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DOUBLING UP: A PROFILE OF U.S. SCIENTISTS AND ENGINEERS WHO HOLD SECOND JOBS

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In 1997, a total of 11.5 percent of U.S. scientists and engineers worked in second jobs.

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In 1997, 11.5 percent of the employed U.S. scientific and engineering (S&E) workforce held second jobs¹. Because those with second jobs constitute such a significant fraction of working scientists and engineers, it is useful to examine their employment and demographic characteristics, as well as to begin to understand the motivation of these individuals to work in second jobs. Table 1 shows the percentages of those who had second jobs in the three main employment sectors: education, government, and business/industry. The percentage of those with second jobs was highest for those whose primary job was in the educa-

tion sector and lowest for those primarily working in business or industry. There was some variation within and among employment sectors: employees of private not-for-profit organizations and State and local governments were roughly twice as likely to hold second jobs than those working in the private, for-profit sector (16.1 to 16.4 percent versus 8.6 percent). Among those whose principal job was part time, 18.3 percent held second jobs, compared with only 10.0 percent of individuals who worked full time on their principal job². The percentage of S&Es with second jobs was lower for those who supervise others (10.5 percent) than for those who did not (12.4 percent).

Table 1. Scientists and engineers working in second jobs, by sector of primary employment: 1997

| Sector of employment of principal job ¹ | Employed | Employed in second job | Percentage employed in second jobs |
|--|------------|------------------------|------------------------------------|
| Total, all sectors..... | 10,585,600 | 1,215,800 | 11.5 |
| Education..... | 1,953,500 | 342,700 | 17.5 |
| Government..... | 1,367,300 | 176,200 | 12.9 |
| Business/Industry.... | 7,264,900 | 696,900 | 9.6 |

¹ Data on sector of employment for second job were not collected.

NOTE: The "Education" sector includes 4-year colleges and universities; medical schools; university-affiliated research institutes; 2-year colleges and universities; secondary schools; and preschool, elementary or middle schools. The "Government" sector Federal, State or local governments. The "Business/Industry" sector includes private, for-profit organizations; private, not-for-profit organizations; and those who are self-employed.

SOURCE: National Science Foundation/Division of Science Resources Studies, Scientists and Engineers Statistical Data System (SESTAT) 1997.

¹ This information was obtained from the 1997 Scientists and Engineers Statistical Data System (SESTAT) Integrated Database maintained by the National Science Foundation. For more details on the SESTAT system, see *SESTAT: A Tool for Studying Scientists and Engineers in the United States*. Arlington, VA: 1999, NSF 99-337. The S&E workforce includes all individuals who have ever received a bachelor's degree or higher in a science or engineering field, plus persons holding a non-S&E bachelor's or higher degree who were employed in a S&E occupation during the 1993, 1995, or 1997 SESTAT surveys.

Some 21.6 percent of social scientists³ worked in second jobs, the highest rate by occupational group within the S&E workforce (table 2); engineers participated in second jobs at the lowest rate (7.1 percent)⁴. Individuals with S&E principal jobs who held second jobs did not tend to work in the same occupations as that of their principal job. With the exception of social scientists and individuals in non-S&E occupations, only about a third of the science and engineering workforce with second jobs held them in the

² "Part-time" employment is defined as less than 35 hours per week over a year; "full-time" is 35 hours or greater per week over a year.

³ The category of social scientists includes psychologists.

⁴ In the SESTAT system, S&E occupations are defined as computer or mathematical scientists, physical scientists, life scientists, social scientists, and engineers. Non-S&E occupations include those in health-related fields (including physicians), technicians in any field, managers and administrators (in all sectors and fields), sales and marketing occupations, lawyers, and occupations in the arts and humanities. Almost 70 percent of individuals with science or engineering degrees have their principal jobs in non-S&E occupations. However, within the non-S&E occupations, as defined by SESTAT, there are several categories of occupations that have a close relationship to science and engineering, such as physicians or engineering technicians.

