FERMILAB INDUSTRIAL AFFILIATES FOURTH ANNUAL MEETING

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The fourth annual meeting of the Fermilab Industrial Affiliates took place May 24 and 25. The central theme was "Industry and Large Scientific Projects - Particle Accelerators and Projections into the Future." The Superconducting Super Collider was taken as a prime example. This project may well be one of the most ambitious basic research projects in history.

Construction of a super accelerator will involve industrial participation on a scale unfamiliar to particle physics. It will require participation of many companies ranging from corporate giants to small machine shops. New innovative approaches will be needed to cement these relationships. In the words of George Keyworth, the Scientific Advisor to the President, at the Saver Dedication, "We have to realize that SSC won't be just another national big-science facility...The SSC design challenge is far more than just choosing between niobium-titanium or niobium-tin. That may be a necessary part of the job, but, as IBM or AT&T or Apple would be quick to tell us, big challenges demand big leaps in thinking...Ultimately, like Apollo, it's going to require cooperation and integration between the scientists who intend to use it and the technologists--many from industry and from unaccustomed disciplines--who will be full partners in this effort."

The highlight of the meeting was a Round Table on Industrial Participation in Large Scale Science Projects. The Round Table explored how deeply industry could or would opt to participate in projects like the super accelerator. It is important to determine how industry will react to the challenge of involvement in a project which is vital to scientific research but whose follow-on benefits are not clear. In the particular case of the super accelerator, manufacture of 10,000 large superconducting magnets will raise new problems of precision, quality assurance, and reliability. Whereas industry would not be expected to lose money, unusual requirements on close interaction with the designers throughout production may be required. The super accelerator project will have high visibility and serious technical challenges. All of this cannot carry excessive cost penalties.

The Table, chaired by Dick Lundy, included participants from a cross section of industries with expertise in technologies needed for a super accelerator. Among the participants were Dr. Ray Beuligman, program director of energy systems at Convair/General Dynamics; Mr. Dick Rodenizer, manager of systems and product engineering for medical systems at General Electric; Dr. C. H. Dustmann of Brown-Boveri in Germany, now working on superconducting magnets for HERA; Dr. John Hulm of Westinghouse, one of the developers of modern superconducting wire and a member

of the Board of Overseers for the SSC; Mr. Carl Rosner, chairman and chief executive officer of Intermagnetics General; Mr. Ryusei Saito, chief engineer in the nuclear fusion division of Hitachi, now working on the CDF coil; and Dr. Ed Temple, head of the U. S. Department of Energy working group on the SSC. The diverse perspectives of the participants led to a lively exchange of views. In particular, the discussion illuminated a range of industrial viewpoints across the U. S., Germany, and Japan. On Thursday, the meeting concentrated on the super accelerator and the experience gained with the Fermilab Energy Saver. Leon Lederman led in with a talk on the possibilities for physics in the 1990's that mandate an accelerator much more powerful than the Tevatron. Rich Orr discussed the operating experience with the Saver. Lundy then laid out the challenges of a super accelerator. Mr. Paul Gilbert of Parsons Brinckerhoff in San Francisco (the firm overseeing conventional construction for the SLAC SLC) reviewed the architectural-engineering requirements. Claus Rode outlined the characteristics of the large scale cryogenic systems that would be needed for the SSC. Dixon Bogert discussed controls and Mel Shochet, of the University of Chicago, speculated on the detectors that will be reuqired. Tom Nash covered future directions needed for computers.

The banquet speaker was Martin Cooper, retired vice president and director of research at Motorola, and one of the principals in the development of the cellular telephone concept. He now heads his own firm, Cellular Business Concepts.

The Fermilab Industrial Affiliates was established in 1980 in order to improve university-industry research communications and to foster technology transfer from Fermilab. The annual meeting provides an opportunity for research directors and senior technical personnel from the Affiliates and other companies, some from overseas, to visit Fermilab. By now, Fermilab Affiliates includes more than thirty institutions including many research-oriented companies in the Fortune 500 list as well as several vigorous young organizations established by Fermilab (user and staff) alumni.

Participation in the meeting included more than eighty people from outside Fermilab. More than forty U. S. companies and six foreign concerns were represented. There were also several participants from the Department of Energy and the press.

The attendees were uniformly pleased with the meeting. The wide spectrum of Affiliated interests emphasized the need to report on new Fermilab technology. Often others can see new, valuable ways to exploit technology developed for a very particular need here at the Laboratory.

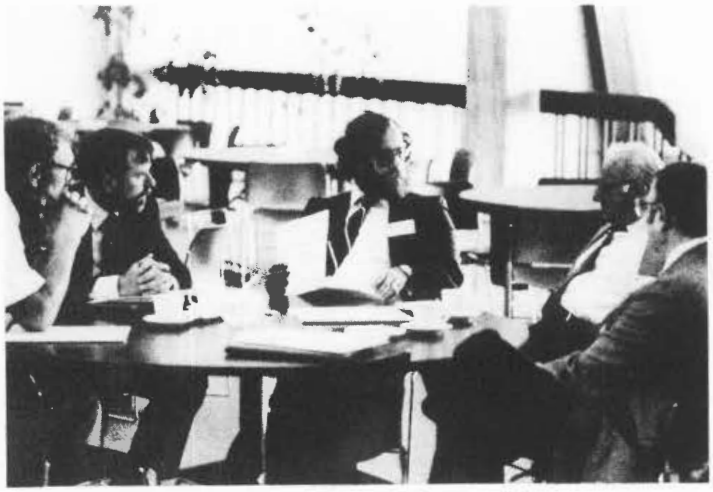
Round Table at Fermilab Industrial Affiliates meeting. From left to right are Dick Lundy, chairman; Ray Beuligman, Convair/ General Dynamics; C. H. Dustmann, Brown-Boveri; John Hulm, Westinghouse, speaking; Dick Rodenizer, General Electric; Carl Rosner, Intermagnetic General; Ryusei Saito, Hitachi; and Ed Temple, DOE.

(Photograph by Fermilab Photo Unit)

Marty Cooper, the Affiliates after-dinner speaker, brings a smile to Leon Lederman and John Hulm, possibly when he told a famous quality control joke that Dick Lundy had decided not to use.

(Photograph by Fermilab Photo Unit)

A group of Japanese industrial representatives interested in high-energy physics technology at the recent Affiliates meeting. Clockwise from center back are H. Tanaka, Furukawa; M. Ikeda, Furukawa; S. Ito, Toshiba; N. Yamaguchi, Mitsubishi; R. Saito, Hitachi; M. Amano, IHI; and Taiji Yamanouchi, Fermilab.
(Photograph by Fermilab Photo Unit)



An informal discussion at the Affiliates meeting. Both the men in the center, Eric Siskind, NYCB Real Time Computing, and (right) Mel Schwartz, Digital Pathways, are alumni of particle physics and presidents of their own companies.
(Photograph by Fermilab Photo Unit)

Two of the principals in the development of the Fermilab Energy Saver superconducting wire, Bruce Zeitlin of Intermagnetics General and Bill Fowler, Fermilab, at the Affiliates meeting.

(Photograph by Jan Fox)

C. H. Dustmann of Brown/Boveri in Germany and Claus Rode of Fermilab in an informal moment at the Affiliates meeting.

(Photograph by Fermilab Photo Unit)