) data for fiscal years 2012 and 2021 to examine the size and demographic composition of the DOD federal civilian workforce based on whether or not an employee was identified as a veteran.¹ We analyzed the number and percentage of employees with and without veteran status in the DOD civilian workforce. We also analyzed the demographic composition of these veteran and non-veteran populations to examine the representation of women and employees from historically disadvantaged racial or ethnic groups (historically disadvantaged groups).

We found that the size of the DOD civilian workforce who are veterans grew from 36.60 percent in fiscal year 2012, to 38.91 percent in fiscal year 2021, and generally grew in each of the military departments and across the other DOD components, as shown in table 60.

Table 60: DOD Civilian Workforce by Veteran Status, Fiscal Years 2012 and 2021

		Fiscal year 2012		Fiscal year 2021	
		Number	Percent	Number	Percent
Department of the Army	Veteran	98,478	36.61	98,821	40.10
	Non-veteran	170,513	63.39	147,631	59.90
Department of the Navy	Veteran	69,254	35.36	80,591	36.04
	Non-veteran	126,626	64.64	143,022	63.96
Department of the Air Force	Veteran	68,585	40.75	73,849	42.80
	Non-veteran	99,739	59.25	98,709	57.20
Other DOD components	Veteran	27,818	31.42	33,769	35.49
	Non-veteran	60,719	68.58	61,376	64.51
Total DOD	Veteran	264,135	36.60	287,030	38.91
	Non-veteran	457,597	63.40	450,738	61.09
	Total	721,732	100.00	737,768	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data.

¹We analyzed existing employees in fiscal years 2012 and 2021 who were identified in the data as veterans. Employees who potentially had prior military service but were not identified in the DOD data as veterans are included in the proportion of the non-veteran workforce.

Appendix IX: Representation of Veterans in the DOD Civilian Workforce

We found that women were less represented in the veteran population than they were in the non-veteran population in both fiscal years we analyzed, but historically disadvantaged groups were more represented in the veteran population than in the non-veteran population for both years. Specifically, we found that about 19 percent of the total DOD civilian workforce with veteran status were women in fiscal year 2021, but women were nearly 41 percent of those without veteran status.² Employees from historically disadvantaged groups represented about 35 percent of the total veteran population and about 31 percent of non-veterans.³

Representation of women and historically disadvantaged groups in the veteran population generally increased in fiscal year 2021 compared with 2012 except for the latter in the Department of the Army. The following tables present the number and percentage of women and historically disadvantaged groups in the veteran and non-veteran populations in fiscal years 2012 and 2021.

Table 61: Representation of Women in the DOD Civilian Workforce by Veteran Status, Fiscal Years 2012 and 2021

		Fiscal year 2012		Fiscal year 2021	
		Number	Percent	Number	Percent
Department of the Army	Veteran	19,762	20.07	20,556	20.80
	Non-veteran	76,048	44.60	63,270	42.86
Department of the Navy	Veteran	8,837	12.76	11,924	14.80
	Non-veteran	47,158	37.24	49,466	34.59
Department of the Air Force	Veteran	10,850	15.82	13,336	18.06
	Non-veteran	36,416	36.51	36,452	36.93
Other DOD components	Veteran	5,085	18.28	7,555	22.37
	Non-veteran	33,899	55.83	34,302	55.89
Total women	Veteran	44,534	16.86	53,371	18.59
	Non-veteran	193,521	42.29	183,490	40.71
	Total	238,055	32.98	236,861	32.11

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

²In contrast, men then represented about 81 percent of the veteran population but about 59 percent of non-veterans.

³White employees represented about 65 percent of the veteran population and about 69 percent of non-veterans.

**Appendix IX: Representation of Veterans in the
DOD Civilian Workforce**

Table 62: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups in the DOD Civilian Workforce by Veteran Status, Fiscal Years 2012 and 2021

		Fiscal year 2012		Fiscal year 2021	
		Number	Percent	Number	Percent
Department of the Army	Veteran	37,144	37.72	35,946	36.37
	Non-veteran	48,787	28.61	41,296	27.97
Department of the Navy	Veteran	23,395	33.78	29,324	36.39
	Non-veteran	38,374	30.30	47,306	33.08
Department of the Air Force	Veteran	18,740	27.32	22,444	30.39
	Non-veteran	25,209	25.27	27,828	28.19
Other DOD components	Veteran	10,418	37.45	13,523	40.05
	Non-veteran	21,343	35.15	22,993	37.46
Total employees from historically disadvantaged racial or ethnic groups	Veteran	89,697	33.96	101,237	35.27
	Non-veteran	133,713	29.22	139,423	30.93
	Total	223,410	30.95	240,660	32.62

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

In 2012, the Department of Defense (DOD) identified occupations that it considered to be related to science, technology, engineering, and mathematics (STEM) and organized them into 12 broad STEM occupational categories (see fig. 34). We analyzed DOD data for appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees to identify the number and percentage of women and employees from historically disadvantaged racial or ethnic groups (historically disadvantaged groups) in each of these 12 categories by military department or other DOD component from fiscal year 2012 through fiscal year 2021.¹ We found that representation of women and employees from historically disadvantaged groups in the STEM workforce generally remained relatively low.

¹DOD consists of dozens of components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 34: DOD Science, Technology, Engineering, and Mathematics (STEM) Occupational Categories and Series

Broad Category	Occupational Series		Broad Category	Occupational Series		Broad Category	Occupational Series	
Life Sciences	28	Environmental Protection Specialist	Social sciences	101	Social Science	Life and physical science technicians	404	Biological Science Technician
	401	General Biological Science		110	Economist		458	Soil Conservation Technician
	403	Microbiology		130	Foreign Affairs		462	Forestry Technician
	405	Pharmacology		131	International Relations		1311	Physical Science Technician
	408	Ecology		132	Intelligence		1316	Hydrologic Technician
	410	Zoology		136	International Cooperation		1341	Meteorological Technician
	413	Physiology		150	Geography		1361	Navigational Information
	414	Entomology		180	Psychology		1374	Geodetic Technician
	415	Toxicology		184	Sociology		1382	Food Technician
	430	Botany		190	General Anthropology		1384	Textile Technician
	434	Plant Pathology		193	Archeology		1386	Photographic Technology
	435	Plant Physiology		1730	Education Research		1521	Mathematics Technician
	437	Horticulture		801	General Engineering		1531	Statistical Assistant
	440	Genetics		803	Safety Engineering	Architects	807	Landscape Architecture
	454	Rangeland Management		804	Fire Protection Engineering		808	Architecture
	457	Soil Conservation		806	Materials Engineering		601	General Health Science
	460	Forestry		810	Civil Engineering		602	Medical Officer
	470	Soil Science	819	Environmental Engineering	603		Physicians Assistant	
	471	Agronomy	830	Mechanical Engineering	610		Nurse	
	482	Fishery Biology	840	Nuclear Engineering	630		Dietician & Nutritionist	
486	Wildlife Biology	850	Electrical Engineering	660	Pharmacist			
487	Animal Science	854	Computer Engineering	662	Optometrist			
Computer sciences and information technology	334	Computer Specialist	855	Electronics Engineering	665		Speech Pathology & Audiology	
	1550	Computer Science	858	Biomedical Engineering	667	Orthotist & Prosthetist		
	1670	Equipment Specialist	861	Aerospace Engineering	668	Podiatrist		
	2210	Information Technology Management	871	Naval Architecture	680	Dental Officer		
	Mathematics and related sciences	1510	Actuary	880	Mining Engineering	701	Veterinary Medical Science	
1515		Operations Research	881	Petroleum Engineering	620	Practical Nurse		
1520		Mathematics	890	Agricultural Engineering	644	Medical Technologist		
1529		Mathematical Statistician	893	Chemical Engineering	645	Medical Technician		
1530		Statistician	895	Industrial Engineering	646	Pathology Technician		
1540		Cryptography	1321	Metallurgy	647	Diagnostic Radiologic Technologist		
1541		Cryptanalysis	802	Engineering Technician	648	Therapeutic Radiologic Technologist		
Physical sciences		1301	General Physical Science	809	Construction Control	Program management	340	Program Management
	1306	Health Physics	817	Surveying Technician	343		Management & Program Analysis	
	1310	Physics	818	Engineering Drafting	346		Logistics Management	
	1313	Geophysics	856	Electronics Technician				
	1315	Hydrology	873	Ship Surveying				
	1320	Chemistry	896	Industrial Engineering Technician				
	1330	Astronomy & Space Science	1370	Cartography				
	1340	Meteorology	1371	Cartographic Technician				
	1350	Geology	1373	Land Surveying				
	1360	Oceanography						
	1372	Geodesy						

Source: GAO replication of Department of Defense (DOD) information. | GAO-23-105284

Representation of Women Generally Remained Low

Department of Defense Overall

We found that representation of women among DOD STEM occupational categories generally remained low at relatively stable levels from fiscal year 2012 through fiscal year 2021, according to the data we analyzed.

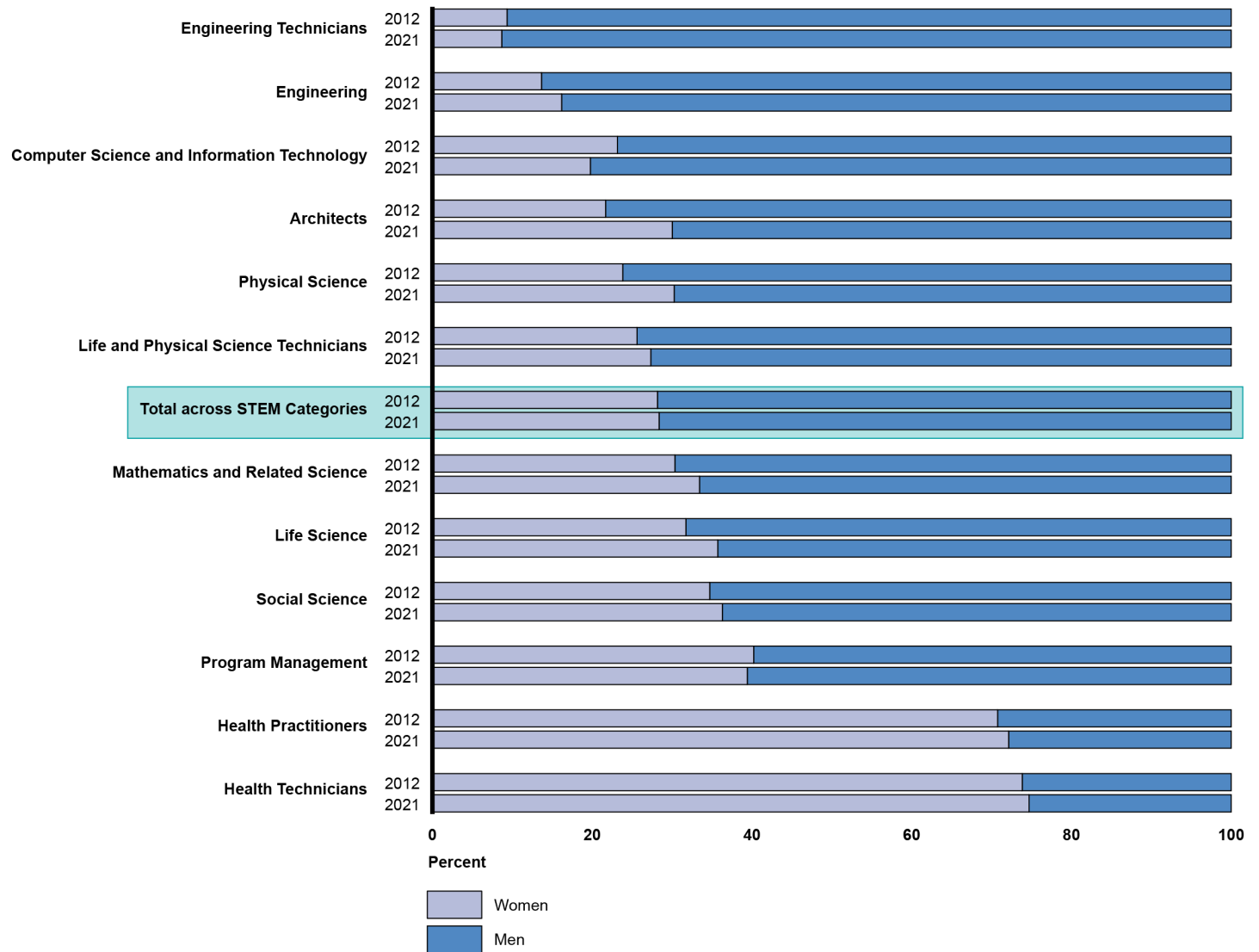
Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

For example, representation of women totaled about 28 percent of all DOD STEM occupational categories over the 10 years we analyzed. Men represented the remaining 72 percent. Additionally, representation of women during each of those years consistently remained lowest among engineering technicians—at about 9 percent annually. In contrast, during that same 10 years, representation of women consistently exceeded that of men in two DOD STEM categories—health practitioners and health technicians. Specifically, representation of women ranged from 71 to 72 percent annually among health practitioners and from 74 to 75 percent among health technicians. Figure 35 and table 63 depict 2 of the 10 years of data we analyzed as well as additional details pertaining to DOD’s STEM occupational categories in fiscal years 2012 and 2021.²

²We included only visual depictions of the 12 occupational categories for fiscal years 2012 and 2021—the beginning and ending points of our data—primarily because the percentages of each generally remained similar every year.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 35: Representation of Women and Men in the DOD Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 63: Representation of Women and Men in the DOD Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

Fiscal year	Women		Men	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	2,128	31.73	4,579	68.27
Computer Science and Information Technology	11,026	23.17	36,570	76.83
Mathematics and Related Science	1,468	30.35	3,369	69.65
Physical Science	1,687	23.83	5,393	76.17
Social Science	4,422	34.71	8,317	65.29
Engineering	9,454	13.66	59,740	86.34
Engineering Technicians	1,870	9.35	18,129	90.65
Life and Physical Science Technicians	581	25.61	1,688	74.39
Architects	254	21.69	917	78.31
Health Practitioners	10,110	70.75	4,179	29.25
Health Technicians	4,912	73.85	1,739	26.15
Program Management	21,135	40.22	31,409	59.78
Total	69,047	28.17	176,029	71.83
Fiscal year 2021				
Life Science	2,497	35.72	4,493	64.28
Computer Science and Information Technology	11,192	19.77	45,414	80.23
Mathematics and Related Science	1,908	33.44	3,798	66.56
Physical Science	2,282	30.27	5,257	69.73
Social Science	5,116	36.30	8,977	63.70
Engineering	12,428	16.17	64,419	83.83
Engineering Technicians	1,814	8.68	19,083	91.32
Life and Physical Science Technicians	590	27.34	1,568	72.66
Architects	373	30.03	869	69.97
Health Practitioners	11,044	72.14	4,265	27.86
Health Technicians	4,628	74.69	1,568	25.31
Program Management	24,001	39.42	36,887	60.58
Total	77,873	28.37	196,598	71.63

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Military Departments and Other DOD Components

We also found that representation of women in DOD STEM occupational categories generally remained low in each military department but, in

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

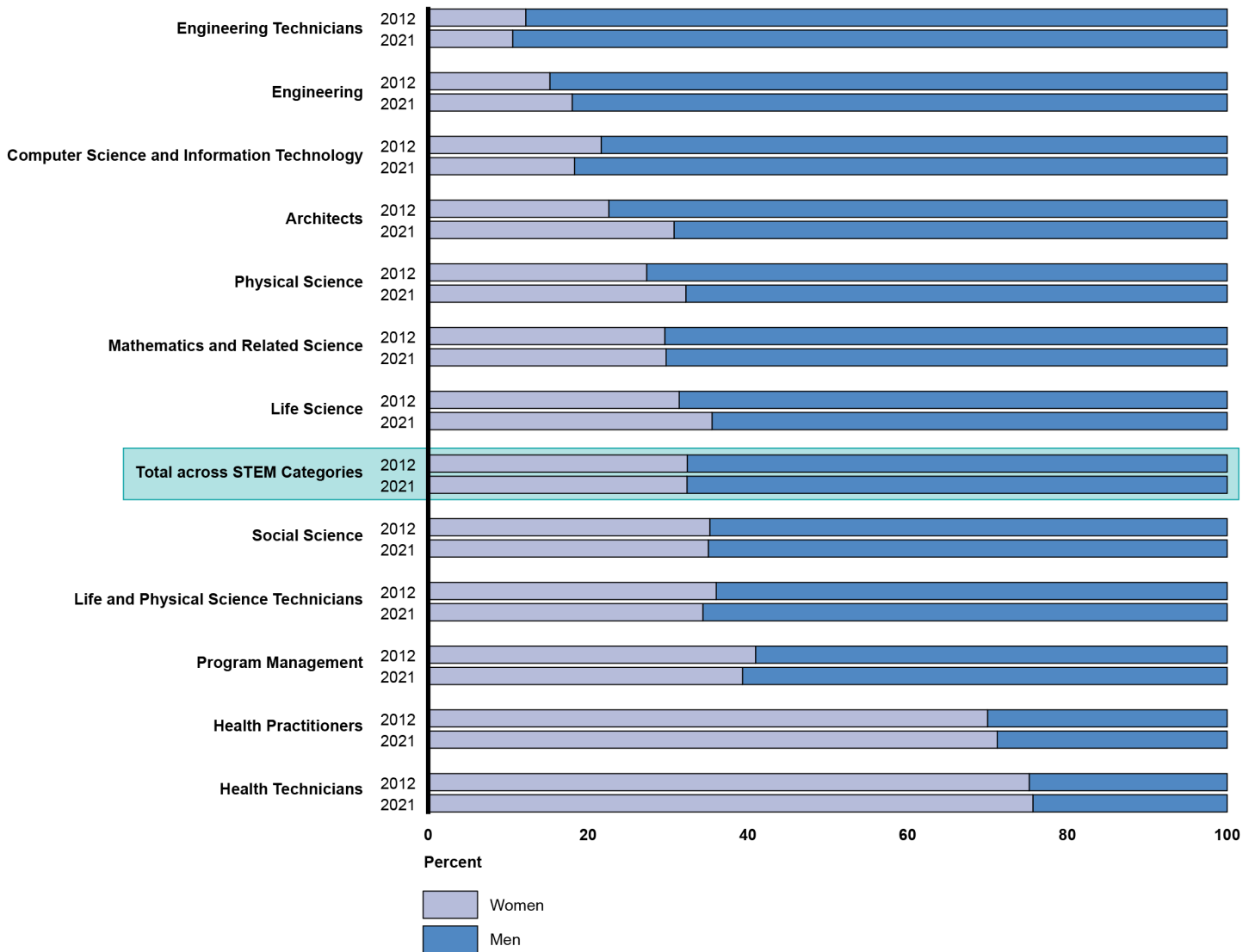
comparison, was slightly higher in the Army and other DOD components in fiscal years 2012 and 2021, according to the data we analyzed.³ For example, for the 2 years we analyzed, representation of women ranged from a low of 23.36 percent in the Air Force to a high of 38.44 percent in other DOD components. Additionally, representation of women during each of those years remained lowest among engineering technicians—from a low of 7 percent in the Air Force to a high of 12 percent in the Army and other DOD components.

In contrast, during those same 2 years, representation of women consistently exceeded that of men in two DOD STEM categories—health practitioners and health technicians, according to the data we analyzed. Specifically, representation of women ranged from a low of 67 percent in the Air Force to a high of 76 percent in other DOD components annually among health practitioners and from a low of 67 percent in the Navy and other DOD components to a high of 76 percent in the Army among health technicians. The following figures and tables depict the 2 years of data that we analyzed as well as additional details pertaining to DOD’s STEM occupational categories by department or other DOD components in fiscal years 2012 and 2021.

³Unlike our DOD-wide analysis, we did not analyze all 10 years of data by component.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 36: Representation of Women and Men in the Army Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 64: Representation of Women and Men in the Army Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

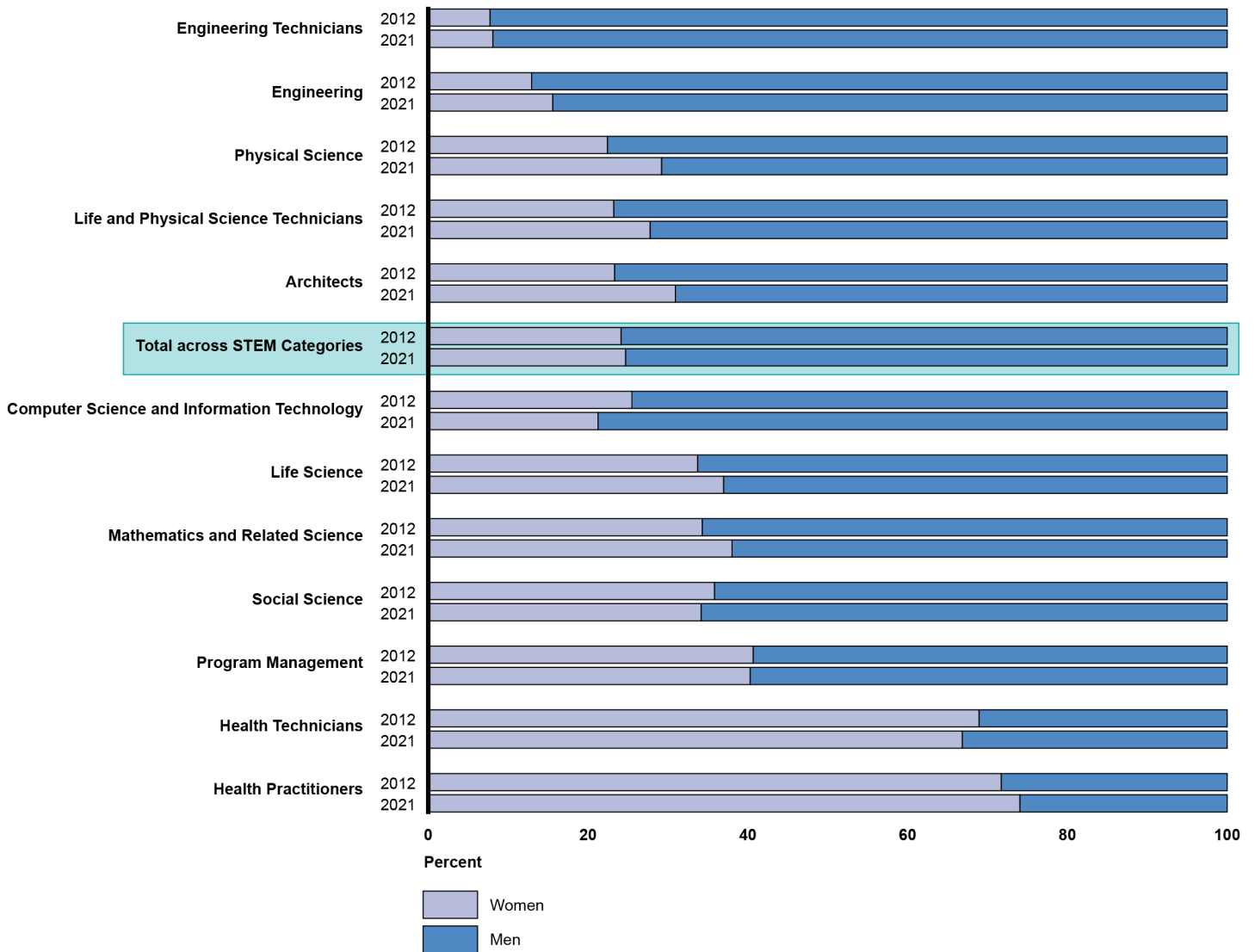
Fiscal year	Women		Men	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	1,455	31.41	3,178	68.59
Computer Science and Information Technology	3,454	21.64	12,507	78.36
Mathematics and Related Science	520	29.61	1,236	70.39
Physical Science	709	27.34	1,884	72.66
Social Science	2,089	35.25	3,837	64.75
Engineering	3,396	15.22	18,911	84.78
Engineering Technicians	789	12.21	5,671	87.79
Life and Physical Science Technicians	239	36.05	424	63.95
Architects	127	22.60	435	77.40
Health Practitioners	6,287	70.00	2,694	30.00
Health Technicians	3,617	75.23	1,191	24.77
Program Management	7,296	40.97	10,510	59.03
Total	29,978	32.42	62,478	67.58
Fiscal year 2021				
Life Science	1,682	35.52	3,054	64.48
Computer Science and Information Technology	2,919	18.30	13,028	81.70
Mathematics and Related Science	473	29.77	1,116	70.23
Physical Science	846	32.24	1,778	67.76
Social Science	2,170	35.05	4,022	64.95
Engineering	3,928	18.01	17,887	81.99
Engineering Technicians	611	10.57	5,169	89.43
Life and Physical Science Technicians	177	34.37	338	65.63
Architects	167	30.76	376	69.24
Health Practitioners	6,060	71.22	2,449	28.78
Health Technicians	3,127	75.68	1,005	24.32
Program Management	7,236	39.33	11,164	60.67
Total	29,396	32.38	61,386	67.62

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 37: Representation of Women and Men in the Navy Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 65: Representation of Women and Men in the Navy Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

