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September 2002

HIGH-SKILL TRAINING

Grants from H-1B Visa Fees Meet Specific Workforce Needs, but at Varying Skill Levels

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Contents

Letter		1
	Results in Brief	2
	Background	5
	Skill Grants Offer Training with Flexible Service Delivery While Scholarship Grants Offer Education through Degree Programs	8
	Skill Grant and Scholarship Grants Designed to Meet Workforce Needs, Though the Skill Levels for Which They Train Varies	21
	National Efforts Not Coordinated to Strategically Address High-Skill Needs, but Local Coordination Shows Promise	28
	Conclusions	32
	Recommendations for Executive Action	34
	Agency Comments	34
Appendix I	**Scope and Methodology**	38
Appendix II	**Survey Sent to Skill Grant Recipients**	40
Appendix III	**Detailed Data on Skill Grant Programs**	52
Appendix IV	**Detailed Data on NSF's Computer Science, Engineering, and Mathematics Scholarship Program**	57
Appendix V	**Areas of Training for First 43 Skill Grants**	58
Appendix VI	**Key Federal Programs and Initiatives with a High-Skill Component**	60
Appendix VII	**Comments from the Department of Labor**	64

Appendix VIII **Comments from the National Science Foundation** 69

Appendix IX **Comments from the Department of Commerce** 71

Appendix X **GAO Contacts and Staff Acknowledgments** 77

GAO Contacts 77
Staff Acknowledgments 77

Tables

Table 1: Top 10 Occupation Categories for H-1B Visa Petitions Approved for Fiscal Year 2001 22
Table 2: Skill Grant Recipients Visited 38
Table 3: Post-Secondary Educational Institutions Visited 39
Table 4: Participants Enrolled in Training 52
Table 5: Gender of Participants 52
Table 6: Age of Participants 52
Table 7: Race/Ethnicity of Participants 53
Table 8: Employment Status of Participants at the Time of Enrollment 53
Table 9: Education Status of Participants at the Time of Enrollment 53
Table 10: Participants Who Attained the Following as a Result of Program Participation 54
Table 11: Organization Obtained or Tried to Obtain H-1B Visa Application Data to Identify Skill Shortages in High-Skill Occupations in Local Area 54
Table 12: Other Methods Used to Identify Skill Shortages in High-Skill Occupations in Local Area 54
Table 13: Number of Employers Needing High-Skilled Workers That Organization Worked with before and after Receiving the Grant 55
Table 14: Role of One-Stop System in the H-1B Skills Training Program 55
Table 15: Methods Grantees Plan to Use to Sustain the Skill Grant Training 55
Table 16: Gender of Participants in IT Training 56
Table 17: Race/Ethnicity of Participants in IT training 56

Table 18: Characteristics of Computer Science, Engineering, and Mathematics Scholarship Recipients as of May 1, 2002 57
Table 19: Occupations on Which Grantees from First Three Funding Rounds Provided Training 58

Figures

Figure 1: Age of Participants 13
Figure 2: Highest Education Level Participants Attained before Training Program 14
Figure 3: Percentage of Women, African Americans, and Hispanics Participating in Skill Grant IT Training as Compared with the U.S. IT Workforce 15
Figure 4: Status of Participants as of January 31, 2002 16
Figure 5: Funding Sources the 43 Grantees Expect to Use to Sustain the Skill Grant Training Programs 18
Figure 6: Comparison of Demographic Characteristics of Current Scholarship Program Students to Students Awarded Related Bachelor's Degrees in the United States in 1999-2000 20
Figure 7: Number of Grantees Who Offered Training in Various Categories 23
Figure 8: Scholarship Program Students' Majors by Categories 27

Abbreviations

ATELS	Office of Apprenticeship Training, Employer and Labor Services
ETA	Employment and Training Administration
EHR	Directorate for Education and Human Resources
INS	Immigration and Naturalization Service
IT	information technology
JTPA	Job Training Partnership Act
NSF	National Science Foundation
OVAE	Office of Vocational and Adult Education
TA	Technology and Administration
WIA	Workforce Investment Act

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United States General Accounting Office
Washington, DC 20548

September 20, 2002

The Honorable James Barcia
Ranking Minority Member, Subcommittee on
Environment, Technology, and Standards
Committee on Science
House of Representatives

The Honorable Lynn Rivers
House of Representatives

In recent years, U.S. employers have complained of shortages of workers with higher-level skills in information technology, the sciences, and other fields. To find workers with these skills, employers often turn to foreign workers, who enter the United States with H-1B visas to work in specialty occupations.[1] Despite the recent economic downturn, employers report that they continue to need higher-skilled workers. Congress passed the Workforce Investment Act (WIA) of 1998 to create a system connecting employment, education, and training services to better match workers to labor market needs. In 1998, Congress passed legislation raising limits on the number of high-skilled workers entering the United States and imposing a $500 fee on employers—which was later raised to $1,000—for each foreign worker for whom they applied. Most of the money collected is to be spent on training that improves the skills of U.S. workers. Fifty-five percent of the funds are provided to the Department of Labor for technical skill grants to increase the supply of skilled workers in occupations identified as needing more workers. Labor awards the skill grants to local workforce investment boards, created under WIA to establish local workforce development policies, thereby linking the skill grant program with the workforce system. The boards use the funds to provide training to employed and unemployed people. The National Science Foundation (NSF) receives 22 percent of the funds to distribute as scholarship grants

[1]Under the H-1B program, specialty occupations are those requiring theoretical and practical application of a body of specialized knowledge and the attainment of a bachelor's or higher degree (or its equivalent) in the specific specialty. These can be in a range of fields from architecture, engineering, and mathematics to medicine, education, theology, and the arts, but the majority of H-1B visa petitions approved are for computer-related occupations. H-1B visas may also be awarded to fashion models of distinguished merit and ability but this report does not focus on them.

to post-secondary schools that distribute the funds as scholarships for low-income students in computer science, engineering, and mathematics degree programs.[2] As of July 1, 2002, about $197 million has been awarded through the skill grant program; as of May 1, 2002, about $72 million has been awarded through the scholarship grant program.

Because of your interest in how the United States is meeting the employers' demand for high-skilled workers, you asked about the skill grant and scholarship grant programs and how they relate to other high-skill workforce development practices. Specifically, we address (1) how the skill grant and scholarship grant programs are being administered to raise the skill level of American workers; (2) whether the skill grant and scholarship training is based on workforce needs and specific jobs that H-1B visa holders fill, particularly in the information technology (IT) industry; and (3) to what extent these programs are coordinated with other workforce development programs at the local and national level to meet high-skill training needs.

In response to your questions, we surveyed the 43 recipients of skill grants distributed in 2000; visited 12 of these grantees and interviewed the local workforce investment board's staff, and, at most grantees, the training providers, employers, and participants; visited 6 colleges that received scholarship grants; analyzed data on the participants and outcomes for the scholarship grants; and discussed these programs and other high-skill training with officials from the Departments of Labor and Commerce, NSF, and Immigration and Naturalization Service[3] (INS), and industry representatives. Our work was conducted in accordance with generally accepted government auditing standards between October 2001 and July 2002. See appendix I for a full discussion of our scope and methodology.

Results in Brief

The grantees operating skill grant programs use the flexibility allowed by Labor to administer training through a variety of service delivery options to individuals whose skills need to be upgraded, whereas NSF's scholarship grant programs provide scholarships to low-income students for college degree programs. The skill grant program provides flexibility to meet local workforce needs through the selection of the partners who

[2]The balance of the funds is directed toward nontraining activities.

[3]We consulted INS for their views on how the occupations in which skill grants were training compared to H-1B positions.

implement the program, the length and setting of training, and the participants served. Three-fourths of the participants are employed workers upgrading their skills, whose employers approved the training. Information on participants and training outcomes is limited because Labor has not collected consistent data on individual programs. Grantees report that of the over 16,000 participants who enrolled in training through January 31, 2002, about half have completed training. Grantees could provide only limited data on outcomes and the same participant could be counted in more than one outcome; however, these data provide an indication of how the participants benefited from the training. Grantees stated that of the participants they could report on, about 1,800 were placed in new or upgraded jobs, 1,600 increased their wages or salaries, 2,600 attained skill certifications, and 1,900 attained industry-recognized skill standards. Grantees who could report on their participants' characteristics indicated that 43 percent are female; 20 percent are African American; 7 percent Asian; and 6 percent are Hispanic; and half had a 2-year or higher postsecondary degree. Although grantees have used the skill grant program to create innovative programs and build ties with new partners, many have not planned for alternative funding beyond the program's two-year limit and may be unable to offer their program in the future. In the scholarship grant program, postsecondary schools use the funds in a structured academic setting to attract and retain low-income students in computer science, engineering, and mathematics degree programs. Almost 8,000 students have received scholarships as of May 1, 2002. Finding students eligible for the scholarship grant program has proven to be a challenge, as some schools have struggled to fill open slots; however, NSF officials believe that their change to a less strict standard for financial eligibility has made it easier to recruit students.

The training offered by the skill grant programs is based on local workforce needs, although sometimes for lower-skill jobs than those filled by H-1B visa holders, and the scholarship program's training is based on national workforce needs and the types of jobs that many H-1B visa holders fill. The skill grant training is designed by grantees to address skill shortages in the local workforce by providing technical skills training for both employed and unemployed workers. Almost all of the 43 grantees funded in 2000 provided IT-related training; other training provided included health care, telecommunications, engineering, and manufacturing. Throughout the process of designing and implementing the skill grant training, new partnerships were formed, thereby increasing workforce investment boards' knowledge of local workforce needs. In establishing their programs, grantees sought information on local employers' use of H-1B visa workers and on workforce shortages as

identified in labor market data and through discussions with employers. In its solicitations for grant applications, Labor has provided guidelines that were confusing as to the skill level of training that grantees should provide. INS, in characterizing the occupations for which training was provided, identified about 40 percent of the occupations as able to qualify for an H-1B visa level occupation. The scholarship program, by its nature, is preparing students for careers in fields with workforce shortages nationally, and is focusing its efforts on attracting and keeping students in those fields. In addition, it educates students for the high-skill jobs comparable to jobs filled by H-1B visa holders.

While federal initiatives are not coordinated to strategically address high-skill needs at a national level, local skill grant programs increased coordination, though Labor provided limited assistance to enhance these efforts. Several federal agencies Labor, NSF, Commerce, and others have independent programs to address the need for high-skill workers; however, coordination across agencies is limited. While Labor's Employment and Training Administration (ETA) has begun to take a more strategic approach to identify skill shortfalls in a few key industries—such as health care and IT—efforts to coordinate these high-skill initiatives within ETA are also limited. At the same time, local workforce program officials said that a major benefit of the skill grant program was its contribution to advancing the goals of WIA, such as building relationships with more employers and partners. Survey respondents reported working with one-third more employers with high-skill needs since receiving the H-1B grants. Despite this progress, local skill grant representatives faced challenges in obtaining information on companies needing H-1B workers and would have liked assistance in marketing the program to those employers. Furthermore, Labor and NSF provided few opportunities for grantees to share information and learn from each other.

We include recommendations to the Secretary of Labor and to the Director of NSF to improve the H-1B skill grants and scholarship programs, respectively. We also recommend that the Secretary of Labor proactively develop a more comprehensive approach to address high-skill workforce needs across the country. In commenting on a draft of the report, Labor and NSF generally agreed with our findings and recommendations, although Labor believes its recent new reporting requirements will provide the information needed to monitor progress and evaluate the program. In its comments, Commerce raised no objections to our recommendations but had concerns about our job design, suggesting that we should have gathered information on the most recent grants awarded in December 2001 and during 2002. However, because these grants were so new,

information generally was not available regarding participant characteristics or program operations.

Background

In recent years, Congress passed legislation that modified the visa program for foreign workers who enter the country with H-1B visas to work in specialty occupations. Changes have included expanding the limits on the number of workers who may be approved for these visas from 65,000 to 195,000, providing Labor with additional enforcement authority, and establishing an employer fee to fund training of American workers. The American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277) authorized programs to provide technical skills training and scholarships for low-income postsecondary students pursuing high technology fields of study. To fund these programs, it assessed a $500 fee on employers for each person for whom they submitted an application for an H-1B visa.[4] In 2000, the H-1B visa application fee for employers was raised to $1,000. Also, the American Competitiveness in the Twenty-First Century Act (P.L 106-313) clarified some guidelines for administering the skill grant program and included Commerce as a consultant to the skill grant distribution process. The fee for employers who apply for H-1B visa workers, which funds the skill grants and scholarship grants, expires on September 30, 2003. Currently, 55 percent of the fees collected are distributed to Labor for skill grants and 22 percent are distributed to NSF for scholarship grants. The remaining 23 percent of the funds is to be used for other activities.[5] The 2003 Labor budget proposed redirecting the skill grant funding beginning in fiscal year 2003 to reducing the backlog of applications submitted on behalf of foreign workers for permanent residency.

In 1998, Congress also passed WIA, which replaced the Job Training Partnership Act (JTPA) and introduced various reforms to the coordination and delivery of federal employment and training services. WIA seeks to create a workforce investment system that connects employment, education, and training services to better match workers to labor market needs. WIA specifies separate funding sources for each of the act's main client groups adults, dislocated workers, and youth. The

[4]Assessments were also made for visa extensions and employment changes.

[5]Fifteen percent is allotted for a direct or matching grant program to support private-public partnerships in education for kindergarten to grade 12, 4 percent to decrease processing times for H-1B petitions, and 4 percent for labor condition application processing and enforcement.

American Competitiveness and Workforce Improvement Act of 1998 linked the H-1B skill grants to federally funded employment and training services administered by Labor by requiring that the grants be awarded to private industry councils, workforce investment boards or regional consortia of these boards. [6]

Labor is responsible for administering and overseeing the H-1B grant program on a national level, which includes compiling and collecting reports, maintaining an H-1B skill grants website, and providing technical assistance. Labor's regional offices assign one staff person to each grantee within the region to serve as the front-line contact and monitor of the grantees.[7]

Through its Office of Policy and Research, Labor has awarded 43 skill grants totaling about $96 million distributed in three separate rounds in February 2000, July 2000, and October 2000, and an additional 24 grants totaling about $67 million were distributed in a rolling award process beginning in December 2001. Workforce investment boards or regional consortia of these can receive skill grants. For each application, a local workforce investment board must indicate that the project is consistent with, and will be coordinated with, the region's workforce investment efforts. The 2000 law allotted 25 percent of the skill grants to business-related consortia; a first round was awarded in May 2002 to 14 grantees, totaling about $34 million. Labor convenes panels to review grant applications and recommends grantees for selection on the basis of specific criteria, such as target population, service delivery, and ability to meet labor market needs.

Grantees have been required to submit a quarterly financial report and a quarterly narrative progress report. While Labor did not require a standard format for the narrative progress report until the quarter ending September 30, 2002, some grantees used a template developed by Labor that included numbers for the following: individuals continuing to be

[6]As part of the reforms under WIA, local workforce investment boards replaced private industry councils, the local administrative entity under JTPA. While private industry councils provided oversight and could operate local JTPA programs, workforce investment boards provide oversight but are prohibited from directly providing services unless they receive a waiver from the governor. Even though WIA passed in 1998, local areas were not required to establish boards until July 1, 2000, which means many private industry councils were still in place at the time the skill grants were authorized.

[7]The front-line grant monitor is called a Grant Officer's Technical Representative.

served from any quarter, individuals served during the quarter, individuals served since the beginning of the project, individuals newly enrolled, and individuals who exited without completion. Labor limited the amount of money grantees' could spend on administrative costs to 10 percent of the funding and set the grant period at up to 2 years, although some grantees have received 1 year extensions at no additional cost. Grantees are required to obtain matching funds from other parties; the amount they have been required to obtain ranged from 25 percent to 50 percent of the grant, depending on the round in which they received their grant. Business consortia grantees are required to obtain matching funds of 100 percent of the grant they receive.

The 2000 law provided specific guidance about the types of training that should be provided under the skill grants, which was absent from the 1998 law. It said that the training is not limited to skill levels commensurate with a 4-year undergraduate degree, but should include the preparation of workers for a broad range of positions along a career ladder. It also required that at least 80 percent of the grants be awarded to programs and projects that train employed and unemployed workers in skills in high technology, information technology, and biotechnology. The 1998 law did not elaborate on the nature of the training authorized and did not mention any particular occupations.

NSF provides scholarship grants to schools that grant associate, baccalaureate, or graduate degrees. The schools are selected by panels that review applications from postsecondary schools. Students must be majoring in computer science, engineering, or math; must be enrolled in classes full-time; must demonstrate financial need; and must demonstrate academic potential and ability. Initially, only students who were eligible for Pell grants[8] could be eligible for scholarships, but NSF later relaxed this requirement to include students who were eligible for any federal financial aid. Each student receives up to $3,125 per year for up to 4 years. As of May 2002, 277 schools have obtained grants ranging from $24,750 to $760,320 in a series of three rounds of grant awards totaling about $72 million. Schools may ask for an additional 5 percent of the total requested scholarship amount for administrative costs, an increase from the original 2 percent for the first set of grants awarded. Schools may also

[8]Pell grants are based in part on students' financial need and their cost of attendance. Students eligible for Pell grants must have lower incomes than for other types of federal student aid. Pell grants do not need to be repaid. Students can receive both Pell grants and these scholarships.

ask for an additional 5 percent of the total requested scholarship amount for student support services.

