

PHYSICS COMMUNITY

AIP-Manpower Inc Agreement Aims to Boost Industry's Use of Physicists

From 1985 to 1995, the average number of US workers provided by temporary employment services more than tripled, to 2.2 million a day, according to the National Association of Temporary and Staffing Services. Within the temp population, a small but growing fraction now consists of highly educated, highly skilled scientists and engineers, who come in as self-employed consultants and, increasingly, as contractors placed by temporary-help agencies.

In October, the American Institute of Physics and Manpower Inc, the world's largest temporary staffing firm, signed an agreement designed to give physicists easier access to such contractor slots. Having built its business on filling orders for clerical and blue-collar workers, Manpower has recently branched out into the high-technology realm, offering technical and scientific workers through its Manpower Technical division. "We consider this relationship as the beginning of an important strategic program to address the usage and employment of highly trained scientific personnel," says Mitchell Fromstein, president and CEO of Manpower. "We intend to be a unique channel between large companies and physicists." Manpower is only one of many temporary-help companies now offering scientists for hire. Last March, for instance, rival Kelly Services created Kelly Scientific Resources for the same purpose, and smaller, more specialized firms have also sprung up.

According to Ed Goldin, director of AIP's career services division, AIP is now supplying Manpower with the résumés of physicists who have expressed an interest in such work. The résumés are being entered into Manpower's résumé retrieval and scanning system, a computerized database containing about 5 million résumés. Manpower has also agreed to ask its clients, which include Fortune 500 companies such as Hewlett-Packard and IBM, to "come forward with positions that would be of interest to physicists," Goldin says. If an opening comes up that matches a physicist's qualifications, he or she will be brought in for an interview with Manpower and then with the client.

"Physicists have a reputation in in-

Will temp agencies provide more physicists with an entree into the industrial workforce?

dustry of being 'academic'—not particularly good at or interested in solving real-world problems," says John Rigden, AIP's director of physics programs. "So a physicist who takes a contract position with, say, Hewlett-Packard will have a very strong addition to [his or her] résumé."

As is the case with most placement agencies, Manpower is considered the employer and thus issues the paycheck, but the client company defines where and when the physicist works, as well as the work itself. "In most cases, project assignments are six months or longer, and could run to several years," says Fromstein, adding that his company will also be arranging for the direct placement of physicists in permanent positions.

About 40% of Manpower Technical temps are offered a permanent position with the client. "If this [figure] holds up for our PhDs, that's not bad," notes Goldin. The success of the AIP-Manpower agreement, he adds, will be judged on whether "physicists are finding positions, being challenged by the work and getting other offers that are fruitful."

Even so, he expects to hear some complaints. "There will be those who say, 'We're sending PhDs out on tem-

porary jobs! What's the world coming to?'" He points out that physics already has a long-standing tradition of using temporary workers—namely postdocs.

Some observers, however, view the agency-mediated employment of scientists as a sign of real change, and not necessarily one for the better. According to William DiFazio, a sociologist at St. John's University, New York, who has studied the scientific workplace, what is happening to scientists is part of a larger social transformation in which "everyone is being proletarianized. The whole workforce is being degraded, and no one is exempt, except those at the uppermost levels." DiFazio notes that short-term assignments are less likely to represent opportunities for scientists to do basic research or to pursue their curiosity in their work.

Benefits and costs

Earlier this fall, at the annual meetings of the American Vacuum Society, the Materials Research Society and the American Physical Society's division of plasma physics, Manpower representatives were on hand to explain their services. Among those is a benefits package that includes hospitalization coverage and a 401(k) pension plan, available to people who have worked a set number of hours; after completing 1500 hours, for instance, one qualifies for two weeks of paid vacation. Free training in such things



*"Would you like me to send you a technical manual
or would you rather talk to one of our geeks?"*

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as C++ programming and networking software is also available.

According to Daniel White, a career counselor with Scientific Career Transitions, a nonprofit group based in New York City that provides advice to scientists who want to switch careers, "Organizations hire temps to do work that's not their core business." So, for example, a bank might bring in a contractor to upgrade its computer network. "There's a growing tendency to view employees not just as labor, but as intellectual capital. When you hire a temp, you just want [his or her] labor—you don't need to own the expertise."

White sees some advantages to temporary work arrangements, especially when a company is considering hiring a permanent employee. "It's very expensive to bring people on staff, so it's important that the person fits in. It's sort of a 'try before you buy' approach." On the down side, temps have less job security. "You have to live with not knowing where you'll be in six months," White says.

Consulting

Although temp agencies are still a novelty in science employment, the kind of work and lifestyle they may offer physicists is similar to the self-employed consultant's. Physicist Steve McClain has been an optical design consultant for the past year and a half. He does some work from his home in Tucson, Arizona, and he also travels regularly to his main client's plant near Allentown, Pennsylvania. Being single and with no dependents, he enjoys the autonomy and can support himself by working part-time, although he says, "I tend to put in more hours than I charge for."