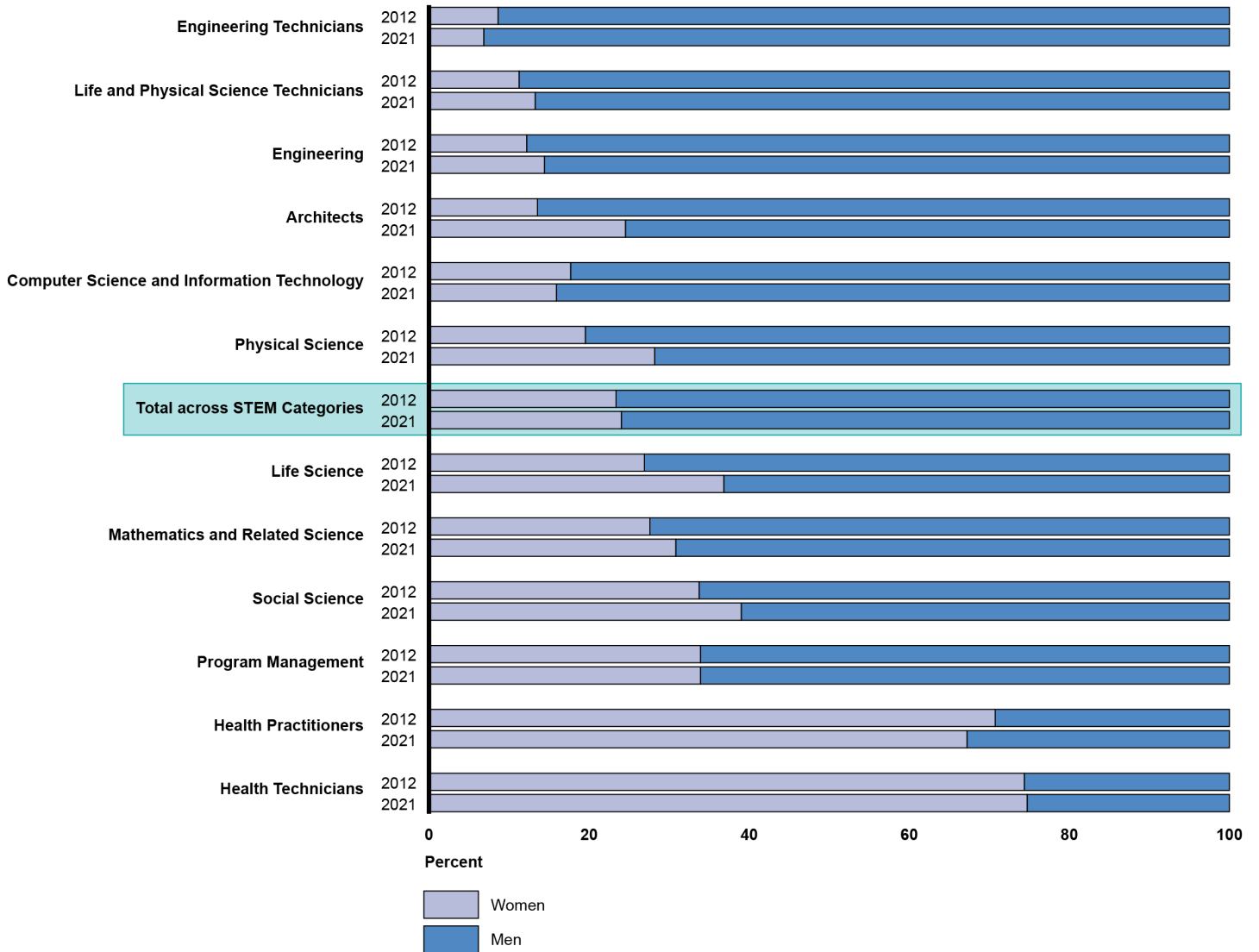
Fiscal year	Women		Men	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	403	33.72	792	66.28
Computer Science and Information Technology	3,468	25.49	10,138	74.51
Mathematics and Related Science	588	34.29	1,127	65.71
Physical Science	699	22.43	2,417	77.57
Social Science	883	35.82	1,582	64.18
Engineering	3,897	12.94	26,228	87.06
Engineering Technicians	829	7.72	9,908	92.28
Life and Physical Science Technicians	278	23.22	919	76.78
Architects	104	23.32	342	76.68
Health Practitioners	1,854	71.72	731	28.28
Health Technicians	528	68.93	238	31.07
Program Management	7,039	40.67	10,268	59.33
Total	20,570	24.13	64,690	75.87
Fiscal year 2021				
Life Science	481	36.97	820	63.03
Computer Science and Information Technology	3,995	21.25	14,804	78.75
Mathematics and Related Science	848	38.03	1,382	61.97
Physical Science	984	29.20	2,386	70.80
Social Science	833	34.15	1,606	65.85
Engineering	5,574	15.58	30,203	84.42
Engineering Technicians	997	8.09	11,333	91.91
Life and Physical Science Technicians	345	27.76	898	72.24
Architects	163	30.93	364	69.07
Health Practitioners	1,892	74.05	663	25.95
Health Technicians	381	66.84	189	33.16
Program Management	9,159	40.29	13,571	59.71
Total	25,652	24.70	78,219	75.30

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 38: Representation of Women and Men in the Air Force Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 66: Representation of Women and Men in the Air Force Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

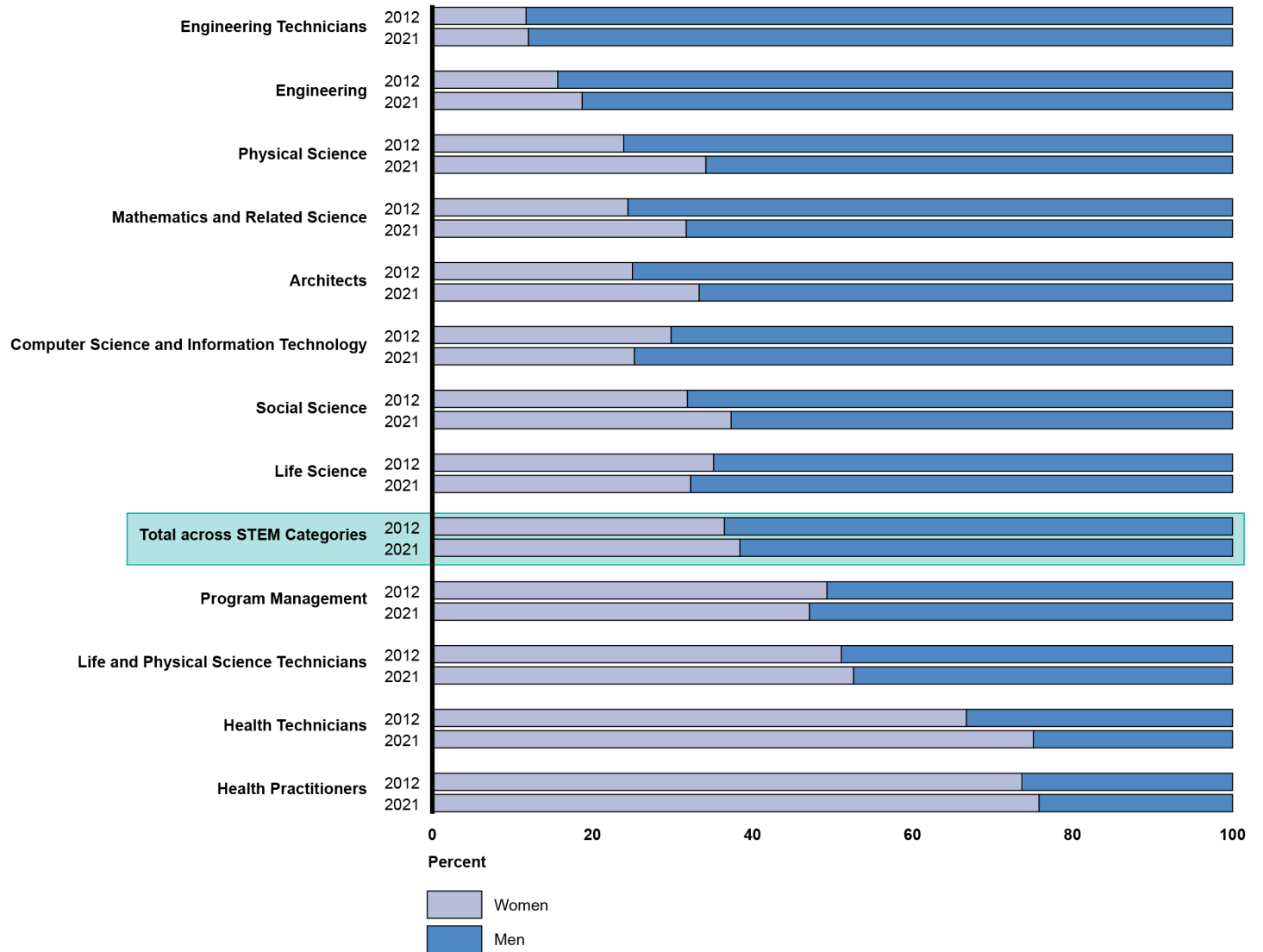
Fiscal year	Women		Men	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	127	26.91	345	73.09
Computer Science and Information Technology	1,858	17.70	8,640	82.30
Mathematics and Related Science	229	27.59	601	72.41
Physical Science	218	19.53	898	80.47
Social Science	1,151	33.75	2,259	66.25
Engineering	1,642	12.21	11,806	87.79
Engineering Technicians	213	8.63	2,256	91.37
Life and Physical Science Technicians	41	11.26	323	88.74
Architects	21	13.55	134	86.45
Health Practitioners	897	70.74	371	29.26
Health Technicians	470	74.37	162	25.63
Program Management	3,955	33.92	7,706	66.08
Total	10,822	23.36	35,501	76.64
Fiscal year 2021				
Life Science	214	36.83	367	63.17
Computer Science and Information Technology	2,116	15.92	11,178	84.08
Mathematics and Related Science	404	30.84	906	69.16
Physical Science	358	28.19	912	71.81
Social Science	1,716	39.01	2,683	60.99
Engineering	2,271	14.42	13,483	85.58
Engineering Technicians	170	6.84	2,317	93.16
Life and Physical Science Technicians	48	13.26	314	86.74
Architects	40	24.54	123	75.46
Health Practitioners	986	67.21	481	32.79
Health Technicians	408	74.73	138	25.27
Program Management	4,378	33.91	8,531	66.09
Total	13,109	24.03	41,433	75.97

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 39: Representation of Women and Men in the Other DOD Components' Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 67: Representation of Women and Men in the Other DOD Components' Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

Fiscal year	Women		Men	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	143	35.14	264	64.86
Computer Science and Information Technology	2,246	29.82	5,285	70.18
Mathematics and Related Science	131	24.44	405	75.56
Physical Science	61	23.92	194	76.08
Social Science	299	31.88	639	68.12
Engineering	519	15.66	2,795	84.34
Engineering Technicians	39	11.71	294	88.29
Life and Physical Science Technicians	23	51.11	22	48.89
Architects	2	25.00	6	75.00
Health Practitioners	1,072	73.68	383	26.32
Health Technicians	297	66.74	148	33.26
Program Management	2,845	49.31	2,925	50.69
Total	7,677	36.49	13,360	63.51
Fiscal year 2021				
Life Science	120	32.26	252	67.74
Computer Science and Information Technology	2,162	25.24	6,404	74.76
Mathematics and Related Science	183	31.72	394	68.28
Physical Science	94	34.18	181	65.82
Social Science	397	37.35	666	62.65
Engineering	655	18.71	2,846	81.29
Engineering Technicians	36	12.00	264	88.00
Life and Physical Science Technicians	20	52.63	18	47.37
Architects	3	33.33	6	66.67
Health Practitioners	2,106	75.81	672	24.19
Health Technicians	712	75.11	236	24.89
Program Management	3,228	47.13	3,621	52.87
Total	9,716	38.44	15,560	61.56

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Other DOD components include defense agencies and field activities unless not publicly reported in the data. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

Representation of
Employees from
Historically Disadvantaged
Groups Generally
Remained Low

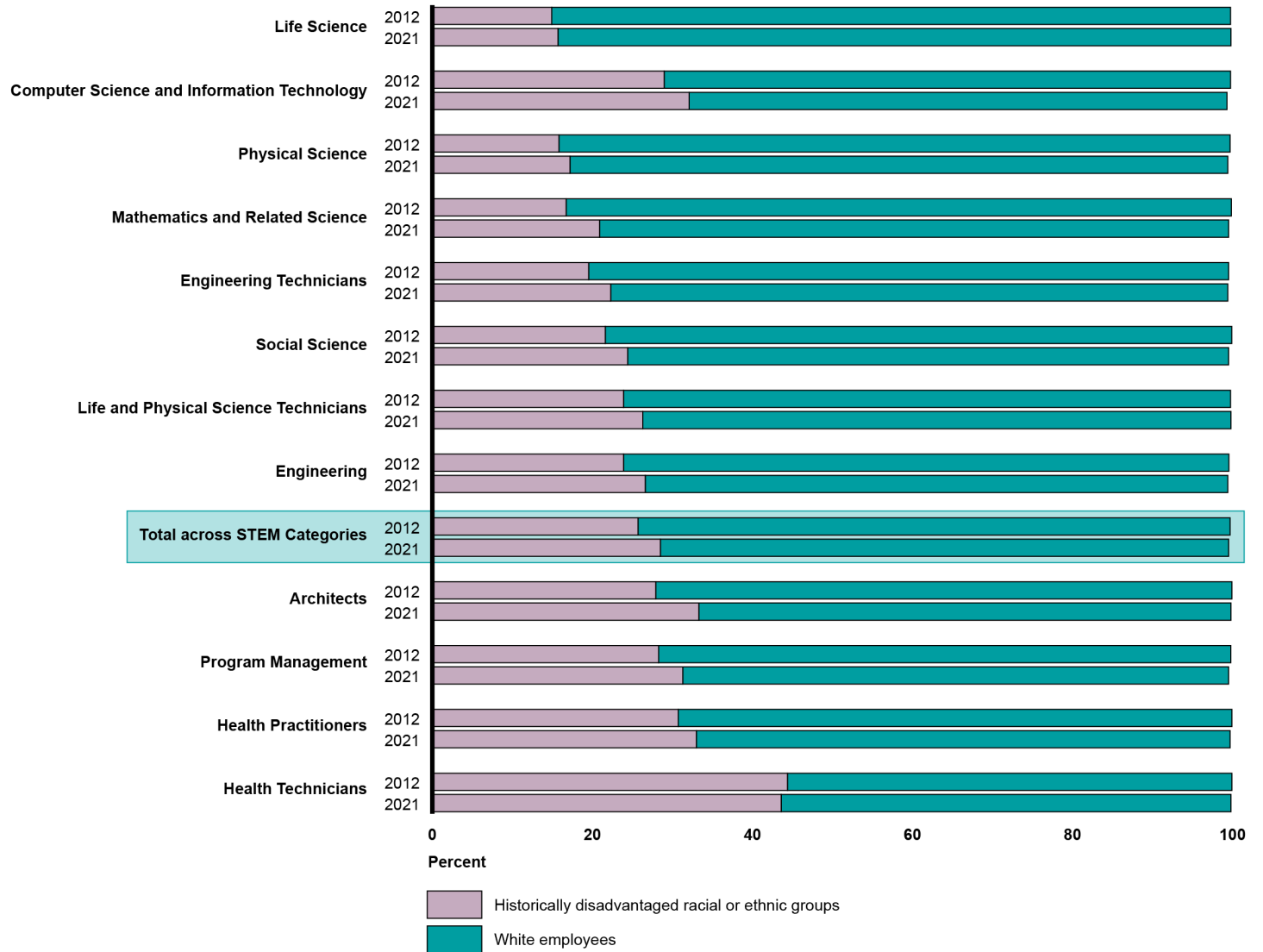
Department of Defense Overall

We found that representation of employees from historically disadvantaged groups across DOD STEM occupational categories generally remained low at relatively stable levels from fiscal year 2012 through fiscal year 2021, according to the data we analyzed. For example, over those 10 years, representation of these groups—similar to our analysis for women as compared to men—totaled about 27 percent of all DOD STEM occupational categories. White employees represented the remaining 72 percent.⁴ Additionally, representation of employees from historically disadvantaged groups during each of those years consistently remained lowest among the life science group—ranging from about 15 to 16 percent annually. Their representation remained highest among the health technicians group, ranging from 43 to 46 percent annually. Figure 40 and table 68 depict 2 of the 10 years of data that we analyzed as well as additional details pertaining to DOD’s STEM occupational categories in fiscal years 2012 and 2021.

⁴Our percentages do not total 100 percent because 0.34 percent of employees did not specify a race or ethnicity.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 40: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the DOD Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 68: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the DOD Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

Fiscal year	Historically disadvantaged racial or ethnic groups		White	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	1,001	14.92	5,689	84.82
Computer Science and Information Technology	13,791	28.98	33,686	70.77
Mathematics and Related Science	809	16.73	4,020	83.11
Physical Science	1,120	15.82	5,938	83.87
Social Science	2,753	21.61	9,973	78.29
Engineering	16,536	23.90	52,337	75.64
Engineering Technicians	3,905	19.53	15,995	79.98
Life and Physical Science Technicians	542	23.89	1,721	75.85
Architects	327	27.92	843	71.99
Health Practitioners	4,391	30.73	9,886	69.19
Health Technicians	2,952	44.38	3,693	55.53
Program Management	14,853	28.27	37,570	71.50
Total	62,980	25.70	181,351	74.00
Fiscal year 2021				
Life Science	1,094	15.65	5,878	84.09
Computer Science and Information Technology	18,171	32.10	38,045	67.21
Mathematics and Related Science	1,195	20.94	4,487	78.64
Physical Science	1,300	17.24	6,198	82.21
Social Science	3,442	24.42	10,585	75.11
Engineering	20,475	26.64	55,909	72.75
Engineering Technicians	4,667	22.33	16,114	77.11
Life and Physical Science Technicians	567	26.27	1,585	73.45
Architects	414	33.33	826	66.51
Health Practitioners	5,052	33.00	10,214	66.72
Health Technicians	2,699	43.56	3,480	56.17
Program Management	19,068	31.32	41,524	68.20
Total	78,144	28.47	194,845	70.99

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

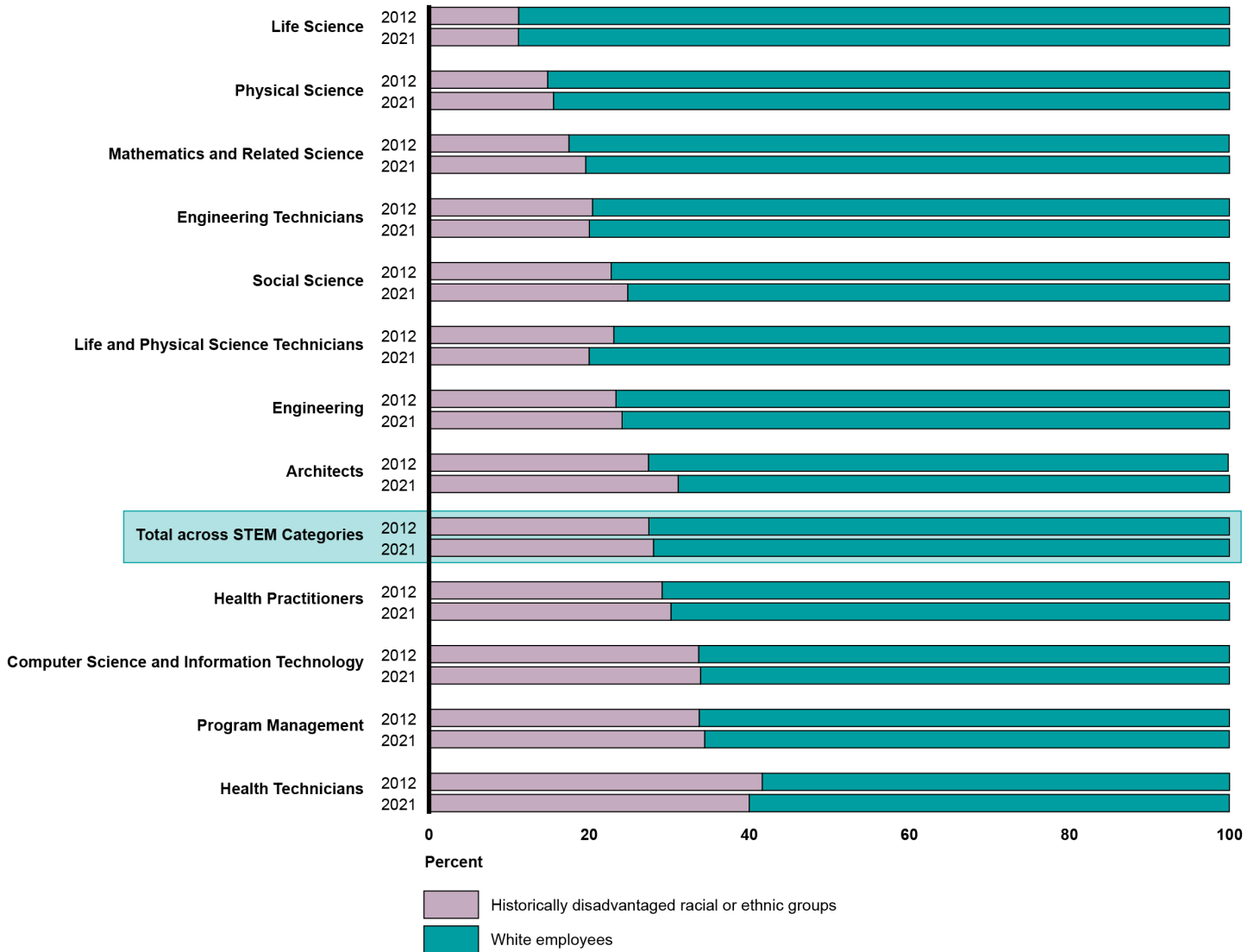
the most recent value to all available years. Tables may not total 100 percent because we excluded instances for which race or ethnicity was unspecified.