Skill Grants Offer Training with Flexible Service Delivery While Scholarship Grants Offer Education through Degree Programs

Skill grantees use the grant program to offer training through a variety of service delivery options to people whose skills need to be upgraded; scholarship grantees use the scholarship program to offer traditional degree programs in mathematics, computer science, and engineering to low-income students. While the skill grant program requires grantees to create partnerships to implement the program, the nature of the partnerships is flexible. The grant training, which can be used to prepare workers for a range of occupations, can be offered to employed and unemployed individuals in a variety of settings. However, in the scholarship grant program, the postsecondary schools receiving grants provide scholarships toward undergraduate and graduate postsecondary education, with a goal of attracting and retaining low-income students in computer science, engineering, and mathematics degree programs. Some schools are having difficulty finding students eligible for the scholarship grant program to fill all available slots. NSF officials, however, believe that their change to a less strict standard for financial eligibility has made it easier to recruit students.

Skill Grantees Form a Variety of Partnerships to Train Employed and Unemployed Individuals, but Face Challenges Sustaining the Programs

In implementing their skill grant programs, grantees form partnerships to meet local workforce needs and to train diverse participants. However, many grantees have not planned for alternative funding to sustain the training program beyond the 2-year time frame allowed for the grant. The skill grant program requires grantees to create partnerships with local entities to implement the program, yet the nature of the partnerships is flexible. Data on participants are limited, however, because Labor does not require grantees to collect consistent participant and outcome information. Although many grantees have used the skill grant program to create innovative programs and build ties with new partners, many have not planned for alternative funding beyond the end of the grant period and may be unable to offer their program in the future.

Variety of Service Delivery Options

Skill grantees taking advantage of the skill grant program's flexibility, have formed partnerships with local entities, and have used a variety of innovative service delivery options. For the first three rounds in which skill grants were awarded, workforce investment boards or private industry councils were required to submit grant proposals to Labor; however various partners initiated or implemented the skill grant training program to best meet local workforce needs. Other partners may include

employers, unions, for-profit and not-for-profit training institutions, community colleges, public and private 4-year colleges, and other organizations such as business trade or industry associations or community and faith-based organizations. The following sites that we visited exemplify the variety of partner configurations and service delivery options.

- At several sites in various states, the grantee implemented the skill grant using local government, nonprofit or community based organizations that were also administering WIA programs. The skill grant funds were awarded either to employers to train current workers or individuals to upgrade their skill set. For example, one offered businesses grants of up to $50,000 to train their employees in information technology, electrical engineering, mechanical engineering, or precision manufacturing; another offered funds for IT training and targeted employed workers as well as dislocated (laid-off) workers, low-income people, and high school students. The local boards advertised the availability of training through standard advertising channels such as flyers, newspapers, and the one-stop centers.[9] The training providers were chosen by the employer or the individuals participating in the programs.

- At a site in California, a major health care provider with thousands of employees partnered with the local board, the union, and training providers to address specific skill shortages within its company. Similarly, at a site in Massachusetts, unions at two manufacturing plants partnered with the local board, training providers, and the employers. For both grants, training was available primarily to company employees. In this arrangement, the local workforce boards were not heavily involved in the operation of the training program, but did connect the grant to the local workforce system. Employers and unions implemented the skill grants in the regions covered by the employers instead of limiting participation to only workers in the area served by the board.

- At a site in D.C., a college initiated and implemented the skill grant, while the local board advised the college and established networks to other partners. The college sought out employers who wanted their underemployed workers to receive IT training. It also marketed the training directly to unemployed individuals. All training occurred at the college administrating the grant.

[9]WIA establishes one-stop centers as the access point for employment-related and training services.

- At one site in California, the local board partnered with four training providers to offer different IT curriculums to both employed individuals and dislocated workers. The training partners and the board were responsible for recruiting participants for the program.

The skill grant training programs vary in length and by type of provider; different approaches are taken to respond to employers and trainees' needs. Training programs at sites we visited were as short as a 1-day course on new software taught through a for-profit training provider and as long as a 2-year college curriculum at a technical college. A grantee has the flexibility to provide different training at different sites. For example, one grantee ran four different IT training programs, each with a different time frame: one on weekends for 9 months at a community college; one summerlong program on weekdays at a community college; one full time for 10 months at a nonprofit training provider; and one with various schedules offered through a major state university continuing education program.

Depending on the partners and service delivery option for the skill grant, the training can take place in a variety of locations, such as on-site at a company or at a training facility. At one skill grant location, a local community college offered math, electronics, and other courses at the workplace after the close of the workday. Employees could earn an associate degree in computer and telecommunications technology at a convenient location, while upgrading their skills for their employer.

The skill grant program's flexibility allows grantees to adjust the content of their training in response to changes in local labor market demands or events. The grant administrators at one site providing training in both health care and IT increased the number of health care training participants and decreased the number of IT training participants in response to changing employer demand for workers. Similarly, a local board that partnered with two large employers to train current workers amended their grant to include training for dislocated workers when one employer had a major lay-off. Participants who had been laid off could continue in the training program.

Despite the flexibility of the skill grant program, many of the skill grantees experienced challenges during the start-up phase of the grant. On average, grantees took about 4 months from the time the grants were awarded until the programs were operational and began serving individuals. For two, forming new partnerships with employers and training providers took longer than anticipated. For others, the economic downturn that began in

2001 altered their ability to participate. For a few grantees, these obstacles delayed their program start-up 9 months or longer. As a result, several grantees asked or planned to ask for a no-cost extension of up to 1 year beyond the original 2-year grant period.

Between December 2001 and July 2002, Labor has awarded an additional 38 grants, including 14 awards under the 25 percent allotment reserved for business or business-related consortia. Based on information in the summaries of the funded projects, some of the regional consortia are led by large nationwide corporations such as MetLife, Inc., or General Motors Corporation, while other programs are led by community colleges, or in one case, an organization working to enhance opportunities for the Latino population. Many of the projects cover geographic areas larger than the areas served through a single local workforce board. For example, one project led by a national employer will serve participants in five states: Alabama, Indiana, Michigan, New York, and Ohio. Other projects will serve participants in a broad area of one state or a few selected major metropolitan areas around the country.

Diverse Grant Participants, Though Data Are Limited

In the first three rounds of skill grant awards, the training programs served a range of participants, in part because of the flexibility afforded in the skill grant program. The skill grant programs were not required to select participants on the basis of eligibility factors such as age, income, or employment status of the individuals. However, in its solicitations for grant applications, Labor encouraged grant applicants to reach out to underrepresented groups, such as minorities, women, and individuals with disabilities. Grantees targeted various combinations of employed, dislocated, and unemployed individuals, and specific populations such as youth, disabled, or public assistance recipients. For example, at one site, the grantee targeted two groups: individuals who were employed and wanted to upgrade IT skills or gain a new skill set and unemployed individuals who were seeking a computer-related job. At another site, the grantee used the skill grant program to train high school students in an IT program at the vocational high school and also trained employed, dislocated, and low-income adults using other training providers.

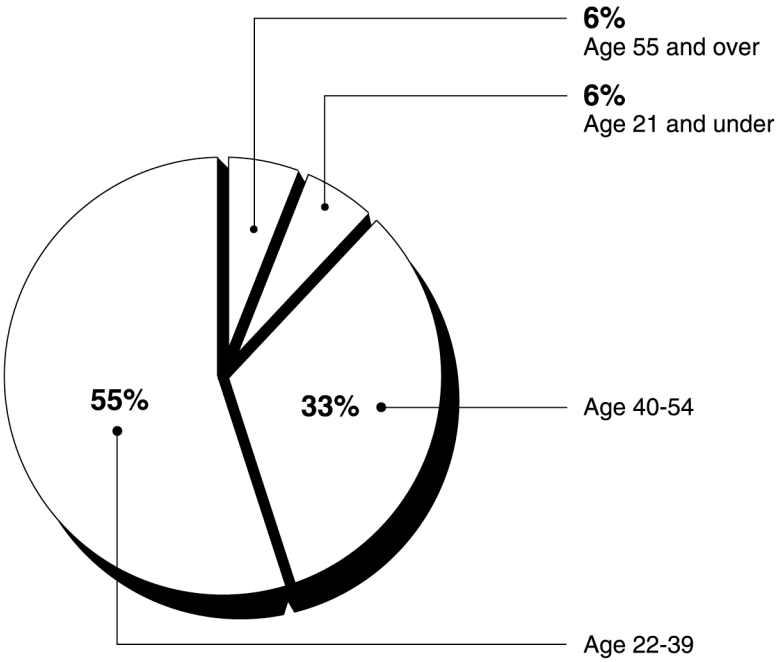
Data on participant characteristics are limited because Labor did not require standard data on individual participants to be collected and reported. Until the quarter from July 1 through September 30, 2002, grantees were not required to report on standard data elements. For that quarter, Labor will be requiring that grantees submit standard information on the status of participants' training and certain outcomes, such as new job placements and the number of wage increases individuals received as

a result of H-1B training. However, the new requirements still do not require specific demographic data on the individual participants or information on the specific levels of training provided.

Because data collection varies across sites, the responses to our survey questions about participant characteristics vary as well.[10] All grantees provided information on the number of training participants in their program, reporting that a total of 16,590 individuals were enrolled in training between March 1, 2000, and January 31, 2002. Grantees from the first three rounds who collected participant employment data (39 of the 43 grantees) report that approximately three-fourths of skill grant participants are employed workers upgrading their skills. In addition, the data from our survey show that the skill grants are reaching a wide range of ages, though focusing more heavily on ages 22 to 39, as shown in figure 1.

[10]Although we received completed surveys from all 43 grantees in the first three rounds of grant awards, information on demographics was generally provided for less than half of the total number of training participants. Data with low response rates may not be generalizable to all skill grant participants.

Figure 1: Age of Participants

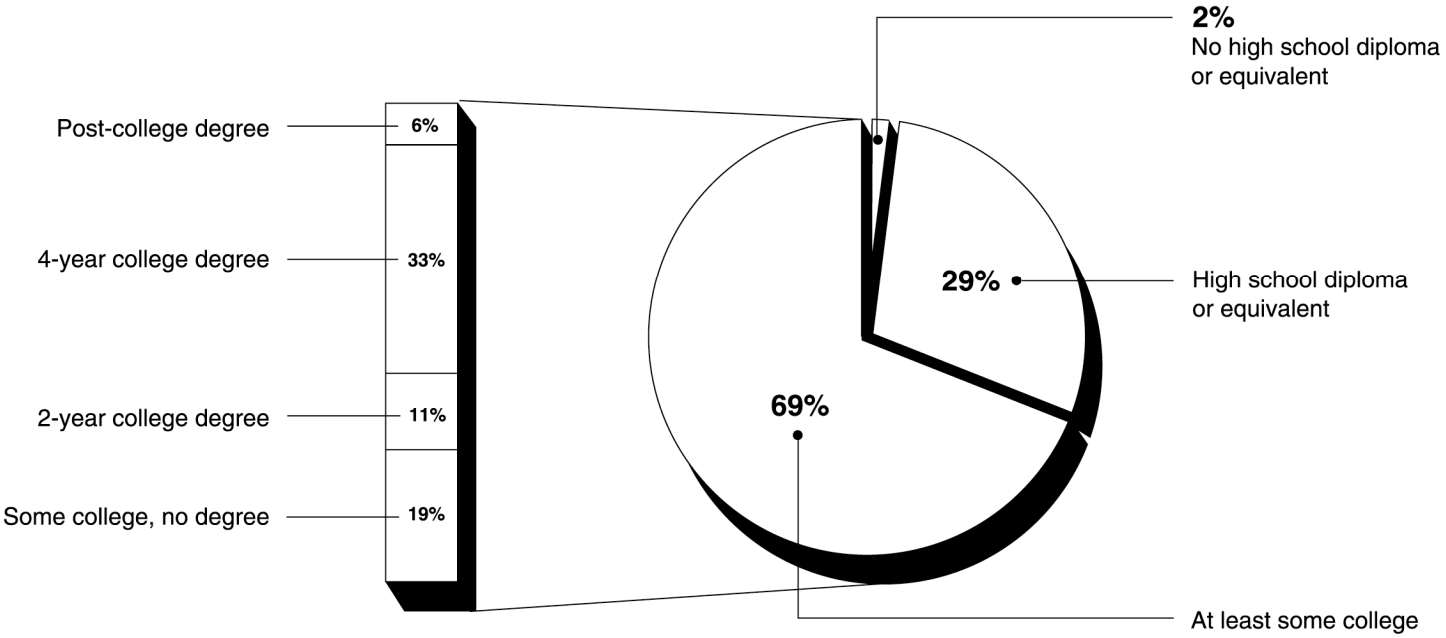


Note: Based on 6,398 participants, or 39 percent of participants in the first three rounds of the skill grant training program.

Source: GAO data from H-1B Skill Grant Survey.

Because many grantees chose to target employed individuals that want to upgrade skills or change careers, the participants often have some education beyond high school. Information on the educational background of participants in the first three rounds of grants reveals that most of the participants have some college education, many with at least a bachelor's degree (see figure 2). In one case, a health care training program required that a participant be a registered nurse before receiving training as a nurse specialist in the operating room or critical care.

Figure 2: Highest Education Level Participants Attained before Training Program



Note: Based on 6,645 participants, or 40 percent of participants in the first three rounds of the skill grant training program.

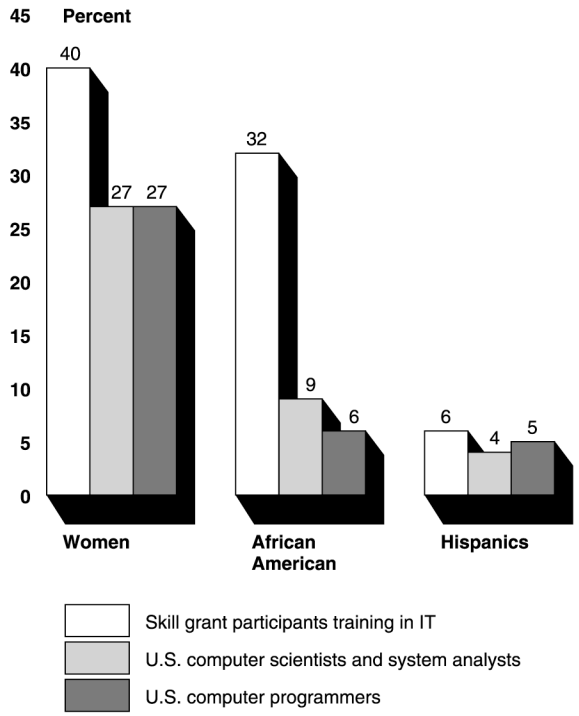
Source: GAO data from H-1B Skill Grant Survey.

Grantees reported that almost 5,000 participants were members of "underrepresented" groups. Underrepresented groups can include women, minorities, persons with disabilities, and older workers. Information gathered from grantees collecting gender, race, and ethnicity data indicates that a greater percentage of women and African Americans are training for IT occupations in this program than are working in IT occupations nationally. Grantees indicate that 40 percent of the skill grant participants in IT training[11] were female as compared with 27 percent of computer scientists and systems analysts, and computer programmers in the U.S. workforce in 2001, according to Bureau of Labor Statistics data. Further, a higher portion of African Americans and about an equal portion

[11]Based on data on those grantees that train for IT occupations only. Data for participants on whom information was known (not only those from grantees that train exclusively for IT occupations) indicate that 43 percent are female, 20 percent are African Americans, 7 percent are Asian, and 6 percent are Hispanic.

of Hispanics were trained than were present in those key IT occupations, as shown in figure 3.[12]

Figure 3: Percentage of Women, African Americans, and Hispanics Participating in Skill Grant IT Training as Compared with the U.S. IT Workforce



Note: Includes data on the 19 grantees who provided IT training only.

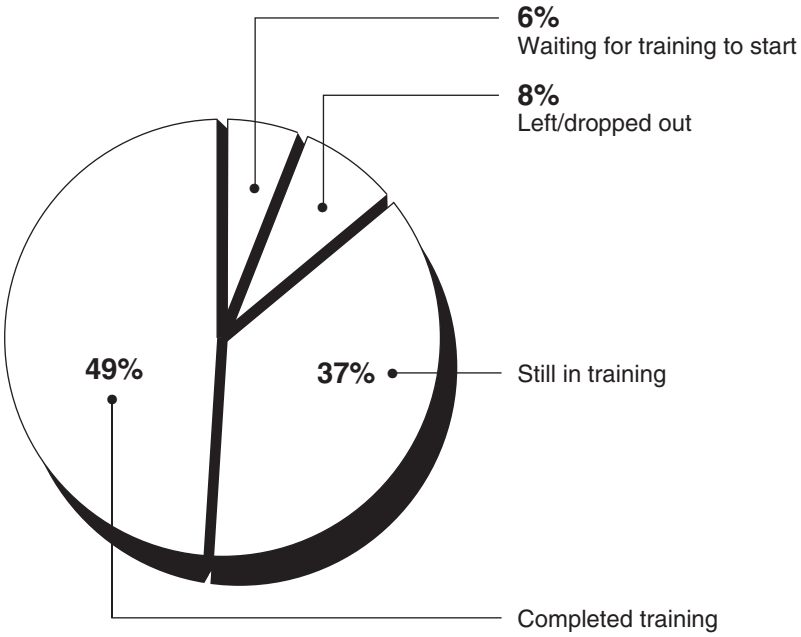
Source: Bureau of Labor Statistics and GAO data from H-1B Skill Grant Survey.