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Table 2. Scientists and engineers working in second jobs, by category of principal job: 1997

| Second job characteristic ¹ | Total | Principal job | | | | | | |
|--|-----------|----------------------------|------------------------------------|-----------------|---------------------|--------------------------------|-----------|---------------------|
| | | S&E occupations | | | | | | Non-S&E occupations |
| | | Total, all S&E occupations | Computer & mathematical scientists | Life scientists | Physical scientists | Social scientists ² | Engineers | |
| Number of individuals with second jobs..... | 1,215,800 | 330,700 | 98,700 | 32,700 | 26,300 | 75,500 | 97,500 | 885,100 |
| Percentage of individuals with second jobs..... | 11.5% | 10.2% | 9.5% | 10.2% | 9.2% | 21.6% | 7.1% | 12.3% |
| Second job in same category as principal job..... | 76.2% | 37.1% | 37.5% | 26.7% | 31.8% | 50.2% | 31.4% | 90.8% |
| Second job in a different category than principal job..... | 23.4% | 61.8% | 62.2% | 70.4% | 65.6% | 48.2% | 68.0% | 9.0% |
| Second job in an S&E category | 8.1% | 5.7% | 3.2% | 9.1% | 12.8% | 2.3% | 7.7% | 9.0% |
| Second job in a non-S&E category.... | 15.3% | 56.2% | 59.0% | 61.3% | 52.8% | 45.9% | 60.4% | N/A |
| Second job category is unknown..... | <1% | 1.1% | <1% | 2.9% | 2.6% | 1.6% | <1% | <1% |

¹Principal job categories chosen by respondents were verified against other information collected on the surveys; such information was not available for verifying second job categories.

²Social scientists includes psychologists.

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

KEY: N/A = Not applicable

SOURCE: National Science Foundation/Division of Science Resources Studies, Scientists and Engineers Statistical Data System (SESTAT) 1997.

same occupational group as their primary jobs. For those with second jobs in a category different from their principal job, the second job was most likely in the category of a non-S&E occupation. Between 52.8 and 61.3 percent of those principally employed in computer or mathematical sciences, physical sciences, life sciences, and engineering who held second jobs worked in second jobs that were not in science and engineering.

What factors are related to holding a second job? Dissatisfaction with the principal job did not appear to be an important factor: 11.1 percent of individuals who were “very” or “somewhat” satisfied with their principal jobs obtained second jobs compared to 14.0 percent of individuals who were “very” or “somewhat” dissatisfied with their principal jobs. Similarly, the relationship of an individual’s highest degree to his or her principal job was a minor factor: those with second jobs were only slightly less likely (76.9 percent) to report that their highest degree is related to their principal job versus those without second jobs (78.4 percent). However, individuals with second jobs reported

that their second jobs were more likely to not be related to their highest degree than their principal jobs (42.2 versus 23.1 percent) (table 3). The greater the level of the highest degree, the more likely it was that an individual held a second job: 10.5 percent of bachelor’s degree holders, 12.4 percent of master’s degree holders, and 15.1 percent of doctorate holders worked in second jobs (table 4).

Income and salary on the principal job may be factors in the decision to hold a second job. Individuals with a second job reported that their median salary on their principal job was \$39,000; those without second jobs reported a median salary of \$49,000 on their principal jobs. This gap closed somewhat when total earned income was considered: the total median earned income of those with second jobs was \$45,000 compared with \$50,000 for those without second jobs. Total household income was also lower for those with second jobs, \$65,000, as opposed to the \$74,000 reported for those without second jobs.

A lower salary on principal job is related to having a second job.

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Table 3. Relationship of principal and second jobs to highest degree of scientists and engineers: 1997

| Relationship of job to highest degree | Employed in one job only | Employed in a second job | |
|---------------------------------------|--------------------------|--------------------------|------------|
| | | Principal job | Second job |
| | Percentage | | |
| Closely related..... | 50.5 | 52.3 | 36.6 |
| Somewhat related..... | 27.8 | 24.6 | 21.1 |
| Not related..... | 21.6 | 23.1 | 42.2 |

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

SOURCE: National Science Foundation/Division of Science Resources Studies, Scientists and Engineers Statistical Data System (SESTAT) 1997.