Military Departments and Other DOD Components

We also found that representation of employees from historically disadvantaged groups in DOD STEM occupational categories generally remained low in each military department and the other DOD components in fiscal years 2012 and 2021, according to the data we analyzed. For example, over the 2 years we analyzed, representation of these groups ranged from a low of 22.37 percent in the Air Force to a high of 34.36 percent in other DOD components. White employees represented the remaining percentages. Additionally, representation of employees from historically disadvantaged groups remained highest among health technicians—ranging from a low of 40 percent in the Army and Air Force to a high of 67 percent in other DOD components, depending on the year. Their representation was lowest among life sciences, physical sciences, math and related sciences, and social science, depending on DOD component and fiscal year. The following figures and tables depict the 2 years of data we analyzed as well as additional details pertaining to DOD’s STEM occupational categories by department or other DOD components in fiscal years 2012 and 2021.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 41: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Army Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 69: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Army Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

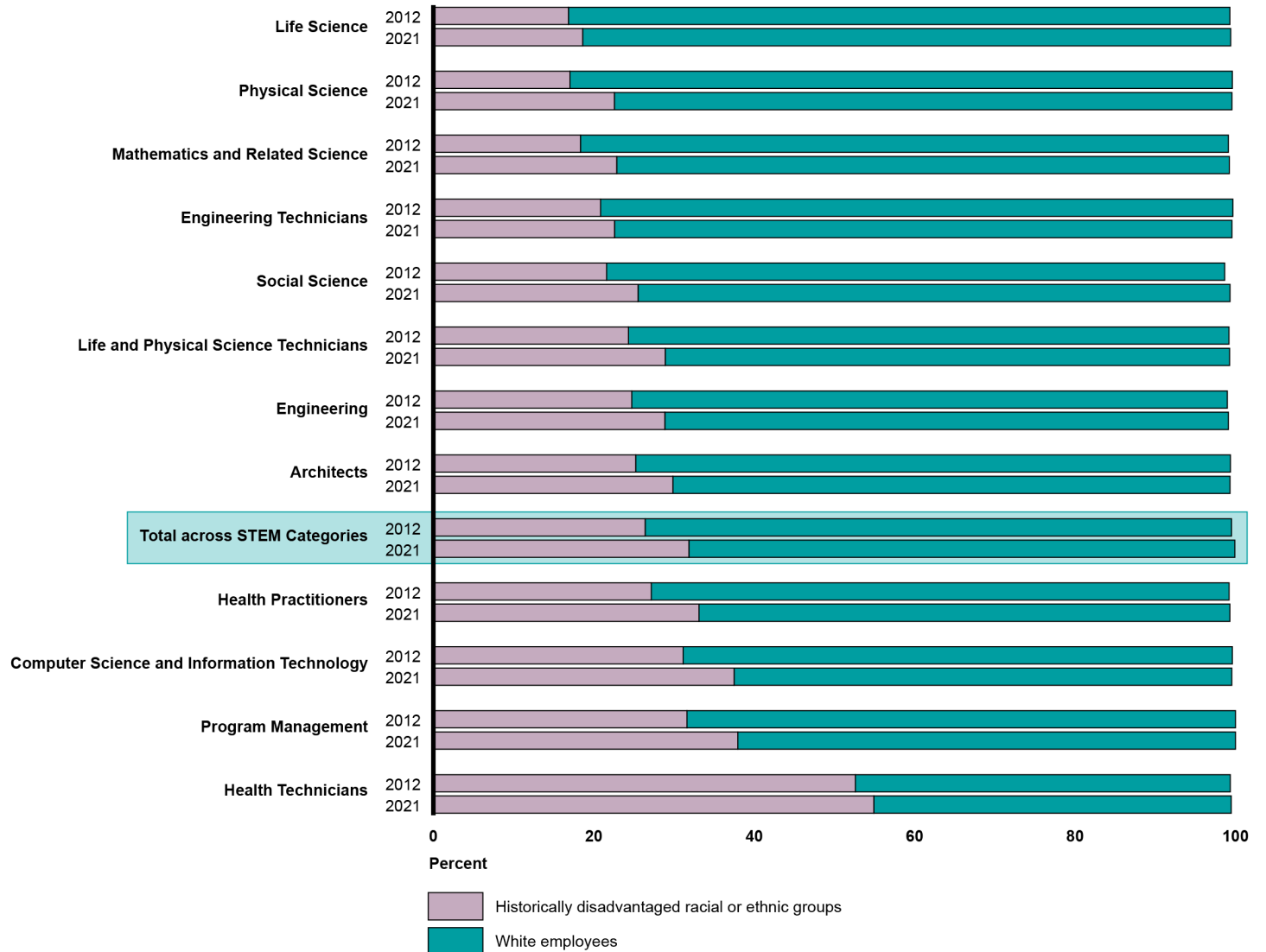
Fiscal year	Historically disadvantaged racial or ethnic groups		White	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	518	11.18	4,115	88.82
Computer Science and Information Technology	5,376	33.68	10,582	66.30
Mathematics and Related Science	307	17.48	1,448	82.46
Physical Science	384	14.81	2,209	85.19
Social Science	1,349	22.76	4,576	77.22
Engineering	5,209	23.35	17,093	76.63
Engineering Technicians	1,319	20.42	5,140	79.57
Life and Physical Science Technicians	153	23.08	510	76.92
Architects	154	27.40	407	72.42
Health Practitioners	2,614	29.11	6,366	70.88
Health Technicians	2,001	41.62	2,807	58.38
Program Management	6,008	33.74	11,795	66.24
Total	25,392	27.46	67,048	72.52
Fiscal year 2021				
Life Science	529	11.17	4,207	88.83
Computer Science and Information Technology	5,407	33.91	10,536	66.07
Mathematics and Related Science	311	19.57	1,278	80.43
Physical Science	408	15.55	2,216	84.45
Social Science	1,536	24.81	4,656	75.19
Engineering	5,262	24.12	16,553	75.88
Engineering Technicians	1,158	20.03	4,621	79.95
Life and Physical Science Technicians	103	20.00	412	80.00
Architects	169	31.12	374	68.88
Health Practitioners	2,571	30.22	5,938	69.78
Health Technicians	1,653	40.00	2,478	59.97
Program Management	6,336	34.43	12,060	65.54
Total	25,443	28.03	65,329	71.96

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Tables may not total 100 percent because we excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 42: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Navy Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 70: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Navy Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

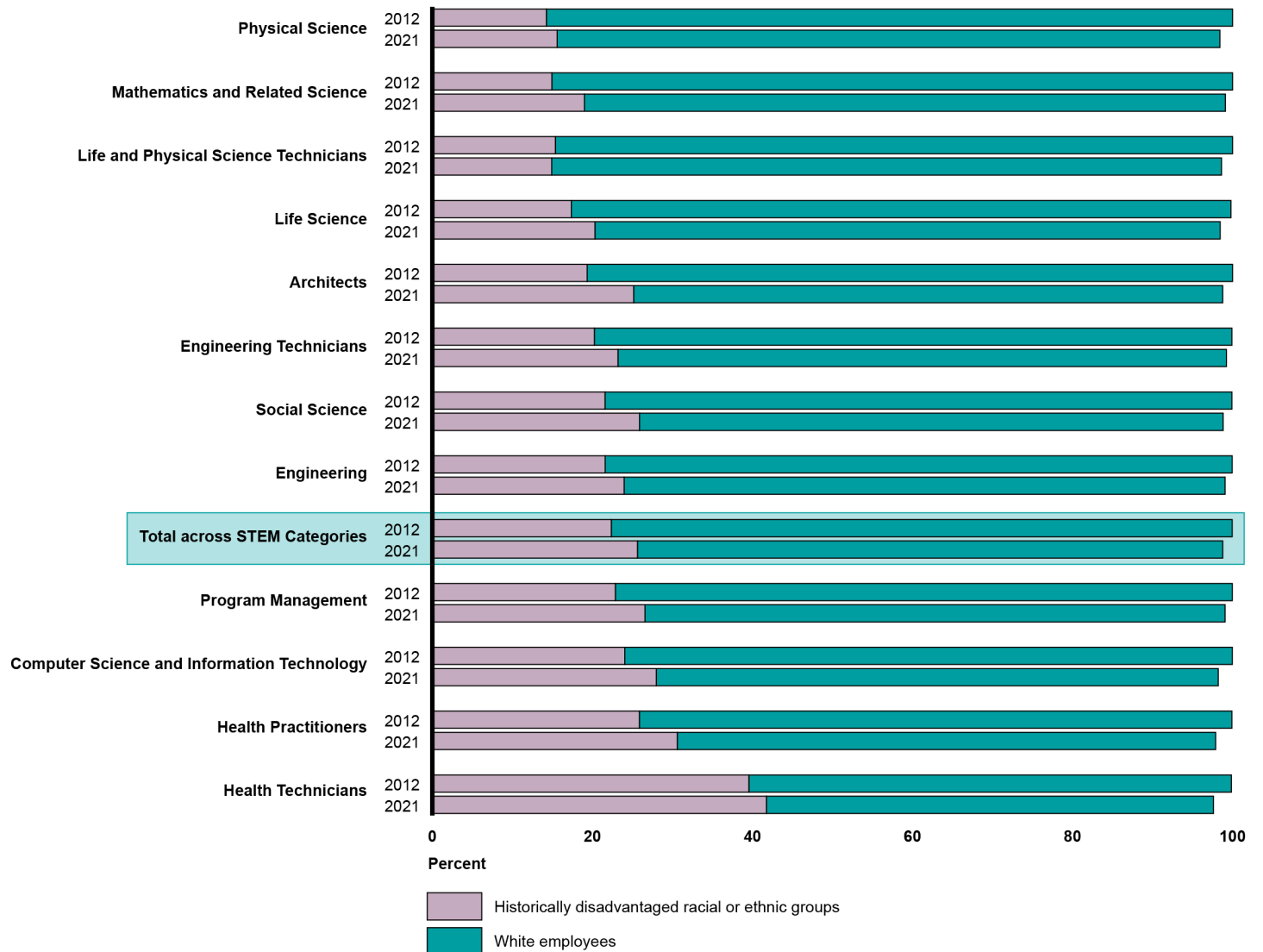
Fiscal year	Historically disadvantaged racial or ethnic groups		White	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	258	21.59	921	77.07
Computer Science and Information Technology	3,695	27.16	9,801	72.03
Mathematics and Related Science	292	17.03	1,416	82.57
Physical Science	525	16.85	2,569	82.45
Social Science	514	20.85	1,943	78.82
Engineering	7,450	24.73	22,367	74.25
Engineering Technicians	1,970	18.35	8,671	80.76
Life and Physical Science Technicians	316	26.40	875	73.10
Architects	141	31.61	305	68.39
Health Practitioners	805	31.14	1,770	68.47
Health Technicians	403	52.61	358	46.74
Program Management	4,364	25.22	12,833	74.15
Total	20,733	24.32	63,829	74.86
Fiscal year 2021				
Life Science	332	25.52	960	73.79
Computer Science and Information Technology	6,227	33.12	12,442	66.18
Mathematics and Related Science	503	22.56	1,717	77.00
Physical Science	627	18.61	2,723	80.80
Social Science	551	22.59	1,877	76.96
Engineering	10,320	28.85	25,140	70.27
Engineering Technicians	2,819	22.86	9,416	76.37
Life and Physical Science Technicians	396	31.86	846	68.06
Architects	200	37.95	327	62.05
Health Practitioners	958	37.50	1,585	62.04
Health Technicians	313	54.91	254	44.56
Program Management	6,788	29.86	15,785	69.45
Total	30,034	28.91	73,072	70.35

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Tables may not total 100 percent because we excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 43: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Air Force Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 71: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Air Force Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

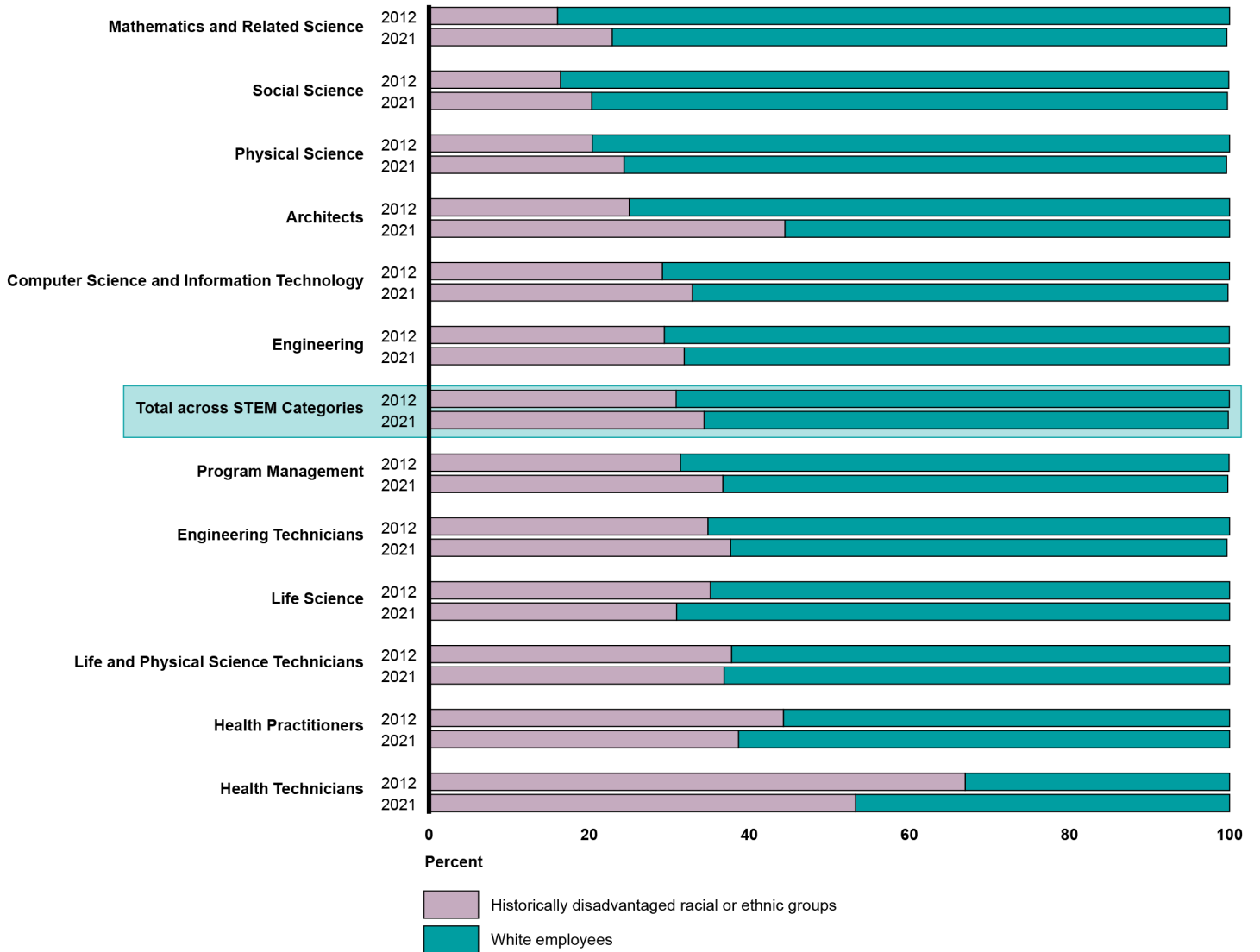
Fiscal year	Historically disadvantaged racial or ethnic groups		White	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	82	17.37	389	82.42
Computer Science and Information Technology	2,525	24.05	7,969	75.91
Mathematics and Related Science	124	14.94	706	85.06
Physical Science	159	14.25	957	85.75
Social Science	736	21.58	2,671	78.33
Engineering	2,903	21.59	10,538	78.36
Engineering Technicians	500	20.25	1,967	79.67
Life and Physical Science Technicians	56	15.38	308	84.62
Architects	30	19.35	125	80.65
Health Practitioners	328	25.87	939	74.05
Health Technicians	250	39.56	381	60.28
Program Management	2,668	22.88	8,989	77.09
Total	10,361	22.37	35,939	77.58
Fiscal year 2021				
Life Science	118	20.31	454	78.14
Computer Science and Information Technology	3,720	27.98	9,336	70.23
Mathematics and Related Science	249	19.01	1,049	80.08
Physical Science	198	15.59	1,052	82.83
Social Science	1,139	25.89	3,208	72.93
Engineering	3,777	23.97	11,832	75.10
Engineering Technicians	577	23.20	1,891	76.04
Life and Physical Science Technicians	54	14.92	303	83.70
Architects	41	25.15	120	73.62
Health Practitioners	449	30.61	987	67.28
Health Technicians	228	41.76	305	55.86
Program Management	3,431	26.58	9,358	72.49
Total	13,981	25.63	39,895	73.15

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. Tables may not total 100 percent because we excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Figure 44: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Other DOD Components' Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years. We excluded instances for which race or ethnicity was unspecified.

Appendix X: Representation of Civilian Workforce in DOD STEM Occupational Categories Remained Unchanged

Table 72: Representation of Employees from Historically Disadvantaged Racial or Ethnic Groups and White Employees in the Other DOD Components' Civilian Workforce by STEM Occupational Category, Fiscal Years 2012 and 2021

Fiscal year	Historically disadvantaged racial or ethnic groups		White	
	Number	Percent	Number	Percent
Fiscal year 2012				
Life Science	143	35.14	264	64.86
Computer Science and Information Technology	2,195	29.15	5,334	70.83
Mathematics and Related Science	86	16.04	450	83.96
Physical Science	52	20.39	203	79.61
Social Science	154	16.42	783	83.48
Engineering	974	29.39	2,339	70.58
Engineering Technicians	116	34.83	217	65.17
Life and Physical Science Technicians	17	37.78	28	62.22
Architects	2	25.00	6	75.00
Health Practitioners	644	44.26	811	55.74
Health Technicians	298	66.97	147	33.03
Program Management	1,813	31.42	3,953	68.51
Total	6,494	30.87	14,535	69.09
Fiscal year 2021				
Life Science	115	30.91	257	69.09
Computer Science and Information Technology	2,817	32.89	5,731	66.90
Mathematics and Related Science	132	22.88	443	76.78
Physical Science	67	24.36	207	75.27
Social Science	216	20.32	844	79.40
Engineering	1,116	31.88	2,384	68.09
Engineering Technicians	113	37.67	186	62.00
Life and Physical Science Technicians	14	36.84	24	63.16
Architects	4	44.44	5	55.56
Health Practitioners	1,074	38.66	1,704	61.34
Health Technicians	505	53.27	443	46.73
Program Management	2,513	36.69	4,321	63.09
Total	8,686	34.36	16,549	65.47

Source: GAO analysis of Department of Defense (DOD) workforce data. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilians employed in DOD science, technology, engineering, and mathematics (STEM) occupational categories. Other DOD components include defense agencies and field activities unless not publicly reported in the data. Historically disadvantaged racial or ethnic groups include the following based on Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over

**Appendix X: Representation of Civilian
Workforce in DOD STEM Occupational
Categories Remained Unchanged**

time, we assigned the most recent value to all available years. Tables may not total 100 percent because we excluded instances for which race or ethnicity was unspecified.

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

The Office of Personnel Management (OPM) *Handbook of Occupational Groups and Families*, which is divided into two parts—white-collar occupational series and trade, craft, or labor (hereafter blue-collar) occupational series—provides agencies with a mechanism to classify positions.¹ Table 73 shows each of OPM’s 23 groups in the white-collar series as well as its 36 families in the blue-collar series.² We used OPM’s organization to sort and analyze DOD data by race or ethnicity and gender in fiscal years 2012 and 2021. We found that while representation of women generally was greater when compared to that of employees from historically disadvantaged racial and ethnic groups (historically disadvantaged groups) among OPM-defined white-collar groups—which employs the bulk of DOD’s federal civilian workforce—the reverse was

¹Office of Personnel Management, *Handbook of Occupational Groups and Families* (Dec. 2018). OPM previously referred to the white-collar occupational series as General Schedule (GS) systems occupations (which includes occupational groups), and to the trade, craft, or labor occupational series as federal wage system occupations (which includes job families). According to OPM, an occupational group is a major category of white-collar occupations, embracing a group of associated or related occupations. A job family is a broad grouping of trades, craft, and labor occupations related in one or more ways, such as similarity of functions performed, transferability of knowledge and skills from one occupation to another, or similarity of materials or equipment worked on.

²White-collar occupational groups are associated with a four-digit number ranging from 0000 to 2200 and a group name. Each group includes multiple white-collar series not exclusive to those in the GS pay plan. For example, the engineering and architecture group (0800) includes series such as general engineering (0801), architecture (0808), and civil engineering (0810). The blue-collar job families also are associated with a four-digit number ranging from 2500 to 9000 and a family name. These families include employees in recognized trades or crafts, or other skilled mechanical crafts, or in unskilled, semi-skilled, or skilled manual-labor occupations, and other employees including foremen and supervisors in positions having trade, craft, or laboring experience and knowledge as the paramount requirement. For example, the metal work family (3800) includes job series such as sheet metal (3806) and mobile equipment metal (3809). We did not analyze the Department of Defense (DOD) civilian workforce by series given DOD’s size and organizational structure as well as the complexities involved in evaluating its data at that level. Although OPM excludes vessel jobs within its blue-collar occupational series because each is excluded from the federal wage system by 5 U.S.C. 5342, we included it in our analysis of DOD data because of the large number of employees who maintain jobs within its 96 occupational codes. Section 5342 of Title 5, United States Code, provides that subchapter IV, except Section 5348, is not applicable to officers and members of crews of vessels excepted from chapter 51 of title 5 by Section 5102 (8) of that title.

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

true for blue-collar job families.³ That is, representation of employees from historically disadvantaged groups in blue-collar job families generally was greater than for women.

Table 73: OPM Occupational Groups and Families

White-Collar Occupational Groups (Code)	Blue-Collar (Trade, Craft, or Labor) Job Families (Code)
Miscellaneous Occupations (0000)	Wire Communications Equipment Installation and Maintenance (2500)
Social Science, Psychology, and Welfare (0100)	Electronic Equipment Installation and Maintenance (2600)
Human Resources Management (0200)	Electrical Installation and Maintenance (2800)
General Administrative, Clerical, and Office Services (0300)	Fabric and Leather Work (3100)
Natural Resources Management and Biological Sciences (0400)	Instrument Work (3300)
Accounting and Budget (0500)	Machine Tool Work (3400)
Medical, Hospital, Dental, and Public Health (0600)	General Services and Support Work (3500)
Veterinary Medical Science (0700)	Structural and Finishing Work (3600)
Engineering and Architecture (0800)	Metal Processing (3700)
Legal and Kindred (0900)	Metal Work (3800)
Information and Arts (1000)	Motion Picture, Radio, Television, and Sound Equipment Operation (3900)
Business and Industry (1100)	Lens and Crystal Work (4000)
Copyright, Patent, and Trademark (1200)	Painting and Paperhanging (4100)
Physical Sciences (1300)	Plumbing and Pipefitting (4200)
Library and Archives (1400)	Pliable Materials Work (4300)
Mathematical Sciences (1500)	Printing (4400)
Equipment, Facilities, and Services (1600)	Wood Work (4600)
Education (1700)	General Maintenance and Operations Work (4700)
Inspection, Investigation, Enforcement, and Compliance (1800)	General Equipment Maintenance (4800)

³DOD consists of dozens of components, including the three military departments of the Army, the Navy, and the Air Force, and more than 30 other DOD components, such as defense agencies, field activities, and other organizations including the Office of the Secretary of Defense. See Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components* (Dec. 21, 2010). Our analysis does not include the workforce of certain defense agencies if not publicly reported in federal workforce data, such as the National Security Agency or Defense Intelligence Agency. Historically disadvantaged racial or ethnic groups include the following based on OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Native Alaskan, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where race or ethnicity changed over time for an employee record, we assigned the most recent value available.

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

White-Collar Occupational Groups (Code)	Blue-Collar (Trade, Craft, or Labor) Job Families (Code)
Quality Assurance, Inspection, and Grading (1900)	Plant and Animal Work (5000)
Supply (2000)	Miscellaneous Occupations (5200)
Transportation (2100)	Industrial Equipment Maintenance (5300)
Information Technology (2200)	Industrial Equipment Operation (5400)
	Transportation/Mobile Equipment Operation (5700)
	Transportation/Mobile Equipment Maintenance (5800)
	Ammunition, Explosives, and Toxic Materials Work (6500)
	Armament Work (6600)
	Warehousing and Stock Handling (6900)
	Packing and Processing (7000)
	Laundry, Dry Cleaning, and Pressing (7300)
	Food Preparation and Serving (7400)
	Personal Services (7600)
	Fluid Systems Maintenance (8200)
	Engine Overhaul (8600)
	Aircraft Overhaul (8800)
	Film Processing (9000)
	Vessel Jobs (9900)

Source: Office of Personnel Management (OPM) *Handbook of Occupational Groups and Families*. | GAO-23-105284

Notes: OPM excludes the vessel jobs family (9900) within its trade, craft, or labor occupational series—because they are excluded from the federal wage system by Section 5342 of Title 5, United States Code—but our analysis includes that family because of the large number of federal civilian employees in those DOD jobs.

Distribution of DOD Civilian Employees by OPM White-Collar Occupational Groups

Employees in white-collar occupational groups represent the majority of DOD’s federal civilian workforce. For example, these occupational groups were associated with between 81 percent of DOD’s 721,732 civilian employees in fiscal year 2012 (585,342) and 83 percent of its 737,768 civilian employees in 2021 (610,733), according to our analysis of DOD data. Tables 74 and 75 show the greatest proportions (about a third) in both years were in either the general administrative, clerical, or office services group or in the engineering and architecture group as well as other DOD civilian distributions across occupational groups.

Table 74: Representation of DOD Civilian Employees by OPM White-Collar Occupational Group, Fiscal Year 2012

Occupational group (code)	Frequency	Percent
General Administrative, Clerical, and Office Services (0300)	132,123	22.57
Engineering and Architecture (0800)	90,602	15.48

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

Occupational group (code)	Frequency	Percent
Business and Industry (1100)	48,585	8.30
Accounting and Budget (0500)	43,152	7.37
Medical, Hospital, Dental, and Public Health (0600)	40,923	6.99
Miscellaneous Occupations (0000)	37,729	6.45
Information Technology (2200)	36,163	6.18
Human Resources Management (0200)	22,499	3.84
Education (1700)	20,724	3.54
Supply (2000)	19,218	3.28
Social Science, Psychology, and Welfare (0100)	17,011	2.91
Transportation (2100)	13,929	2.38
Equipment, Facilities, and Services (1600)	10,897	1.86
Mathematical Sciences (1500)	10,331	1.76
Physical Sciences (1300)	9,215	1.57
Quality Assurance, Inspection, and Grading (1900)	8,665	1.48
Information and Arts (1000)	6,669	1.14
Legal and Kindred (0900)	6,282	1.07
Natural Resources Management and Biological Sciences (0400)	5,239	0.90
Inspection, Investigation, Enforcement, and Compliance (1800)	3,923	0.67
Library and Archives (1400)	1,277	0.22
Veterinary Medical Science (0700)	94	0.02
Copyright, Patent, and Trademark (1200)	92	0.02
Total	585,342	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data and Office of Personnel Management (OPM) information. | GAO-23-105284

Note: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees.