In addition to participant demographic data, some grantees collected outcome data, although these data were limited and had not been standardized. In general, such data are not collected until after participants have ended their training. As of January 31, 2002, grantees reported that 7,646 had completed their entire training program. Most of the remaining participants were still in training; the rest were either waiting for training to start at the time of our survey or had left or dropped

[12]The Bureau of Labor Statistics data describes workers in these key IT-related occupations. However, it does not represent all of the IT-related occupations and skill sets trained for in the skill grant training program.

out of the program (see figure 4). Because grantees did not always collect outcome data, such as certifications obtained or wages that increased, the outcome data are not complete. The data we collected do not identify whether each participant achieved only one or more than one of the outcomes reported, thus the outcomes cannot be compared to the number of participants who completed their training. While limited, the outcomes reported indicate what the training programs achieved. Grantees reported that
1,796 participants were placed in new or upgraded positions;
1,571 participants increased their wages/salaries; 2,582 participants attained skill certifications, such as a Microsoft Certified Systems Engineer; and 1,870 participants attained industry-recognized skill standards. Grantees report a very low number of participants receiving a 2-year or 4-year college degree, which may be due to the 2-year time frame of the skill grant program.

Figure 4: Status of Participants as of January 31, 2002



Note: Information reported on 15,485 of the 16,590 participants, or 93 percent.

Source: GAO data from H-1B Skill Grant Survey.

Because the program is flexible, grantees can choose to measure success with outcomes relevant to their service delivery option. For example, a

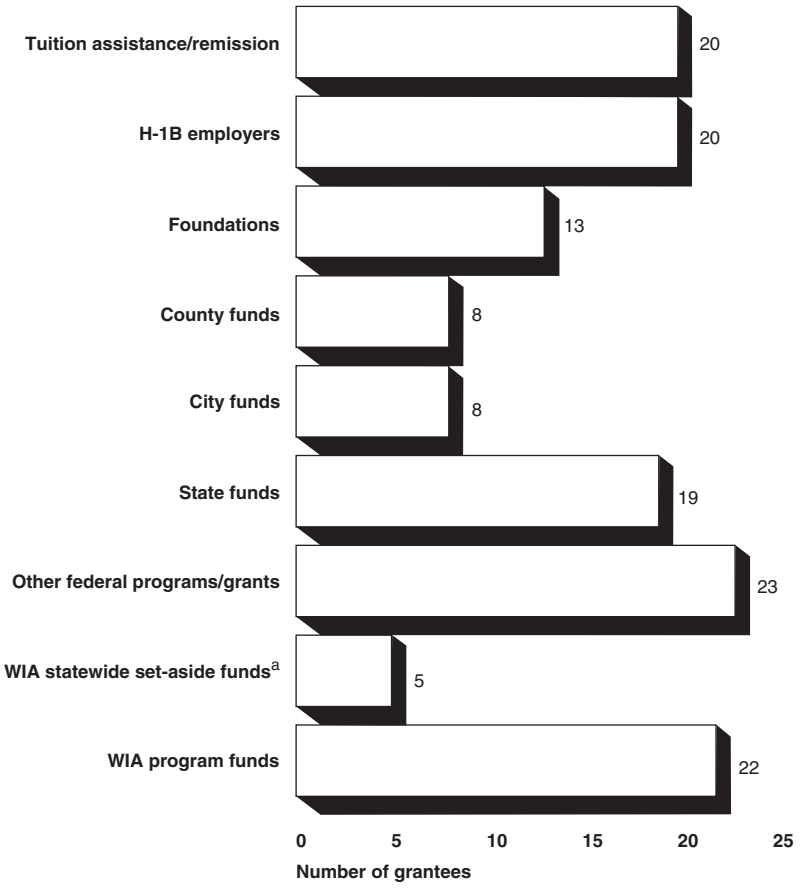
grantee that is targeting unemployed individuals can measure job placements, while a grantee targeting employed individuals can measure wage gains or job retention. Outcomes measured included student or employer satisfaction, students' continuation in school, job retention, job placements, wage gains, or upgraded positions. Only 1 of the 43 grantees is planning to measure reduced reliance on H-1B workers as an outcome. Employers and employees we interviewed reported that the training is valuable because it may contribute to an employee's loyalty to the company or may provide a service within the company that would otherwise have been outsourced. For example, at one skill grant location, employees of a small nonprofit organization learned how to edit and upgrade the company's website. By gaining the skills through existing staff, the company became more competitive and saved money.

Even though grantees were interested in tracking outcomes of participants, and had attempted to do so, they encountered a number of challenges. Since the programs were largely based on the needs of employers, the purpose of the training was often to upgrade a worker's skills, which is not necessarily connected to an easily measured outcome. For example, training that helps a registered nurse become an operating room specialist or helps an employee at an IT firm upgrade his or her skills to keep up with current technology may not be accompanied with a wage gain or promotion. A couple of grantees we visited said that the training helped employees avoid being laid off with the recent dip in the economy. In addition, some skill grantees said they had a difficult time collecting data from private industry employers who were reluctant to give personal information, such as wages, on their employees.

Future Funding for Sustaining Skill Grant Programs Is Uncertain

Although grantees were required to outline a plan in their applications for sustaining their programs beyond the grant period, some skill grantees who were in their last year of funding had not identified definite future funding sources. During our site visits, grantees said that the H-1B grant provided funding to initiate programs. For example, one grantee said it gave their program the "shot in the arm" it needed to start a new and innovative training program. Some grantees hoped that continuing the program would be easier once the program was established. In their survey responses, grantees identified a wide variety of other funding sources they expected to use to sustain the training programs established under the skill grant. The most common sources of funds were other federal programs, WIA program funds (adult, dislocated workers, or youth program), H-1B employers, and tuition assistance/remission (see figure 5).

Figure 5: Funding Sources the 43 Grantees Expect to Use to Sustain the Skill Grant Training Programs



[a]States can setaside 15 percent from each of the three WIA funding streams (adults, dislocated workers, and youth) to be used for statewide activities, including incumbent worker projects and authorized youth and adult activities.

Source: GAO data from H-1B Skill Grant Survey.

However, several grantees we visited did not have definite plans for alternative funding beyond the program's 2-year limit and may be unable to offer their program in the future. For example, one program that trained in IT areas had planned to seek funding from employers that were hiring graduates of the training program, but with the downturn in the IT industry, employers were not expected to want to contribute as readily. Some grantees were planning to apply for another H-1B skill grant to continue their programs, but whether they would be approved, was not known.

In the recent grant solicitation, Labor has allowed grantees to reapply to continue a program but has required at least some expansion of the grantee's program. Previous skill grant recipients were encouraged to apply for another H-1B grant to provide a different approach or scope to skills training, including the option to expand the existing training program. Labor did award one grantee from the first round of awards another H-1B grant in the fourth round to expand its initial IT training program. The grant administrator at this site commented that continued funding could only improve the training now that the infrastructure was in place.

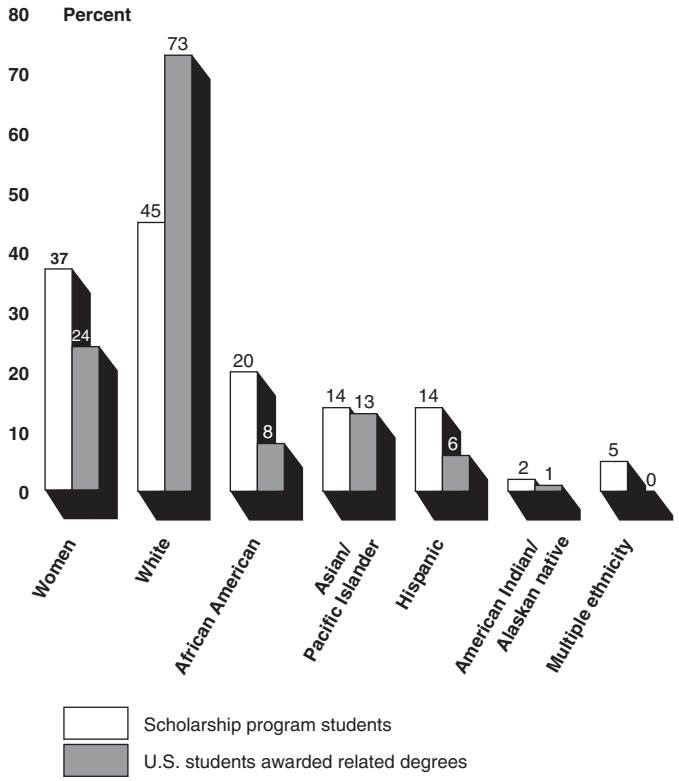
Scholarship Grants Serve Low-income Students in Computer Science, Engineering and Mathematics Degrees

The scholarship grant program emphasizes the importance of attracting and retaining low-income students in computer science, engineering, and mathematics degree programs, primarily by providing them tuition funds and supplemental income to assist with living expenses. As of May 1, 2002, 7,706 students had received scholarships through the program. Scholarship program coordinators at sites we visited noted that students who meet the low-income requirement for this program typically have to work at least part-time, in addition to attending school. According to an NSF official, the scholarships, which are not restricted to tuition, can be used for any expenses related to school, such as housing, transportation, or childcare. School officials said that students could use the time that they would be working at a job to focus on schoolwork. One student said that the scholarship is helping her to finish the program faster because she is required to be a full-time student to receive the scholarship. Moreover, two students thought that the scholarship attracted them to these fields of study when they were debating what major to choose. One student told us that even though she excelled in math in high school, she only considered becoming a math major after she learned about the scholarship opportunity.

On the basis of data collected by NSF on students who receive the scholarships, the program is attracting a higher proportion of women and minorities than have pursued degrees in computer science, engineering, and mathematics as a whole. As shown in figure 6, scholarship recipients include a greater portion of women and minorities than are included among computer science, engineering, and mathematics degree awardees. Approximately 37 percent of the students in the scholarship program are women, as compared with 24 percent of all students earning computer and information science, engineering and engineering related technologies, and mathematics bachelor's degrees in 1999-2000, according to Department of Education statistics. Further, the percentage of minority

students in the program was higher than the percentage of minority students earning comparable bachelor's degrees nationally.

Figure 6: Comparison of Demographic Characteristics of Current Scholarship Program Students to Students Awarded Related Bachelor's Degrees in the United States in 1999-2000



Note: Totals do not equal 100 percent due to rounding. Scholarship program data exclude 812 students of the total 7,706 for whom ethnicity was unknown. Data on students awarded degrees exclude nonresident aliens.

Source: NSF database on Computer Science, Engineering, and Mathematics Scholarship students and Department of Education, Office of Educational Statistics.

During our visits we found that while the scholarship program is serving low-income students, some of the schools were having trouble filling their scholarship slots. An NSF program official agreed that some of the smaller schools were having trouble filling slots, and that one complaint heard from school representatives responsible for the program was the restrictive requirement that students be eligible for Pell grants to receive an award. Effective January 2002, NSF relaxed this criteria to require that

students are federal financial-aid eligible, a less restrictive criteria. The NSF program official estimates that while enrollments appear to have increased since the criteria was relaxed, the effect of this change will not be known for another year; however, he believes the change has made it easier to recruit students. Moreover, since the start of the program, some schools have begun other initiatives to publicize the program to find more students that meet the eligibility requirements, which may help to increase the enrollments in the scholarship program.

Skill Grant and Scholarship Grants Designed to Meet Workforce Needs, Though the Skill Levels for Which They Train Varies

The skill grant training is based on local workforce needs and addresses occupations both below and at the bachelor's degree level required for H-1B visas, whereas the scholarship program's training is on the basis of national workforce needs and the jobs that many H-1B visa holders fill. The skill grant training is designed by grantees to address skill shortages in the local workforce. However, the programs, as permitted by law, do not always prepare participants for the specific kind of jobs held by H-1B visa holders. The scholarship program also focuses its efforts on attracting and keeping students in specific fields with national workforce shortages.

Skill Grant Programs' Training Based on Local Workforce Needs

As established by law, the skill grants were intended to provide technical skills training, but acceptable areas of training were not prescribed. Labor, in its solicitations for grant applications, stated that the funds were intended for skill training in high-skill occupations that are in demand by U.S. businesses. Its guidance stated that the overall goal of H-1B-financed training is to raise the skills of American workers so that they can fill high-skill jobs presently being filled by temporary H-1B workers. Labor also stated that one key indication of the occupations in demand is the number of employer applications for H-1B foreign workers, and noted that two industries appear to generate the most current H-1B demand—IT and health care. The solicitations included an appendix of specific occupations in which job openings were certified through these applications; the top two occupations by far that were listed were "occupations in systems analysis and programming" (an IT occupation) and "therapists" (a health care occupation). However, many applications were never filled with a foreign worker.[13] INS data on the actual workers who eventually obtain

[13]More applications are certified than visas approved for several reasons, such as applications approved for anticipated employment that does not transpire.

visas indicate a different mix; the largest category is computer-related occupations, while medicine and health occupations represent a much smaller portion of the visas approved, as shown in table 1.

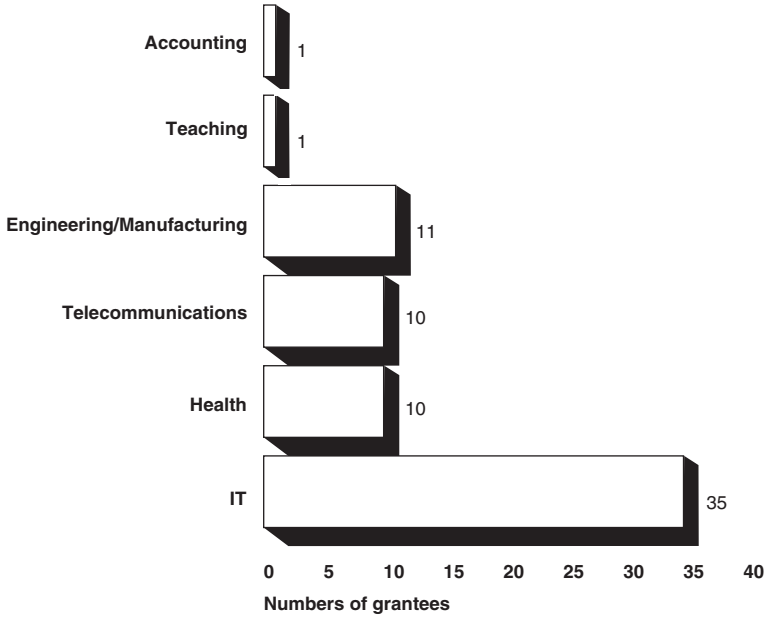
Table 1: Top 10 Occupation Categories for H-1B Visa Petitions Approved for Fiscal Year 2001

Occupation category	Percent
1. Computer-related	58.0
2. Architecture, engineering, and surveying	12.2
3. Administrative specializations	7.2
4. Education	5.3
5. Managers and officials (not elsewhere classified)	3.8
6. Medicine and health	3.4
7. Life sciences	2.0
8. Social sciences	1.9
9. Mathematics and physical sciences	1.7
10. Miscellaneous professional, technical, and managerial	1.7

Source: U.S. Immigration and Naturalization Service.

Most of the skill grant programs funded with the first three rounds of grants distributed in 2000 were providing training for IT occupations. Several programs trained in a variety of areas, but of the 43 grantees selected in the first three rounds of grants, 35 provided training in IT and 19 of these trained exclusively in IT. The number of grantees who offered training in specific categories is shown in figure 7.

Figure 7: Number of Grantees Who Offered Training in Various Categories



Note: Grantees often offered training in more than one area.

Source: GAO data from H-1B Skill Grant Survey.

As applicants for skill grants planned their programs, they used information that Labor supplied in the solicitation about occupations in demand and supplemented it with additional information about local labor market needs. Of the 43 grantees selected in the first three rounds, 33 tried to obtain H-1B visa data for their area to help them identify shortage areas being filled with foreign workers, but only 23 were successful. During our site visits, some grantees said they followed up with the employers identified as having H-1B visa workers and discussed their workforce needs. The surveyed applicants also used other approaches to identify local workforce needs:

- 42 reported using state and/or regional labor market information;
- 40 reported using information from employers on hiring demands;
- 19 reported using newspaper want ads; and
- 27 reported using at least one other approach, including working with industry groups, using others' studies of local skills gaps, analyzing postings on Internet job sites, employer focus groups, and national studies.

Grantees we visited commented that this process allowed the workforce investment boards to better understand industries and employers that employ higher skilled workers, with whom they had not previously had strong relationships. One grantee official noted that the grant had been useful in helping his organization look at broader labor market needs and focus on emerging trends, such as an anticipated shortage of nurses due to retirements. Another spoke of how this process helped to better understand the telecommunications/information technology industry. Several grantees noted that this grant gave them the opportunity to provide training that helped meet employers' labor needs.

Skill Grant Training in Several Occupational Areas, at a Range of Skill Levels

Although the skill level of H-1B occupations is generally required to be at the bachelor's degree level, the law governing the skill grants does not require that the grants, though funded with fees from H-1B workers' employers, train at that same level. The goal of the skill grant programs was to provide technical skill training to workers, both for those who were employed as well as those who were unemployed. The American Competitiveness and Workforce Improvement Act that established the program does not refer to any particular occupations and did not elaborate on the nature of the training authorized. The American Competitiveness in the Twenty-First Century Act of 2000 did provide more specific direction, stating that this training is not limited to skill levels commensurate with a 4-year undergraduate degree, but should include preparing workers for a broad range of positions along a career ladder.