"I miss learning new science," McClain says. "But I made a conscious decision to leave academia when I saw that you had to be not only a good teacher and a good researcher but also a good money raiser. I figured I could do two out of three, but not all three." After earning his PhD from Cornell University in 1992, he spent three years as a research scientist at the University of Alabama in Huntsville, where he met members of the group he's working for now. Good contacts are a necessity, he says, and "some fields of physics definitely lend themselves to this type of work." Given the current growth in optics, he believes he could find a staff position "fairly easily," but has so far resisted the move. McClain has seen a few peers leave physics altogether, frustrated with the lack of opportunities. "I'm happy with what I'm doing. But it's not the way I'd imagined it would be."

Those sentiments are shared by An-

drew Lazarewicz, a PhD geophysicist who's worked as a consultant since being laid off three years ago, at the age of 43. His consulting firm, Science Resources Network, has stayed afloat financially, but it hasn't been easy, he says. Being a businessman is something that physics didn't prepare him for. "We've been taught how to solve technical problems, but not how to make money." What's more, he says, "there are a lot of people like me—there's a lot of competition." These days, he works part-time for Boston College, under a contract with the Nuclear Regulatory Commission to assess

the seismic hazards around nuclear power plants. The rest of his time is spent developing new leads, to see him beyond next summer when the NRC money runs out.

Lazarewicz has tried finding work through employment agencies "without much luck. They tend to work in the mainstream rather than with specialties." The AIP-Manpower agreement "sounds like a good idea," he says, and expressed the hope that the scientific societies will continue to find ways of supporting their members who are consultants.

JEAN KUMAGAI

Swiss Neutron Source Starts Up

The neutron beams at Switzerland's new spallation source, SINQ, will be started up this month for testing and alignment of instruments. Experiments are scheduled to begin next spring.

Located in Villigen, SINQ is part of the Paul Scherrer Institute (PSI), which in October hosted the well-attended first European Conference on Neutron Scattering. (The name SINQ—pronounced "sin-q"—is derived from that of the former Swiss Institute for Nuclear Research, one of PSI's two predecessors, and from *Quelle*, the German word for source.)

The government of Switzerland—incidentally, the country with the most neutron users per capita—has paid 85 million Swiss francs (about \$70 million, representing more than 4% of the Swiss annual science budget) toward building the neutron source and experimental setups. PSI will cover SINQ's operational costs. In addition, SINQ will use PSI's existing 600 MeV accelerator. In so doing, it will join other facilities such as the neutron spallation sources at Los Alamos and Argonne National Laboratories in the US, and ISIS at Rutherford Appleton Laboratory near Oxford, England (which has the highest peak neutron flux), which have been economizing by adapting high-energy equipment to other uses.

In spallation, neutrons are released from heavy metal target nuclei in collisions with highly accelerated protons. Reactors, the more common neutron source, produce a continuous flux of neutrons from fission chain reactions. In contrast, the four currently operating spallation sources—in the US, England and Japan—produce short neutron pulses (20–50 Hz). This pulsed mode is generally better suited to time-of-flight measurements of structure and dynamic processes of materials

than is the continuous-flux mode.

At the Swiss spallation source, however, the bombarding proton pulses from PSI's accelerator will be so close together that the resulting neutron flux will be nearly continuous. SINQ's flux of about 10^{14} n/cm² s will be comparable to that of a medium-flux reactor. Since SINQ won't be able to exploit the pulsed mode, a major emphasis will be on low-energy, or "cold," neutrons ($T = 25$ K, or about 2 meV, at SINQ). Furthermore, a cryogenic moderator for producing cold neutrons can be positioned where the neutron flux is highest, "which is not possible with a reactor, because of the heating from increased gamma radiation," explains PSI neutron physicist Albert Furrer, who is responsible for instrumentation and the scientific program at SINQ.

Cold neutrons are finding increasing importance in scattering studies of submicrometer structures such as polymers and biological molecules and for very-high-resolution micro electron volt spectroscopic studies of slow dynamics of such materials, as well as for the study of magnetic materials using polarized neutrons. "We expect SINQ to be competitive with the world's best cold neutron source—the reactor at the Institute Laue-Langevin in Grenoble [France]," says Furrer. He adds that "SINQ may provide a useful prototype for the eventual replacement of nuclear reactors" for neutron physics.

Indeed, although spallation technology lags behind reactor technology, many neutron scientists seem to share the view of Laue-Langevin director Reinhard Scherm, who says that "spallation is the way to higher peak flux." One advance that will be developed at SINQ is the use of high-density liquid metal targets with convective cooling. Such targets will be able to absorb higher proton currents—and