Table 75: Representation of DOD Civilian Employees by OPM White-Collar Occupational Group, Fiscal Year 2021

Occupational group (code)	Frequency	Percent
General Administrative, Clerical, and Office Services (0300)	129,317	21.17
Engineering and Architecture (0800)	99,129	16.23
Business and Industry (1100)	53,192	8.71
Information Technology (2200)	42,661	6.99
Accounting and Budget (0500)	42,175	6.91
Miscellaneous Occupations (0000)	41,073	6.73

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

Occupational group (code)	Frequency	Percent
Medical, Hospital, Dental, and Public Health (0600)	40,272	6.59
Human Resources Management (0200)	22,616	3.70
Education (1700)	19,052	3.12
Supply (2000)	18,325	3.00
Social Science, Psychology, and Welfare (0100)	17,860	2.92
Mathematical Sciences (1500)	14,333	2.35
Transportation (2100)	13,065	2.14
Equipment, Facilities, and Services (1600)	11,860	1.94
Physical Sciences (1300)	9,730	1.59
Quality Assurance, Inspection, and Grading (1900)	9,172	1.50
Inspection, Investigation, Enforcement, and Compliance (1800)	7,450	1.22
Legal and Kindred (0900)	6,540	1.07
Information and Arts (1000)	6,079	1.00
Natural Resources Management and Biological Sciences Group (0400)	5,711	0.94
Library and Archives (1400)	926	0.15
Copyright, Patent, and Trademark (1200)	99	0.02
Veterinary Medical Science (0700)	96	0.02
Total	610,733	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data and Office of Personnel Management (OPM) information. | GAO-23-105284

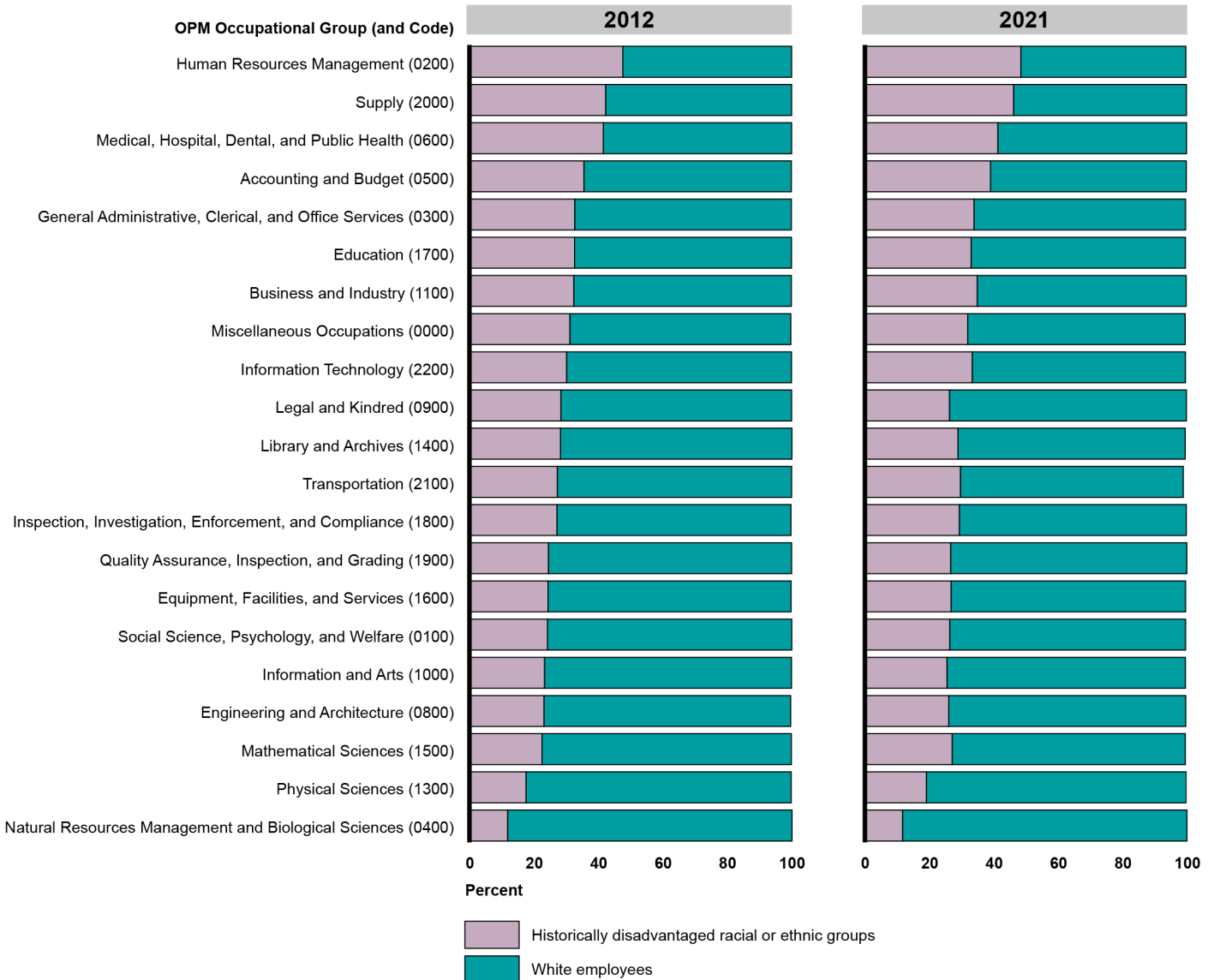
Note: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees.

We found that while representation of DOD civilian employees from historically disadvantaged groups in each of the 21 white-collar groups ranged from 12 to 48 percent (see fig. 45), the same occupational groups generally had greater representations of women, according to our analysis of DOD data. Specifically, figure 46 shows that while representation of women ranged from 10 to 71 percent, those percentages frequently exceeded 26 percent, including five groups for which the percentage of women was higher than for their male counterparts.⁴

⁴We excluded two groups—the copyright, patent, and trademark group and the veterinary medical science group—from this analysis because each had fewer than 100 federal civilian employees in both fiscal years.

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

Figure 45: Representation of DOD Civilian Employees by OPM White-Collar Occupational Group and Race or Ethnicity, Fiscal Years 2012 and 2021

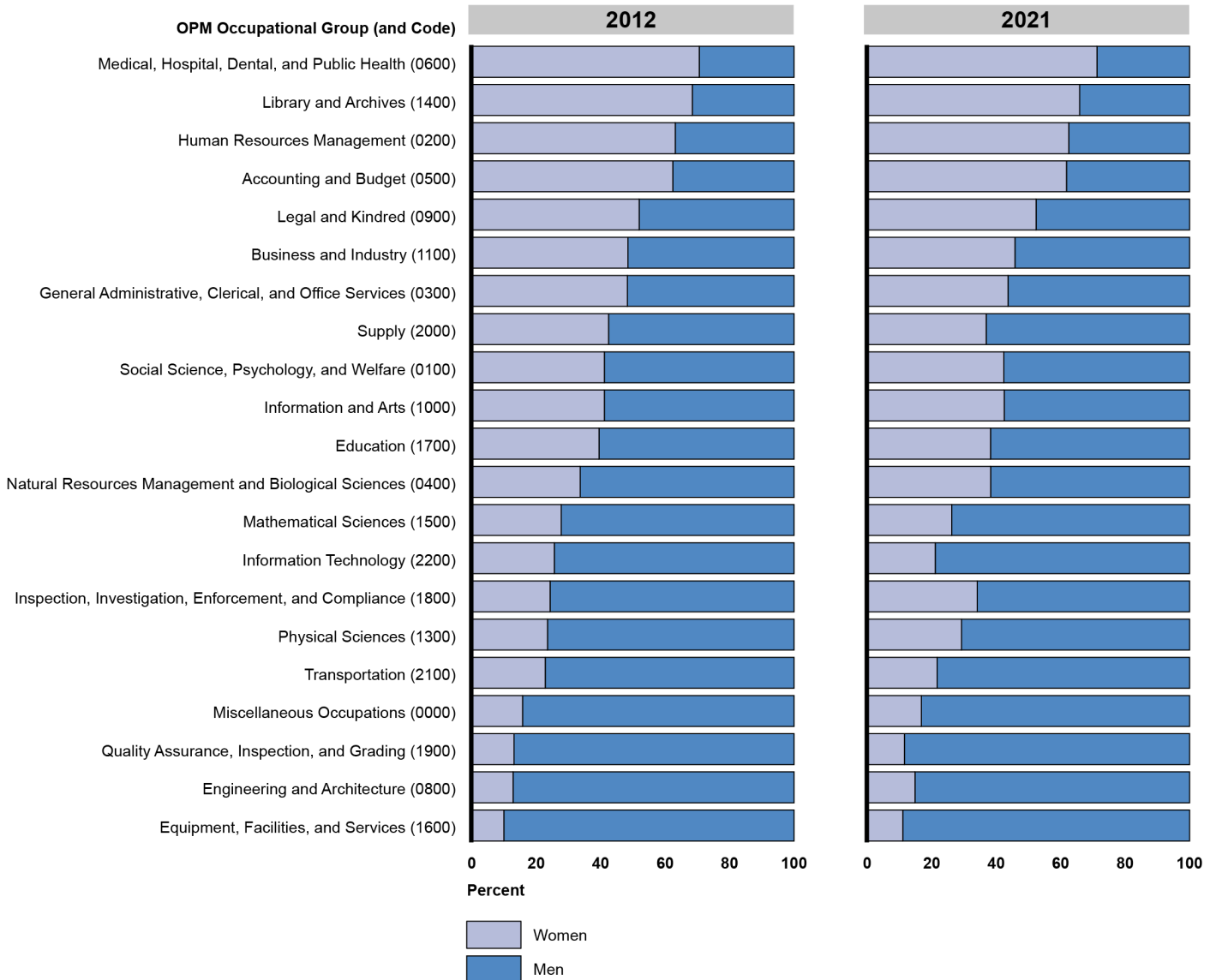


Source: GAO analysis of Department of Defense (DOD) workforce data; Office of Personnel Management (OPM) information. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by OPM-defined occupational group, excluding two—copyright, patent, and trademark (1200) and veterinary medical science (0700)—because each employed fewer than 100 civilians both years. Historically disadvantaged racial or ethnic groups include the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

Figure 46: Representation of DOD Civilian Employees by OPM White-Collar Occupational Group and Gender, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data; Office of Personnel Management (OPM) information. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by OPM-defined occupational groups, excluding two—copyright, patent, and trademark (1200) and veterinary medical science (0700)—because each employed fewer than 100 civilians both years. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Distribution of DOD Civilian Employees by OPM Blue-Collar Job Families

When compared to white-collar groups, employees in blue-collar job families represent a much smaller percentage of DOD’s federal civilian workforce. For example, blue-collar job families represented between 19 percent of DOD’s 721,732 civilian employees in fiscal year 2012 (136,390) and 17 percent of its 737,768 civilian employees in 2021 (127,035), according to our analysis of DOD data. Tables 76 and 77 depict distributions of DOD federal civilians across the various job families in fiscal years 2012 and 2021.⁵ Although OPM excludes the vessel job family from its blue-collar occupational series, we included it in our analysis because of the large number of DOD employees in its 96 occupational codes.⁶

Table 76: Representation of DOD Civilian Employees by OPM Blue-Collar Job Family, Fiscal Year 2012

Job family (code)	Frequency	Percent
Transportation/Mobile Equipment Maintenance (5800)	15,739	11.54
Aircraft Overhaul (8800)	12,914	9.47
Warehousing and Stock Handling (6900)	12,171	8.92
Electronic Equipment Installation and Maintenance (2600)	10,677	7.83
Metal Work (3800)	9,272	6.80
Industrial Equipment Maintenance (5300)	7,889	5.78
Electrical Installation and Maintenance (2800)	6,837	5.01
General Maintenance and Operations Work (4700)	6,138	4.50
Transportation/Mobile Equipment Operation (5700)	5,926	4.34
Vessel Jobs (9900)	5,699	4.18
Machine Tool Work (3400)	4,243	3.11
Industrial Equipment Operation (5400)	4,126	3.03
Metal Processing (3700)	3,898	2.86
Painting and Paperhanging (4100)	3,583	2.63
Engine Overhaul (8600)	3,121	2.29
Armament Work (6600)	3,073	2.25
Plumbing and Pipefitting (4200)	2,900	2.13
Fluid Systems Maintenance (8200)	2,736	2.01

⁵DOD employed no civilians in the film processing family in fiscal year 2012 or 2021.

⁶Section 5342 of Title 5, United States Code, provides that subchapter IV (prevailing rate systems), except Section 5348, is not applicable to officers and members of crews of vessels excepted from chapter 51 of title 5 (which provides a plan for the classification of positions by Section 5102 (8) of title 5.)

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

Job family (code)	Frequency	Percent
Miscellaneous Occupations (5200)	2,212	1.62
Food Preparation and Serving (7400)	2,158	1.58
General Equipment Maintenance (4800)	1,549	1.14
General Services and Support Work (3500)	1,509	1.11
Ammunition, Explosives, and Toxic Materials (6500)	1,431	1.05
Wood Work (4600)	1,274	0.93
Packing and Processing (7000)	1,125	0.82
Pliable Materials Work (4300)	890	0.65
Instrument Work (3300)	751	0.55
Structural and Finishing Work (3600)	699	0.51
Fabric and Leather Work (3100)	614	0.45
Wire Communications Equipment Installation & Maintenance (2500)	527	0.39
Plant and Animal Work (5000)	443	0.32
Laundry, Dry Cleaning, and Pressing (7300)	117	0.09
Lens and Crystal Work (4000)	82	0.06
Personal Services (7600)	26	0.02
Printing (4400)	22	0.02
Motion Picture, Radio, Television, and Sound Equipment (3900)	19	0.01
Total	136,390	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data and Office of Personnel Management (OPM) information. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by OPM-defined job family. OPM excludes the vessel jobs family (9900) within its trade, craft, or labor occupational series—because they are excluded from the federal wage system by Section 5342 of Title 5, United States Code—but our analysis includes that family because of the large number of employees in those DOD jobs.

Table 77: Representation of DOD Civilian Employees by OPM Blue-Collar Job Family, Fiscal Year 2021

Job family (code)	Frequency	Percent
Transportation/Mobile Equipment Maintenance (5800)	13,205	10.39
Aircraft Overhaul (8800)	11,833	9.31
Warehousing and Stock Handling (6900)	11,046	8.70
Industrial Equipment Maintenance (5300)	8,708	6.85
Electronic Equipment Installation and Maintenance (2600)	8,699	6.85
Metal Work (3800)	8,516	6.70
General Maintenance and Operations Work (4700)	6,977	5.49

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

Job family (code)	Frequency	Percent
Electrical Installation and Maintenance (2800)	6,551	5.16
Vessel Jobs (9900)	5,697	4.48
Transportation/Mobile Equipment Operation (5700)	5,471	4.31
Metal Processing (3700)	4,041	3.18
Machine Tool Work (3400)	3,965	3.12
Industrial Equipment Operation (5400)	3,592	2.83
Plumbing and Pipefitting (4200)	3,539	2.79
Painting and Paperhanging (4100)	3,353	2.64
Miscellaneous Occupations (5200)	2,687	2.12
Armament Work (6600)	2,491	1.96
Engine Overhaul (8600)	2,353	1.85
Fluid Systems Maintenance (8200)	1,947	1.53
Food Preparation and Serving (7400)	1,887	1.49
Ammunition, Explosives, and Toxic Materials (6500)	1,678	1.32
Pliable Materials Work (4300)	1,379	1.09
Wood Work (4600)	1,254	0.99
General Equipment Maintenance (4800)	1,231	0.97
General Services and Support Work (3500)	1,079	0.85
Structural and Finishing Work (3600)	804	0.63
Instrument Work (3300)	731	0.58
Packing and Processing (7000)	656	0.52
Fabric and Leather Work (3100)	643	0.51
Plant and Animal Work (5000)	427	0.34
Wire Communications Equipment Installation & Maintenance (2500)	383	0.30
Laundry, Dry Cleaning, and Pressing (7300)	97	0.08
Lens and Crystal Work (4000)	74	0.06
Personal Services (7600)	20	0.02
Printing (4400)	14	0.01
Motion Picture, Radio, Television, and Sound Equipment (3900)	7	0.01
Total	127,035	100.00

Source: GAO analysis of Department of Defense (DOD) workforce data and Office of Personnel Management (OPM) information. | GAO-23-105284

Notes: The data shown reflect numbers and percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees. OPM excludes the vessel jobs family (9900) within its trade, craft, or labor occupational series—because they are excluded from the federal wage system by Section 5342 of Title 5, United States Code—but our analysis includes that family because of the large number of employees in those DOD jobs.

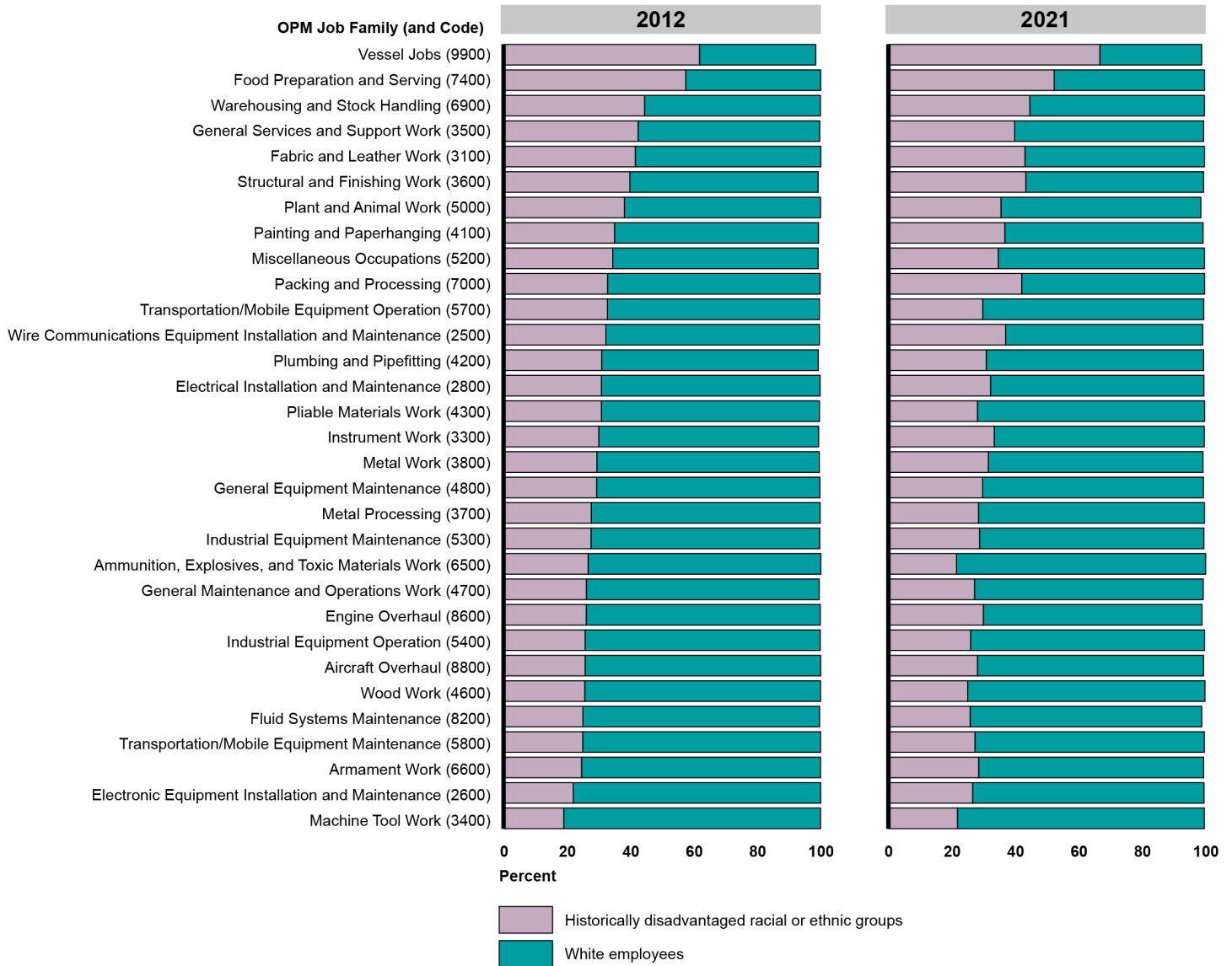
Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

We found that representation of DOD civilian employees from historically disadvantaged groups in each of the 31 blue-collar job families generally was greater than that of women, according to our analysis of DOD data for fiscal years 2012 and 2021.⁷ Specifically, we found that representation of employees from historically disadvantaged groups in each of the job families ranged from 19 to 67 percent, depending on fiscal year and family. Figure 47 depicts additional details pertaining to this group across each family. In comparison, the same representation for women ranged from 2 to 53 percent. In general, as depicted in figure 48, representation of women across blue-collar job families remained in the teens to single digits when compared to their male counterparts. While we did not also analyze the reasons why the percentage of women remained so low, it could be based on a number of factors, including that many or all are predominantly male-dominated occupations for any agency.

⁷We excluded five job families—laundry, dry cleaning, and pressing; lens and crystal work; personal services, printing; and motion picture, radio, television and sound equipment—from this analysis because each had fewer than 100 federal civilian employees in both fiscal years.

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

Figure 47: Representation of DOD Civilian Employees by OPM Blue-Collar Job Family and Race or Ethnicity, Fiscal Years 2012 and 2021



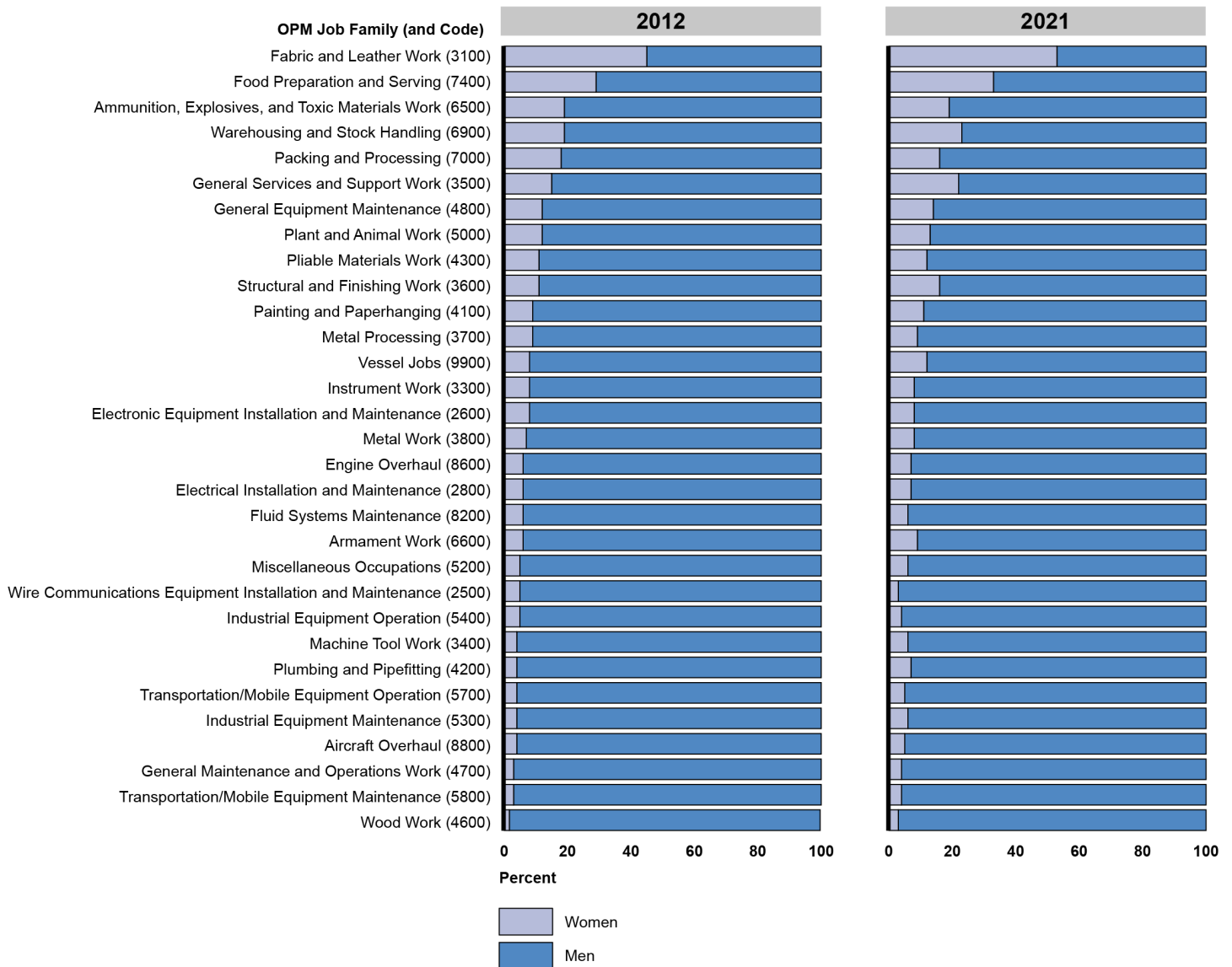
Source: GAO analysis of Department of Defense (DOD) workforce data; Office of Personnel Management (OPM) information. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by OPM-defined job family, excluding five—motion picture, radio, television, and sound equipment (3900), printing (4400), personal services (7600), lens and crystal work (4000), and laundry, dry cleaning, and pressing (7300)—because each employed fewer than 100 civilians in at least 1 of the 2 years we analyzed. Historically disadvantaged racial or ethnic groups include the following OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a

Appendix XI: Representation of DOD Civilian Employees in OPM Occupational Groups and Families

demographic category changed over time for an employee record, we assigned the most recent value available. We excluded instances for which race or ethnicity was unspecified.

Figure 48: Representation of DOD Civilian Employees by OPM Blue-Collar Job Family and Gender, Fiscal Years 2012 and 2021



Source: GAO analysis of Department of Defense (DOD) workforce data; Office of Personnel Management (OPM) information. | GAO-23-105284

Notes: The data shown reflect percentages of appropriated-fund, full-time (i.e., 40-hour workweek) federal civilian employees by OPM-defined job family, excluding five—motion picture, radio, television, and sound equipment (3900), printing (4400), personal services (7600), lens and crystal work (4000), and laundry, dry cleaning, and pressing (7300)—because each employed fewer than 100 civilians in at least 1 of the 2 years we analyzed. For instances where a demographic category changed over time for an employee record, we assigned the most recent value available.

Appendix XII: Promotion Outcomes: Descriptive and Adjusted Analysis by Gender and Racial or Ethnic Group

We examined promotion outcomes based on Department of Defense (DOD) federal civilian workforce data for fiscal year 2012 through fiscal year 2021. We analyzed descriptive promotion rates for General Schedule (GS) employees in the GS pay plan within each of the three military departments of the Army, the Navy, and the Air Force, and collectively across the workforce of the other DOD components.¹

We also conducted a multivariate statistical regression analysis (specifically, duration analysis), which estimate promotion odds by controlling for other factors that could influence promotion, such as occupation.² To examine relationships of various demographic characteristics and other factors that may influence promotion outcomes, we built three sets of models with some variations in demographic characteristics to examine promotions in following ways:

1. We compared promotion outcomes between employees that self-identified with a historically disadvantaged racial or ethnic group and White employees, and between women and men.
2. We compared promotion outcomes between individual racial or ethnic group categories with White employees and between women and men.

