

Placement Opportunities for Human Factors Engineering and Ergonomics Professionals: Part II: Academic and Internship Positions

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This paper describes placement opportunities for HFE and ergonomics professionals in academic and internship positions, which were contained in the position announcements distributed by the Human Factors and Ergonomics Society (HFES) Placement Service during 1994-1995. Ten academic and twenty internship positions were announced. The features of the position announcement examined include: degree requirements, major field of study, areas of expertise, required work experience, salary, geographic location, job description and skills required. Academic positions were most frequently available in industrial engineering, and human factors ergonomics. Expertise in the area of industrial ergonomics and consumer products was most frequently desired. The most frequently cited courses to be taught were human factors/ergonomics and statistics. Among internships, knowledge of human-computer interaction was most frequently cited. Professional skills and expectations of interns are also discussed.

During the period from Nov. 1994 through Oct. 1995, the Placement Service of the Human Factors and Ergonomics Society (HFES) received announcements describing ten academic positions and twenty internships available for human factors and ergonomic (HF&E) professionals. Employers completed a "Job Listing" form, provided by the HFES Placement Service, on which they provided information on a variety of factors including: degree requirements, major field of study, areas of expertise, required work experience, geographic location, job description, employment sector and skills required. This paper describes those academic and internship

positions while Part I (Moroney & Adams, 1996) described industry, government and consulting positions.

It should be noted that the positions examined do not represent all of the academic and internship opportunities available to HFE and ergonomic professionals. Related academic and internship positions are listed in the American Psychological Association's Monitor and the American Psychological Society's Observer, among others. While academic positions are usually announced across broad geographic areas (i.e. the entire U.S.), internships are often communicated informally by industry, or by announcements to selected