Unlike some other fields, occupations in the IT field are difficult to classify as to the level of education degree they require. The Bureau of Labor Statistics in its *Occupational Outlook Handbook* has noted that some IT workers have a degree in computer science, mathematics, or information systems, while others have taken special courses in computer programming to supplement their study in other fields, such as accounting or other business areas. The National Workforce Center for Emerging Technologies has identified IT skill cluster titles and the education necessary for the occupations. For several of the occupations, workers

can prepare academically with a range of training types, from a 1-year certificate program to a 4-year degree program.[14]

Labor, when issuing guidance in its solicitations for grant applications for various rounds, provided confusing language when describing the level of training that was appropriate. The solicitations state that the primary target served should be workers who can be trained and placed directly in the high-skill H-1B visa occupations. However, the solicitations also sometimes included other information that allowed training for lower level positions. For example:

- The first round's solicitation also says grantees should reach out to high- and low-skilled workers to train for H-1B occupations related career paths. However, some grantees commented that raising a low-skilled worker to a baccalaureate level in the 2-year grant period could be difficult.
- The two most recent solicitations for applications mirror the change from the 2000 law. They state that the technical skills training is not limited to skill levels commensurate with a 4-year degree and should prepare workers for a broad range of positions along a career ladder.

Although Labor's solicitations were unclear as to the level of training that was acceptable, according to Labor officials, they avoided being overly prescriptive to allow grantees flexibility and encourage innovation. In addition, Labor stated that because this was a new program, it was difficult to determine where more clarification was needed until grantees began to ask similar questions. Labor did post some questions and answers about the H-1B skill grant program from two conferences for potential grant applicants on the H-1B Technical Skills Training Grant website.[15] A Labor official also told us that Labor is developing a list of commonly asked grantee questions and answers to those questions, which should be posted in the near future.

The 43 grantees from the first three rounds provided training for a range of levels of occupations. INS Adjudications Division staff, when asked to assess whether these occupations are equivalent to skill levels needed for H-1B positions, said that many of them could be acceptable H-1B

[14]See *Building a Foundation for Tomorrow: Skill Standards for Information Technology*, by the Northwest Center for Emerging Technologies, now called the National Workforce Center for Emerging Technologies. This study was sponsored in part by the National Science Foundation.

[15]The site address is *http://www.doleta.gov/h-1b/*.

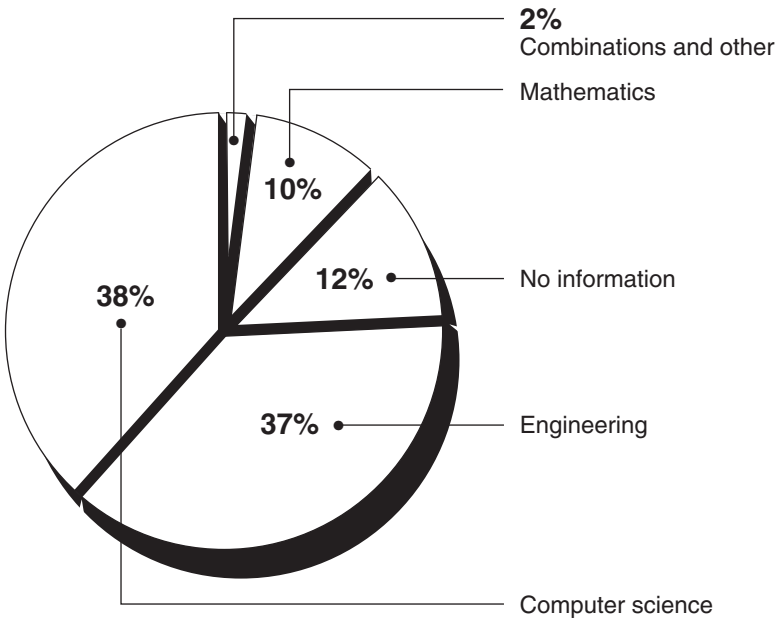
positions, depending on the details of the job descriptions.[16] The agency found that 25 (38 percent) of the 66 occupations in which training was provided could qualify for H-1B occupations, 30 (45 percent) would generally not qualify, and the remaining 11 occupations were too vague to be characterized either way. (See app. V for a full list of the occupations in which skill grant programs trained and INS's assessment of how the occupations compared with H-1B occupations.) A few employers told us that in some cases the specific skills they needed could be obtained from an H-1B worker, or could be obtained by training a present employee, who already had some knowledge of processes, in specific higher-level skills. For example, a small nonprofit organization that had interviewed outside candidates, including an H-1B worker, for a networking position decided to use the skill grant funds to upgrade an employee's skill sets instead. Similarly, the general manager at a manufacturing plant said that electronics technicians who were being upgraded to junior engineers would be able to do testing that previously was part of the responsibilities of senior engineers, some of whom were H-1B workers.

Scholarship Grant Programs Targeted to Meet National Workforce Needs and Train at High-Skill Levels

Students receiving scholarship grants are enrolled in educational areas that prepare students for occupations frequently filled by H-1B visa holders, an indicator of national workforce needs. The law establishing the program stated that scholarship recipients must use the scholarship to enroll or continue enrollment at a school in order to pursue an associate, undergraduate, or graduate level degree in computer science, engineering, or mathematics. Although the students are pursuing a variety of specific course programs, such as automation robotics and actuarial science, their areas of study can be classified into broad categories as shown in figure 8. INS data on H-1B visa workers indicate that these majors would provide suitable training for positions these foreign workers often fill. As shown in table 1, the data on H-1B visa workers approved to begin work during fiscal year 2001, which reflect national workforce needs, indicate that 58 percent of them were for computer-related occupations.

[16]INS noted that many of the occupations they characterized as not H-1B equivalent could be found to be H-1B equivalent and vice versa, depending on the facts contained in an individual petition. For example, many of the "technician" positions frequently require only a 2-year associate degree in a given field, or a baccalaureate degree in an unrelated field and experience. However, an employer could require at least a baccalaureate degree in the given field and the actual duties could be presented as quite complex. INS added that other occupations, such as nurses and radiology technicians, generally are not H-1B equivalent; however, they could be H-1B equivalent for supervisory or management level positions.

Figure 8: Scholarship Program Students' Majors by Categories



Note: Numbers do not total to 100 percent due to rounding.

Source: NSF database on Computer Science, Engineering, and Mathematics Scholarship students.

Training paid for in part by scholarship grants is for occupations with a similar level of complexity to those held by H-1B visa holders, who must have bachelor's degrees or equivalent experience. Some students receiving scholarships are attending 2-year schools while others are in 4-year undergraduate programs or graduate programs. (About a quarter of the schools in the program are 2-year schools.) Some of those in 2-year programs plan to transfer into 4-year degree programs. For example, one program we visited at a 2-year community college was specifically preparing students for transfer to a nearby 4-year public university, a process that was simplified by the transfer agreements that the program advisor had arranged.

National Efforts Not Coordinated to Strategically Address High-Skill Needs, but Local Coordination Shows Promise

While federal programs and initiatives are not coordinated to strategically address the national need for high-skill workers, local skill grant programs are more coordinated, though Labor has provided limited assistance to enhance these local efforts. There are multiple federal agencies and offices within agencies involved in efforts to address the need for high-skill workers, although coordination is limited. At the same time, local workforce officials said that as a result of implementing their skill grants they have increased coordination with partners and employers. Yet, skill grant representatives said they would have liked more assistance from Labor in obtaining information on companies needing H-1B workers and developing a national strategy to market the program. Labor and NSF provided few opportunities for grantees to share information and learn from each other.

National Efforts Address High-Skill Needs for Workers, Although Coordination is Limited

Multiple federal agencies and offices within agencies are involved in efforts to address shortages of high-skill workers and/or attract more students to high technology fields. Yet, these efforts are not focused on broadly coordinating across agencies to address national high-skill workforce needs in a strategic way. Within Labor, many of these efforts are discretionary grant programs operated by ETA through separate offices with limited coordination. For example, ETA's Office of Policy and Research oversees the H-1B skill grant program, ETA's Office of Adult Services oversees several discretionary grant programs that address employer skill shortages and a grant to the Information Technology Association of America to inform IT companies about the workforce investment boards' role in local communities; and ETA's Office of Apprenticeship Training, Employer and Labor Services oversees a grant to expand apprenticeship in the IT occupational area. In addition to the H-1B scholarship program, the NSF has other programs aimed at attracting and retaining students in high-skill degree programs. The Department of Commerce's Office of Technology Policy within the Technology Administration, the Department of Education's Office of Vocational and Adult Education, the Department of Health and Human Services' Health Resources and Services Administration, also have initiatives and programs to research and/or address areas of high-skill needs and shortages. (A list of some key programs and initiatives that have a component addressing the need for high-skill workers is shown in app. VI.)

The lack of coordination between federal agencies was evidenced within the two grant programs funded with H-1B fees. The Labor-administered skill grants and NSF-administered scholarship grant programs have had little coordination across agencies to address broader needs. According to

a NSF official, while programs such as the scholarship grants are complementary to Labor's workforce programs, NSF's primary link to the workforce system has been with the Department of Education. At the local level, some of the skill grant representatives said they did not know about the scholarship grants and some of the colleges with scholarship grants did not know about the skill grants. Yet, local grant representatives of both programs were interested in learning more about each other and it appeared that there were some areas where they could have benefited from more coordination. For example, one university official overseeing the scholarship program mentioned that she would like more information on the skill grants because of the many requests about training programs from students who have degrees but still need additional training to be more marketable to employers.

Within Labor, ETA oversees the WIA adult, dislocated worker, and youth programs and has some other initiatives to address high-skill workforce needs in addition to the skill grants; however, these efforts are not linked together to build on the lessons being learned. For example, ETA assigned regional staff from the Office of Apprenticeship Training, Employer and Labor Services (ATELS) to monitor the skill grants. ATELS also has a major initiative to develop apprenticeships in new and emerging industries such as IT and health care. Yet, according to a national ATELS official, a strong partnership between the skill grant program and ATELS did not develop, which could have led to building a broader infrastructure that connects the skill grants and apprenticeship efforts in high technology industries. A Labor official from the Division of One-Stop Operations within ETA said that a formal mechanism is not currently in place to share information among grant programs such as the skill grant program and other ETA grants and programs. However, these officials did say that the ETA leadership is interested in looking at the role of demonstration grants such as the skill grant program and how they fit into ETA's ongoing employment and training programs. An example of this type of coordination was demonstrated by Labor's Boston regional office that convened a series of 3 daylong conferences that focused on current worker training for H-1B grantees and other discretionary grants awarded by Labor. In addition, the Assistant Secretary of ETA recently announced the establishment of a Business Relations Group that will strive to better support business linkages with all components of the workforce system, such as apprenticeship programs and Job Corps.

Labor involved Commerce in the skill grant program, as required by the American Competitiveness in the Twenty-First Century Act of 2000, but these efforts were limited and not part of a more comprehensive strategy

to address high-skill needs across agencies. Labor consulted with Commerce while developing the initial solicitation for grant application for the skill grant program. The 2000 act mandated that role by requiring that Labor consult with Commerce in awarding the grants and requiring Commerce to complete a study of public and private sector high-tech workforce training programs. Commerce staff also served on some of the skill grant application review panels. Yet, Commerce expressed frustration in trying to obtain information from Labor on the skill grant program for their report on workforce training programs. At the same time, Commerce is leading several major initiatives addressing IT employers and employees, which are independent of Labor's workforce programs.

While some federal agencies are taking steps to more broadly address high-skill workforce needs and skill shortages, no agency has taken the lead in coordinating across education, economic development and workforce development programs to strategically focus on high-skill needs. The Secretary of Labor established a "21st Century Workforce Initiative" that includes the Office of the 21st Century Workforce, created by executive order on June 20, 2001, to provide information and forums on workforce issues. However, these efforts address the broad workforce and are not focused specifically on high-skill needs. The Secretaries of Labor and Health and Human Services are also working on a Memorandum of Understanding to support joint efforts to address the nation's nursing shortage. Within Labor's ETA, there are some efforts to take a more strategic role in identifying skill shortfalls in a few key industries, notably health care and IT. Yet, these efforts tend to be limited largely to one agency or targeted to one industry, without building on the lessons being learned across programs and initiatives addressing high-skill needs.

Skill Grants Helped Local Boards Increase Coordination but Labor Provided Limited Assistance to Enhance These Efforts

Local workforce board representatives and program officials reported that the skill grants helped them advance key goals of the WIA workforce system, such as coordinating with new partners beyond local boundaries, building relationships with more employers, and linking to the one-stop system; however, they would have liked more assistance from Labor to enhance these local efforts. Survey respondents reported working with one-third more employers with high-skill needs since receiving the H-1B grants. Some workforce officials said that the skill grants enabled them to work with employers that would not have accessed the WIA workforce system otherwise. We also spoke with some employers who said they had not known of the services available or worked with the WIA workforce system before this grant. At the same time, 10 of the grantees said they had difficulty obtaining data on H-1B visa applications to identify employers

who used H-1B workers in their areas. A number of grantees contacted Labor, INS, state workforce agencies, and even congressional offices to attempt to track down this information. While some grantees got information from Labor, others did not. Almost a quarter of the grantees said they would like more assistance from Labor in obtaining information on companies hiring H-1B workers or networking with H-1B employers. A number of grantees suggested that it would be beneficial for Labor to develop a national strategy to market the H-1B grant program to employers and to facilitate discussions with national employers who use H-1B workers. One of the national employers who participated in a H-1B skill grant program expressed interest in replicating its experiences and sharing information on a national level.

Almost all (40) of the grantees reported that the one-stop centers, which are the cornerstone of the WIA workforce system, had a role in the grant and in some cases, increased visibility as a result of the grant. For many of the grantees, the one-stop centers served multiple functions with the most common being recruiting/referring participants, followed by conducting intake/assessment, identifying job openings for participants, and matching participants to job openings/employers. One of the grantees that worked with employers to upgrade the skills of current workers said that they used the one-stop centers to help backfill the lower-level positions vacated by employees who got the H-1B training and moved into higher-level positions. One employer we interviewed, who was not aware of the publicly funded workforce system before the H-1B grant, expressed interest in using the screening services available through the local one-stop center after learning about these services through the grant.

Local workforce officials also mentioned how these training programs helped support other efforts under WIA to strengthen the workforce system. For example the skill grants helped the workforce investment boards think beyond local boundaries to regional and employer territories and develop a model for employer-driven training that can also be applied to other programs, such as those funded by WIA. A number of grantees commented on how the H-1B grant enhanced their capacity to work with community colleges and other partners to provide innovative, higher-skills training. At the same time, some grantees requested more technical assistance from Labor in such areas as learning more about national efforts to develop and define career ladders. As one grantee noted, information on career ladders is available in different areas, but is hard to

track down; information developed by efforts such as the National Skill Standards Board[17] could be useful, but this information does not always make its way to the local level.

Local Skill Grant and Scholarship Programs Had Limited Opportunities to Share Information

For both the skill grant and scholarship grant programs, grant recipients thought they could have benefited from sharing more information with one another about lessons learned and promising practices. Yet, Labor and NSF provided few opportunities for this type of information exchange. Labor has established a website with relevant information for the H-1B grants, conducted an early study of the program and a second study of exemplary practices of H-1B skill grants, and convened two national meetings for H-1B skill participants. However, grantees do not have a mechanism for ongoing information exchange with each other. In our mail survey and through site visits with grantees, 13 of the grantees noted that they would like to have more opportunities to network and share information among grantees. Some of the local grantees formed informal networks to share information and have relied on each other for technical assistance. Officials at scholarship programs we visited also said that they would like the opportunity to exchange information and promising practices with other schools. NSF plans to convene a meeting of the scholarship program coordinators from all the colleges awarded NSF scholarship grants in the spring of 2003. The schools we visited commended NSF for distributing information about the program and responding to questions in a timely fashion through e-mail.

Conclusions

The H-1B skill grant and scholarship grant programs are two key programs that train high-skill workers and help address employers' concerns about skill shortages in the United States—particularly in IT and health care fields. The skill grant program's flexibility allows training at high-skill levels, often in IT-related occupations, while the scholarship program attracts and encourages students to stay in degree programs in the computer science, engineering, or mathematics. Both programs respond to workforce shortages in either the local or national economies.

[17]The National Skill Standards Board was created by the National Skill Standards Act of 1994 to develop a voluntary national system of skill standards, assessment, and certification systems.

Both programs have encountered challenges during their early implementation. Labor's confusing guidance on the skill grant program has resulted in uncertainty about the type of training that should be provided. Further, Labor's new reporting requirements, with the first quarterly report due September 30, 2002, do not require grantees to collect data on individual participants or the level of training being provided. Without these data, Labor cannot identify whom the program is serving or whether the training prepares participants for H-1B level jobs or career ladders leading to those jobs. This limits the ability of Labor to adequately assess the program's effectiveness and limits the ability of Congress to determine whether the program is accomplishing its goals. The local scholarship grant programs struggled initially with recruiting enough students to fill all available spaces in their programs. However, it appears that this may no longer be a problem now that NSF broadened the program's financial eligibility requirements.