¹Our analysis includes employees assigned to the GS pay-plan code, not other pay-plan codes in the GS pay system, such as GL, GP, GM, or GR. Our analysis of the executive level includes only Senior Executive Service employees identified with the ES pay-plan code. We did not include political appointees or other special senior-level positions in other pay plan. The GS pay plan is neither the only way nor a guaranteed path to obtaining a position in the Senior Executive Service. DOD employees from other pay plans, as well as applicants external to DOD and government, can be accepted into the Senior Executive Service or other senior-level positions depending on the knowledge, skills, abilities, and hiring authorities associated with those positions. We examined promotions in the three military departments, and collectively across the other DOD components, which include defense agencies, field activities, and other DOD organizations unless not reported in the data we analyzed. For example, some intelligence agencies do not publicly report their workforce data, including defense agencies, such as the National Security Agency and Defense Intelligence Agency.

²Our descriptive analyses consisted of calculating simple averages of the total number of promotions in a higher grade in the following fiscal-year quarter out of the total number of employees in a given grade in the current fiscal year-quarter from the beginning of fiscal years 2012 through the end of fiscal year 2021. Given this methodology, we were not able to calculate promotion rates for quarter four of fiscal year 2021, because of DOD data we analyzed ended in quarter four of fiscal year 2021. See appendixes I and XIII for more information on the methodology of our analyses, including the control variables we used.

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3. We compared promotion outcomes among White women, women from historically disadvantaged groups, and men from historically disadvantaged groups, with White men.

The following tables summarize our descriptive analyses of simple averages of promotion rates, and the results of our adjusted multivariate statistical regression analyses. We also present relative differences in these promotion rates and odds for women compared to men, and compared across various racial or ethnic groups compared with White employees.

- Table 78 summarizes our analysis comparing employees from historically disadvantaged racial or ethnic groups, as a whole, to White employees.³ As shown in the table, we found that DOD civilian employees from historically disadvantaged racial or ethnic groups generally have lower promotion rates and lower odds of promotion than their White counterparts.
- Table 79 presents our analysis comparing promotion outcomes between men and women. As shown in the table, we found differences between descriptive promotion rates and adjusted promotion odds, but these varied by GS grade and DOD component.
- Tables 80–83 present our descriptive analysis of promotion rates of individual racial or ethnic groups, and adjusted analysis of promotion odds comparing promotions of White employees with employees from other racial or ethnic groups. As shown in the tables, we found that generally White employees have higher promotion rates and higher odds of promotion across all racial and ethnic groups. Black or African American employees generally have lower odds of promotion across most GS grades at DOD, and other racial or ethnic groups also have lower odds depending on GS grade and DOD component.
- Tables 84–87 present our analysis of both gender and racial or ethnic group, with which we examined promotion outcomes for women and men from historically disadvantaged racial or ethnic groups, as well as White women, compared to White men.

While our descriptive analyses provide helpful context on promotion, they do not account for the variety of factors besides gender and racial or ethnic group that may affect promotion outcomes, nor do they show

³Historically disadvantaged racial or ethnic groups consist of the following based on Office of Personnel Management (OPM) categories: Black or African American, Hispanic or Latino, Asian, American Indian or Native Alaskan, Native Hawaiian or Other Pacific Islander, and two or more races.

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whether systematic delays in promotion exist. Our adjusted analyses, which control for a variety of factors, neither completely explain the reasons for differences in promotion outcomes, which may result from various unobservable factors. Thus, our analyses do not establish a causal relationship between demographic characteristics and promotion outcomes. See appendix I for more information on our methodology and additional considerations and limitations for our analysis of DOD data.

Table 78: Descriptive and Adjusted Promotion Analysis for White Employees and Employees from Historically Disadvantaged Racial or Ethnic Groups in the DOD Civilian Workforce, by Military Department and in the Other DOD Components, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Department of the Army							
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	17.75	17.08	11.52	6.39	3.29	2.47	0.50
Promotion rate, historically disadvantaged groups (percent)	15.58	15.19	10.74	5.74	2.94	2.06	0.49
Percentage point difference between promotion rates for White and historically disadvantaged groups	-2.17	-1.89	-0.78	-0.65	-0.35	-0.41	-0.01
Percentage difference between promotion rate for White and historically disadvantaged groups (percent)	-12.23	-11.07	-6.77	-10.17	-10.64	-16.60	-2.00
<i>Adjusted analysis</i>							
Odds ratio for promotion for historically disadvantaged groups relative to White	0.891***	0.884***	0.922***	0.855***	0.836***	0.804***	0.970
95 percent confidence interval	[0.870, 0.913]	[0.863, 0.905]	[0.900, 0.944]	[0.830, 0.881]	[0.794, 0.881]	[0.720, 0.898]	[0.603, 1.561]
Percentage difference between promotion odds for historically disadvantaged groups and promotion odds for White (percent)	-10.90***	-11.60***	-7.80***	-14.50***	-16.40***	-19.60***	-3.00
95 percent confidence interval (percent)	[-13.00, -8.70]	[-13.70, -9.50]	[-10.00, -5.60]	[-17.00, -11.90]	[-20.60, -11.90]	[-28.00, -10.20]	[-39.70, 56.10]
Department of the Navy							
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	24.87	29.91	18.08	6.91	3.47	4.08	0.50
Promotion rate, historically disadvantaged groups (percent)	20.87	25.76	17.06	6.25	3.54	3.46	0.51
Percentage point difference between promotion rates for White and historically disadvantaged groups	-4.00	-4.15	-1.02	-0.66	0.07	-0.62	0.01

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Percentage difference between promotion rate for White and historically disadvantaged groups (percent)	-16.08	-13.87	-5.64	-9.55	2.02	-15.20	2.00
<i>Adjusted analysis</i>							
Odds ratio for promotion for historically disadvantaged groups relative to White	0.822***	0.833***	0.882***	0.782***	0.943**	0.791***	0.877
95 percent confidence interval	[0.798, 0.846]	[0.810, 0.857]	[0.860, 0.905]	[0.757, 0.808]	[0.890, 0.999]	[0.710, 0.882]	[0.539, 1.429]
Percentage difference between promotion odds for historically disadvantaged groups and promotion odds for White (percent)	-17.80***	-16.70***	-11.80***	-21.80***	-5.70**	-20.90***	-12.30
95 percent confidence interval (percent)	[-20.20, -15.40]	[-19.00, -14.30]	[-14.00, -9.50]	[-24.30, -19.20]	[-11.00, -0.10]	[-29.00, -11.80]	[-46.10, 42.90]
Department of the Air Force							
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	22.19	18.17	10.85	5.97	3.24	2.87	0.66
Promotion rate, historically disadvantaged groups (percent)	19.05	17.43	11.55	5.56	3.10	2.59	1.30
Percentage point difference between promotion rates for White and historically disadvantaged groups	-3.14	-0.74	0.70	-0.41	-0.14	-0.28	0.64
Percentage difference between promotion rate for White and historically disadvantaged groups (percent)	-14.15	-4.07	6.45	-6.87	-4.32	-9.76	96.97
<i>Adjusted analysis</i>							
Odds ratio for promotion for historically disadvantaged groups relative to White	0.852***	0.892***	0.887***	0.857***	0.911**	0.886	1.794**
95 percent confidence interval	[0.825, 0.879]	[0.866, 0.918]	[0.860, 0.914]	[0.823, 0.892]	[0.846, 0.980]	[0.754, 1.041]	[1.079, 2.985]
Percentage difference between promotion odds for historically disadvantaged groups and promotion odds for White (percent)	-14.80***	-10.80***	-11.30***	-14.30***	-8.90**	-11.40	79.40**
95 percent confidence interval (percent)	[-17.50, -12.10]	[-13.40, -8.20]	[-14.00, -8.60]	[-17.70, -10.80]	[-15.40, -2.00]	[-24.60, 4.10]	[7.90, 198.50]
Other DOD components							
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	25.35	35.72	15.10	6.56	4.65	3.55	0.86
Promotion rate, historically disadvantaged groups (percent)	22.59	33.84	15.69	6.24	3.96	2.60	0.59

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Percentage point difference between promotion rates for White and historically disadvantaged groups	-2.76	-1.88	0.59	-0.32	-0.69	-0.95	-0.27
Percentage difference between promotion rate for White and historically disadvantaged groups (percent)	-10.89	-5.26	3.91	-4.88	-14.84	-26.76	-31.40
<i>Adjusted analysis</i>							
Odds ratio for promotion for historically disadvantaged groups relative to White	0.943***	0.919***	0.987	0.921***	0.846***	0.798***	0.665**
95 percent confidence interval	[0.906, 0.982]	[0.883, 0.956]	[0.956, 1.019]	[0.885, 0.958]	[0.796, 0.899]	[0.716, 0.889]	[0.467, 0.947]
Percentage difference between promotion odds for historically disadvantaged groups and promotion odds for White (percent)	-5.70***	-8.10***	-1.30	-7.90***	-15.40***	-20.20***	-33.50**
95 percent confidence interval (percent)	[-9.40, -1.80]	[-11.70, -4.40]	[-4.40, 1.90]	[-11.50, -4.20]	[-20.40, -10.10]	[-28.40, -11.10]	[-53.30, -5.30]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

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Table 79: Descriptive and Adjusted Promotion Analysis for Women and Men in the DOD Civilian Workforce, by Military Department and in the Other DOD Components, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Department of the Army							
<i>Descriptive analysis</i>							
Promotion rate for men (percent)	16.91	15.53	11.04	6.05	3.04	2.30	0.48
Promotion rate for women (percent)	16.88	17.48	11.55	6.44	3.55	2.57	0.52
Percentage point difference between promotion rate for women and men	-0.03	1.95	0.51	0.39	0.51	0.27	0.04
Percentage difference between promotion rate for women and men (percent)	-0.18	12.56	4.62	6.45	16.78	11.74	8.33
<i>Adjusted analysis</i>							
Odds ratio for promotion for women relative to men	0.989	1.135***	1.027**	1.013	1.057**	1.094*	0.994
95 percent confidence interval	[0.964, 1.015]	[1.107, 1.164]	[1.002, 1.054]	[0.982, 1.046]	[1.002, 1.114]	[0.983, 1.218]	[0.625, 1.580]
Percentage difference between promotion odds for women and promotion odds for men (percent)	-1.10	13.50***	2.70**	1.30	5.70**	9.40*	-0.60
95 percent confidence interval (percent)	[-3.60, 1.50]	[10.70, 16.40]	[0.20, 5.40]	[-1.80, 4.60]	[0.20, 11.40]	[-1.70, 21.80]	[-37.50, 58.00]
Department of the Navy							
<i>Descriptive analysis</i>							
Promotion rate for men (percent)	23.67	29.13	18.21	6.34	3.24	3.79	0.43
Promotion rate for women (percent)	22.47	26.87	16.82	7.59	4.10	4.40	0.72
Percentage point difference between promotion rate for women and men	-1.20	-2.26	-1.39	1.25	0.86	0.61	0.29
Percentage difference between promotion rate for women and men (percent)	-5.07	-7.76	-7.63	19.72	26.54	16.09	67.44
<i>Adjusted analysis</i>							
Odds ratio for promotion for women relative to men	0.949***	0.905***	0.959***	0.972	1.079**	1.052	1.378
95 percent confidence interval	[0.918, 0.982]	[0.877, 0.935]	[0.930, 0.988]	[0.939, 1.007]	[1.015, 1.146]	[0.949, 1.166]	[0.914, 2.077]
Percentage difference between promotion odds for women and promotion odds for men (percent)	-5.10***	-9.50***	-4.10***	-2.80	7.90**	5.20	37.80
95 percent confidence interval (percent)	[-8.20, -1.80]	[-12.30, -6.50]	[-7.00, -1.20]	[-6.10, 0.70]	[1.50, 14.60]	[-5.10, 16.60]	[-8.60, 107.70]
Department of the Air Force							
<i>Descriptive analysis</i>							

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Promotion rate for men (percent)	22.08	17.38	9.88	5.84	3.05	2.77	0.68
Promotion rate for women (percent)	19.86	18.81	13.51	5.90	3.70	3.01	1.03
Percentage point difference between promotion rate for women and men	-2.22	1.43	3.63	0.06	0.65	0.24	0.35
Percentage difference between promotion rate for women and men (percent)	-10.05	8.23	36.74	1.03	21.31	8.66	51.47
<i>Adjusted analysis</i>							
Odds ratio for promotion for women relative to men	0.859***	0.988	1.039**	0.918***	1.101***	0.993	0.989
95 percent confidence interval	[0.829, 0.889]	[0.959, 1.018]	[1.007, 1.072]	[0.882, 0.956]	[1.024, 1.185]	[0.855, 1.152]	[0.586, 1.671]
Percentage difference between promotion odds for women and promotion odds for men (percent)	-14.10***	-1.20	3.90**	-8.20***	10.10***	-0.70	-1.10
95 percent confidence interval (percent)	[-17.10, -11.10]	[-4.10, 1.80]	[0.70, 7.20]	[-11.80, -4.40]	[2.40, 18.50]	[-14.50, 15.20]	[-41.40, 67.10]
Other DOD components							
<i>Descriptive analysis</i>							
Promotion rate for men (percent)	27.91	35.19	14.62	6.43	4.34	3.05	0.74
Promotion rate for women (percent)	21.23	34.57	16.25	6.46	4.52	3.63	0.95
Percentage point difference between promotion rate for women and men	-6.68	-0.62	1.63	0.03	0.18	0.58	0.21
Percentage difference between promotion rate for women and men (percent)	-23.93	-1.76	11.15	0.47	4.15	19.02	28.38
<i>Adjusted analysis</i>							
Odds ratio for promotion for women relative to men	0.866***	0.955**	0.912***	0.956**	1.056*	1.034	1.118
95 percent confidence interval	[0.829, 0.904]	[0.915, 0.997]	[0.881, 0.944]	[0.917, 0.997]	[0.993, 1.123]	[0.935, 1.144]	[0.840, 1.489]
Percentage difference between promotion odds for women and promotion odds for men (percent)	-13.40***	-4.50**	-8.80***	-4.40**	5.60*	3.40	11.80
95 percent confidence interval (percent)	[-17.10, -9.60]	[-8.50, -0.30]	[-11.90, -5.60]	[-8.30, -0.30]	[-0.70, 12.30]	[-6.50, 14.40]	[-16.00, 48.90]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 through GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes

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any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

Table 80: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Racial or Ethnic Group, Department of the Army, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	17.75	17.08	11.52	6.39	3.29	2.47	0.50
Promotion rate, Black or African American (percent)	14.50	14.25	10.49	5.67	2.90	1.94	0.40
Promotion rate, Hispanic or Latino (percent)	15.60	14.48	10.37	5.43	2.83	2.01	0.82
Promotion rate, Asian (percent)	19.51	20.17	12.19	6.27	2.82	2.32	0.67
Promotion rate, other races (percent)	14.56	12.82	9.03	4.66	3.40	2.37	0.00
Promotion rate, two or more races (percent)	20.59	21.01	12.69	6.86	3.65	2.43	0.00
Percentage point difference between promotion rates for Black or African American and White	-3.25	-2.83	-1.03	-0.72	-0.39	-0.53	-0.10
Percentage difference between promotion rates for Black or African American and White (percent)	-18.31	-16.57	-8.94	-11.27	-11.85	-21.46	-20.00
Percentage point difference between promotion rates Hispanic or Latino and White	-2.15	-2.60	-1.15	-0.96	-0.46	-0.46	0.32
Percentage difference between promotion rates for Hispanic or Latino and White (percent)	-12.11	-15.22	-9.98	-15.02	-13.98	-18.62	64.00
Percentage point difference between promotion rates for Asian and White	1.76	3.09	0.67	-0.12	-0.47	-0.15	0.17

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Percentage difference between promotion rates for Asian and White (percent)	9.92	18.09	5.82	-1.88	-14.29	-6.07	34.00
Percentage point difference between promotion rates for other races and White	-3.19	-4.26	-2.49	-1.73	0.11	-0.10	-0.50
Percentage difference between promotion rates for other races and White (percent)	-17.97	-24.94	-21.61	-27.07	3.34	-4.05	-100.00
Percentage point difference between promotion rates for two or more races and White	2.84	3.93	1.17	0.47	0.36	-0.04	-0.50
Percentage difference between promotion rate for two or more races and White (percent)	16.00	23.01	10.16	7.36	10.94	-1.62	-100.00
<i>Adjusted analysis</i>							
Odds ratio for promotion for Black or African American relative to White	0.845***	0.852***	0.917***	0.864***	0.813***	0.754***	0.784
95 percent confidence interval	[0.820, 0.872]	[0.826, 0.878]	[0.889, 0.946]	[0.831, 0.899]	[0.759, 0.872]	[0.650, 0.874]	[0.402, 1.527]
Percentage difference between promotion odds for Black or African American and White (percent)	-15.50***	-14.80***	-8.30***	-13.60***	-18.70***	-24.60***	-21.60
95 percent confidence interval (percent)	[-18.00, -12.80]	[-17.40, -12.20]	[-11.10, -5.40]	[-16.90, -10.10]	[-24.10, -12.80]	[-35.00, -12.60]	[-59.80, 52.70]
Odds ratio for promotion for Hispanic or Latino relative to White	0.915***	0.864***	0.895***	0.823***	0.854***	0.750**	1.625
95 percent confidence interval	[0.879, 0.951]	[0.830, 0.898]	[0.859, 0.933]	[0.780, 0.869]	[0.775, 0.940]	[0.599, 0.939]	[0.783, 3.374]
Percentage difference between promotion odds for Hispanic or Latino and White (percent)	-8.50***	-13.60***	-10.50***	-17.70***	-14.60***	-25.00**	62.50
95 percent confidence interval (percent)	[-12.10, -4.90]	[-17.00, -10.20]	[-14.10, -6.70]	[-22.00, -13.10]	[-22.50, -6.00]	[-40.10, -6.10]	[-21.70, 237.40]
Odds ratio for promotion for Asian relative to White	0.931**	0.952	0.923***	0.819***	0.769***	0.940	1.490
95 percent confidence interval	[0.874, 0.992]	[0.898, 1.010]	[0.872, 0.976]	[0.767, 0.875]	[0.685, 0.862]	[0.744, 1.189]	[0.542, 4.096]
Percentage difference between promotion odds for Asian and White (percent)	-6.90**	-4.80	-7.70***	-18.10***	-23.10***	-6.00	49.00
95 percent confidence interval (percent)	[-12.60, -0.80]	[-10.20, 1.00]	[-12.80, -2.40]	[-23.30, -12.50]	[-31.50, -13.80]	[-25.60, 18.90]	[-45.80, 309.60]

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Odds ratio for promotion for other races relative to White	0.919*	0.843***	0.878**	0.820***	1.050	0.904	N/A
95 percent confidence interval	[0.837, 1.010]	[0.765, 0.928]	[0.793, 0.972]	[0.718, 0.937]	[0.833, 1.325]	[0.559, 1.462]	N/A
Percentage difference between promotion odds for other races and White (percent)	-8.10*	-15.70***	-12.20**	-18.00***	5.00	-9.60	N/A
95 percent confidence interval (percent)	[-16.30, 1.00]	[-23.50, -7.20]	[-20.70, -2.80]	[-28.20, -6.30]	[-16.70, 32.50]	[-44.10, 46.20]	N/A
Odds ratio for promotion for two or more races relative to White	1.080**	1.105***	1.075**	1.011	1.031	0.970	N/A
95 percent confidence interval	[1.010, 1.154]	[1.035, 1.180]	[1.005, 1.150]	[0.926, 1.104]	[0.883, 1.205]	[0.698, 1.346]	N/A
Percentage difference between promotion odds for two or more races and White (percent)	8.00**	10.50***	7.50**	1.10	3.10	-3.00	N/A
95 percent confidence interval (percent)	[1.00, 15.40]	[3.50, 18.00]	[0.50, 15.00]	[-7.40, 10.40]	[-11.70, 20.50]	[-30.20, 34.60]	N/A

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, N/A = No promotions occurred for this group based on the data we analyzed.

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

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Table 81: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Racial or Ethnic Group, Department of the Navy, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	24.87	29.91	18.08	6.91	3.47	4.08	0.50
Promotion rate, Black or African American (percent)	19.01	23.22	15.66	6.43	3.58	3.30	0.43
Promotion rate, Hispanic or Latino (percent)	20.83	26.68	18.86	7.53	3.26	4.11	0.99
Promotion rate, Asian (percent)	23.37	28.93	17.28	5.20	3.33	3.24	0.00
Promotion rate, other races (percent)	15.90	19.96	15.42	5.20	3.32	2.69	0.56
Promotion rate, two or more races (percent)	29.41	34.67	21.54	7.69	4.84	4.02	0.97
Percentage point difference between promotion rates for Black or African American and White	-5.86	-6.69	-2.42	-0.48	0.11	-0.78	-0.07
Percentage difference between promotion rates for Black or African American and White (percent)	-23.56	-22.37	-13.38	-6.95	3.17	-19.12	-14.00
Percentage point difference between promotion rates Hispanic or Latino and White	-4.04	-3.23	0.78	0.62	-0.21	0.03	0.49
Percentage difference between promotion rates for Hispanic or Latino and White (percent)	-16.24	-10.80	4.31	8.97	-6.05	0.74	98.00
Percentage point difference between promotion rates for Asian and White	-1.50	-0.98	-0.80	-1.71	-0.14	-0.84	-0.50
Percentage difference between promotion rates for Asian and White (percent)	-6.03	-3.28	-4.42	-24.75	-4.03	-20.59	-100.00
Percentage point difference between promotion rates for other races and White	-8.97	-9.95	-2.66	-1.71	-0.15	-1.39	0.06
Percentage difference between promotion rates for other races and White (percent)	-36.07	-33.27	-14.71	-24.75	-4.32	-34.07	12.00
Percentage point difference between promotion rates for two or more races and White	4.54	4.76	3.46	0.78	1.37	-0.06	0.47
Percentage difference between promotion rate for two or more races and White (percent)	18.25	15.91	19.14	11.29	39.48	-1.47	94.00
<i>Adjusted analysis</i>							

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Odds ratio for promotion for Black or African American relative to White	0.806***	0.841***	0.839***	0.821***	0.908**	0.771***	0.617
95 percent confidence interval	[0.774, 0.838]	[0.810, 0.874]	[0.808, 0.870]	[0.783, 0.860]	[0.835, 0.988]	[0.658, 0.903]	[0.282, 1.350]
Percentage difference between promotion odds for Black or African American and White (percent)	-19.40***	-15.90***	-16.10***	-17.90***	-9.20**	-22.90***	-38.30
95 percent confidence interval (percent)	[-22.60, -16.20]	[-19.00, -12.60]	[-19.20, -13.00]	[-21.70, -14.00]	[-16.50, -1.20]	[-34.20, -9.70]	[-71.80, 35.00]
Odds ratio for promotion for Hispanic or Latino relative to White	0.904***	0.918***	1.005	0.949*	0.936	0.954	1.602
95 percent confidence interval	[0.858, 0.953]	[0.871, 0.968]	[0.957, 1.056]	[0.892, 1.010]	[0.832, 1.054]	[0.766, 1.189]	[0.775, 3.309]
Percentage difference between promotion odds for Hispanic or Latino and White (percent)	-9.60***	-8.20***	0.50	-5.10*	-6.40	-4.60	60.20
95 percent confidence interval (percent)	[-14.20, -4.70]	[-12.90, -3.20]	[-4.30, 5.60]	[-10.80, 1.00]	[-16.80, 5.40]	[-23.40, 18.90]	[-22.50, 230.90]
Odds ratio for promotion for Asian relative to White	0.754***	0.749***	0.825***	0.623***	0.908*	0.690***	N/A
95 percent confidence interval	[0.718, 0.791]	[0.714, 0.786]	[0.789, 0.862]	[0.589, 0.658]	[0.821, 1.004]	[0.563, 0.844]	N/A
Percentage difference between promotion odds for Asian and White (percent)	-24.60***	-25.10***	-17.50***	-37.70***	-9.20*	-31.00***	N/A
95 percent confidence interval (percent)	[-28.20, -20.90]	[-28.60, -21.40]	[-21.10, -13.80]	[-41.10, -34.20]	[-17.90, 0.40]	[-43.70, -15.60]	N/A
Odds ratio for promotion for other races relative to White	0.804***	0.728***	0.914**	0.727***	0.932	0.670	2.609
95 percent confidence interval	[0.732, 0.883]	[0.660, 0.802]	[0.837, 0.998]	[0.646, 0.819]	[0.750, 1.158]	[0.414, 1.084]	[0.637, 10.694]
Percentage difference between promotion odds for other races and White (percent)	-19.60***	-27.20***	-8.60**	-27.30***	-6.80	-33.00	160.90
95 percent confidence interval (percent)	[-26.80, -11.70]	[-34.00, -19.80]	[-16.30, -0.20]	[-35.40, -18.10]	[-25.00, 15.80]	[-58.60, 8.40]	[-36.30, 969.4]
Odds ratio for promotion for two or more races relative to White	0.939	0.949	1.001	0.958	1.261***	0.966	2.133
95 percent confidence interval	[0.870, 1.013]	[0.880, 1.022]	[0.932, 1.074]	[0.875, 1.049]	[1.081, 1.470]	[0.717, 1.303]	[0.671, 6.783]
Percentage difference between promotion odds for two or more races and White (percent)	-6.10	-5.10	0.10	-4.20	26.10***	-3.40	113.30

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
95 percent confidence interval (percent)	[-13.00, 1.30]	[-12.00, 2.20]	[-6.80, 7.40]	[-12.50, 4.90]	[8.10, 47.00]	[-28.30, 30.30]	[-32.90, 578.30]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, N/A = No promotions occurred for this group based on the data we analyzed.

