

Questionnaires sent out by NSB, the policy-making body for NSF, are accompanied by a letter cosigned by NSB chairman Norman Hackerman and Congressman Symington and go to approximately 3000 prospective principal investigators (grant applicants, of whom nearly equal numbers received awards and rejections from NSF) for FY 1975 and 1500 scientists who acted as proposal reviewers in FY 1974; participants were chosen by systematic random sampling techniques.

NSB hopes to determine how those acquainted with the selection processes regard the present system and to learn of suggested improvements. Results of the twin surveys are expected to be announced in early 1976. Another study, relating to peer review among other things, is being conducted by the National Academy of Sciences Committee on Science and Public Policy. Philip Handler, president of NAS, has argued that disputes over NSF peer review could be minimized if the present system were replaced by more extensive use of convened panels to evaluate research proposals, as employed by the National Institutes of Health.

Some scientists have not waited for the results of the NSB surveys to express their concern. In a letter to Senator Robert Dole (R., Kan.), University of Kansas physics department chairman David Beard comments on the threat unwise criticisms of peer review pose to his role as a referee for government agencies on research project proposals: "If I had to sign my reviews, I would estrange friends and former students if my reviews were anything less than enthusiastic . . . I don't think I would continue [to review proposals if anonymity were lost]." William Havens, Executive Secretary of the American Physical Society, has expressed his belief that "the present peer review system is a satisfactory way to operate . . .", and he asserts that the legislative branch would have to set up an apparatus equivalent to NSF itself before any vastly expanded congressional role in proposal evaluation could prove effective. —FCB

Graduate-student opinions on careers in industry

Two reports by graduate students show that while most doctoral physics students would prefer careers in academia, today's job crunch has forced many of them to consider careers in industrial research. Don N. Page of the California Institute of Technology and Harry J. Kimble of the University of Rochester spoke about students' attitudes toward industry at the recent meeting of the Corporate Associates of the American Institute of Physics.



Don Page (left) and Harry Kimble speak.

Page conducted a questionnaire survey of the aspirations of physics graduate students, with emphasis upon their views of jobs in industrial research. In his talk he showed the results of interviews with 120 graduate students in seven California physics departments. Page's interviews indicated that while 71% of his subjects considered an academic career more desirable than research in an industrial or government laboratory, only 47% definitely aspired to work in academia. This discrepancy showed that while most graduate students would prefer an academic career, many realize that they will be forced into other sectors because of the current job shortage in university education.

Page also asked students to give their own value judgments by listing the pros and cons of an industrial career in order of their importance. He found that while most of his sample viewed industrial jobs as better-paid than academic ones, and many considered them easier to get and hold, students tended to feel that an industrial career is more intellectually and structurally restrictive than an academic one. This loss of freedom, either in terms of the ability to choose and switch research fields or in terms of flexibility in schedules, lifestyle, etc. accounted for over one half of the students' "most important" cons. Students were divided on the question of whether the work in industry is "better" than academic research; the research work in industry was cited by different students as more and less interesting, the environment more and less stimulating and the pressure and politics more and less intense.

The source of these conceptions, Page found, is generally not first-hand knowledge of industry. Over half of Page's sample had no experience in industry whatsoever; only 28% had industrial experience of longer than a single summer. The primary source of information was the opinion of other people

who had worked in industry (over half the students listed this as a source), but nearly as many also listed rumor, hearsay, prejudice or no external sources as a part of the basis of their opinion. Nevertheless, the overall opinion of 34% of the students was favorable to industry, while another 36% had neutral or mixed feelings. Page reported that students seemed eager for more direct lines of communication from prospective employers in industry.

Kimble's talk illustrated one graduate student's investigation of the realities of industrial research. After discussions with industrial physicists, Kimble concluded that while a career in industry is definitely different from an academic career, industry offers some unique advantages. Funding and technical support are often better in industry, and the environment of the industrial laboratory fosters collaboration and cooperation solving problems. According to Kimble, movement between fields of specialization is more easily accomplished in industry than in academia, and industry encourages its workers to pick up a broad spectrum of interdisciplinary experience.

Kimble also pointed out that the research directors of the laboratories have the opportunity to determine the scientific character of that laboratory. The loss of freedom that Page's students feared in choosing their research problems and carrying them out might vary significantly from laboratory to laboratory, and the students' success in an industrial environment would depend upon the attitude of the research director and the students' own willingness to adjust to the inherent restrictions of industrial research. Kimble's investigation serves to break down some of the stereotypes and prejudice against industrial careers that many of Page's sample seemed to feel.

Soviets halt distribution of PHYSICS TODAY issue

At the Moscow physics show held 25 November–3 December, Soviet show officials prevented the distribution of 2500 copies of the November issue of *PHYSICS TODAY*. The special issue, devoted to Soviet physics achievements, also carried a news story on the award of the Nobel peace prize to physicist Andrei Sakharov.

Four American exhibitors had arranged to distribute the *PHYSICS TODAY* copies at the show. Tracor Northern was stopped by customs authorities at the show. Ortec was stopped by show officials as their cartons were opened. Princeton Applied Research Corp. was able to distribute eight or ten copies before being told by show officials to stop.

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