Skill and scholarship grantees have had limited opportunities for sharing information on best practices or how they overcame challenging problems. While Labor recently published a report on exemplary practices of H-1B training programs and has convened two national meetings of grantees, there is no mechanism for grantees to exchange information on lessons learned with each other on an ongoing basis. On the basis of our site visits, the scholarship program grantees also expressed interest in having the opportunity to share information with each other. The skill grant and scholarship programs could also benefit from better communication with one another. For example, local one-stop systems could have helped colleges with scholarship grants recruit potential students for the scholarship program. On the other hand, skill grant programs could have benefited by knowing of scholarship programs in their community, since they could be another resource for participants who had trained through the skill grant program but wanted to continue to work toward a college degree in computer science, engineering, or mathematics.

While many efforts to train high-skill workers are underway by different agencies, these efforts are not coordinated across agencies to build on lessons learned and maximize their impact. The progress made at the local level by the skill grant program in building relationships with employers and identifying skills needed has broader implications for enhancing national efforts to meet high-skill needs. At the national level, Labor has initiated some promising efforts such as analyzing workforce needs in health care and IT, two industries in which employers have expressed concerns about labor shortages. In addition, the partnership between

Labor and Health and Human Services to support joint efforts to address the nation's nursing shortage is a positive example of bridging initiatives across agencies. While these efforts by Labor and other agencies are moving in the right direction, a more broad-based, comprehensive approach would help the United States address its high-skill labor needs in a more strategic way.

Recommendations for Executive Action

To ensure that the skill grant program can assess its effectiveness and that information about grantees' successful approaches are shared throughout the program, the Secretary of Labor should

- implement the new quarterly reporting requirements and expand these requirements to also include information on individual participants and the level of training that is being provided so they can better measure whether the program is achieving its goals and
- establish ongoing mechanisms to share successful strategies among grantees and encourage networking.

To ensure that the scholarship program improves its ability to attract and retain students to computer science, engineering, and mathematics fields, the Director of NSF should establish mechanisms to share successful strategies and encourage networking among the postsecondary schools that are grantees.

In addition, in a more overarching effort to be responsive to workforce development needs, the Secretary of Labor should be proactive in building a comprehensive approach within the Department and across federal agencies to address high-skill workforce needs across the country.

Agency Comments

The Department of Labor, the National Science Foundation, and the Department of Commerce commented on a draft of this report (see apps. VII, VIII, and IX). In general, Labor agreed with our recommendations, although Labor believed that their new reporting requirements will be sufficient to provide needed information to evaluate the program. NSF generally agreed with the report, and provided technical comments. While Commerce raised concerns about the design of our study, Commerce did not take issue with our recommendations. Commerce was more interested in the recent grants awarded than in the implementation of the first three rounds of grant awards that was the focus of our study. The recent grant awards were so new that information was generally not available on

participant characteristics or program operations. Because Congress asked us to focus our study on how H-1B programs are operating, we reviewed programs that were already in place. Overall, Commerce's comments appear consistent with our findings that Labor has not collected sufficient data on the program to judge its effectiveness.

The Department of Labor supported our recommendation that the Secretary of Labor take a proactive approach to addressing high-skill workforce needs across the country. Regarding the recommendation about reporting requirements, Labor pointed out that ETA has recently developed a standard format for the quarterly report. However, we believe that the new reporting requirements need to include additional information on participants' demographic characteristics and the level of training to ensure that Labor and others can evaluate who is being served and how the training relates to occupations that H-1B visa workers fill. Labor concurred with our recommendation that the Department establish mechanisms for grantees to share successful strategies. In fact, Labor noted that ETA has provided grantees with two studies that include information about grantees' best practices and also plans to provide additional technical assistance support to the H-1B program that will include information sharing.

Commerce, in commenting on the draft, was critical of our decision to focus on the skill grants distributed in the first three rounds of grant awards and not on the more recent grantee selections. Commerce notes that the changes in the law in 2000 governing the skill grants and Labor's program implementation and grantee selection have had an impact on the composition of the training offered. We focused our work on the first rounds of grants because we wanted to obtain information on how grantees were implementing programs. Grantees from the more recent awards begun in December 2001 could have provided little, if any, information on actual participants and training.

Commerce was also concerned about our presentation of information on identifying the occupations for which grantees should be training. Commerce states that we drew conclusions by comparing labor condition application data and visa petition data from different years. Our report, however, does not compare these two sources of information, but rather points out that the most recent information available on H-1B visa petitions approved provides a different picture of H-1B workers' occupations than was identified through the labor condition application data. Further, as we noted in the report, grantees began their analysis of workforce needs with data on H-1B occupations from labor condition

applications, but their decisions about occupations in which to train were based on local labor market conditions and employers' needs. Regarding our reporting on educational requirements for H-1B workers in IT occupations, Commerce commented that we failed to contrast others' data on the high portion of workers in IT who have a bachelor's or higher degree with the education profile of participants at grantees we surveyed. The education data we present on participants reflect their education profiles when they entered the programs. Participants may achieve degrees as a result of the training. Further, we believe that at the time of our survey it was too early to evaluate the number of degrees participants attained because many longer programs were not yet completed.

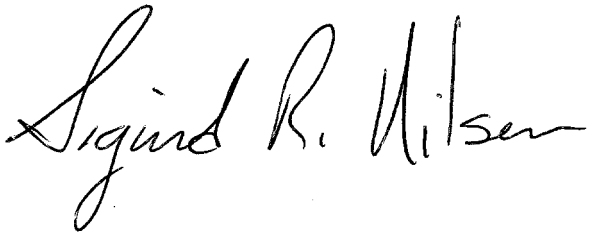
We agree with Commerce's comment that we provide limited information on the level of training being provided; however, this information is the most extensive data grantees could provide and was not available from any other sources prior to our study. Consequently, we have included a recommendation to Labor regarding data collection. Commerce also noted that individual duties could vary within the same occupational title. We recognize in the report that some occupation titles are vague, but believe that the INS analysis that we present is helpful to identify those occupations that could qualify as H-1B occupations, while recognizing that some are too vague to categorize. In addition, Commerce said we imply that a specific company's training of junior engineers might reduce this firm's need for an H-1B worker. This example was included to point out only that these workers trained with H-1B grants could perform some duties otherwise performed by an H-1B worker. Commerce also comments that we should have explored the implementation of the career ladder concept with grantees. Our discussions of career ladders focused on the level of training provided and led to our discussion in the report about grantees' desire to have more assistance in developing and defining career ladders.

Commerce also expressed some concerns regarding our review of the NSF scholarship program. However, the additional areas that they believe we should have explored, such as whether the scholarships are attracting students who would otherwise not have pursued degrees in these disciplines, would have required resource-intensive approaches, such as surveying schools and scholarship recipients, and were beyond the scope of this study. Because much information was available directly from NSF's program database, we chose to rely on this participant data for our study.

All three agencies provided technical comments, which we incorporated as appropriate.

As arranged with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies of this report to the Secretary of Labor, the Director of NSF, the Secretary of Commerce, and other interested parties. We will also make copies available to others upon request. In addition, this report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-7215 or Joan T. Mahagan at (617) 565-7532. Other key contributors to this assignment are listed in appendix X.



Sigurd R. Nilsen
Director, Education, Workforce, and
Income Security Issues

Appendix I: Scope and Methodology

We took several steps to determine how the skill grant and scholarship grant programs are being administered and the areas and skill levels in which they train. We judgmentally selected 12 grantees (see table 2) from the skill grant program to visit from the first 3 rounds (43 grants) funded within the skill grant program. Those selected represented various geographic locations; rural and urban service delivery; participation from all three grant rounds; and a mixture of areas of training. For each grant, we met with key individuals, such as representatives from the workforce investment boards and for most grants, employers, participants, and training providers. We discussed their objectives; their decisions on the occupational areas in which to train, level of training, and methods of delivering training; their outreach to potential training participants and employers; and their views on the benefits and challenges of operating these programs.

Table 2: Skill Grant Recipients Visited

Grantee	Location
Metro North Regional Employment Board	Malden, Mass.
Regional Employment Board of Hampden County, Inc.	Springfield, Mass.
New Hampshire Workforce Opportunity Council	Concord, N.H.
Vermont Human Resources Investment Board	Montpelier, Vt.
Workforce Investment Council of the District of Columbia	Washington, D.C.
Alexandria/Arlington Workforce Development Consortium	Arlington, Va.
Dallas County Local Workforce Development Board	Dallas, Tex.
North Central Texas Council of Governments	Arlington, Tex.
City of Chicago	Chicago, Ill.
JobWorks, Inc. (Northeastern Indiana WIB)	Fort Wayne, Ind.
Contra Costa County Employment and Human Services Department	Concord, Calif.
City of Sunnyvale – North Valley Job Training Consortium (NOVA) Private Industry Council	Sunnyvale, Calif.

Source: GAO.

We also surveyed all 43 of the round 1, 2, and 3 grantees to obtain specific data, such as the kinds of participants they were serving, the types of training they offered, and their sources for data on workforce needs. While all 43 grantees returned their surveys, as noted in the report, some could not provide information to all questions, particularly those requesting detailed participant demographics. Because this survey was sent to all 43 grant recipients, there is no sampling error, but the practical difficulties of administering any questionnaire may introduce other types of errors, commonly referred to as nonsampling errors. For example, differences in how a particular question is interpreted by a survey respondent could

introduce unwanted variability in the questionnaire's results. We took steps in developing the questionnaire, the data collection, and the data editing and analysis to minimize nonsampling errors. (The survey instrument is provided in app. II.) We obtained Immigration and Naturalization Service (INS) Adjudications Division's views on how the occupations for which the grant programs trained compared with H-1B visa workers' occupations. In addition, we analyzed descriptions of programs funded with more recent skill grants.

We also visited six colleges (see table 3) that received scholarship grants, selected to give us a mix of publicly funded and privately funded schools, 2-year and higher-degree granting schools, and geographic representation. We discussed with program officials their outreach to students, support services to students, and views on the benefits and challenges of the program. To obtain specific information on the grantees and students, we analyzed the National Science Foundation (NSF) database of participants and schools.

Table 3: Post-Secondary Educational Institutions Visited

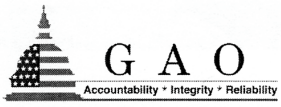
School	Location
Montgomery College	Rockville, Md.
Texas Woman's University	Denton, Tex.
University of California (Mathematics, Engineering, Science Achievement Program)	Oakland, Calif.
Oakton Community College	Des Plaines, Ill.
Springfield Technical Community College	Springfield, Mass.
American University	Washington, D.C.

Source: GAO.

To provide views on the overall programs and the extent to which these programs are coordinated with other workforce development programs designed to meet high-skill training needs, we discussed these programs with officials from the Department of Labor, NSF, the Department of Commerce, the National Association of Workforce Boards, and groups representing industry. We also performed an extensive Internet search to identify programs that key agencies are sponsoring to meet high-skill training needs.

Appendix II: Survey Sent to Skill Grant Recipients

United States General Accounting Office



Survey of Workforce Investment Boards Receiving H-1B Technical Skills Training Grants

Introduction

The U.S. General Accounting Office, an agency of Congress, has been requested to study the H-1B funded technical skills training grants being administered by the Department of Labor and scholarships being administered by the National Science Foundation. As part of this study, we are surveying the first 43 grant recipients of the H-1B technical skills training grants to collect some information about the participants, the type of training being provided, and the program's implementation and collaboration. Our broad objective is to determine the extent to which the H-1B technical skills training grants and scholarships are being used to develop effective programs that can and are helping to strengthen the skills and abilities of American workers in high-skill jobs, particularly in the information technology (IT) industry.

You may need to work with other people in your organization and/or with project partners to complete this survey.

GAO will take steps intended to prevent the disclosure of individually identifiable data from this survey. In our report, the results of this survey will be reported in summary form only. The identity of any individual responding to the survey or the identity of the project itself will not be revealed.

Please complete the survey and return it to Laura Heald (healdl@gao.gov) by March 8, 2002. To complete the survey, you will need to save this Word 2000 file in your computer, complete it and save your responses, and then attach it to your return e-mail to Laura Heald.

If you have any questions concerning any aspect of this survey, please call Laura Heald at (202) 512-8701.

Thank you in advance for your participation.

Please enter the name, title, telephone number, and e-mail address of the key person completing the questionnaire in the event we need to clarify an answer.

Name:

Title:

Agency:

Phone Number:

E-mail Address:

1

Participant Data

1. In what month and year did your organization begin serving individuals (i.e., first enrollment start date) with the H-1B Technical Skills Training grant?

Month [ ] **Year** [ ]

2. How many participants were enrolled in training funded by your organization's H-1B Technical Skills Training grant between **March 1, 2000 and January 31, 2002**? *(Enter number.)*

[ ] **total number of participants enrolled in H-1B training between March 1, 2000 and January 31, 2002**

Please provide the following breakdown of the total entered above: *(Note: The sum of a, b ,c, and d entered below should add to the total number entered above. If data are not available for any specific category(ies) enter "NA".)*

a) How many of the participants enrolled in H-1B training entered above, **completed** their entire H-1B training course between March 1, 2000 and January 31, 2002?

[ ] participants completed their entire H-1B training course between March 1, 2000 and January 31, 2002

b) How many of the participants enrolled in H-1B training entered above, **left/dropped out** before completing their entire H-1B training course?

[ ] participants left/dropped out before completing their H-1B training

c) How many of the participants enrolled in H-1B training entered above, **are still in training**?

[ ] participants are still in training

d) How many of the participants enrolled in H-1B training entered above, **are waiting for training to start**?

[ ] participants are waiting for training to start

3. What was the gender breakdown of the total number of participants enrolled in H-1B training between March 1, 2000 and January 31, 2002? *(Enter numbers. The total should equal the number of participants entered in the first line of question 2above. If data are not available for any specific category(ies), enter "NA".)*

[ ] participants were male

[ ] participants were female

2

4. How many of the total number of participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, were in the following age groups? *(Enter numbers. The total should equal the number of participants entered in the first line of question2 on age 2. If data are not available for any specific category(ies), enter "NA".)*

	participants were age 21 or under
	participants were age 22-39
	participants were age 40-54
	participants were age 55 and over

5. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, were of the following race/ethnicity? *(Enter numbers. The total should equal the number of individuals entered in the first line of question 2 on page 2. If data are not available for any specific category(ies), enter "NA".)*

	participants were American Indian/Alaskan Native
	participants were Black/African-American (non-Hispanic)
	participants were Asian/Chinese/Japanese/Korean/Filipino/Pacific Islander
	participants were White (non-Hispanic)
	participants were of Spanish/Hispanic origin or decent (any race)
	participants were Other - Please specify:

6. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, received one or more of the following types of public assistance: Temporary Assistance to Needy Families, General Assistance (state/local government), Refugee Cash or Assistance or Supplemental Security Income (SSI-SSA Title XVI)? *(Enter number. If data are not available, enter "NA".)*

	participants were receiving public assistance

7. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, had a physical or mental disability? *(Enter number. If data are not available, enter "NA".)*

	participants had a physical/mental disability

3

8. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, had the following employment status at the time of enrollment? *(Enter numbers. The total should equal the number of individuals entered in the first line of question 2 on page 2. If the data are not available for any specific category(ies), enter "NA".*

	participants were employed (including part-time)
	participants were unemployed

Note: In the following question we use the term "dislocated worker". For purposes of this survey, a dislocated worker is defined as an individual who has been terminated or laid off or who has received a notice of termination or layoff; is employed at a facility at which the employer has made a general announcement that the facility will close within 180 days; was self-employed but is unemployed due to general economic conditions or because of a natural disaster; or is a displaced homemaker.

9. Of those participants entered in question 8 above, how many met the definition of dislocated worker at the time of enrollment? *(Enter number. If data are not available, enter "NA".)*

	participants were dislocated workers

10. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, had as their highest educational attainment, the following educational status at the time of enrollment? *(Enter numbers The total should equal the number of individuals entered in the first line of question 2 on page 2. If data are not available for any specific category(ies), enter "NA".)*

	participants did not have a high school diploma/GED or other high school equivalency certificate
	participants had a high school diploma/GED or other high school equivalency certificate
	participants had some college, but not a degree
	participants had a 2 year college degree
	participants had a 4 year college degree
	participants had a post-college degree

11. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, would be considered to be under-represented populations (i.e., women, minorities, persons with disabilities, and older workers)? *(Enter number. If data are not available, enter "NA".)*

	participants would be considered to be under-represented populations

4

12. In the table below, please indicate the following:

A. Whether or not your organization's H-1B Technical Skills Training Program offers each type of occupational training, as well as any other type of training not listed (See Other, specify).

B. For areas where training is provided, the range of duration of training (minimum to maximum).

C. The number of participants enrolled in training in each occupational area between March 1, 2000 and January 31, 2002, and

D. The number of enrolled participants who have been placed in new or upgraded positions in each occupational area between March 1, 2000 and January 31, 2002 as a result of program participation.

(For parts C and D, if data are not available, enter "NA" for all relevant occupational areas.)

Note: Please try to group your specific training areas within the broad occupational areas listed below.