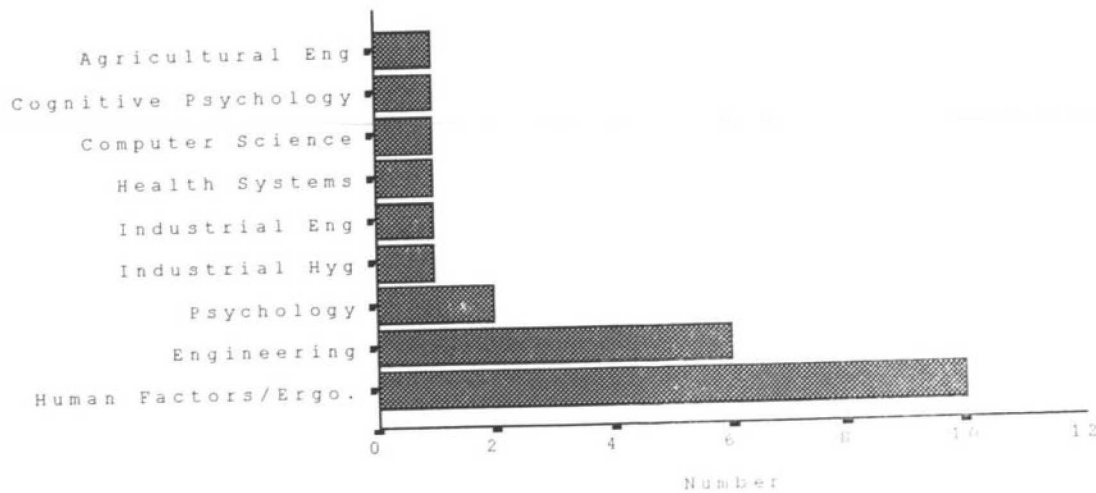


Figure 1: Major Fields of Study Specified for Academic Positions

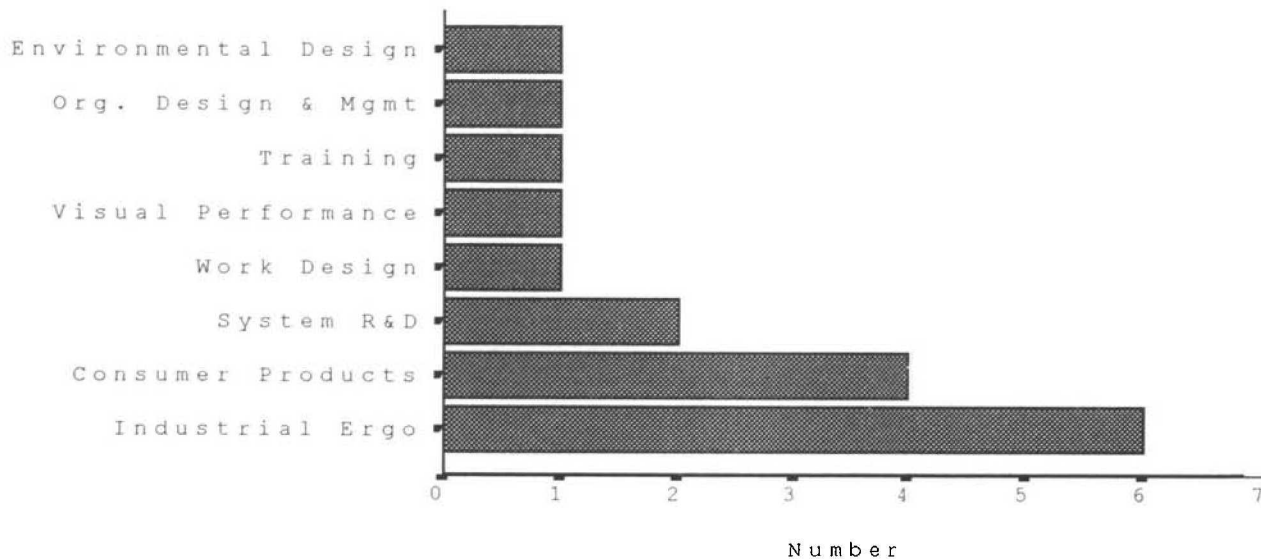


Figure 2: Areas of Expertise Expected Of Academics

universities with which the employer had good relations previously and/or from which employees have graduated. Furthermore, internship opportunities may be announced within limited geographical areas, since the granting agency may not provide travel expenses and may prefer to meet its needs locally.

ACADEMIC POSITIONS

Nine of the ten academic positions required a doctorate, while the one exception required a masters in the area of industrial or agricultural engineering or industrial hygiene. Data describing the major field of study specified by potential employers are contained in Figure 1 (employers could specify up to three major

fields of study per position).

All positions were described as full time and eight of the ten positions were described as tenure track. Five positions were at the assistant professor level, one specified that all ranks were available, and two stated that while an assistant professor position was available, higher levels were possible for qualified personnel. The remaining two did not specify a professorial level. Figure 2 contains the number of academic positions requesting a particular expertise. Employers were allowed to specify up to six areas of expertise. Since these areas were not prioritized, it was impossible to assess the primary needs of the employers. Industrial ergonomics was cited most frequently, followed by consumer products. With respect to courses to be taught (see Figure 3), human

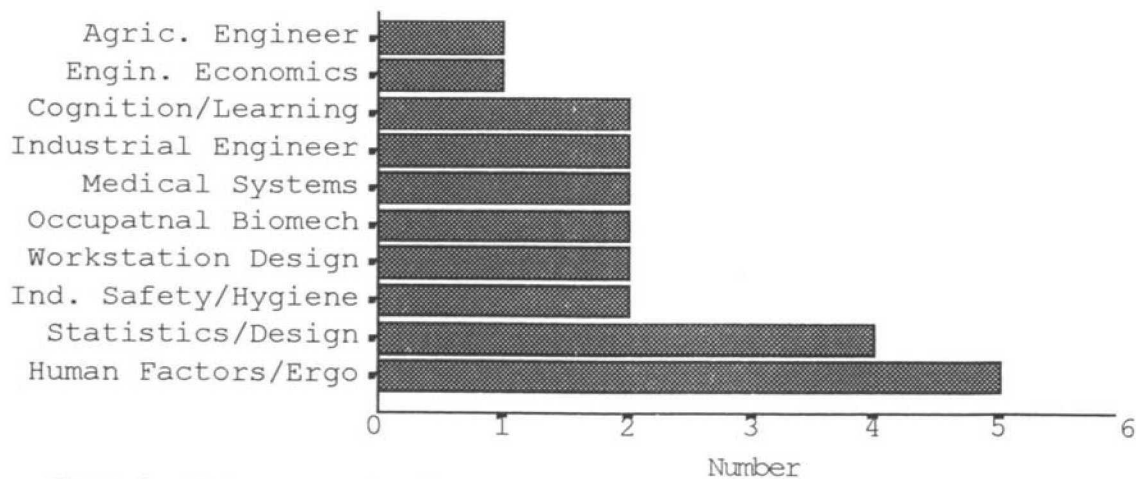


Figure 3: Courses to be Taught.