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

Table 82: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Racial or Ethnic Group, Department of the Air Force, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	22.19	18.17	10.85	5.97	3.24	2.87	0.66
Promotion rate, Black or African American (percent)	17.56	16.11	11.59	5.34	3.23	2.37	0.98
Promotion rate, Hispanic or Latino (percent)	18.53	16.43	10.32	5.93	3.31	3.12	1.65
Promotion rate, Asian (percent)	24.63	24.34	13.15	5.37	2.42	2.30	1.21
Promotion rate, other races (percent)	19.44	17.00	9.54	4.26	2.53	2.54	2.20
Promotion rate, two or more races (percent)	23.52	21.54	14.60	6.69	3.36	2.55	1.25

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Percentage point difference between promotion rates for Black or African American and White	-4.63	-2.06	0.74	-0.63	-0.01	-0.50	0.32
Percentage difference between promotion rates for Black or African American and White (percent)	-20.87	-11.34	6.82	-10.55	-0.31	-17.42	48.48
Percentage point difference between promotion rates Hispanic or Latino and White	-3.66	-1.74	-0.53	-0.04	0.07	0.25	0.99
Percentage difference between promotion rates for Hispanic or Latino and White (percent)	-16.49	-9.58	-4.88	-0.67	2.16	8.71	150.00
Percentage point difference between promotion rates for Asian and White	2.44	6.17	2.30	-0.60	-0.82	-0.57	0.55
Percentage difference between promotion rates for Asian and White (percent)	11.00	33.96	21.20	-10.05	-25.31	-19.86	83.33
Percentage point difference between promotion rates for other races and White	-2.75	-1.17	-1.31	-1.71	-0.71	-0.33	1.54
Percentage difference between promotion rates for other races and White (percent)	-12.39	-6.44	-12.07	-28.64	-21.91	-11.50	233.33
Percentage point difference between promotion rates for two or more races and White	1.33	3.37	3.75	0.72	0.12	-0.32	0.59
Percentage difference between promotion rate for two or more races and White (percent)	5.99	18.55	34.56	12.06	3.70	-11.15	89.39
<i>Adjusted analysis</i>							
Odds ratio for promotion for Black or African American relative to White	0.806***	0.849***	0.835***	0.825***	0.903*	0.790*	1.366
95 percent confidence interval	[0.773, 0.841]	[0.817, 0.882]	[0.802, 0.870]	[0.780, 0.872]	[0.814, 1.001]	[0.624, 1.001]	[0.610, 3.061]
Percentage difference between promotion odds for Black or African American and White (percent)	-19.40***	-15.10***	-16.50***	-17.50***	-9.70*	-21.00*	36.60
95 percent confidence interval (percent)	[-22.70, -15.90]	[-18.30, -11.80]	[-19.80, -13.00]	[-22.00, -12.80]	[-18.60, 0.10]	[-37.60, 0.10]	[-39.00, 206.10]
Odds ratio for promotion for Hispanic or Latino relative to White	0.845***	0.862***	0.876***	0.962	1.000	1.035	2.304**
95 percent confidence interval	[0.803, 0.889]	[0.822, 0.904]	[0.831, 0.923]	[0.898, 1.031]	[0.883, 1.133]	[0.793, 1.350]	[1.043, 5.091]

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Percentage difference between promotion odds for Hispanic or Latino and White (percent)	-15.50***	-13.80***	-12.40***	-3.80	0.00	3.50	130.40**
95 percent confidence interval (percent)	[-19.70, -11.10]	[-17.80, -9.60]	[-16.90, -7.70]	[-10.20, 3.10]	[-11.70, 13.30]	[-20.70, 35.00]	[4.30, 409.10]
Odds ratio for promotion for Asian relative to White	0.921**	1.007	0.958	0.734***	0.740***	0.898	1.712
95 percent confidence interval	[0.852, 0.995]	[0.938, 1.082]	[0.888, 1.034]	[0.664, 0.810]	[0.614, 0.891]	[0.580, 1.391]	[0.522, 5.613]
Percentage difference between promotion odds for Asian and White (percent)	-7.90**	0.70	-4.20	-26.60***	-26.00***	-10.20	71.20
95 percent confidence interval (percent)	[-14.80, -0.50]	[-6.20, 8.20]	[-11.20, 3.40]	[-33.60, -19.00]	[-38.60, -10.90]	[-42.00, 39.10]	[-47.80, 461.30]
Odds ratio for promotion for other races relative to White	0.940	0.970	0.880**	0.751***	0.835	0.748	2.984
95 percent confidence interval	[0.836, 1.057]	[0.866, 1.087]	[0.775, 0.999]	[0.628, 0.899]	[0.598, 1.167]	[0.334, 1.678]	[0.708, 12.588]
Percentage difference between promotion odds for other races and White (percent)	-6.00	-3.00	-12.00**	-24.90***	-16.50	-25.20	198.40
95 percent confidence interval (percent)	[-16.40, 5.70]	[-13.40, 8.70]	[-22.50, -0.10]	[-37.20, -10.10]	[-40.20, 16.70]	[-66.60, 67.80]	[-29.20, 1158.80]
Odds ratio for promotion for two or more races relative to White	1.002	1.042	1.129***	0.994	1.009	0.950	1.650
95 percent confidence interval	[0.920, 1.091]	[0.966, 1.124]	[1.042, 1.222]	[0.892, 1.108]	[0.824, 1.235]	[0.615, 1.468]	[0.397, 6.861]
Percentage difference between promotion odds for two or more races and White (percent)	0.20	4.20	12.90***	-0.60	0.90	-5.00	65.00
95 percent confidence interval (percent)	[-8.00, 9.10]	[-3.40, 12.40]	[4.20, 22.20]	[-10.80, 10.80]	[-17.60, 23.50]	[-38.50, 46.80]	[-60.30, 586.10]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, N/A = No promotions occurred for this group based on the data we analyzed.

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Racial or ethnic groups based Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
and Racial or Ethnic Group**

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees from White or historically disadvantaged racial or ethnic groups in a higher grade in the following fiscal year-quarter, divided by the number of employees from White or historically disadvantaged racial or ethnic groups in the given grade in the current fiscal year-quarter. We calculated the percentage difference for employees historically disadvantaged groups relative to White employees as the unrounded percentage point difference divided by the unrounded promotion rate for men.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios and percentage difference between promotion odds that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while values that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

Table 83: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Racial or Ethnic Group, the Other DOD Components, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White (percent)	25.35	35.72	15.10	6.56	4.65	3.55	0.86
Promotion rate, Black or African American (percent)	20.85	31.39	13.45	6.43	4.07	2.44	0.52
Promotion rate, Hispanic or Latino (percent)	27.47	39.67	19.39	6.52	4.05	2.89	0.91
Promotion rate, Asian (percent)	23.70	36.97	20.22	5.05	3.38	2.44	0.63
Promotion rate, other races (percent)	18.78	26.70	13.90	4.67	2.78	4.24	0.00
Promotion rate, two or more races (percent)	27.90	37.64	20.27	7.71	4.64	3.27	0.61
Percentage point difference between promotion rates for Black or African American and White	-4.50	-4.33	-1.65	-0.13	-0.58	-1.11	-0.34
Percentage difference between promotion rates for Black or African American and White (percent)	-17.75	-12.12	-10.93	-1.98	-12.47	-31.27	-39.53
Percentage point difference between promotion rates Hispanic or Latino and White	2.12	3.95	4.29	-0.04	-0.60	-0.66	0.05
Percentage difference between promotion rates for Hispanic or Latino and White (percent)	8.36	11.06	28.41	-0.61	-12.90	-18.59	5.81
Percentage point difference between promotion rates for Asian and White	-1.65	1.25	5.12	-1.51	-1.27	-1.11	-0.23

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
and Racial or Ethnic Group**

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Percentage difference between promotion rates for Asian and White (percent)	-6.51	3.50	33.91	-23.02	-27.31	-31.27	-26.74
Percentage point difference between promotion rates for other races and White	-6.57	-9.02	-1.20	-1.89	-1.87	0.69	-0.86
Percentage difference between promotion rates for other races and White (percent)	-25.92	-25.25	-7.95	-28.81	-40.22	19.44	-100.00
Percentage point difference between promotion rates for two or more races and White	2.55	1.92	5.17	1.15	-0.01	-0.28	-0.25
Percentage difference between promotion rate for two or more races and White (percent)	10.06	5.38	34.24	17.53	-0.22	-7.89	-29.07
<i>Adjusted analysis</i>							
Odds ratio for promotion for Black or African American relative to White	0.897***	0.888***	0.856***	0.945**	0.861***	0.779***	0.553**
95 percent confidence interval	[0.856, 0.940]	[0.847, 0.931]	[0.823, 0.890]	[0.900, 0.992]	[0.799, 0.928]	[0.679, 0.894]	[0.339, 0.902]
Percentage difference between promotion odds for Black or African American and White (percent)	-10.30***	-11.20***	-14.40***	-5.50**	-13.90***	-22.10***	-44.70**
95 percent confidence interval (percent)	[-14.40, -6.00]	[-15.30, -6.90]	[-17.70, -11.00]	[-10.00, -0.80]	[-20.10, -7.20]	[-32.10, -10.60]	[-66.10, -9.80]
Odds ratio for promotion for Hispanic or Latino relative to White	1.094**	1.008	1.237***	0.921**	0.877**	0.837	1.014
95 percent confidence interval	[1.016, 1.178]	[0.938, 1.082]	[1.170, 1.307]	[0.854, 0.992]	[0.778, 0.988]	[0.667, 1.051]	[0.517, 1.991]
Percentage difference between promotion odds for Hispanic or Latino and White (percent)	9.40**	0.80	23.70***	-7.90**	-12.30**	-16.30	1.40
95 percent confidence interval (percent)	[1.60, 17.80]	[-6.20, 8.20]	[17.00, 30.70]	[-14.60, -0.80]	[-22.20, -1.20]	[-33.30, 5.10]	[-48.30, 99.10]
Odds ratio for promotion for Asian relative to White	0.900**	0.909**	1.175***	0.799***	0.719***	0.673***	0.685
95 percent confidence interval	[0.821, 0.987]	[0.828, 0.998]	[1.094, 1.262]	[0.732, 0.873]	[0.626, 0.824]	[0.527, 0.860]	[0.301, 1.559]
Percentage difference between promotion odds for Asian and White (percent)	-10.00**	-9.10**	17.50***	-20.10***	-28.10***	-32.70***	-31.50
95 percent confidence interval (percent)	[-17.90, -1.30]	[-17.20, -0.20]	[9.40, 26.20]	[-26.80, -12.70]	[-37.40, -17.60]	[-47.30, -14.00]	[-69.90, 55.90]

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
and Racial or Ethnic Group**

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Odds ratio for promotion for other races relative to White	0.970	0.795**	0.938	0.726***	0.684**	1.366	N/A
95 percent confidence interval	[0.813, 1.157]	[0.660, 0.958]	[0.793, 1.108]	[0.576, 0.915]	[0.470, 0.993]	[0.770, 2.423]	N/A
Percentage difference between promotion odds for other races and White (percent)	-3.00	-20.50**	-6.20	-27.40***	-31.60**	36.60	N/A
95 percent confidence interval (percent)	[-18.70, 15.70]	[-34.00, -4.20]	[-20.70, 10.80]	[-42.40, -8.50]	[-53.00, -0.70]	[-23.00, 142.30]	N/A
Odds ratio for promotion for two or more races relative to White	1.072	1.012	1.193***	1.106*	1.033	1.054	0.934
95 percent confidence interval	[0.953, 1.207]	[0.901, 1.136]	[1.088, 1.307]	[0.983, 1.244]	[0.858, 1.243]	[0.770, 1.442]	[0.382, 2.286]
Percentage difference between promotion odds for two or more races and White (percent)	7.20	1.20	19.30***	10.60*	3.30	5.40	-6.60
95 percent confidence interval (percent)	[-4.70, 20.70]	[-9.90, 13.60]	[8.80, 30.70]	[-1.70, 24.40]	[-14.20, 24.30]	[-23.00, 44.20]	[-61.80, 128.60]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, N/A = No promotions occurred for this group based on the data we analyzed.

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Racial or ethnic groups are based on Office of Personnel Management categories used in DOD data. For our analysis, the “other races” category combines American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander employees given their small numbers. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
and Racial or Ethnic Group**

Table 84: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Gender and Racial or Ethnic Group, Department of the Army, Fiscal Year 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White men (percent)	17.79	16.19	11.43	6.28	3.16	2.36	0.47
Promotion rate, White women (percent)	17.69	18.43	11.66	6.63	3.65	2.83	0.60
Promotion rate, men from historically disadvantaged groups (percent)	15.24	14.22	10.18	5.48	2.67	2.06	0.58
Promotion rate, women from historically disadvantaged groups (percent)	15.87	16.18	11.37	6.11	3.36	2.06	0.32
Percentage point difference between promotion rates White women and White men	-0.10	2.24	0.23	0.35	0.49	0.47	0.13
Percentage difference between promotion rates for White women and White men (percent)	-0.56	13.84	2.01	5.57	15.51	19.92	27.66
Percentage point difference between promotion rates men from historically disadvantaged groups and White men	-2.55	-1.97	-1.25	-0.80	-0.49	-0.30	0.11
Percentage difference between promotion rates for men from historically disadvantaged groups and White men (percent)	-14.33	-12.17	-10.94	-12.74	-15.51	-12.71	23.40
Percentage point difference between promotion rates for women from historically disadvantaged groups and White men	-1.92	-0.01	-0.06	-0.17	0.20	-0.30	-0.15
Percentage difference between promotion rates women from historically disadvantaged groups and White men (percent)	-10.79	-0.06	-0.52	-2.71	6.33	-12.71	-31.91
<i>Adjusted analysis</i>							
Odds ratio for promotion for White women relative to White men	0.996	1.173***	1.034**	1.020	1.035	1.131**	1.183
95 percent confidence interval	[0.966, 1.028]	[1.138, 1.208]	[1.003, 1.065]	[0.983, 1.058]	[0.974, 1.100]	[1.003, 1.276]	[0.720, 1.946]
Percentage difference between promotion odds for White women and promotion odds for White men (percent)	-0.40	17.30***	3.40**	2.00	3.50	13.10**	18.30
95 percent confidence interval (percent)	[-3.40, 2.80]	[13.80, 20.80]	[0.30, 6.50]	[-1.70, 5.80]	[-2.60, 10.00]	[0.30, 27.60]	[-28.00, 94.60]
Odds ratio for promotion for men from historically disadvantaged groups relative to White men	0.900***	0.925***	0.930***	0.862***	0.812***	0.845**	1.264

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
and Racial or Ethnic Group**

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
95 percent confidence interval	[0.870, 0.931]	[0.895, 0.956]	[0.900, 0.960]	[0.830, 0.896]	[0.759, 0.868]	[0.737, 0.968]	[0.731, 2.187]
Percentage difference between promotion odds for men from historically disadvantaged groups and promotion odds for White men (percent)	-10.00***	-7.50***	-7.00***	-13.80***	-18.80***	-15.50**	26.40
95 percent confidence interval (percent)	[-13.00, -6.90]	[-10.50, -4.40]	[-10.00, -4.00]	[-17.00, -10.40]	[-24.10, -13.20]	[-26.30, -3.20]	[-26.90, 118.70]
Odds ratio for promotion for women from historically disadvantaged groups relative to White men	0.880***	0.990	0.944***	0.862***	0.905**	0.834**	0.654
95 percent confidence interval	[0.851, 0.911]	[0.957, 1.024]	[0.912, 0.977]	[0.825, 0.901]	[0.838, 0.977]	[0.702, 0.992]	[0.274, 1.561]
Percentage difference between promotion odds for women from historically disadvantaged groups and promotion odds for White men (percent)	-12.00***	-1.00	-5.60***	-13.80***	-9.50**	-16.60**	-34.60
95 percent confidence interval (percent)	[-14.90, -8.90]	[-4.30, 2.40]	[-8.80, -2.30]	[-17.50, -9.90]	[-16.20, -2.30]	[-29.80, -0.80]	[-72.60, 56.10]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
and Racial or Ethnic Group**

Table 85: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Gender and Racial or Ethnic Group, Department of the Navy, Fiscal Year 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White men (percent)	25.06	30.72	18.55	6.55	3.25	3.90	0.43
Promotion rate, White women (percent)	24.53	28.40	17.07	7.90	4.12	4.67	0.77
Promotion rate, men from historically disadvantaged groups (percent)	21.43	26.36	17.47	5.80	3.22	3.26	0.47
Promotion rate, women from historically disadvantaged groups (percent)	20.21	24.97	16.46	7.07	4.07	3.78	0.57
Percentage point difference between promotion rates White women and White men	-0.53	-2.32	-1.48	1.35	0.87	0.77	0.34
Percentage difference between promotion rates for White women and White men (percent)	-2.11	-7.55	-7.98	20.61	26.77	19.74	79.07
Percentage point difference between promotion rates men from historically disadvantaged groups and White men	-3.63	-4.36	-1.08	-0.75	-0.03	-0.64	0.04
Percentage difference between promotion rates for men from historically disadvantaged groups and White men (percent)	-14.49	-14.19	-5.82	-11.45	-0.92	-16.41	9.30
Percentage point difference between promotion rates for women from historically disadvantaged groups and White men	-4.85	-5.75	-2.09	0.52	0.82	-0.12	0.14
Percentage difference between promotion rates women from historically disadvantaged groups and White men (percent)	-19.35	-18.72	-11.27	7.94	25.23	-3.08	32.56
<i>Adjusted analysis</i>							
Odds ratio for promotion for White women relative to White men	0.959**	0.916***	0.975	0.977	1.111***	1.062	1.485*
95 percent confidence interval	[0.921, 0.999]	[0.881, 0.953]	[0.941, 1.011]	[0.938, 1.018]	[1.038, 1.190]	[0.948, 1.190]	[0.958, 2.302]
Percentage difference between promotion odds for White women and promotion odds for White men (percent)	-4.10**	-8.40***	-2.50	-2.30	11.10***	6.20	48.50*
95 percent confidence interval (percent)	[-7.90, -0.10]	[-11.90, -4.70]	[-5.90, 1.10]	[-6.20, 1.80]	[3.80, 19.00]	[-5.20, 19.00]	[-4.20, 130.20]
Odds ratio for promotion for men from historically disadvantaged groups relative to White men	0.831***	0.843***	0.897***	0.786***	0.983	0.805***	1.058

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
and Racial or Ethnic Group**

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
95 percent confidence interval	[0.800, 0.863]	[0.813, 0.874]	[0.869, 0.926]	[0.755, 0.819]	[0.913, 1.057]	[0.703, 0.923]	[0.572, 1.958]
Percentage difference between promotion odds for men from historically disadvantaged groups and promotion odds for White men (percent)	-16.90***	-15.70***	-10.30***	-21.40***	-1.70	-19.50***	5.80
95 percent confidence interval (percent)	[-20.00, -13.70]	[-18.70, -12.60]	[-13.10, -7.40]	[-24.50, -18.10]	[-8.70, 5.70]	[-29.70, -7.70]	[-42.80, 95.80]
Odds ratio for promotion for women from historically disadvantaged groups relative to White men	0.777***	0.750***	0.835***	0.757***	0.982	0.817**	1.007
95 percent confidence interval	[0.744, 0.812]	[0.718, 0.783]	[0.801, 0.870]	[0.720, 0.796]	[0.898, 1.074]	[0.691, 0.966]	[0.468, 2.168]
Percentage difference between promotion odds for women from historically disadvantaged groups and promotion odds for White men (percent)	-22.30***	-25.00***	-16.50***	-24.30***	-1.80	-18.30**	0.70
95 percent confidence interval (percent)	[-25.60, -18.80]	[-28.20, -21.70]	[-19.90, -13.00]	[-28.00, -20.40]	[-10.20, 7.40]	[-30.90, -3.40]	[-53.20, 116.80]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

**Appendix XII: Promotion Outcomes:
Descriptive and Adjusted Analysis by Gender
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Table 86: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Gender and Racial or Ethnic Group, Department of the Air Force, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White men (percent)	23.41	17.72	9.80	5.99	3.12	2.81	0.58
Promotion rate, White women (percent)	20.61	18.99	13.41	5.91	3.68	3.13	1.05
Promotion rate, men from historically disadvantaged groups (percent)	19.35	16.52	10.12	5.33	2.74	2.54	1.49
Promotion rate, women from historically disadvantaged groups (percent)	18.77	18.52	13.69	5.87	3.77	2.69	0.95
Percentage point difference between promotion rates White women and White men	-2.80	1.27	3.61	-0.08	0.56	0.32	0.47
Percentage difference between promotion rates for White women and White men (percent)	-11.96	7.17	36.84	-1.34	17.95	11.39	81.03
Percentage point difference between promotion rates men from historically disadvantaged groups and White men	-4.06	-1.20	0.32	-0.66	-0.38	-0.27	0.91
Percentage difference between promotion rates for men from historically disadvantaged groups and White men (percent)	-17.34	-6.77	3.27	-11.02	-12.18	-9.61	156.90
Percentage point difference between promotion rates for women from historically disadvantaged groups and White men	-4.64	0.80	3.89	-0.12	0.65	-0.12	0.37
Percentage difference between promotion rates women from historically disadvantaged groups and White men (percent)	-19.82	4.51	39.69	-2.00	20.83	-4.27	63.79
<i>Adjusted analysis</i>							
Odds ratio for promotion for White women relative to White men	0.852***	1.001	1.055***	0.900***	1.086*	1.007	1.396
95 percent confidence interval	[0.818, 0.888]	[0.966, 1.037]	[1.017, 1.094]	[0.859, 0.942]	[1.000, 1.179]	[0.856, 1.185]	[0.792, 2.462]
Percentage difference between promotion odds for White women and promotion odds for White men (percent)	-14.80***	0.10	5.50***	-10.00***	8.60*	0.70	39.60
95 percent confidence interval (percent)	[-18.20, -11.20]	[-3.40, 3.70]	[1.70, 9.40]	[-14.10, -5.80]	[0.00, 17.90]	[-14.40, 18.50]	[-20.80, 146.20]

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Odds ratio for promotion for men from historically disadvantaged groups relative to White men	0.843***	0.908***	0.906***	0.831***	0.891**	0.908	2.699***
95 percent confidence interval	[0.806, 0.881]	[0.873, 0.944]	[0.870, 0.944]	[0.789, 0.876]	[0.812, 0.978]	[0.744, 1.109]	[1.526, 4.775]
Percentage difference between promotion odds for men from historically disadvantaged groups and promotion odds for White men (percent)	-15.70***	-9.20***	-9.40***	-16.90***	-10.90**	-9.20	169.90***
95 percent confidence interval (percent)	[-19.40, -11.90]	[-12.70, -5.60]	[-13.00, -5.60]	[-21.10, -12.40]	[-18.80, -2.20]	[-25.60, 10.90]	[52.60, 377.50]
Odds ratio for promotion for women from historically disadvantaged groups relative to White men	0.734***	0.873***	0.910***	0.806***	1.025	0.852	1.005
95 percent confidence interval	[0.701, 0.769]	[0.838, 0.910]	[0.870, 0.952]	[0.759, 0.855]	[0.916, 1.147]	[0.660, 1.100]	[0.386, 2.614]
Percentage difference between promotion odds for women from historically disadvantaged groups and promotion odds for White men (percent)	-26.60***	-12.70***	-9.00***	-19.40***	2.50	-14.80	0.50
95 percent confidence interval (percent)	[-29.90, -23.10]	[-16.20, -9.00]	[-13.00, -4.80]	[-24.10, -14.50]	[-8.40, 14.70]	[-34.00, 10.00]	[-61.40, 161.40]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are

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less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

Table 87: Descriptive and Adjusted Promotion Analysis of DOD Civilian Employees by Gender and Racial or Ethnic Group, in the Other DOD Components, Fiscal Years 2012–2021

	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
<i>Descriptive analysis</i>							
Promotion rate, White men (percent)	29.22	36.08	14.32	6.58	4.59	3.24	0.76
Promotion rate, White women (percent)	21.99	35.27	16.37	6.54	4.76	4.19	1.12
Promotion rate, men from historically disadvantaged groups (percent)	25.99	33.85	15.24	6.11	3.75	2.51	0.63
Promotion rate, women from historically disadvantaged groups (percent)	20.43	33.83	16.12	6.35	4.16	2.70	0.54
Percentage point difference between promotion rates White women and White men	-7.23	-0.81	2.05	-0.04	0.17	0.95	0.36
Percentage difference between promotion rates for White women and White men (percent)	-24.74	-2.25	14.32	-0.61	3.70	29.32	47.37
Percentage point difference between promotion rates men from historically disadvantaged groups and White men	-3.23	-2.23	0.92	-0.47	-0.84	-0.73	-0.13
Percentage difference between promotion rates for men from historically disadvantaged groups and White men (percent)	-11.05	-6.18	6.42	-7.14	-18.30	-22.53	-17.11
Percentage point difference between promotion rates for women from historically disadvantaged groups and White men	-8.79	-2.25	1.80	-0.23	-0.43	-0.54	-0.22
Percentage difference between promotion rates women from historically disadvantaged groups and White men (percent)	-30.08	-6.24	12.57	-3.50	-9.37	-16.67	-28.95
<i>Adjusted analysis</i>							
Odds ratio for promotion for White women relative to White men	0.878***	0.976	0.924***	0.944**	1.037	1.101*	1.185
95 percent confidence interval	[0.832, 0.928]	[0.924, 1.031]	[0.886, 0.965]	[0.897, 0.993]	[0.965, 1.114]	[0.983, 1.234]	[0.870, 1.614]
Percentage difference between promotion odds for White women and promotion odds for White men (percent)	-12.20***	-2.40	-7.60***	-5.60**	3.70	10.10*	18.50

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	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
95 percent confidence interval (percent)	[-16.80, -7.20]	[-7.60, 3.10]	[-11.40, -3.50]	[-10.30, -0.70]	[-3.50, 11.40]	[-1.70, 23.40]	[-13.00, 61.40]
Odds ratio for promotion for men from historically disadvantaged groups relative to White men	0.961	0.942**	1.003	0.904***	0.823***	0.899	0.769
95 percent confidence interval	[0.907, 1.019]	[0.891, 0.996]	[0.960, 1.049]	[0.855, 0.956]	[0.757, 0.895]	[0.777, 1.040]	[0.487, 1.213]
Percentage difference between promotion odds for men from historically disadvantaged groups and promotion odds for White men (percent)	-3.90	-5.80**	0.30	-9.60***	-17.70***	-10.10	-23.10
95 percent confidence interval (percent)	[-9.30, 1.90]	[-10.90, -0.40]	[-4.00, 4.90]	[-14.50, -4.40]	[-24.30, -10.50]	[-22.30, 4.00]	[-51.30, 21.30]
Odds ratio for promotion for women from historically disadvantaged groups relative to White men	0.815***	0.874***	0.897***	0.886***	0.904**	0.769***	0.652
95 percent confidence interval	[0.771, 0.862]	[0.827, 0.924]	[0.858, 0.938]	[0.838, 0.936]	[0.832, 0.983]	[0.660, 0.896]	[0.383, 1.110]
Percentage difference between promotion odds for women from historically disadvantaged groups and promotion odds for White men (percent)	-18.50***	-12.60***	-10.30***	-11.40***	-9.60**	-23.10***	-34.80
95 percent confidence interval (percent)	[-22.90, -13.80]	[-17.30, -7.60]	[-14.20, -6.20]	[-16.20, -6.40]	[-16.80, -1.70]	[-34.00, -10.40]	[-61.70, 11.00]

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: Historically disadvantaged racial or ethnic groups include the following Office of Personnel Management categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. For instances where a demographic category for an employee record changed over time, we assigned the most recent value to all available years.