Occupational training areas	**A. Does your program offer training in the following areas?** *(Check yes or no for each area.)*		**B. For training offered, the range of duration of training in this occupational area** *(Minimum to maximum for all training providers)* *(Specify days, weeks, months or years, or enter "NA" if data not available; leave blank if training not offered.)*	**C. Number of participants enrolled in training in this occupational area** *(Enter number or "NA" if data is not available; leave blank if training not offered.)*	**D. Number of enrolled participants who have been placed in new or upgraded positions in this occupational area** *(Enter number or "NA" if data is not available; leave blank if training not offered.)*
	Yes	**No**			
Computer–Related Occupations					
Computer Operator			to		
Computer Programmer			to		
Computer Technician			to		
Database Administrator			to		
Hardware Engineer			to		
Network Administrator			to		
Network Technician			to		
Office Administrator			to		
Project Manager			to		
Software Engineer			to		
Systems Design/Integration			to		
Technical Support			to		
Web Development /Administrator			to		
Other, please specify: _____			to		

Continued on next page.

5

Question 12 (Continued)

Note: ***Please try to group your specific training areas within the broad occupational areas listed below.***

Occupational training areas	A. Does your program offer training in the following areas? *(Check yes or no for each area)*		B. For training offered, the range of duration of training in this occupational area *(Minimum to maximum for all training providers)* *(Specify days, weeks, months or years, or enter "NA" if data not available; leave blank if training not offered.)*	C. Number of participants enrolled in training in this occupational area *(Enter number or "NA" if data is not available; leave blank if training not offered.)*	D. Number of enrolled participants who have been placed in new or upgraded positions in this occupational area *(Enter number or "NA" if data is not available; leave blank if training not offered.)*
	Yes	No			
Telecommunications-Related Occupations					
Telecommunications Cabling			to		
Telecommunications Specialist			to		
Telecommunications Technician			to		
Other, please specify: _____			to		
Healthcare, Biotechnology & Science Occupations					
Bio-technology & Biomedical Research			to		
Certified Nursing Assistant			to		
Chemists			to		
Clinical Data Manager in Bioscience			to		
Home Health Aide			to		
Licensed Practical Nurse			to		
Medical Lab Technician			to		
Operating Room, Critical Care, or Other Nursing Specialty			to		
Qualified Medical Assistant			to		
Radiology Technician			to		
Surgical Technician			to		
Registered Nurse (2 year degree)			to		
Registered Nurse (4 year degree)			to		
Other, please specify: _____			to		

Continued on next page.

6

Question 12 (Continued)

Note: ***Please try to group your specific training areas within the broad occupational areas listed below.***

Occupational training areas	A. Does your program offer training in the following areas? *(Check yes or no for each area)*		B. For training offered, the range of duration of training in this occupational area *(Minimum to maximum for all training providers)* *(Specify days, weeks, months or years, or enter "NA" if data not available; leave blank if training not offered.)*	C. Number of participants enrolled in training in this occupational area *(Enter number or "NA" if data is not available; leave blank if training not offered.)*	D. Number of enrolled participants who have been placed in new or upgraded positions in this occupational area *(Enter number or "NA" if data is not available; leave blank if training not offered.)*
	Yes	No			
Engineering & Manufacturing Occupations					
Advanced Manufacturing			to		
Electrical Engineer			to		
Electronics Technician			to		
Electrician			to		
Machinist			to		
Mechanical Engineer			to		
Micro Assembler			to		
Mill Rights			to		
Quality Assurance Technician			to		
Tool Setter			to		
Other, please specify: _____			to		

13. Please provide the total number of participants enrolled in H-1B training between March 1, 2000 and January 31, 2002, who have been placed in new or upgraded positions as a result of program participation. *(Enter number. If none, enter zero. If data are not available, enter "NA".)*

[ ] participants were placed in new or upgraded positions

14. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002 have increased their wages/salaries over their pre-enrollment wages/salaries as a result of program participation? *(Enter number. If none, enter zero. If data are not available, enter "NA".)*

[ ] participants increased their wages/salaries

7

15. How many participants enrolled in H-1B training between March 1, 2000 and January 31, 2002 attained the following degrees, certifications, licenses, or skill standards as a result of program participation?
(Enter numbers. If none, enter zero. If data are not available for any specific category(ies), enter "NA".)

	participants attained 2 year college degree
	participants attained 4 year college degree
	participants attained certifications
	participants attained licenses
	participants attained industry recognized skill standards

16. Does your program track other outcomes (e.g., customer satisfaction, less turnover for employers, etc.)? *(Check one.)*

1. [ ] Yes
2. [ ] No
3. [ ] Do not know

If yes, please identify the other outcomes being tracked. *(Enter response in box below.)*

Program Implementation/Collaboration

17. Did your organization obtain (or try to obtain) H1-B visa application data to identify highly skilled occupations in which there is a shortage in your local labor market area? *(Check one.)*

1. [ ] Yes, we obtained H1-B visa application data
2. [ ] Yes, we tried to obtain H1-B visa application data but were not successful in getting the data
3. [ ] No, we did not obtain nor try to obtain H1-B visa application data

If your organization tried to obtain H1-B visa application data to identify occupations with shortages but was not successful (box 2 checked above), please describe the problem(s) that arose. *(Enter response in box below.)*

8

18. Which of the following other methods did your organization use to identify highly skilled occupations for which there is a shortage in your local labor market area? *(Check all that apply.)*

1. [ ] State/regional labor market information
2. [ ] Newspaper want ads
3. [ ] Expressed employer hiring demands
4. [ ] Other - Please specify in box below:

19. How would you describe the current level of interest in the program shown by participants/potential participants? *(Check one.)*

1. [ ] More interest in the program than originally expected (e.g., currently have a waiting list or have had to turn potential participants away)
2. [ ] About the level of interest we originally expected (e.g., filling training positions, but no waiting list)
3. [ ] Less interest in the program than originally expected (e.g., have not been able to fill available training positions)

20. Please indicate the number of employers needing high skilled workers that your organization worked with at the time the grant went into effect and the number of employers needing high skilled workers that your organization currently works with. *(Enter numbers. If data are not available for any specific category(ies), enter "NA".)*

	number of employers needing high skilled workers that your organization worked with at the time the grant went into effect
	number of employers needing high skilled workers that your organization currently works with

21. In which of the following ways are employers participating in your organization's H-1B Technical Skills Training Grant Program? *(Check all that apply.)*

1. [ ] Identifying employees who need to upgrade skills to stay employed/advance in H-1B occupations
2. [ ] Providing jobs in H-1B occupations for participants during/after training.
3. [ ] Providing information about H-1B skill shortages or overall labor shortages in the local area/region
4. [ ] Participating in training design and content
5. [ ] Providing training to participants
6. [ ] Sharing program costs/contributing matching funds
7. [ ] Other - Please specify:

9

22. Has your program faced any particular challenges in working with and trying to meet the needs of employers in the Information Technology (IT) industry? *(Check one.)*

1. [ ] Yes
2. [ ] No
3. [ ] Do not know
4. [ ] Not applicable, this program is not involved with the IT industry

If yes, please identify these challenges in the box below:

23. Has your program faced any particular challenges in working with and trying to meet the needs of employers in other hi technology industries, such as engineering or healthcare? *(Check one.)*

1. [ ] Yes
2. [ ] No
3. [ ] Do not know
4. [ ] Not applicable, this program is not involved with other high technology industries

If yes, please identify these industries and challenges in the box below:

10

24. What role does the One-Stop system in your local area have in the H-1B Skills Training Program? (*Check all that apply.*)

1. [ ] One-Stop operator manages the H-1 B grant
2. [ ] One-Stop operator serves as the fiscal agent for the H-1B grant
3. [ ] Recruit/refer participants through One-Stop Centers
4. [ ] Conduct intake/assessment at One-Stop Centers
5. [ ] Identify job openings for participants through One-Stop Centers
6. [ ] Match participants to job openings/employers through One-Stop Centers
7. [ ] Other - Please specify in box below:

8. [ ] Not applicable, One-Stop system does not have a role in this H-1B grant

25. Please indicate which, if any, of the following funding sources you expect to use to sustain the H-1B Technical Skills Training Program beyond the timeframe of the grant. *(Check all that apply.)*

1. [ ] WIA program funds (adult, dislocated worker or youth programs)
2. [ ] WIA Governor's Reserve Fund
3. [ ] Other federal programs/grants
4. [ ] State programs
5. [ ] City programs
6. [ ] County programs
7. [ ] Foundations
8. [ ] H1-B employers
9. [ ] Tuition assistance/remission
10. [ ] Other - Please specify in box below:

11. [ ] None of the above

26. In your opinion, what were the most positive aspects of implementing the H-1B Technical Skills Training Program?

11

27. In your opinion, what are the most challenging aspects of implementing the H-1B Technical Skills Training Program?

28. Do you have any recommendations for national level activities that could enhance the efforts of local WIBs in reaching out to H-1B employers and meeting their needs for high skilled workers?

1. [ ] Yes
2. [ ] No

If yes, please specify:

29. If you have any additional comments or suggestions, please use the space below.

Thank you very much for your participation.
Please return your survey to Laura Heald (healdl@gao.gov) by March 8.

12

Appendix III: Detailed Data on Skill Grant Programs

The survey mailed out to the 43 grantees that received skill grants in the first three funding rounds provided much data on those programs. The tables below provide data from the surveys beyond the data provided in the report.

Table 4: Participants Enrolled in Training

Responses	Number	Percent
Participants who completed training	7,646	49
Participants who left/dropped out of training	1,238	8
Participants who are still in training	5,691	37
Participants who are waiting for training to start	910	6
Total	**15,485**	**100**

Note: Based on 93 percent of the participants.

Source: GAO data from H-1B Skill Grant Survey.

Table 5: Gender of Participants

Gender	Number	Percent
Male	5,288	57
Female	4,066	43
Total	**9,354**	**100**

Note: Based on 56 percent of the participants.

Source: GAO data from H-1B Skill Survey.

Table 6: Age of Participants

Age	Number	Percent
21 or under	401	6
22 - 39	3,497	55
40 - 54	2,088	33
55 and over	412	6
Total	**6,398**	**100**

Note: Based on 39 percent of the participants.

Source: GAO data from H-1B Skill Grant Survey.

Table 7: Race/Ethnicity of Participants

Race/ethnicity	Number	Percent
American Indian/Alaskan Native	69	1
African-American (non-Hispanic)	1,524	20
Asian	556	7
White (non-Hispanic)	4,841	62
Spanish/Hispanic	504	6
Other	312	4
Total	**7,806**	**100**

Note: Based on 47 percent of the participants.

Source: GAO data from H-1B Skill Grant Survey.

Table 8: Employment Status of Participants at the Time of Enrollment

Employment status	Number	Percent
Employed	10,411	73
Unemployed	3,793	27
Total	**14,204**	**100**

Note: Based on 86 percent of the participants.

Source: GAO data from H-1B Skill Grant Survey.

Table 9: Education Status of Participants at the Time of Enrollment

Education level	Number	Percent
No high school diploma/GED[a] or equivalent	132	2
High school diploma/GED or equivalent	1,937	29
Some college, but no degree	1,269	19
2-year college degree	718	11
4-year college degree	2,218	33
Post-college degree	371	6
Total	**6,645**	**100**

[a]General Education Development (high school equivalency test)

Note: Based on 40 percent of the participants.

Source: GAO data from H-1B Skill Grant Survey.

Table 10: Participants Who Attained the Following as a Result of Program Participation

Outcomes	Number
Placed in new or upgraded positions	1796
Increased wage/salaries	1571
Attained 2-year college degree	33
Attained 4-year college degree	61
Attained certifications	2,582
Attained licenses	101
Attained industry recognized skill standards	1,870

Note: Because participants may have achieved more than one outcome, we cannot tell what percent of the participants these numbers represent.

Source: GAO data from H-1B Skill Grant Survey.

Table 11: Organization Obtained or Tried to Obtain H-1B Visa Application Data to Identify Skill Shortages in High-Skill Occupations in Local Area

Response	Number	Percent
Obtained H1-B visa application data	23	54
Tried to obtain H1-B visa application data, but were not successful in getting it	10	23
Did not try to obtain H1-B visa application data	10	23
Total	**43**	**100**

Source: GAO data from H-1B Skill Grant Survey.

Table 12: Other Methods Used to Identify Skill Shortages in High-Skill Occupations in Local Area

Response	Number
State/regional labor market information	42
Newspaper want ads	19
Expressed employer hiring demands	40
Other	27

Note: Respondents could check more than one answer.

Source: GAO data from H-1B Skill Grant Survey.

Table 13: Number of Employers Needing High-Skilled Workers That Organization Worked with before and after Receiving the Grant

Response	Number
Number employers needing high-skilled workers that organization worked with at the time grant went into effect	1,978
Number employers needing high-skilled workers that organization currently working with	2,648

Source: GAO data from H-1B Skill Grant Survey.

Table 14: Role of One-Stop System in the H-1B Skills Training Program

Response	Number
One-stop operator manages the H-1B grant	15
One-stop operator serves as fiscal agent of the H-1B grant	15
Recruit/refer participants through one-stop centers	34
Conduct intake/assessment at one-stop centers	25
Identify job openings for participants through one-stop centers	24
Match participants to job openings/employers through one-stop centers	24
Other	7

Note: Respondents could check more than one answer.

Source: GAO data from H-1B Skill Grant Survey.

Table 15: Methods Grantees Plan to Use to Sustain the Skill Grant Training

Response	Number
WIA[a] program funds	22
WIA[a] statewide set-aside funds	5
Other federal programs/grants	23
State programs	19
City programs	8
County programs	8
Foundations	13
H-1B employers	20
Tuition assistance/remission	20
Other	11

[a]Workforce Investment Act.

Note: Respondents could check more than one answer.

Source: GAO data from H-1B Skill Grant Survey.

Table 16: Gender of Participants in IT Training

Gender	Number	Percent
Males	2,061	60
Females	1,370	40
Total	**3,431**	**100**

Note: On the basis of grantees that provided information technology (IT) training only (19 grantees) and reported that they served a total of 5,672 participants. This response is based on 60 percent of the participants.

Source: GAO data from H-1B Skill Grant Survey.

Table 17: Race/Ethnicity of Participants in IT training

Race/ethnicity	Number	Percent
American Indian/Alaskan Native	24	1
African American (non-Hispanic)	1,069	32
Asian	314	9
White (non-Hispanic)	1,753	52
Spanish/Hispanic	186	6
Other	44	1
Total	**3, 390**	**100**

Note: On the basis of grantees that provided IT training only (19 grantees) and reported that they served a total of 5,672 participants. This response is based on 60 percent of the participants.

Source: GAO data from H-1B Skill Grant Survey.

Appendix IV: Detailed Data on NSF's Computer Science, Engineering, and Mathematics Scholarship Program

This table provides additional data on the students in the Computer Science, Engineering, and Mathematics Scholarship Program.

Table 18: Characteristics of Computer Science, Engineering, and Mathematics Scholarship Recipients as of May 1, 2002

Category	Characteristic	Number	Percent
Gender	Male	4,610	60
	Female	2,859	37
	No information	237	3
Age[a]	21 and under	3,462	45
	22-30	3,016	39
	31-40	857	11
	41-50	282	4
	51-72	88	1
Race/ethnicity[b]	White	3,135	45
	African American	1,409	20
	Asian/Pacific Islander	961	14
	Hispanic	957	14
	American Indian	117	2
	Multiple ethnicity[c]	315	5
Major	Computer Science	2,958	38
	Engineering	2,844	37
	Mathematics	790	10
	Computer Science and Engineering	75	1
	Computer Science and Mathematics	27	0
	Mathematics and Engineering	9	0
	Other	44	1
	No information	959	12

[a]Age when first entered the scholarship program. Information was not available on one student.

[b]Race/ethnicity data excludes 812 students for whom ethnicity was unknown.

[c]The majority of those with more than one category of ethnicity were White/Hispanic (242).

Note: Totals may not add to 100 percent due to rounding.

Source: NSF Database on Computer Science, Engineering, and Mathematics Scholarship students.

Appendix V: Areas of Training for First 43 Skill Grants

This table presents data on occupations for which the grantees train, as provided by the 43 grantees that received skill grants in the first three funding rounds.