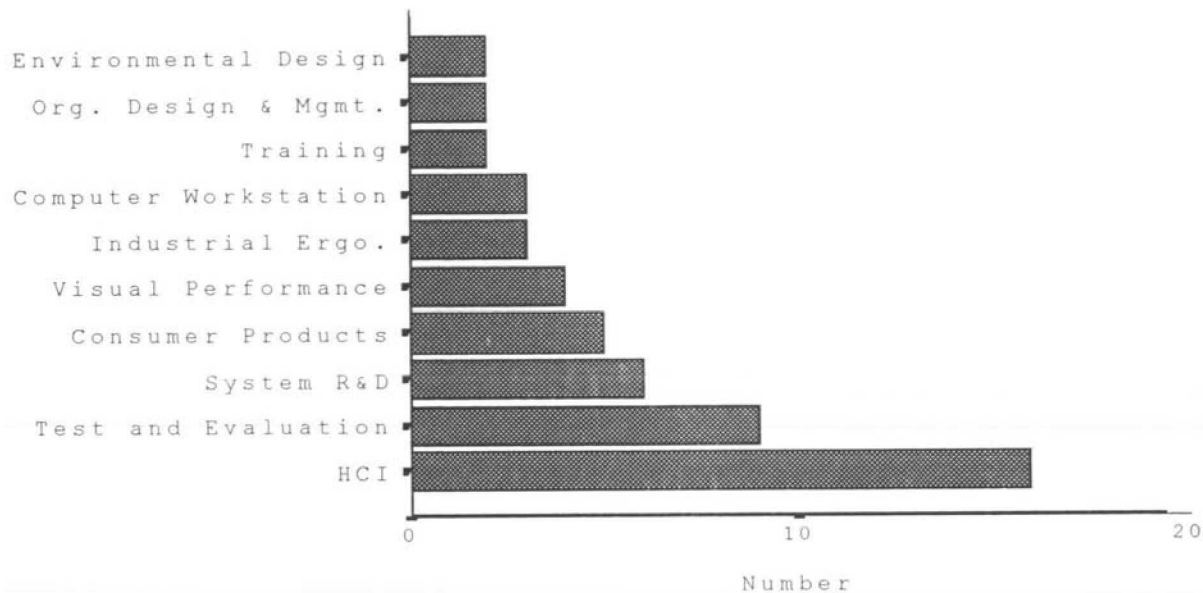


Figure 4: Areas of Expertise Requested of Interns.

factors/ergonomics was most frequently cited as the course to be taught, with statistics/experimental design being the second most frequently cited.

Seven of the nine doctoral positions did not specify an experience requirement, whereas, the remaining two specified: one year of teaching and research experience; and two years for work in the health systems area, respectively. The masters position preferred one year of experience in industrial hygiene or agricultural engineering.

Salary was described as negotiable in all cases, with two listings specifying ranges from \$45-61,000 and \$45-48,000.

Three positions were available in the both the East-Central (IN,KY,MI,OH) and Mid-Central (AR,KS,MO,NE,OK) areas of the United States. The remainder were distributed at other locations.

INTERNSHIP POSITIONS

Twenty internship positions were announced. The minimum degree requirements for these positions were distributed among three categories: Bachelors (N=9), Masters (N=5) and degree "Not Specified" (N=6). Most positions required a minimum of a bachelors (i.e. these students would be working on their masters or doctoral degrees).

Human Factors/Ergonomics was cited most frequently (18 times) as the major field of study, while Psychology was the second most frequently cited (15

times). Computer Science and Engineering were specified nine and eight times respectively.

Figure 4 contains data describing the desired areas of expertise. Areas of expertise with less than two entries are not reported. As was the case for positions in industry, government/ military and consulting positions (Moroney & Adams, 1996), the area of expertise most frequently requested was Human Computer Interfaces, followed by Test and Evaluation (usually in the area of computer systems). An examination of the narrative portion revealed, not surprisingly, that all positions are related to the computer industry.

Most internships were offered for an academic quarter, a semester, or a summer; although a few were offered for six months to a year. Salary was not specified for 17 of the 20 positions. The three positions for which salary was specified offered: \$2475-3070/month for 3 months, \$9-14/hr and \$12-15/hr. Zero experience was specified for all but two positions which desired 0.5 years experience in computer science, engineering or human factors. Most (N=6) of the positions were located in the Southeast, followed by the Northeast (N=4) and Southwest (N=4). One announcement offered several positions throughout the U.S. to Ph.D students (minimum degree requirement was masters).

The computer skills desired of interns were culled from the placement forms. They included knowledge of operating systems, applications (word processors, statistical packages) and programming (e.g. C++, Supercard, Visual Basic). A listing of professional skills

and expectations desired of interns is provided in Table 1. Most of the observations regarding desired skills reported by Moroney & Adams (1996) also apply to the internship positions. Additional details are provided by Shapiro (1995, 1994), and Shapiro, et al. (1995).

The requirement to work as a team member was common to both the internship positions and industry, consulting, and government/military positions, but was not listed as a requirement for academia. This highlights the difference between academia and the workplace: individualism vs. teamwork. Despite this contrast, educators have made efforts to provide their students with opportunities for team work. The sections which follow will describe strategies used by three educators (Moroney, Green & Konz, 1996) and provide reference material (Stone, 1996) for use by interested educators.

CONCLUSION

The authors hope that they have provided a useful analysis of the placement opportunities available to HF&E personnel seeking academic and internship positions. A similar analysis performed annually should be of use to both members and educators.

References

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- Shapiro, R. G. (1994). What is it like working in industry? Poster presented at the 38th Annual Meeting of the Human Factors and Ergonomics Society.
- Shapiro, R. G. (1995, October). How can human factors education meet industry needs. Ergonomics in Design, p 32.

Table 1. Professional Skills and Expectations Desired of Interns.

<u>Professional Skills</u>
<ul style="list-style-type: none"> • Analytical • Communication • Problem solving • Visual presentation • Writing
<u>Expectations</u>
<ul style="list-style-type: none"> • Broad background • Maturity • Self-motivated • Show potential for innovation • Work independently • Work with a team

- Shapiro, R. G., Brown, M. L., Fogleman, M., Goldberg, J. H., Granda, R. E., Hale, J. P., Sanders, E. B.-N. (1995). Preparing for the human factors/ergonomics job market. Proceedings of the Human Factors and Ergonomics Society 39th Annual Meeting. (pp 379-389). Santa Monica, CA: Human Factors and Ergonomics Society.
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