



5. CONCLUSION

Analysis of GRT data for the 1998 reporting year entailed preparation of some tables comparable to those reported in the 1997 baseline GRT report. Other tables were developed to present data not previously collected or examined. Further, detailed text responses from the project reports were reviewed to provide additional contextual information to supplement the quantitative data. Below are brief descriptions of some of the findings that resulted from the analyses of the 1998 GRT report.

Summary of Findings

Enrollment. Minority enrollment in the GRT program was stable, decreasing only slightly, from 12 to 11 percent, between the 1997 and 1998 reporting years. Between those same years, the percentage of female trainees also decreased only slightly, from 38 to 37 percent. The percentage of disabled trainees in those two reporting years remained the same, at 1 percent. The 1994 cohort had the highest percentage of minority trainees, at about 16 percent.

Comparison of GRT Enrollment to National Graduate Enrollment. Comparison of data from the GRT Distance Monitoring Survey System with those from NSF's GSS for 1997 shows that the percentage of women participating in the GRT program (37 percent) was lower than the percentage of women graduate students in science and engineering overall in the country (43 percent).

Comparison of data on race/ethnicity data from the same sources shows that the overall rates of participation of GRT trainees by race/ethnicity group were very close to the percentages reported by the GSS for those same ethnic groups, varying by no more than 2 percent. These data are less precise, however, than the comparisons of data on gender because of the high percentages in both data sources for which race/ethnicity was unknown.

Recruitment. Most of the GRT projects (90 percent) used at least one strategy to recruit trainees for the GRT program. About 38 percent reported visiting minority-serving institutions or women's colleges to recruit minority and female trainees; 50 percent made



some other effort to recruit trainees from underrepresented groups. This is an increase from the Baseline Report; 41 percent of projects reported using such strategies to recruit these groups in the 1997 reporting year.

International Opportunities for Trainees. Projects placed increased emphasis on international opportunities for their trainees; 59 percent of projects reported such opportunities in 1998, compared to 38 percent in 1997. The most common activities were travel to foreign meetings and conferences, work in foreign universities and research settings, and field research in conjunction with foreign researchers.

Initiatives to Prepare Trainees for Faculty Positions. Projects also placed increased emphasis on initiatives to prepare their trainees for faculty positions. Overall, 85 percent of projects reported such initiatives in 1998, compared to 54 percent in 1997. Specifically, 97 percent of the 1994 and 1995 cohorts provided these activities for their trainees.

Trainee Ph.D. Completion. By 1998, the cumulative percentage of all GRT trainees who had completed their Ph.D.s was about 12 percent, almost double the completion rate reported in 1997. Completion rates were similar for males and females, but higher for nonminorities than for minorities (13 percent and 4 percent, respectively). This gap in completion rates between minority and nonminority trainees increased between 1997 and 1998.

Years to Complete Ph.D. The 1998 cumulative data show that the average time to complete the GRT Ph.D. (5.5 years) did not vary by gender or minority status. In the 1997 reporting year, only 12 percent of GRT trainees who completed their Ph.D.s had taken 4 years or less to complete their program. By 1998, the cumulative percentage of the trainees who were able to complete their Ph.D.s in 4 years or less was 21 percent. On the other hand, the percentage of trainees who took 7 or more years to complete their Ph.D.s increased from 3 to 19 percent.

Employment Status of Trainees Who Completed Ph.D.s. Almost half of the 194 trainees who had completed their GRT Ph.D.s by the 1998 reporting period were in postdoctoral positions. Most of the others were employed as educators or by private organizations.

Attrition. The cumulative percentage of all GRT trainees who had stopped their pursuit of a Ph.D. by 1998 was 18 percent, an increase in the 10 percent cumulative attrition rate in 1997. Minority students had a higher attrition rate than nonminority



students (24 percent compared to 17 percent) in 1998. The most common reason for leaving the GRT program was to pursue employment; more than half of the Engineering and Computer and Information Sciences and the Engineering trainees who left the program did so to pursue employment.

Employment Status of Trainees Who Left GRT Program Prior to Obtaining Ph.D.s. By the 1998 reporting period, trainees who left the GRT program before completing their Ph.D. were most likely to be employed in the private sector (39 percent). Employment status was unknown for about one-fifth of former trainees. Most of the others were in graduate school either at the GRT institution or studying elsewhere.

GRT Course Features. Projects continued to develop course and/or curriculum accomplishments that will remain with the GRT-funded department after the GRT project has ended. A total of 316 new courses, other institutional offerings, or course requirements were developed by the 157 GRT projects during the 1998 reporting year alone. These institutional outcomes are in addition to the 1,061 that had already been reported during the 1997 reporting year for all years of project operation prior to the 1998 reporting year.

Conclusion

Data obtained from the GRT Distance Monitoring Survey System for the 1998 reporting year show some areas of definite progress since the 1997 Baseline Report. In recent years, NSF has increased the emphasis it places on short-term project outcomes. The data for 1998 show that over time, GRT projects have increased the range of project features such as private/public sector opportunities and multidisciplinary training activities provided to improve the educational experiences of trainees. This trend suggests that NSF's efforts to communicate to GRT principal investigators regarding the importance of these educational experiences have been increasingly successful.

On the other hand, some trends from the 1998 data, such as the higher attrition rate for minority GRT trainees than for nonminority trainees and the increase in the percentage of trainees who took 7 or more years to complete their Ph.D.s, warrant closer attention in the future. These analyses also raise questions that cannot be answered by the data contained within the monitoring system. For example, the general decrease between 1997 and 1998 reporting years in the number of years required for trainees to complete their GRT-supported Ph.D.s raises the question of whether the trainees' involvement in the GRT program had any influence on that reduction.

In the 1999 reporting year, more detailed data have been collected by the Distance Monitoring Survey on race, ethnicity, and



disability. As more trainees complete their Ph.D. programs, subsequent years of GRT trend data should provide richer information about trainee Ph.D. completion and subsequent employment. Such data can contribute to the continued refinement of the GRT program and of related agency endeavors.