Table 19: Occupations on Which Grantees from First Three Funding Rounds Provided Training

		H-1B Equivalent?		
Occupation	**Number of grantees offering**	**Yes**	**No**	**Unsure**
Computer-related occupations				
Computer Operator	17		X	
Computer Programmer	21			X
Computer Technician	21		X	
Database Administrator	21	X		
Hardware Engineer	18	X		
Network Administrator	24	X		
Network Technician	24		X	
Office Administrator	8			X
Project Manager	12			X
Software Engineer	20	X		
Systems Design/Integration	17	X		
Technical Support	20		X	
Web Development/Administrator	26	X		
UNIX Systems Administration	1			X
Network Engineering	1	X		
Graphic/Web Design	1	X		
Network Security	1		X	
Technology Teacher	1	X		
Network Professional	1	X		
Software Quality Analyst	1	X		
Computer Software Specialist	1	X		
Computer Hardware Specialist	1	X		
Technical Analyst	1		X	
Computer Analyst	1		X	
Drafter (computer-aided-design)	1			X
Lead Engineer (digital media)	1			X
Audio and Video Equipment Technician	1		X	
IT Manager	1	X		
Telecommunications-related occupations				
Telecommunications Cabling	5		X	
Telecommunications Specialist	6			X
Telecommunications Technician	9		X	
Health care, biotechnology, and science occupations				
Biotechnology and Biomedical Research	2	X		

Occupation	Number of grantees offering	H-1B Equivalent? Yes	No	Unsure
Certified Nursing Assistant	4		X	
Chemists	3	X		
Clinical Data Manager in Bioscience	2			X
Home Health Aide	1		X	
Licensed Practical Nurse	6		X	
Medical Lab Technician	2		X	
Operating Room, Critical Care, or other Nursing Specialty	3			X
Qualified Medical Assistant	3		X	
Radiology Technician	5		X	
Surgical Technician	2		X	
Registered Nurse (2-year degree)	7		X	
Registered Nurse (4-year degree)	6		X	
Nurse Practitioner	1	X		
Acute Care Nursing Assistant	1		X	
Medical Unit Assistant	1		X	
Physical Therapy Aide	1		X	
Pharmacy Technician	1		X	
Dental Technician	1		X	
Engineering and manufacturing occupations				
Advanced Manufacturing	2			X
Electrical Engineer	8	X		
Electronics Technician	7		X	
Electrician	3		X	
Machinist	3		X	
Mechanical Engineer	7	X		
Micro Assembler	1		X	
Quality Assurance Technician	4		X	
Tool Setter	2		X	
E-Commerce Engineering	1			X
Computer Engineering	1	X		
Computer Numerical Control Programmer	1	X		
Managers (in Manufacturing & Engineering)	1	X		
Human Resources (in manufacturing and Engineering)	1	X		
Other				
Teachers (primarily IT or science, secondary or postsecondary)	1	X		
Accountants	1	X		

Source: GAO survey of 43 grantees and U.S. Immigration and Naturalization Service.

Appendix VI: Key Federal Programs and Initiatives with a High-Skill Component

The following programs and initiatives were identified as having at least a component that addresses the need for high-skills in the following ways: training; education and scholarships; recruitment to high-skill fields; collaborative efforts within/among agencies; and resources and information related to high-skill areas. This list is not comprehensive, but serves as an illustration of various efforts and resources that currently exist.

Agency/office	Program/initiative
Department of Labor	
Secretary's initiatives	21st Century Workforce Initiative–mission to ensure that all American workers have as fulfilling and financially rewarding a career as they aspire to have and make sure no worker gets left behind in the limitless potential of the dynamic, global economy of this new millennium. Office of the 21st Century Workforce–created by executive order June 20, 2001, to gather and disseminate information relating to workforce issues by conducting summits, conferences, meetings, and other appropriate forums. The executive order also established the President's Council on the 21st Century Workforce to provide information and advice on issues affecting the 21st century workforce. A Memorandum of Understanding is under development between the Department of Labor and the Department of Health and Human Services to address issues such as the nursing shortage.
Employment and Training Administration (ETA)/Office of Policy & Research	H-1B Technical Skill Training Grants–provides grants for technical skills training to employed and unemployed individuals in occupations that are in employer demand. Grants are provided to local workforce investment boards, private industry councils or regional consortia, and to partnerships that consist of at least two businesses or a business-related nonprofit organization.
ETA/Office of Apprenticeship Training, Employer & Labor Services	Information Technology Industry Outreach Initiative–Grant awarded to the Computer Technology Industry Association in 5/01 and ends in 12/02–to expand apprenticeship in the IT occupational area. This includes developing and testing an IT apprenticeship model in five pilot sites and creating a structure to market and support IT apprenticeships.
ETA/Office of Workforce Security/Division of One-Stop Operations	Serves as the One-Stop office within ETA (national and regional offices) for any issues related to WIA and provides support to state and local officials as they build One-Stop systems. Also fosters partnerships on workforce issues with other federal agencies such as the Department of Education, the Department of Health and Human Services, and the Department of Housing and Urban Development.
ETA/Office of Adult Services	WIA Adult and Dislocated Worker Programs–provide three levels of services to adults 18 years and older. These services include: core services (job search and placement assistance, etc.); intensive services (comprehensive assessments, case management, etc.); and training services (occupational skill training, skill upgrading, etc.).

Agency/office	Program/initiative
ETA/Office of Adult Services	Discretionary grants that relate to H-1 B skill grants: • Information Technology Association of America Grant–conduct a series of targeted activities to inform IT companies about the role of workforce investment boards in local communities. • Skills Shortages, Partnership Training/System Building Demonstration Program–awarded grants to 11 states and the District of Columbia to help establish regional partnerships to respond to employers' identified skill shortages. • Minority Colleges and Universities Workforce Partnerships and Training Strategies to Address Skill Shortages Demonstration Program–awarded grants to 13 minority colleges and universities to develop new systems to train workers for high-skill jobs in areas where companies are facing labor shortages. • Incumbent/Dislocated Worker Skill Shortage II Demonstration Program–awarded grants to 19 communities to create projects or industry-led consortia to upgrade current workers, design/adapt training curricula in skill shortage occupational areas, and recruit/retrain workers in this area.
ETA/Office of Technology and Information Services	Occupational Information Network–database accessible from any Web browser that contains comprehensive information on job requirements and worker competencies.
National Science Foundation	
Directorate for Education and Human Resources (EHR)/ Division of Undergraduate Education	Computer Science, Engineering and Mathematics Scholarships–grants to postsecondary schools that distribute the funds as scholarships for academically talented, low-income students in computer science, computer technology, engineering, engineering technology, or mathematics. Program for Gender Equity in Science, Mathematics, Engineering and Technology–grants to support research, demonstration, and dissemination projects that broaden the participation of girls and young women in science, mathematics, engineering, and technology education. Addresses middle school, high school, and undergraduate education. Science, Technology, Engineering, and Mathematics Talent Expansion Program–planning and pilot grants to academic institutions to increase the number of students (U.S. citizens or permanent residents) pursuing and receiving associates or baccalaureate degrees in science, technology, engineering, and mathematics. Noyce Scholarship Supplements–institutions of higher education that lead or are partnering in other NSF grants can receive supplemental funding for scholarships to encourage science, engineering, and mathematics majors and professionals to become K-12 mathematics and science teachers.
EHR/Divisions of Undergraduate Education and Elementary, Secondary & Informational Education	Advanced Technological Education–grants to promote improvement in technological education at the undergraduate and secondary school levels by supporting curriculum development; preparation and professional development of college faculty and secondary school teachers; internships and field experiences for faculty, teachers, and students, and other activities.

Agency/office	Program/initiative
Department of Commerce	
Technology Administration (TA)/Office of Technology Policy	National Medal of Technology–presidential award to individuals, teams, or companies for accomplishments in the innovation, development, commercialization, and management of technology. First awarded in 1985. Review and study of high-tech workforce training programs in the United States–authorized by the American Competitiveness in the 21st Century Act of 2000. Work Force Reports–*The Digital Work Force: Building Infotech Skills at the Speed of Innovation*—a report on the demand for highly skilled information technology workers and its August 2000 Update, and Digital Workforce State Data and Rankings. Go 4 IT! Web site–maintains this site to provide information on IT education, employment, and training programs. GetTech–partnership developed by the Department of Commerce's Office of Technology Policy and the National Association of Manufacturer's Center for Workforce Success to encourage young people, particularly those in middle school, to prepare for careers in mathematics, science, and technology.
TA/National Institute of Standards and Technology	Manufacturing Extension Partnership–nationwide network of not-for-profit centers in over 400 locations nationwide to provide assistance to small and medium-sized manufacturers. If this assistance includes obtaining new equipment, these centers may provide training on the new equipment.
Economic Development Administration	Technology-Led Economic Development–Web site that identifies federal, state, and local initiatives related to technology-led economic development.

Agency/office	Program/initiative
Department of Education	
Office of Vocational and Adult Education (OVAE)	Preparing America's Future–initiative that provides a framework to connect OVAE's activities to support education reform and prepare the 21st century workforce. This effort organized three teams, High School Excellence Team; Community and Technical Colleges Team; and Adult Learning Team, to develop a coherent strategy for preparing America's future with implications for policy and practice. Carl D. Perkins Vocational-Technical Education Act Amendments of 1998–provides federal funding for vocational and technical education programs and services to youth and adults. The majority of the funds are awarded as grants to state education agencies as State Basic Grants and Tech Prep Grants. Career clusters–established 16 broad career clusters that consist of entry level through professional-level occupations in a broad industry area. Each cluster includes academic and technical skills and knowledge needed for further education and careers. IT Career Cluster Initiative–partnership of the Education Development Center, Inc., the Information Technology Association of America, and the National Alliance of Business to create a national model and career cluster curricular framework for IT careers. This initiative is sponsored by the Department of Education and National School-to-Work Office. Community Technology Centers program–grants to create or expand community technology centers that will provide disadvantaged residents of economically distressed urban and rural communities with access to information technology and related training.
Department of Health and Human Services	
Health Resources and Services Administration	Grants to address emerging nursing shortage include: • Advanced Education Nursing Traineeship grants. • Advanced Education Nurse Anesthetist Traineeship grants. • Geriatric Nursing Knowledge and Experiences in Long-Term Care Facilities grants. • Nurse Faculty Development in Geriatrics grants. Cooperative agreements for health workforce research—available for state or local governments, health professions schools, schools of nursing, academic health centers, community-based health facilities, and other appropriate public or private nonprofit entities, including faith-based organizations to conduct research that will contribute to (1) the development of information describing the current status of the health professions workforce and (2) analysis of fundamental health workforce related issues.
National Skill Standards Board	
	Information Communications Technology Voluntary Partnership–sponsoring research for the development of skill standards and the potential alignment of industry-based certifications in the Information Technology and Telecommunications sector.

Source: Compiled by GAO from various Web sites.

Appendix VII: Comments from the Department of Labor

U.S. Department of Labor

Assistant Secretary for
Employment and Training
Washington, D.C. 20210

AUG 28 2002

Mr. Sigurd R. Nilsen
Director, Education, Workforce,
and Income Security Issues
United States General Accounting Office
Washington, DC 20548

Dear Mr. Nilsen:

Thank you for your letter to Secretary of Labor Elaine L. Chao, providing the draft GAO report entitled "High Skill Training: Grants from H-1B Visa Fees Meet Specific Workforce Needs, But at Varying Skill Levels" (GAO-02-881). We very much appreciate the opportunity to comment on the draft report. We also value the professionalism of your staff in conducting the H-1B Technical Skills Training Grant Demonstration review and the constructive suggestions contained in the draft report.

We are pleased that GAO's review found that the H-1B skills grant demonstration has helped improve partnerships among local workforce investment boards, businesses, and education and training organizations. A major goal of the Department of Labor is to respond firmly and clearly to business skill needs. This includes building sustained partnerships between the business community and the public workforce investment system created under the Workforce Investment Act of 1998 (WIA). By doing this, workers will be the ultimate beneficiary because they will be receiving more targeted training assistance that will lead to better jobs at higher wages.

A key GAO recommendation is that the Secretary of Labor take a "proactive approach to addressing high-skill workforce needs across the country." The Department supports this recommendation and continues to identify ways that the public workforce system can provide leadership and solutions to this critical economic need. As GAO acknowledges, we have industry initiatives underway in the areas of information technology and health care, and we plan to expand our high growth job training partnerships to several other industries. Any components of the H-1B skills grant demonstration that truly address high-skill workforce needs will be incorporated in our efforts.

I also want to take the opportunity to address the other key GAO recommendations. First, the draft report notes in several sections that participant and outcome data should be standardized and collected so that project outcomes can be obtained to determine whether goals and objectives have been met. It also notes the absence of a reporting system. The Department's Employment and Training Administration (ETA) recently developed a standard format and content for the quarterly

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report required from grantees and briefed all current grantees on the new quarterly report format and requirements at the H-1B Grantee Conference held July 31 – August 1, 2002. A copy of the report and instructions is enclosed. Data elements required are specified, as is the content of the narrative section of the quarterly report. The new report will be effective for the quarter ending September 30, 2002.

ETA is developing a system to give grantees the option of completing their quarterly reports electronically. This gives ETA a more efficient way to review grantee information. In addition, ETA has completed an automated system to report financial data and has trained grantees on its use during the recent H-1B grantee conference; we expect it to be online by the end of December 2002. ETA also plans to award a contract to evaluate the impact of the H-1B grant program by the end of September 2002.

The GAO also recommended that the Department "establish mechanisms to share successful strategies among grantees and encourage networking." We agree that this is an important objective. The GAO identified several ETA activities that supported this objective. More are planned. ETA also commissioned and has provided grantees copies of two process studies that contain considerable information about grantees' best practices. We will provide additional technical assistance support for the H-1B demonstration project that includes the sharing of information and experiences leading to improved program performance.

The GAO raised a significant concern that the H-1B grant program guidelines "were confusing as to the skill level of training that grantees should provide." It also notes that the Immigration and Naturalization Service (INS), in reviewing the first 43 H-1B grant projects, characterized about 40 percent of the occupations for which training was being provided as qualifying at the H-1B visa level. As GAO notes in its report, the current legislation authorizing the H-1B grant program (ACWIA 2000) specifically directs that H-1B skill grants be used not only for H-1B visa level training, but also for "the preparation of workers for a broad range of positions along a career ladder." While we acknowledge that some training may not fully meet the H-1B visa level for baccalaurates or commensurate experience, this statutory provision contributes importantly to differences between the INS H-1B visa standard and some of the occupation training being conducted by H-1B technical skills grantees.

We recognize, as does the GAO report, that the H-1B technical skills grants are a demonstration project, and that the level of training issue is one of the "lessons learned." We do believe that a measure of the ultimate success of this demonstration effort is whether the workers trained can mitigate the need for businesses to import high skill workers under the H-1B visa program. Therefore, we are monitoring carefully the various grant applications and awards, and whether they meet this objective. Future evaluation efforts will also take this objective into consideration.

I have enclosed some additional comments about observations in the draft report. Again, we appreciate your sharing the draft report with us and for the cooperation of the study staff. Please contact Gerri Fiala, Administrator, Office of Policy and Research, at 202-693-3665, for any clarifications or additional information.

Sincerely,

Emily Stover DeRocco

Enclosures

Responses and Comments to GAO H-1B Report

1. Page 6 GAO comment: "While Labor does not require a standard format for the narrative progress report…"

Response: ETA has developed a standard format and content for the required quarterly report. Data elements required are specified, as is the content of the narrative section of the quarterly report. Grantees were briefed on the new quarterly report format and requirements at the grantee conference held July 31 – August 1, 2002. The new report will be effective for the quarter ending September 30, 2002.

2. Page 11 GAO comment: "Data on participants is limited because Labor did not establish standardized reporting requirements for the grantees. Grantees express frustration with the lack of a reporting system, which they had been told was in development…"

Page 15 GAO comment: "In addition to participant demographic data, some grantees collect outcome data, although this data is limited and not standardized. In general, such data is not collected until after participants have ended their training…"

Response: See response to #1 above. ETA has specified reporting requirements for both the quarterly progress report and for the final report. The data elements required to be provided by grantees are sufficient for progress monitoring and for project evaluation purposes. Grantees are required to report quarterly, including outcome data for the quarter as well as cumulative outcome data. In addition to identifying standardized elements for grantees to submit, ETA has sought alternative ways to ease grantees' submissions of quarterly reports. ETA has been working on the development of a system to provide grantees the option of completing their quarterly reports electronically and sending the reports via email. The system will also provide ETA a more efficient way of reviewing quarterly information submitted by grantees. An automated system to report grantee financial data has been completed and will be online in the near future. Grantees were provided training on the automated financial reporting system during the recent H-1B grantee conference.

3. Page 34 Recommendations, GAO comment: "The Secretary of labor should

- Identify the standard participant and outcome data that is needed…
- Establish mechanisms to share successful strategies among grantees…"

Response: See responses 1 and 2 above. With respect to sharing strategies, ETA has sponsored two grantee conferences and has plans to sponsor additional ones as necessary. ETA is currently in the process of procuring additional technical assistance support for the H-1B demonstration project, and one of the key priorities is supporting the sharing of information and experiences among H-1B technical skills grantees. In addition to national conferences, Regional Offices have held H-1B grantee conferences to share information among grantees.

4. Page 4 GAO comment "In its solicitations for grant applications, Labor has provided guidelines that were confusing as to the skill level of training that grantees should provide."

Response: The Solicitation published on April 13, 2001, stated (p.4) that the ACWIA technical skills training is geared towards employed and unemployed workers who can be trained and placed directly in highly skilled H-1B occupations. Any possible confusion might be the result of the Department attempting to reconcile the statutory provision of training for jobs on career ladders with the very clear and primary goal of placing American workers in H-1B level jobs. Recognition of the legislative language in amended section 414(c)(2) should be included in the text of the report to explain any administrative "confusion."

5. Page 17 GAO comment "Even though grantees were interested in tracking outcomes of participants and had attempted to do so, they encountered a number of challenges."

Response: The paragraph which the above sentence begins recognizes one of the problems faced by DOL in administering this grant program - how to collect and measure outcomes. For example, some positive results (noted by GAO) include participants gaining a skill and thereby not being laid off in a reduction which occurred because of a recent dip in the economy.

6. Page 1 GAO footnote: ETA suggests the full definition of H-1B level skill included so that readers will have the complete definition from the beginning of the report.

7. Page 5: GAO may want to note that, in addition to the funds used for technical skills grants, under ACWIA a small portion of the funds going to Labor from H-1B visa fee applications are used for processing alien labor certifications.

8. Page 7: GAO may want to note that the matching fund requirement under ACWIA 2002 is a statutory requirement, not a DOL established requirement.