Table 4 relates demographic characteristics of employed scientists and engineers to the likelihood of holding a second job. A slightly higher percentage of women (12.1 percent) than men (11.2 percent) were employed in second jobs. Persons with disabilities were slightly more likely to have second jobs (13.0 percent) than those without disabilities (11.4 percent). Among the racial/ethnic groups, Asian/Pacific Islanders were the least likely to hold a second jobs (7.8 percent); blacks and Native American/Alaskan Natives were most likely to hold such positions (15.2 and 14.1 percent, respectively). As a group, underrepresented minorities were slightly more likely to hold second jobs (14.0 percent) than were Asian/Pacific Islanders and whites (11.2 percent). Some 9.1 percent of permanent residents and 4.1 percent of temporary residents held second jobs, compared to 11.6 percent of U.S. citizens. This difference may be partially attributable to visa status: holders of temporary visas require full-time employment to be granted a visa, and may be restricted from holding another job.

The propensity of U.S. scientists and engineers to be engaged in second jobs did not change much over the middle years of the decade of the 1990s, as shown in table 5. There were some fluctuations over two year periods in the percentage of individuals who held second jobs, with a 6.7-percent decrease in the period from 1993 (11.9 percent) to 1995 (11.1 percent).

Table 4. Likelihood of scientists and engineers holding a second job by demographic characteristics and highest degree: 1997

| Characteristic | Total ¹ | Highest degree level | | |
|---|--------------------|-------------------------------------|----------|-----------|
| | | Bachelor's | Master's | Doctorate |
| | | Percentage employed in a second job | | |
| Total..... | 11.5 | 10.5 | 12.4 | 15.1 |
| Sex | | | | |
| Female..... | 12.1 | 11.4 | 13.1 | 17.3 |
| Male..... | 11.2 | 10.0 | 12.0 | 14.4 |
| Disability status | | | | |
| With disabilities..... | 13.0 | 11.9 | 14.1 | 17.2 |
| Without disabilities.... | 11.4 | 10.4 | 12.3 | 15.0 |
| Race/ethnicity | | | | |
| Hispanic..... | 12.3 | 11.9 | 12.5 | 14.9 |
| Black..... | 15.2 | 13.9 | 17.8 | 19.0 |
| American Indian/ Alaskan Native..... | 14.1 | 12.9 | 15.9 | 23.3 |
| Asian/Pacific Islander..... | 7.8 | 7.9 | 7.1 | 8.3 |
| White..... | 11.5 | 10.3 | 12.6 | 16.0 |
| Underrepresented minorities ² | 14.0 | 13.1 | 15.9 | 17.4 |
| Asian/Pacific Islanders and Whites..... | 11.2 | 10.2 | 12.1 | 14.9 |
| Citizenship status | | | | |
| U.S. citizen..... | 11.6 | 10.5 | 12.6 | 15.9 |
| Non-U.S. citizen, permanent resident..... | 9.1 | 7.4 | 9.8 | 9.1 |
| Non-U.S. citizen, temporary resident..... | 4.1 | 5.8 | 2.7 | 4.4 |

¹Total includes professional degrees, which are not broken out separately.

²Underrepresented minorities¹ includes Hispanics, blacks, and American Indian/Alaskan Natives.

SOURCE: National Science Foundation/Division of Science Resources Studies, Scientists and Engineers Statistical Data System (SESTAT) 1997.

The percentage of S&Es with second jobs was relatively stable during the mid-1990s.

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Table 5. Scientists and engineers working in second jobs, by sector of primary employment: 1993-1997

| Sector of employment of principal job ¹ | Percentage employed in second jobs | | |
|--|------------------------------------|------|------|
| | 1993 | 1995 | 1997 |
| Total, all sectors... | 11.9 | 11.1 | 11.5 |
| Education..... | 18.4 | 17.3 | 17.5 |
| Government..... | 12.2 | 11.2 | 12.9 |
| Industry..... | 10.1 | 9.4 | 9.6 |

¹ Data on sector of employment for second job were not collected.

SOURCE: National Science Foundation/Division of Science Resources Studies, Scientists and Engineers Statistical Data System (SESTAT) 1993, 1995, and 1997.

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