The promotion of GS-7 includes both promotion to GS-8 and GS-9 due to the different intervals at which some federal positions promote (e.g., most positions from GS-7 to GS-11 promote at a two-grade interval from GS-7 to GS-9 to GS-11; however, some positions promote at one-grade intervals from GS-7 to GS-8, then to GS-9, etc.). Similarly, the promotion of GS-9 includes both promotion to GS-10 and GS-11. For one-grade intervals, GS-11 and above, the promotion includes any promotions to the next grade (e.g., GS-11 to GS-12) and promotion to a non-adjacent grade (i.e., a jump in grade, such as from GS-11 to GS-13).

For our descriptive analysis, promotion rate is the annual average of the number of newly elevated employees in a higher grade in a fiscal year, divided by the number of employees in the end of the same fiscal year from the beginning of fiscal years 2012 through the end of fiscal year 2021.

For the adjusted analysis, we conducted discrete-time duration analysis using a logit model that controlled for a variety of factors relevant to promotions, and we analyzed the time durations (number of fiscal year-quarters) to be promoted. The adjusted analysis does not completely explain the reasons for differences in odds of promotion. While various independent variables capture and control for many different characteristics across different demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes. Odds ratios that are

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statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate individuals with that characteristic are more likely to be promoted. While statistical significance tests in regression models are useful as a diagnostic tool to test model coefficients, they may not be the only information sources agencies use to help identify disparities.

Appendix XIII: Promotion Regression Results with Control Variables, for Gender and Overall Racial or Ethnic Group

Tables 88–91 provide the estimates for odds ratios from multivariate statistical regression (specifically, duration regression results) for our estimates of odds of promotion based on Department of Defense (DOD) data for the three military departments and across the other DOD components.¹ We present the tables below, which specifically pertain to our analysis of women compared with men, and employees from historically disadvantaged racial or ethnic groups overall compared with White employees, to provide additional information on the control variables we used in our analysis, including disability status, age, federal experience, education, work schedule, and occupation group.²

Our analyses do not completely explain the reasons for differences in promotion outcomes, which may result from various unobservable factors. Thus, our analyses do not establish a causal relationship between demographic characteristics and promotion outcomes.

Table 88: Variables Used and Resulting Odds Ratios from Adjusted Analysis of Promotions of Women Compared to Men and Employees from Historically Disadvantaged Racial or Ethnic Groups Compared to White in the Department of the Army Civilian Workforce, Fiscal Years 2012–2021

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Female	0.989 (0.964 - 1.015)	1.135*** (1.107 - 1.164)	1.027** (1.002 - 1.054)	1.013 (0.982 - 1.046)	1.057** (1.002 - 1.114)	1.094* (0.983 - 1.218)	0.994 (0.625 - 1.580)
Historically disadvantaged racial or ethnic group	0.891*** (0.870 - 0.913)	0.884*** (0.863 - 0.905)	0.922*** (0.900 - 0.944)	0.855*** (0.830 - 0.881)	0.836*** (0.794 - 0.881)	0.804*** (0.720 - 0.898)	0.970 (0.603 - 1.561)

¹We examined promotions in the three military departments, and collectively across the other DOD components, which include defense agencies, field activities, and other DOD organizations unless not reported in the data we analyzed. For example, some intelligence agencies do not publicly report their workforce data, including defense agencies such as the National Security Agency and Defense Intelligence Agency.

²Historically disadvantaged racial or ethnic groups consist of the following based on Office of Personnel Management (OPM) categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White. OPM categorizes sex as male or female, but in this report we refer to gender (i.e., men and women). Occupation groups are based on OPM occupation groups associated with DOD employee records. We do not include the full regression results of our other analyses, pertaining to individual racial or ethnic group and combining sex and racial or ethnic group, because we used the same analytical approach and control variables for those models.

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Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Targeted disability	0.886** (0.804 - 0.977)	0.965 (0.874 - 1.066)	0.792*** (0.718 - 0.874)	0.788*** (0.697 - 0.890)	0.838* (0.680 - 1.034)	0.521** (0.301 - 0.901)	2.791* (0.867 - 8.988)
Non-Targeted Disability	0.855*** (0.813 - 0.899)	0.845*** (0.804 - 0.888)	0.871*** (0.831 - 0.913)	0.823*** (0.776 - 0.872)	0.739*** (0.668 - 0.819)	0.828* (0.681 - 1.006)	0.524 (0.192 - 1.435)
Began federal service at or after age 40	0.769*** (0.747 - 0.792)	0.804*** (0.782 - 0.826)	0.753*** (0.734 - 0.774)	0.709*** (0.686 - 0.733)	0.813*** (0.769 - 0.860)	0.862*** (0.772 - 0.962)	1.065 (0.686 - 1.655)
Bachelor's Degree or More	2.339*** (2.282 - 2.398)	2.702*** (2.639 - 2.766)	2.275*** (2.220 - 2.331)	1.895*** (1.832 - 1.961)	1.749*** (1.637 - 1.869)	1.508*** (1.298 - 1.752)	2.746** (1.113 - 6.771)
Veterans' preference	1.002 (0.976 - 1.028)	0.938*** (0.915 - 0.963)	0.932*** (0.909 - 0.956)	0.978 (0.947 - 1.011)	1.037 (0.982 - 1.095)	1.073 (0.967 - 1.190)	0.577** (0.367 - 0.908)
No federal experience before this grade	1.187*** (1.152 - 1.222)	1.229*** (1.193 - 1.266)	1.116*** (1.079 - 1.155)	1.217*** (1.161 - 1.276)	1.339*** (1.224 - 1.465)	1.257** (1.022 - 1.545)	2.572*** (1.401 - 4.724)
Works less than 40 hours per week	0.605*** (0.481 - 0.761)	0.543*** (0.415 - 0.712)	0.330*** (0.244 - 0.446)	0.306*** (0.231 - 0.407)	0.183*** (0.106 - 0.316)	0.056*** (0.008 - 0.398)	—
Overseas duty station in last fiscal-year quarter	1.009 (0.936 - 1.088)	1.320*** (1.247 - 1.396)	1.534*** (1.468 - 1.603)	1.421*** (1.358 - 1.486)	1.725*** (1.606 - 1.853)	1.502*** (1.296 - 1.740)	1.560 (0.884 - 2.754)
<i>Occupation group</i>							
Social Science, Psychology and Welfare	1.906*** (1.719 - 2.113)	0.726*** (0.661 - 0.799)	1.040 (0.958 - 1.128)	0.632*** (0.562 - 0.710)	0.965 (0.799 - 1.165)	0.812 (0.545 - 1.212)	1.024 (0.169 - 6.198)
Human Resources Management	1.477*** (1.401 - 1.557)	1.495*** (1.395 - 1.603)	1.398*** (1.297 - 1.507)	1.290*** (1.165 - 1.428)	1.821*** (1.528 - 2.170)	1.277 (0.898 - 1.816)	0.777 (0.129 - 4.674)
General Administrative, Clerical and Office Services	1.327*** (1.268 - 1.389)	0.844*** (0.793 - 0.898)	0.981 (0.919 - 1.048)	1.298*** (1.192 - 1.413)	0.969 (0.834 - 1.125)	1.009 (0.748 - 1.362)	1.873 (0.586 - 5.987)
Natural Resources Management and Biological Sciences	4.265*** (3.913 - 4.650)	0.797*** (0.733 - 0.868)	0.819*** (0.750 - 0.895)	0.877** (0.783 - 0.981)	1.135 (0.932 - 1.382)	1.007 (0.664 - 1.526)	—
Accounting and Budget	2.932***	1.983***	1.641***	1.374***	1.417***	1.232	3.137*

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Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
	(2.764 - 3.109)	(1.848 - 2.128)	(1.526 - 1.764)	(1.250 - 1.511)	(1.200 - 1.673)	(0.885 - 1.716)	(0.911 - 10.804)
Medical, Hospital, Dental, and Public Health	0.735*** (0.690 - 0.782)	1.008 (0.942 - 1.080)	0.428*** (0.397 - 0.461)	0.541*** (0.487 - 0.601)	0.396*** (0.308 - 0.509)	0.492** (0.265 - 0.914)	—
Veterinary Medical Science	0.380*** (0.209 - 0.694)	0.181* (0.025 - 1.297)	—	0.335** (0.125 - 0.899)	—	—	—
Engineering and Architecture	4.322*** (4.084 - 4.573)	2.695*** (2.526 - 2.875)	1.696*** (1.587 - 1.814)	1.178*** (1.080 - 1.284)	0.854** (0.732 - 0.997)	0.751* (0.547 - 1.031)	0.677 (0.177 - 2.599)
Legal and Kindred	0.946 (0.850 - 1.054)	0.581*** (0.500 - 0.674)	0.835** (0.712 - 0.977)	4.111*** (3.532 - 4.785)	2.245*** (1.883 - 2.676)	1.301 (0.928 - 1.825)	0.837 (0.214 - 3.273)
Information and Arts	2.385*** (2.109 - 2.697)	0.995 (0.904 - 1.095)	0.785*** (0.712 - 0.865)	0.780*** (0.677 - 0.898)	0.850 (0.654 - 1.105)	0.623 (0.336 - 1.155)	—
Business and Industry	2.803*** (2.655 - 2.959)	1.701*** (1.592 - 1.817)	1.907*** (1.778 - 2.045)	1.580*** (1.443 - 1.732)	1.346*** (1.145 - 1.583)	0.826 (0.584 - 1.167)	1.899 (0.496 - 7.263)
Copyright, Patent, and Trademark	—	—	—	16.050** (1.664 - 154.841)	—	2.681* (0.948 - 7.582)	—
Physical Science	3.675*** (3.233 - 4.178)	2.128*** (1.907 - 2.373)	1.466*** (1.320 - 1.628)	1.255*** (1.114 - 1.413)	0.794** (0.643 - 0.981)	0.846 (0.556 - 1.288)	0.514 (0.053 - 4.990)
Library and Archives	0.442*** (0.301 - 0.651)	0.587*** (0.427 - 0.808)	0.324*** (0.231 - 0.455)	0.450*** (0.277 - 0.731)	1.285 (0.601 - 2.746)	0.712 (0.098 - 5.191)	—
Mathematical Sciences	3.881*** (3.441 - 4.377)	3.555*** (3.135 - 4.031)	4.076*** (3.609 - 4.604)	2.462*** (2.179 - 2.782)	1.177 (0.966 - 1.435)	0.977 (0.668 - 1.427)	2.249 (0.533 - 9.486)
Equipment, Facilities, and Service	3.236*** (2.827 - 3.705)	1.019 (0.922 - 1.126)	1.381*** (1.254 - 1.520)	0.539*** (0.473 - 0.614)	0.978 (0.736 - 1.298)	0.543 (0.245 - 1.207)	—
Education	1.071 (0.972 - 1.180)	0.608*** (0.556 - 0.665)	0.530*** (0.486 - 0.578)	0.737*** (0.648 - 0.838)	0.824 (0.651 - 1.042)	0.570** (0.330 - 0.985)	—
	1.670***	0.578***	2.113***	2.883***	1.306**	0.610*	2.054

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Inspection, Investigation, Enforcement, and Compliance	(1.376 - 2.026)	(0.470 - 0.711)	(1.845 - 2.421)	(2.475 - 3.358)	(1.033 - 1.651)	(0.353 - 1.054)	(0.211 - 19.978)
Quality Assurance, Inspection, and Grading	7.924*** (6.771 - 9.272)	1.221*** (1.094 - 1.363)	0.859** (0.761 - 0.968)	0.884 (0.739 - 1.058)	0.919 (0.640 - 1.320)	0.307 (0.074 - 1.267)	—
Supply	0.957 (0.903 - 1.015)	1.222*** (1.127 - 1.325)	0.991 (0.908 - 1.081)	0.829** (0.718 - 0.956)	0.517*** (0.338 - 0.791)	1.103 (0.496 - 2.452)	—
Transportation	1.083* (0.988 - 1.187)	1.048 (0.940 - 1.168)	0.886** (0.794 - 0.990)	1.567*** (1.394 - 1.761)	0.491*** (0.390 - 0.617)	0.483*** (0.280 - 0.836)	—
Information Technology	6.047*** (5.456 - 6.703)	1.722*** (1.604 - 1.850)	1.132*** (1.055 - 1.216)	1.100** (1.003 - 1.206)	1.185** (1.007 - 1.393)	0.794 (0.563 - 1.119)	—
Duration controls	✓	✓	✓	✓	✓	✓	✓
Fiscal year controls	✓	✓	✓	✓	✓	✓	✓
Constant	0.007*** (0.007 - 0.008)	0.008*** (0.008 - 0.009)	0.009*** (0.009 - 0.010)	0.006*** (0.005 - 0.007)	0.004*** (0.003 - 0.005)	0.004*** (0.003 - 0.007)	0.000*** (0.000 - 0.001)
Observations	778,364	885,271	1,231,506	1,449,848	1,016,221	345,971	91,798

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, — = not applicable, ✓ = controls applied

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: The Office of Personnel Management (OPM) categorizes sex as male or female, but in this report we generally refer to gender (i.e., men and women). Historically disadvantaged racial or ethnic groups consist of the following based on OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White.

Occupation groups based on OPM groups associated with DOD employee records.

Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate that individuals with that characteristic are more likely to be promoted. We conducted discrete-time duration analysis using logit models to analyze the time duration (number of fiscal-year quarters) before promotion from each GS grade shown. In all models, we controlled for the time that employees spent in each grade before promotion and fiscal year fixed effects (indicator variables representing the fiscal year), because available promotion slots (and resulting promotion outcomes) may be related to budget constraints that vary across fiscal year. These analyses do not completely explain why differences in odds of promotion exist. While various independent variables capture and control for many characteristics across demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes.

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Table 89: Variables Used and Resulting Odds Ratios from Adjusted Analysis of Promotions of Women Compared to Men and Employees from Historically Disadvantaged Racial or Ethnic Groups Compared to White in the Department of the Navy Civilian Workforce, Fiscal Years 2012–2021

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Female	0.949*** (0.918 - 0.982)	0.905*** (0.877 - 0.935)	0.959*** (0.930 - 0.988)	0.972 (0.939 - 1.007)	1.079** (1.015 - 1.146)	1.052 (0.949 - 1.166)	1.378 (0.914 - 2.077)
Historically disadvantaged racial or ethnic group	0.822*** (0.798 - 0.846)	0.833*** (0.810 - 0.857)	0.882*** (0.860 - 0.905)	0.782*** (0.757 - 0.808)	0.943** (0.890 - 0.999)	0.791*** (0.710 - 0.882)	0.877 (0.539 - 1.429)
Targeted disability	0.932 (0.830 - 1.048)	0.889** (0.798 - 0.991)	0.767*** (0.692 - 0.850)	0.755*** (0.659 - 0.864)	0.893 (0.702 - 1.137)	0.979 (0.651 - 1.471)	— —
Non-Targeted Disability	0.915*** (0.860 - 0.973)	0.871*** (0.823 - 0.922)	0.869*** (0.825 - 0.914)	0.880*** (0.827 - 0.937)	0.776*** (0.693 - 0.869)	0.831* (0.686 - 1.007)	0.522 (0.191 - 1.426)
Began federal service at or after age 40	0.701*** (0.675 - 0.727)	0.695** (0.671 - 0.719)	0.710*** (0.688 - 0.732)	0.670*** (0.645 - 0.697)	0.686*** (0.641 - 0.735)	0.688*** (0.613 - 0.772)	0.610* (0.366 - 1.014)
Bachelor's Degree or More	2.383*** (2.307 - 2.461)	2.371*** (2.301 - 2.444)	2.358*** (2.297 - 2.420)	2.165*** (2.092 - 2.240)	1.906*** (1.781 - 2.039)	1.484*** (1.297 - 1.697)	2.290* (0.991 - 5.290)
Veterans' preference	0.947*** (0.915 - 0.980)	0.827*** (0.801 - 0.854)	0.855*** (0.831 - 0.879)	0.867*** (0.837 - 0.899)	1.029 (0.968 - 1.094)	0.989 (0.894 - 1.094)	0.669 (0.414 - 1.081)
No federal experience before this grade	1.597*** (1.540 - 1.656)	1.240*** (1.200 - 1.283)	1.263*** (1.220 - 1.307)	1.284*** (1.222 - 1.348)	1.313*** (1.185 - 1.455)	1.554*** (1.276 - 1.894)	3.122** (1.260 - 7.740)
Works less than 40 hours per week	0.637* (0.388 - 1.046)	0.933 (0.507 - 1.717)	0.484** (0.275 - 0.852)	0.344*** (0.190 - 0.625)	0.400** (0.179 - 0.894)	— —	— —
Overseas duty station in last fiscal-year quarter	0.671*** (0.598 - 0.752)	0.494*** (0.442 - 0.552)	0.963 (0.893 - 1.038)	1.479*** (1.384 - 1.581)	1.223*** (1.093 - 1.369)	0.852 (0.683 - 1.064)	— —
<i>Occupation group</i>							
Social Science, Psychology and Welfare	0.327*** (0.228 - 0.469)	0.411*** (0.344 - 0.491)	0.369*** (0.317 - 0.428)	0.527*** (0.437 - 0.635)	0.711** (0.540 - 0.935)	0.673 (0.339 - 1.338)	— —
Human Resources Management	1.796***	2.615***	1.726***	1.558***	1.753***	1.918***	1.000

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
	(1.673 - 1.928)	(2.408 - 2.840)	(1.587 - 1.876)	(1.397 - 1.738)	(1.459 - 2.106)	(1.319 - 2.789)	(0.191 - 5.244)
General Administrative, Clerical and Office Services	1.863***	1.589***	1.546***	1.191***	0.919	1.219	0.724
	(1.760 - 1.972)	(1.492 - 1.692)	(1.450 - 1.648)	(1.096 - 1.295)	(0.799 - 1.056)	(0.901 - 1.650)	(0.175 - 3.003)
Natural Resources Management and Biological Sciences	2.617***	0.995	0.970	0.529***	0.746	0.969	1.357
	(1.844 - 3.716)	(0.753 - 1.315)	(0.786 - 1.197)	(0.426 - 0.658)	(0.509 - 1.095)	(0.472 - 1.990)	(0.121 - 15.210)
Accounting and Budget	2.973***	2.057***	1.769***	1.633***	1.422***	1.787***	0.768
	(2.789 - 3.170)	(1.919 - 2.204)	(1.646 - 1.901)	(1.488 - 1.791)	(1.220 - 1.657)	(1.300 - 2.458)	(0.176 - 3.356)
Medical, Hospital, Dental, and Public Health	0.724***	0.490***	0.179***	0.221***	0.354***	0.315**	—
	(0.654 - 0.802)	(0.440 - 0.545)	(0.159 - 0.201)	(0.185 - 0.263)	(0.240 - 0.522)	(0.113 - 0.876)	—
Veterinary Medical Science	—	—	—	—	—	—	—
	—	—	—	—	—	—	—
Engineering and Architecture	16.838***	3.582***	2.235***	0.896***	0.685***	1.317*	0.414
	(15.841 - 17.897)	(3.372 - 3.805)	(2.103 - 2.376)	(0.826 - 0.971)	(0.595 - 0.789)	(0.969 - 1.789)	(0.096 - 1.791)
Legal and Kindred	1.003	0.492***	1.002	4.809***	5.353***	3.635***	0.383
	(0.852 - 1.180)	(0.388 - 0.624)	(0.805 - 1.248)	(3.943 - 5.866)	(4.368 - 6.561)	(2.622 - 5.038)	(0.082 - 1.794)
Information and Arts	2.226***	0.824***	0.691***	0.675***	0.456***	0.425	—
	(1.865 - 2.657)	(0.720 - 0.944)	(0.601 - 0.795)	(0.557 - 0.817)	(0.291 - 0.714)	(0.153 - 1.183)	—
Business and Industry	2.990***	2.395***	2.782***	1.359***	0.988	1.254	0.555
	(2.819 - 3.173)	(2.247 - 2.553)	(2.607 - 2.970)	(1.248 - 1.479)	(0.850 - 1.149)	(0.900 - 1.747)	(0.116 - 2.645)
Copyright, Patent, and Trademark	—	—	—	—	6.494*	7.465*	—
	—	—	—	—	(0.836 - 50.410)	(0.974 - 57.219)	—
Physical Science	3.834***	2.402***	1.372***	0.651***	0.646***	0.978	—
	(3.533 - 4.161)	(2.205 - 2.617)	(1.238 - 1.522)	(0.572 - 0.741)	(0.516 - 0.810)	(0.618 - 1.547)	—
Library and Archives	0.937	1.174	0.336***	0.444***	0.858	—	—
	(0.742 - 1.184)	(0.904 - 1.524)	(0.242 - 0.467)	(0.244 - 0.809)	(0.318 - 2.320)	—	—
Mathematical Sciences	4.254***	3.827***	1.995***	1.695***	0.954	1.283	0.530

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
	(3.742 - 4.837)	(3.344 - 4.378)	(1.735 - 2.294)	(1.463 - 1.963)	(0.751 - 1.212)	(0.850 - 1.938)	(0.088 - 3.204)
Equipment, Facilities, and Service	2.199***	2.125***	1.030	0.909*	1.554***	2.338***	0.470
	(1.866 - 2.591)	(1.912 - 2.362)	(0.936 - 1.133)	(0.813 - 1.016)	(1.302 - 1.856)	(1.642 - 3.329)	(0.065 - 3.380)
Education	0.828**	0.600***	0.517***	0.497***	0.534***	0.974	—
	(0.699 - 0.979)	(0.537 - 0.670)	(0.462 - 0.577)	(0.417 - 0.591)	(0.372 - 0.766)	(0.503 - 1.888)	—
Inspection, Investigation, Enforcement, and Compliance	2.106***	1.193	4.652***	3.714***	0.720***	2.733***	2.186
	(1.343 - 3.302)	(0.906 - 1.570)	(4.115 - 5.260)	(3.294 - 4.189)	(0.602 - 0.862)	(1.935 - 3.859)	(0.467 - 10.223)
Quality Assurance, Inspection, and Grading	13.781***	3.996***	1.349***	0.758***	1.035	0.615	—
	(11.906 - 15.951)	(3.611 - 4.423)	(1.228 - 1.481)	(0.646 - 0.889)	(0.720 - 1.486)	(0.191 - 1.986)	—
Supply	1.559***	1.181***	0.827***	1.047	0.855	1.611	—
	(1.444 - 1.684)	(1.082 - 1.289)	(0.748 - 0.914)	(0.907 - 1.209)	(0.641 - 1.142)	(0.850 - 3.054)	—
Transportation	0.927	0.790***	1.368***	0.964	0.953	0.875	—
	(0.832 - 1.033)	(0.683 - 0.914)	(1.201 - 1.558)	(0.810 - 1.148)	(0.695 - 1.305)	(0.373 - 2.055)	—
Information Technology	5.294***	1.778***	1.257***	0.892**	0.927	1.300	0.119*
	(4.764 - 5.883)	(1.639 - 1.928)	(1.168 - 1.353)	(0.814 - 0.978)	(0.792 - 1.085)	(0.925 - 1.826)	(0.011 - 1.315)
Duration controls	✓	✓	✓	✓	✓	✓	✓
Fiscal year controls	✓	✓	✓	✓	✓	✓	✓
Constant	0.002***	0.006***	0.006***	0.006***	0.005***	0.005***	0.001***
	(0.001 - 0.002)	(0.006 - 0.007)	(0.006 - 0.007)	(0.005 - 0.007)	(0.004 - 0.006)	(0.004 - 0.008)	(0.000 - 0.007)
Observations	425,429	434,082	698,919	1,161,368	773,880	245,084	102,102

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, — = not applicable, ✓ = controls applied

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: The Office of Personnel Management (OPM) categorizes sex as male or female, but in this report we generally refer to gender (i.e., men and women). Historically disadvantaged racial or ethnic groups consist of the following based on OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White.