9. Page 16 GAO observation on the two-year time frame of grants: ETA is aware of the concerns by some grantees and partners that two years may not be sufficient time to reach an H-1B skill level. Any future solicitations will take this into account, using a three-year time frame for grants.

10. Page 17 GAO observation on exemplary practices report: ETA sponsored and has distributed two process analysis reports; the exemplary practices report was the second. Both reports have been distributed to all grantees and both reports are posted on the H-1B website.

Appendix VIII: Comments from the National Science Foundation

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

OFFICE OF THE
DEPUTY DIRECTOR

August 26, 2002

Mr. Sigurd R. Nilsen
Director
Education, Workforce, and
Income Security Issues
United States General Accounting Office
Washington, DC 20548

Dear Mr. Nilsen:

We appreciate the opportunity to comment on the draft report, "High-Skill Training: Grants from H-1B Visa Fees Meet Specific Workforce Needs, But at Varying Skill Levels." The report is generally accurate in its discussion of NSF's Computer Science, Engineering, and Mathematics Scholarship (CSEMS) program and of the modifications NSF has made to improve the program since it made its first awards two years ago.

To date, NSF has made awards to 277 colleges and universities, and they have awarded scholarships to almost 8000 undergraduate and graduate students. As part of the grants, awardee schools have collected extensive data about their students, such as major field of study, demographics, and progress toward the degree. We are pleased to see that these data have been useful in this report, and they are also being used as part of a CSEMS program evaluation conducted by an external evaluator.

The draft report calls attention to the difficulty some early awardee schools had in finding students who met all the eligibility requirements. Effective January 1, 2002, NSF broadened the requirements for all awardees so that students are required to be eligible for need-based Federal financial aid, rather than the more restrictive Pell eligibility. This change has broadened the group of students who are eligible while retaining the requirement for financial need that is part of the legislation establishing the program. We have received many favorable comments about the change. In addition, the report comments that project directors want some mechanism to share best practices among themselves. There has been some sharing of information informally through NSF staff, and, as noted in the draft report, NSF is already planning a project director's meeting, probably in Washington in the spring of 2003. The NSF staff talk with many of the project directors, and we try to respond to suggestions for improving the effectiveness of the projects, as we have in these two instances.

Mr. Sigurd R. Nilsen Page 2

Some technical comments on the draft are as follows:

- On page 27, the pie chart shows the percentage of majors in the scholarship program, and the data are given on page 55. It appears that the sectors in the chart for "Computer Science" and "No information" have been switched. From the data, computer science should be 38% and no information should be 12%.

- As noted in several places in the draft, NSF broadened the scholarship eligibility requirements for all awardees. That change is noted on page 3, page 21, and page 33, but not at the end of the first paragraph on page 8, each of which points out the difficulty some awardees had in recruiting enough students under the previous requirement. We suggest that the change be noted on page 8 as well.

- On page 7, the draft notes that "Schools may request an additional 5% of grant funds [for] administrative costs...." It is a small difference, but they may actually request an additional 5% of the total requested scholarship amount for administrative costs. For completeness, it should be noted that they may in addition request 5% of the total requested scholarship amount for student support services, and these services are important in helping to retain students and encourage achievement among the scholarship recipients.

Sincerely,

Joseph Bordogna

Joseph Bordogna
Deputy Director

Appendix IX: Comments from the Department of Commerce

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Technology Policy
Washington, D.C. 20230

SEP 4 2002

Mr. Sigurd R. Nilsen
Director, Education, Workforce, and Income Security
U.S. General Accounting Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Nilsen:

The Department of Commerce appreciates the opportunity to review the General Accounting Office draft report, GAO/RCED-02-881, "HIGH SKILL TRAINING: Grants from H-1B Visa Fees Meet Specific Workforce Needs, But at Varying Skill Levels."

The Commerce Department finds serious methodological and analytical weaknesses in the GAO review of the high-tech training programs supported with funds from the H-1B Petitioner Account.

First, Commerce notes with great concern GAO's choice to focus almost exclusively on the grants made during the first three rounds of the Labor Department's skill grants program. Importantly, the later competitions were conducted under legislative changes to the program made in 2000 under the American Competitiveness in the Twenty-First Century Act (PL 106-313). These changes have substantially affected, and will continue to affect, the implementation of the grants. In addition, the subsequent competitions account for more than half of the funds distributed under the program. While we recognize that the grantees from the later competitions have yet to produce results to assess in terms of program outcomes, we believe that the composition of the training to be provided has been impacted substantially by changes in the law and in the Labor Department's program implementation and grantee selection.

A review of these later grants, in our view, is necessary for GAO to achieve its stated goal of addressing the issue of "whether the skill grant and scholarship training is based on workforce needs and specific jobs that H-1B visa holders fill." There have been conflicting signals in the course of the development and implementation of the Labor Department's program that have affected the selection of grantees and their training objectives. Public statements from executive and legislative branch officials during the crafting and passage of the American Competitiveness and Workforce Improvement Act of 1998 centered on using the funds collected from H-1B visa applications to meet the Nation's future need for high-skill, high-wage workers by preparing Americans for jobs currently held by H-1Bs. In the Labor Department's public statements and its Solicitation for Grant Applications (SGAs), especially those used in the early rounds, this

Page 2

connection was clear though the legislation did not speak to this goal. In the later competitions, this objective seems to have become less clear as a result of legislative changes and the Labor Department's implementation. Whereas H-1Bs are required to have a four-year degree (or equivalent skills and experience) in the field in which they are to be employed, Congress broadened the training objectives of the Labor training program in 2000 to include "the preparation of workers for a broad range of positions along a career ladder." In addition, Congress defined the type of skills training to be provided, specifying "high technology, information technology, and biotechnology." Judging by the outcome of the later competitions, these new criteria seem to have created ambiguity in the grantee selection process with respect to the occupations and skill levels to be trained. A significant amount of training is now being provided for skill-levels below that required to receive an H-1B visa, in areas for which there is no demonstrated "career ladder" to an H-1B occupation, for occupations not classified as an H-1B occupation, and in occupations not articulated by the legislation.

For example, in the Department's 2002 grants, more than 30 percent of the grants went to training low-level healthcare workers, most on a career ladder to Registered Nurse (RN), yet RNs are not admitted to the United States on an H-1B visa. This would also seem to be in contradiction of another provision of the 2000 law (which GAO does not mention in its review) which specifies, "No more than 20 percent of the grants shall be available to programs and projects that train employed and unemployed workers for skills related to any single specialty occupation." The Bureau of Labor Statistics classifies the educational requirement for RNs as an associates degree, though they may also qualify for state licensure through a hospital vocational diploma program or by earning a bachelor's of science in nursing (B.S.N.) degree. Also, while the review notes that the Immigration and Naturalization Service (INS) states that nurses "could be H-1B equivalent for supervisory or management level positions," the grants awarded in 2002 do not include supervisory training.

Commerce also notes with concern GAO's failure to address the disconnect between the occupations that grantees selected in the latest WIA-focused competitions (under SGA/DFA 01-105) are providing training for and the occupations of those coming into the United States on H-1B visas. While fully half of the grantees (12 of 24) selected in these competitions indicated training efforts focused on nursing or healthcare occupations, only 42 percent (10 of 24) of grantees are training for IT occupations. This stands in stark contrast to H-1B visa statistics published by the Immigration and Naturalization Service (INS) for FY 2001 which show "computer-related occupations" accounting for more than 58 percent of H-1B visas, while only 3.9 percent of H-1B visas were issued to those in "occupations in medicine and health" (of which a substantial share, 44 percent, were issued to "physicians and surgeons"). Clearly the training focus of grantees selected in the 2000 competitions is out of sync with the portfolio of occupations for which H-1B visas were issued.

In addition to this disconnect, it is unclear what statutory language the Department of Labor is relying on in providing training grants for nursing and healthcare occupations given that the 2000 law directs funding for "high technology, information technology, and biotechnology."

Page 3

Second, throughout its review, GAO frequently refers to workforce shortages, particularly in information technology (IT), computer science, mathematics and engineering. This review by GAO fails to provide clear, complete, and compelling evidence for a shortage of workers in any of these occupations. The Commerce Department's extensive analysis in this arena shows that while in recent years there had been evidence indicating a tight labor market for highly-skilled IT workers, there was no way to establish conclusively the existence of an overall IT workforce shortage due to limitations of available data. In 1998, GAO itself endorsed Commerce's position that current statistics frameworks and mechanisms for measuring labor supply do not allow for precise identification of IT worker shortages. In addition, the recent economic downturn has adversely affected employment growth in IT occupations. In 2001, the Department of Labor's Current Population Survey indicated that employment in IT occupations declined by 1.6 percent, after recording 10.9 percent compounded annual growth from 1995 to 2000. Given that rapid employment growth is a critical criteria for ascertaining a workforce shortage, this would argue strongly against a current shortage in IT occupations broadly.

The review also indicates that H-1B visas serve as a measure for workforce shortages/national workforce needs and uses terminology suggesting that H-1B use is based on a requirement unfilled by the domestic workforce, e.g. "companies needing H-1B workers," yet employers are not required to attest that they cannot find an American worker for the position when applying for an H-1B visa. Employers seek workers under the provisions of H-1B for a variety of reasons including securing knowledge and skills to enable their companies to better serve overseas markets, to continue relationships established with these workers during their courses of study in U.S universities, and because some of these workers are perceived to be superior choices for competitive companies. Accordingly, Workforce Investment Boards (WIBs) using H-1B visa data should explore their local employers' underlying reasons for use of these workers.

GAO appropriately questions the Department of Labor's use of the occupations indicated in Labor Condition Applications (LCAs) as a guide for WIBs in assessing workforce needs. In fact, many positions certified through LCAs are never filled by employers. And while Commerce is inclined to believe that the portfolio of occupations represented in LCAs may not ultimately reflect the portfolio of occupations of those granted H-1B visas, it is analytically unsound for GAO to reach this conclusion by comparing 1999 LCA data to 2001 H-1B visa data. If, in fact, the visa list is more accurate for determining current H-1B occupations in demand, then GAO should recommend the Department of Labor make this data available to the applicants, the panelists reviewing applications, and the Department's grant officers. If the visa data is less current than the LCA data, GAO should recommend that INS make its visa data available in a more timely fashion to better ensure that the skill training is based on specific jobs that H-1B visa holders fill.

Commerce also notes with concern that SGAs issued by the Department of Labor on August 1, 2000 and April 13, 2001 include LCA numbers that purport to represent different time periods (parts of FY 1999 and FY 2000, respectively), yet the numbers of LCAs for each occupation are identical. Notwithstanding our above mentioned reservations about the use of LCAs, given that the Labor Department included LCAs numbers to provide guidance to potential applicants and that GAO reports that some grantees reported difficulty finding H-1B visa data, Commerce believes that this error could have misguided applicants.

Page 4

Third, GAO is inconsistent in how it reports the educational requirements of H-1Bs. According to the law, an H-1B must have "(A) theoretical and practical application of a body of highly specialized knowledge, and (B) attainment of a bachelor's or higher degree in the specific specialty (or its equivalent) as a minimum for entry into the occupation in the United States." To meet the "equivalent" standard, an H-1B must have "(i) experience in the specialty equivalent to the completion of such degree, and (ii) recognition of expertise in the specialty through progressively responsible positions relating to the specialty."

GAO argues that "Unlike other fields, occupations in the IT field are difficult to classify as to the level of education degree they require." In support of this thesis, GAO offers a non-sequitor: that the Bureau of Labor Statistics' (BLS) Occupational Outlook Handbook notes that IT workers have degrees from a variety of disciplines. We readily acknowledge that IT workers come from a variety of academic disciplines, as our 1998 report, The Digital Workforce: Building Infotech Skills at the Speed of Innovation, illustrated. However, it should be noted that 68.4 percent of the IT workforce in 2001 held a bachelor's or higher-level degree, up from 64.9 percent in 1995. An additional 9 percent hold an associate's degree. In addition, BLS's biennial occupational projections for the 2000 to 2010 period indicate that three-quarters of new IT jobs will be in IT occupations that generally require a bachelor's or higher-level degree. The remaining one-quarter of new IT jobs will be in occupations that generally require an associate's or higher-level degree. GAO fails to contrast this with the educational profile of the grantees it generated through its own survey that shows only 39 percent with four-year degrees and 11 percent with two-year degrees. GAO also fails to contrast this with the outcome that only 94 (1.2%) of the grantees' 7,646 participants earned a two- or four-year degree through the program.

The GAO review provides extremely limited information on the level and type of training provided by the grantees. While the review suggests that nearly all grantees provided IT training, it fails to distinguish between training designed to use information technology on the job (such as the Microsoft Officer User Specialist (MOUS) certification, which provides workers with basic office software skills such as word processing, spreadsheets, and presentations) and training to prepare a worker to become an IT professional (such as a Certified Network Engineer or Microsoft Certified Systems Engineer). Even among those receiving training to become an IT professional, there is a vast range of knowledge and skills in each of the occupational areas. For example, someone trained in HTML programming to maintain an informational website versus someone capable of designing and implementing a web-based e-Commerce enterprise integration solution for a multinational corporation, though both of these could be classified in the occupation "Web Development/Administrator" provided in Appendix V of the review. Nor do the knowledge and skills represented by a Certified Novell Engineer certification equate with those gained through completion of a four-year computer engineering curriculum, though those holding either might be referred to as a "computer engineer."

In addition, technical skills are only one of several assets employers evaluate in selecting candidates for higher-skill IT jobs. In addition, employers seek formal education (generally at the bachelor's level or higher), experience ("real world," paid, hands-on; sometimes in both a specific technology and specific industry), soft skills (ability to work in a team, problem-solving, oral and written communication), and business skills (ability to apply technology to business problems, requirements analysis, customer orientation).

Page 5

The Labor Department's technical skills training program does not address the complete set of knowledge and skills that workers need to compete for high-skill IT jobs. The review confuses the ability to perform one aspect of a high skill-level job with being prepared for that job. For example, the review suggests that through training electronics technicians were being upgraded to junior engineers through a grantee's training. These junior engineers would also be capable of performing one of the functions (testing) of the senior engineers, some of who were H-1Bs. GAO's review implies that this might reduce this employer's' need for an H-1B, but clearly this newly trained junior engineer does not have all of the requisite education, skills and experience to fill the slot of a senior engineer occupied by an H-1B.

Third, as currently structured, the "career ladder" concept is critical to the program's success in preparing students for H-1B-level jobs. Commerce believes that GAO should have explored: how effectively the grantees identified effective career ladders in the occupations for which they provided training, the skills necessary to put a student on a particular rung of the ladder, and whether they had conveyed to the student an understanding of the career ladder and its rungs (including requisite education, training and experience) to enable the student to successfully navigate to an H-1B level position.

Commerce believes that the GAO review should include the following recommendations regarding the Labor Department's skills grant program:

- greater clarity in the goals of the program,
- stronger emphasis on recruiting and providing technical skills training to those with two- and four-year degrees in non-technical fields;
- stronger emphasis on providing formal education opportunities leading to two- and four-year degrees;
- more extensive and rigorous data collection by the grantees and the Department of Labor, and
- more rigorous evaluation of program, including grantees' achievement of stated goals and the program's preparation of workers for high-skill jobs currently held by H-1Bs.

Commerce also has several concerns with respect to GAO's review of the National Science Foundation's Computer Science, Engineering and Mathematics Scholarship (CSEMS) program. Commerce believes GAO did not address several important issues affecting the success of this program in adding to the number of Americans educated in these disciplines. Commerce would like to have seen GAO explore:

- Whether the scholarships are actually attracting students into the CSEMS disciplines who would otherwise not have pursued degrees in these disciplines (i.e., those who would have pursued a degree in another discipline or those who would not have pursued a degree of any kind).
- Whether the number of graduates in these disciplines is increased by the scholarships or whether others that might have majored in these disciplines were displaced from their seat by a scholarship student in an institution with limited space. The large increase in the number of students majoring in computer science in the last few years has resulted in some institutions reaching full capacity in their computer science programs.

Page 6

- The effect of the size of the scholarship (maximum of $3,125 per year for up to four years) on the number and quality of the scholarship candidates. Given the high cost of tuition, room and board at many four-year universities, it seems that the size of the scholarship may be inadequate, especially for those attending private four-year universities. It would have been useful if GAO had provided the cost of tuition, books, fees and estimated living expenses at the six schools it visited. Commerce questions whether the scholarships are effective at enabling low-income part-time students to become full-time students by using these limited funds to cover non-academic expenses such as transportation, housing and child care. Also, Commerce's reading of the CSEMS enabling legislation casts doubts on the use of these scholarship funds for these non-academic purposes.
- The effect of the size of the scholarships in attracting the interest and applications of community colleges and four-year colleges and universities.

Minor editorial changes have been provided to the General Accounting Office under separate cover. The Department of Commerce hopes that the comments in both letters will be helpful in the preparation of the final report. If there are any questions regarding this response, please contact John Sargent at (202) 482-6185.

Sincerely,

Bruce Mehlman
Assistant Secretary for Technology Policy

Appendix X: GAO Contacts and Staff Acknowledgments

GAO Contacts

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Staff Acknowledgments

In addition to those named above, Laura J. Heald, Carol L. Patey, and Tatiana Winger made important contributions to this report. Stuart M. Kaufman, Corinna A. Nicolaou, and Beverly Ross also provided key technical assistance.

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