Occupation groups based on OPM occupation groups associated with DOD employee records.

Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate that individuals with that characteristic are more likely to be promoted. We conducted discrete-time duration analysis using logit models to analyze the time duration (number of

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
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fiscal-year quarters) before promotion from each GS grade shown. In all models, we controlled for the time that employees spent in each grade before promotion and fiscal year fixed effects (indicator variables representing the fiscal year), because available promotion slots (and resulting promotion outcomes) may be related to budget constraints that vary across fiscal year. These analyses do not completely explain why differences in odds of promotion exist. While various independent variables capture and control for many characteristics across demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes.

Table 90: Variables Used and Resulting Odds Ratios from Adjusted Analysis of Promotions of Women Compared to Men and Employees from Historically Disadvantaged Racial or Ethnic Groups Compared to White in the Department of the Air Force Civilian Workforce, Fiscal Years 2012–2021

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Female	0.859*** (0.829 - 0.889)	0.988 (0.959 - 1.018)	1.039** (1.007 - 1.072)	0.918*** (0.882 - 0.956)	1.101*** (1.024 - 1.185)	0.993 (0.855 - 1.152)	0.989 (0.586 - 1.671)
Historically disadvantaged racial or ethnic group	0.852*** (0.825 - 0.879)	0.892*** (0.866 - 0.918)	0.887*** (0.860 - 0.914)	0.857*** (0.823 - 0.892)	0.911** (0.846 - 0.980)	0.886 (0.754 - 1.041)	1.794** (1.079 - 2.985)
Targeted disability	0.854*** (0.761 - 0.960)	0.972 (0.876 - 1.078)	0.934 (0.837 - 1.042)	0.784*** (0.681 - 0.903)	0.707** (0.539 - 0.927)	1.121 (0.699 - 1.799)	1.405 (0.334 - 5.912)
Non-Targeted Disability	0.869*** (0.818 - 0.922)	1.001 (0.951 - 1.054)	0.913*** (0.868 - 0.962)	0.801*** (0.750 - 0.854)	0.768*** (0.687 - 0.859)	0.739** (0.582 - 0.938)	0.913 (0.392 - 2.122)
Began federal service at or after age 40	0.742*** (0.712 - 0.773)	0.766*** (0.740 - 0.793)	0.759*** (0.733 - 0.785)	0.707*** (0.678 - 0.737)	0.740*** (0.689 - 0.795)	0.779*** (0.678 - 0.895)	0.527** (0.310 - 0.896)
Bachelor's Degree or More	2.519*** (2.439 - 2.602)	3.059*** (2.974 - 3.147)	3.404*** (3.299 - 3.512)	2.644*** (2.516 - 2.779)	1.971*** (1.784 - 2.178)	1.607*** (1.275 - 2.025)	1.720 (0.537 - 5.509)
Veterans' preference	0.825*** (0.795 - 0.855)	0.756*** (0.733 - 0.779)	0.904*** (0.876 - 0.933)	1.113*** (1.070 - 1.157)	1.080** (1.012 - 1.152)	0.923 (0.814 - 1.047)	0.695 (0.424 - 1.138)
No federal experience before this grade	1.277*** (1.230 - 1.325)	1.110*** (1.074 - 1.147)	1.265*** (1.215 - 1.317)	1.312*** (1.240 - 1.387)	1.206*** (1.082 - 1.345)	1.169 (0.899 - 1.520)	3.231** (1.275 - 8.190)
Works less than 40 hours per week	0.739** (0.566 - 0.965)	0.603*** (0.422 - 0.864)	0.869 (0.546 - 1.385)	0.464*** (0.327 - 0.659)	0.362** (0.150 - 0.872)	—	—
	0.375***	0.602***	1.050	1.538***	1.276***	0.975	2.199*

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Overseas duty station in last fiscal-year quarter	(0.324 - 0.434)	(0.544 - 0.665)	(0.963 - 1.144)	(1.400 - 1.690)	(1.092 - 1.492)	(0.685 - 1.390)	(0.860 - 5.617)
<i>Occupation group</i>							
Social Science, Psychology and Welfare	1.080 (0.955 - 1.222)	1.207*** (1.091 - 1.336)	0.676*** (0.610 - 0.748)	0.878 (0.751 - 1.028)	1.203 (0.926 - 1.564)	1.030 (0.560 - 1.894)	— —
Human Resources Management	2.411*** (2.233 - 2.604)	1.480*** (1.358 - 1.614)	1.554*** (1.419 - 1.702)	1.836*** (1.605 - 2.101)	1.842*** (1.456 - 2.332)	1.593* (0.917 - 2.768)	2.520 (0.271 - 23.405)
General Administrative, Clerical and Office Services	1.453*** (1.362 - 1.550)	1.110*** (1.032 - 1.193)	1.409*** (1.307 - 1.519)	1.291*** (1.155 - 1.443)	1.112 (0.917 - 1.349)	1.463* (0.932 - 2.294)	1.363 (0.185 - 10.021)
Natural Resources Management and Biological Sciences	1.367 (0.897 - 2.083)	0.889 (0.585 - 1.349)	1.493*** (1.222 - 1.825)	0.832 (0.608 - 1.139)	0.679 (0.354 - 1.302)	0.508 (0.068 - 3.804)	— —
Accounting and Budget	2.496*** (2.314 - 2.693)	1.686*** (1.556 - 1.827)	1.831*** (1.684 - 1.990)	1.168** (1.032 - 1.322)	0.941 (0.756 - 1.170)	1.666** (1.023 - 2.713)	3.401 (0.444 - 26.047)
Medical, Hospital, Dental, and Public Health	0.654*** (0.568 - 0.753)	0.578*** (0.519 - 0.643)	0.166*** (0.141 - 0.195)	0.281*** (0.199 - 0.397)	0.766 (0.400 - 1.467)	1.073 (0.364 - 3.157)	— —
Veterinary Medical Science	— —	— —	— —	— —	— —	— —	— —
Engineering and Architecture	8.574*** (7.964 - 9.230)	3.310*** (3.069 - 3.569)	1.485*** (1.370 - 1.610)	1.592*** (1.415 - 1.792)	0.640*** (0.520 - 0.788)	0.682 (0.420 - 1.108)	0.522 (0.061 - 4.438)
Legal and Kindred	1.292*** (1.088 - 1.534)	1.273*** (1.088 - 1.490)	0.895 (0.688 - 1.166)	3.141*** (2.413 - 4.090)	2.565*** (1.957 - 3.361)	2.329*** (1.417 - 3.827)	0.421 (0.043 - 4.103)
Information and Arts	1.790*** (1.497 - 2.140)	1.013 (0.897 - 1.144)	0.661*** (0.574 - 0.762)	0.880 (0.699 - 1.107)	0.889 (0.589 - 1.341)	0.851 (0.318 - 2.278)	1.484 (0.091 - 24.286)
Business and Industry	3.276*** (3.067 - 3.500)	2.093*** (1.948 - 2.249)	2.734*** (2.536 - 2.948)	2.127*** (1.898 - 2.383)	0.713*** (0.579 - 0.877)	1.263 (0.774 - 2.060)	0.789 (0.089 - 6.954)
Copyright, Patent, and Trademark	— —	— —	86.983*** (5.413 - 1,397.737)	43.449*** (4.434 - 425.754)	— —	— —	— —
Physical Science	3.580***	0.714***	0.924	0.920	0.479***	0.453	2.049

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Library and Archives	0.586* (2.628 - 4.878)	0.909 (0.594 - 0.859)	0.265*** (0.767 - 1.113)	0.555 (0.740 - 1.145)	1.089 (0.321 - 0.715)	— (0.154 - 1.330)	— (0.125 - 33.528)
Mathematical Sciences	4.039*** (0.343 - 1.002)	4.063*** (0.621 - 1.332)	2.599*** (0.174 - 0.403)	2.142*** (0.262 - 1.177)	0.781* (0.343 - 3.453)	0.878	0.728
Equipment, Facilities, and Service	2.657*** (3.637 - 4.486)	2.195*** (3.619 - 4.561)	1.077 (2.251 - 3.002)	0.742*** (1.838 - 2.497)	2.391*** (0.604 - 1.008)	0.846 (0.509 - 1.517)	1.528 (0.065 - 8.141)
Education	1.377*** (2.345 - 3.011)	0.517*** (1.943 - 2.481)	0.582*** (0.977 - 1.188)	1.079 (0.617 - 0.893)	0.742* (1.825 - 3.132)	0.699 (0.431 - 1.659)	— (0.094 - 24.912)
Inspection, Investigation, Enforcement, and Compliance	4.859*** (1.937 - 12.192)	1.644*** (1.247 - 2.167)	2.603*** (2.247 - 3.016)	2.654*** (2.230 - 3.159)	1.252* (0.981 - 1.597)	2.536*** (1.498 - 4.292)	4.768 (0.580 - 39.235)
Quality Assurance, Inspection, and Grading	7.571*** (6.090 - 9.412)	2.080*** (1.810 - 2.390)	0.510*** (0.443 - 0.588)	0.273*** (0.176 - 0.425)	0.442 (0.140 - 1.396)	—	—
Supply	1.600*** (1.481 - 1.728)	1.490*** (1.363 - 1.629)	0.931 (0.835 - 1.038)	0.542*** (0.404 - 0.726)	0.472** (0.230 - 0.969)	—	—
Transportation	1.164** (1.030 - 1.315)	0.758*** (0.685 - 0.839)	0.819*** (0.733 - 0.916)	1.255*** (1.101 - 1.431)	0.768** (0.617 - 0.956)	1.708** (1.035 - 2.816)	—
Information Technology	5.449*** (4.804 - 6.180)	2.105*** (1.932 - 2.294)	0.888*** (0.816 - 0.965)	0.915 (0.807 - 1.039)	0.837 (0.667 - 1.051)	1.323 (0.793 - 2.209)	1.563 (0.171 - 14.317)
Duration controls	✓	✓	✓	✓	✓	✓	✓
Fiscal year controls	✓	✓	✓	✓	✓	✓	✓
Constant	0.004*** (0.003 - 0.004)	0.004*** (0.004 - 0.005)	0.002*** (0.002 - 0.003)	0.002*** (0.002 - 0.003)	0.002*** (0.002 - 0.003)	0.002*** (0.001 - 0.005)	0.000*** (0.000 - 0.004)
Observations	383,832	592,709	830,229	960,734	602,704	177,173	46,638

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, — = not applicable, ✓ = controls applied

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: The Office of Personnel Management (OPM) categorizes sex as male or female, but in this report we generally refer to gender (i.e., men and women). Historically disadvantaged racial or ethnic

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

groups consist of the following based on OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White.

Occupation groups based on OPM occupation groups associated with DOD employee records.

Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate that individuals with that characteristic are more likely to be promoted. We conducted discrete-time duration analysis using logit models to analyze the time duration (number of fiscal-year quarters) before promotion from each GS grade shown. In all models, we controlled for the time that employees spent in each grade before promotion and fiscal year fixed effects (indicator variables representing the fiscal year), because available promotion slots (and resulting promotion outcomes) may be related to budget constraints that vary across fiscal year. These analyses do not completely explain why differences in odds of promotion exist. While various independent variables capture and control for many characteristics across demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes.

Table 91: Variables Used and Resulting Odds Ratios from Adjusted Analysis of Promotions of Women Compared to Men and Employees from Historically Disadvantaged Racial or Ethnic Groups Compared to White in the Other DOD Components' Civilian Workforce, Fiscal Years 2012–2021

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Female	0.866*** (0.829 - 0.904)	0.955** (0.915 - 0.997)	0.912*** (0.881 - 0.944)	0.956** (0.917 - 0.997)	1.056* (0.993 - 1.123)	1.034 (0.935 - 1.144)	1.118 (0.840 - 1.489)
Historically disadvantaged racial or ethnic group	0.943*** (0.906 - 0.982)	0.919*** (0.883 - 0.956)	0.987 (0.956 - 1.019)	0.921*** (0.885 - 0.958)	0.846*** (0.796 - 0.899)	0.798*** (0.716 - 0.889)	0.665** (0.467 - 0.947)
Targeted disability	0.707*** (0.626 - 0.800)	0.826*** (0.727 - 0.937)	0.706*** (0.633 - 0.788)	0.791*** (0.686 - 0.913)	0.811* (0.639 - 1.029)	0.925 (0.616 - 1.389)	— —
Non-Targeted Disability	0.891*** (0.828 - 0.959)	0.872*** (0.811 - 0.938)	0.797*** (0.752 - 0.846)	0.790*** (0.731 - 0.852)	0.818*** (0.727 - 0.920)	0.823* (0.669 - 1.011)	0.715 (0.378 - 1.352)
Began federal service at or after age 40	0.727*** (0.694 - 0.762)	0.787*** (0.751 - 0.824)	0.740*** (0.713 - 0.767)	0.695*** (0.662 - 0.729)	0.721*** (0.669 - 0.776)	0.638*** (0.565 - 0.720)	0.579*** (0.417 - 0.804)
Bachelor's Degree or More	2.863*** (2.742 - 2.989)	3.146*** (3.008 - 3.290)	2.184*** (2.106 - 2.266)	1.643*** (1.567 - 1.723)	1.467*** (1.363 - 1.579)	1.198*** (1.046 - 1.372)	0.694** (0.481 - 0.999)
Veterans' preference	1.194*** (1.141 - 1.250)	0.997 (0.953 - 1.043)	0.995 (0.960 - 1.032)	1.142*** (1.092 - 1.195)	1.195*** (1.118 - 1.277)	0.965 (0.864 - 1.079)	0.964 (0.706 - 1.318)
	1.719***	1.102***	1.234***	1.320***	1.729***	1.705***	3.477***

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
No federal experience before this grade	(1.634 - 1.809)	(1.046 - 1.160)	(1.178 - 1.292)	(1.230 - 1.416)	(1.564 - 1.911)	(1.426 - 2.037)	(2.187 - 5.529)
Works less than 40 hours per week	0.315*** (0.221 - 0.450)	0.412*** (0.235 - 0.722)	0.854 (0.565 - 1.292)	0.457*** (0.308 - 0.678)	0.264*** (0.110 - 0.636)	0.287* (0.071 - 1.153)	— —
Overseas duty station in last fiscal-year quarter	0.773*** (0.680 - 0.878)	0.537*** (0.473 - 0.609)	1.035 (0.932 - 1.150)	1.113** (1.006 - 1.231)	0.841* (0.697 - 1.013)	0.954 (0.662 - 1.375)	1.350 (0.475 - 3.837)
<i>Occupation group</i>							
Social Science, Psychology and Welfare	1.286 (0.690 - 2.393)	0.984 (0.653 - 1.483)	1.647*** (1.201 - 2.258)	1.019 (0.788 - 1.318)	1.868*** (1.438 - 2.425)	6.105*** (3.924 - 9.500)	1.206 (0.547 - 2.662)
Human Resources Management	2.898*** (2.434 - 3.450)	3.836*** (3.238 - 4.544)	1.498*** (1.295 - 1.733)	1.745*** (1.488 - 2.046)	1.203 (0.958 - 1.512)	1.522* (0.961 - 2.411)	1.439 (0.536 - 3.864)
General Administrative, Clerical and Office Services	1.317*** (1.138 - 1.524)	1.177** (1.025 - 1.351)	1.115* (0.983 - 1.265)	1.163** (1.015 - 1.332)	1.080 (0.887 - 1.314)	1.389 (0.920 - 2.097)	1.581 (0.861 - 2.904)
Natural Resources Management and Biological Sciences	0.267** (0.084 - 0.855)	0.357* (0.125 - 1.021)	0.464** (0.244 - 0.884)	0.680 (0.300 - 1.539)	1.251 (0.684 - 2.288)	1.290 (0.523 - 3.184)	1.565 (0.201 - 12.207)
Accounting and Budget	1.971*** (1.711 - 2.271)	3.156*** (2.756 - 3.615)	1.729*** (1.530 - 1.954)	0.786*** (0.686 - 0.901)	0.875 (0.714 - 1.071)	1.445* (0.947 - 2.205)	3.254*** (1.735 - 6.102)
Medical, Hospital, Dental, and Public Health	0.492*** (0.392 - 0.617)	0.390*** (0.311 - 0.488)	0.679*** (0.581 - 0.793)	0.341*** (0.283 - 0.412)	0.356*** (0.253 - 0.502)	0.598 (0.292 - 1.227)	— —
Veterinary Medical Science	— —	— —	— —	— —	— —	— —	— —
Engineering and Architecture	3.745*** (3.074 - 4.563)	2.354*** (1.974 - 2.807)	2.409*** (2.062 - 2.813)	0.691*** (0.591 - 0.809)	0.890 (0.709 - 1.117)	0.959 (0.604 - 1.524)	0.907 (0.367 - 2.240)
Legal and Kindred	1.135 (0.897 - 1.437)	0.386*** (0.273 - 0.545)	1.409*** (1.106 - 1.795)	3.692*** (2.946 - 4.627)	3.615*** (2.830 - 4.618)	3.594*** (2.322 - 5.562)	0.803 (0.366 - 1.761)
Information and Arts	1.586** (1.004 - 2.506)	0.941 (0.707 - 1.252)	0.734*** (0.594 - 0.908)	0.843 (0.673 - 1.057)	0.805 (0.574 - 1.129)	1.108 (0.587 - 2.092)	— —
Business and Industry	2.007***	2.258***	0.985	1.277***	0.887	0.977	0.859

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
	(1.741 - 2.312)	(1.974 - 2.583)	(0.872 - 1.114)	(1.116 - 1.460)	(0.724 - 1.085)	(0.633 - 1.508)	(0.360 - 2.051)
Copyright, Patent, and Trademark	—	—	—	—	—	—	—
Physical Science	7.247***	2.042**	3.066***	1.143	1.234	1.105	0.811
	(2.593 - 20.255)	(1.141 - 3.655)	(2.004 - 4.690)	(0.793 - 1.646)	(0.845 - 1.801)	(0.575 - 2.122)	(0.180 - 3.667)
Library and Archives	0.484**	2.297***	0.536***	0.616	0.372*	1.295	—
	(0.251 - 0.931)	(1.410 - 3.743)	(0.337 - 0.851)	(0.335 - 1.134)	(0.136 - 1.011)	(0.304 - 5.526)	—
Mathematical Sciences	6.479***	5.342***	5.507***	2.884***	1.175	2.476***	3.041***
	(4.331 - 9.693)	(3.849 - 7.414)	(4.205 - 7.213)	(2.326 - 3.577)	(0.913 - 1.513)	(1.577 - 3.886)	(1.481 - 6.245)
Equipment, Facilities, and Service	1.378	0.576***	0.851	0.402***	0.834	0.786	—
	(0.875 - 2.171)	(0.448 - 0.740)	(0.639 - 1.133)	(0.262 - 0.618)	(0.477 - 1.459)	(0.106 - 5.844)	—
Education	0.668*	0.295***	0.725**	0.817	0.866	1.247	1.745
	(0.429 - 1.042)	(0.212 - 0.410)	(0.566 - 0.930)	(0.606 - 1.101)	(0.626 - 1.197)	(0.658 - 2.366)	(0.461 - 6.605)
Inspection, Investigation, Enforcement, and Compliance	1.669*	0.669*	3.620***	2.606***	0.948	1.118	1.873
	(0.928 - 3.001)	(0.428 - 1.045)	(2.795 - 4.688)	(2.107 - 3.224)	(0.746 - 1.204)	(0.671 - 1.861)	(0.600 - 5.844)
Quality Assurance, Inspection, and Grading	6.843***	6.341***	0.534***	0.541***	0.939	0.274**	—
	(5.753 - 8.139)	(5.409 - 7.433)	(0.470 - 0.608)	(0.459 - 0.638)	(0.717 - 1.230)	(0.095 - 0.792)	—
Supply	1.700***	1.107	0.769***	0.713***	1.160	0.621	—
	(1.467 - 1.969)	(0.962 - 1.274)	(0.673 - 0.878)	(0.607 - 0.838)	(0.905 - 1.486)	(0.339 - 1.137)	—
Transportation	0.969	1.021	0.623***	0.741	0.494*	0.969	—
	(0.797 - 1.179)	(0.818 - 1.273)	(0.483 - 0.803)	(0.511 - 1.075)	(0.230 - 1.064)	(0.797 - 1.179)	—
Information Technology	5.086***	2.623***	1.796***	0.777***	0.744***	1.019	—
	(4.154 - 6.226)	(2.226 - 3.089)	(1.576 - 2.046)	(0.677 - 0.893)	(0.607 - 0.912)	(0.662 - 1.568)	—
Duration controls	✓	✓	✓	✓	✓	✓	✓
Fiscal year controls	✓	✓	✓	✓	✓	✓	✓
Constant	0.006***	0.009***	0.009***	0.008***	0.006***	0.004***	0.002***
	(0.005 - 0.007)	(0.008 - 0.011)	(0.007 - 0.010)	(0.006 - 0.009)	(0.004 - 0.008)	(0.003 - 0.007)	(0.001 - 0.005)

**Appendix XIII: Promotion Regression Results
with Control Variables, for Gender and Overall
Racial or Ethnic Group**

Control variable	Odds ratio (confidence interval)						
	GS-7 to GS-8/9	GS-9 to GS-10/11	GS-11 to GS-12	GS-12 to GS-13	GS-13 to GS-14	GS-14 to GS-15	GS-15 to executive
Observations	209,077	181,580	478,229	722,231	492,866	240,614	117,006

Legend: GS = General Schedule, *** = statistically significant at p-value < 0.01; ** = statistically significant at p-value < 0.05; * = statistically significant at p-value < 0.10, — = not applicable, ✓ = controls applied

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105284

Notes: The Office of Personnel Management (OPM) categorizes sex as male or female, but in this report we generally refer to gender (i.e., men and women). Historically disadvantaged racial or ethnic groups consist of the following based on OPM categories: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and two or more races. White refers to employees who self-identified as non-Hispanic White.

Occupation groups based on OPM occupation groups associated with DOD employee records.

Odds ratios that are statistically significant and lower than 1.00 indicate that individuals with the given characteristic are less likely to be promoted, while odds ratios that are statistically significant and greater than 1.00 indicate that individuals with that characteristic are more likely to be promoted. We conducted discrete-time duration analysis using logit models to analyze the time duration (number of fiscal-year quarters) before promotion from each GS grade shown. In all models, we controlled for the time that employees spent in each grade before promotion and fiscal year fixed effects (indicator variables representing the fiscal year), because available promotion slots (and resulting promotion outcomes) may be related to budget constraints that vary across fiscal year. These analyses do not completely explain why differences in odds of promotion exist. While various independent variables capture and control for many characteristics across demographic groups, unobservable factors may account for differences in odds of promotion; thus, our regression results do not establish a causal relationship between demographic characteristics and promotion outcomes.

Appendix XIV: Comments from the Department of Defense



FORCE RESILIENCY

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

Ms. Brenda Farrell
Director, Defense Capabilities Management
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Ms. Farrell,

This is the Department of Defense (DoD) response to the draft U.S. Government Accountability Office (GAO) report, "DOD CIVILIAN WORKFORCE: Actions Needed to Analyze and Eliminate Barriers to Diversity," dated June 2023 (GAO Code 105284). The Department concurs with the recommendations.

My point of contact is Ms. Chandra Cook, who can be reached at chandra.m.cook2.civ@mail.mil and (571) 232-2509.

Sincerely,

A handwritten signature in blue ink, appearing to read "Elizabeth B. Foster".

Elizabeth B. Foster
Executive Director, Force Resiliency

Appendix XV: GAO Contact and Staff Acknowledgments

GAO Contact

Brenda S. Farrell, (202) 512-3604 or farrellb@gao.gov

Staff Acknowledgments

In addition to the contact named above, Vincent Balloon (Assistant Director), Sally Williamson (Analyst in Charge), Taylor L. Bailey, Tracy Barnes, James (Ben) Etheridge, Scott Hiromoto, Tracey R. Kalinowski, Jocelyn Kuo, Amie Lesser, Ying (Sophia) Liu, Carly McCann, Lillian Ofili, Nicholas Ordieres, Moon Parks, Michael Silver, Geo Venegas, Joseph Wickenhauser, and Lillian Moyano Yob made significant contributions to this report.

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[GAO-23-105528](#). Washington, D.C.: February 27, 2023.

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[GAO-23-106041](#). Washington, D.C.: December 15, 2022.

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