

NSF Notes

Grants Awarded to 202 Young Investigators

The National Science Foundation (NSF) has selected 202 scientists and engineers at U.S. colleges and universities to receive 1992 NSF Young Investigator Awards (NYI). The awards are intended to highlight and enhance the research and teaching careers of outstanding beginning faculty, and to foster cooperation between academia and industry. Each investigator may receive a maximum of \$100,000 per year for five years through a combination of federal and private funds. NSF provides up to \$62,500 annually for each awardee. The awardees are selected through a merit review process that focuses on the accomplishments of the candidates and their potential to become academic leaders both in teaching and research.

Funding Provided for Overseas Research

The National Science Foundation (NSF) has established a "Program for Long and Medium-Term Research at Foreign Centers of Excellence" to promote U.S. progress in science and engineering. The program will

achieve this goal by facilitating access to overseas research sites, introducing young scientists and engineers to research developments abroad, and supporting relationships between the U.S. and foreign research communities. Awards will be made for research in any field of science and engineering supported by NSF.

Overseas visits will be supported for three to 12 months' duration with possible extensions allowed where justified. Allowances are made for travel expenses for the awardee and dependents, and living stipends may be requested.

To be eligible, individuals must be U.S. citizens or native residents of U.S. possessions and have earned a doctoral degree within six years before the date of application, or must expect to receive the degree by the award date.

Appropriate foreign science and technology centers include industrial research laboratories, government research laboratories and centers, privately sponsored nonprofit institutions, and universities.

More information may be obtained by contacting NSF's Division of International Programs at (202) 653-5387.

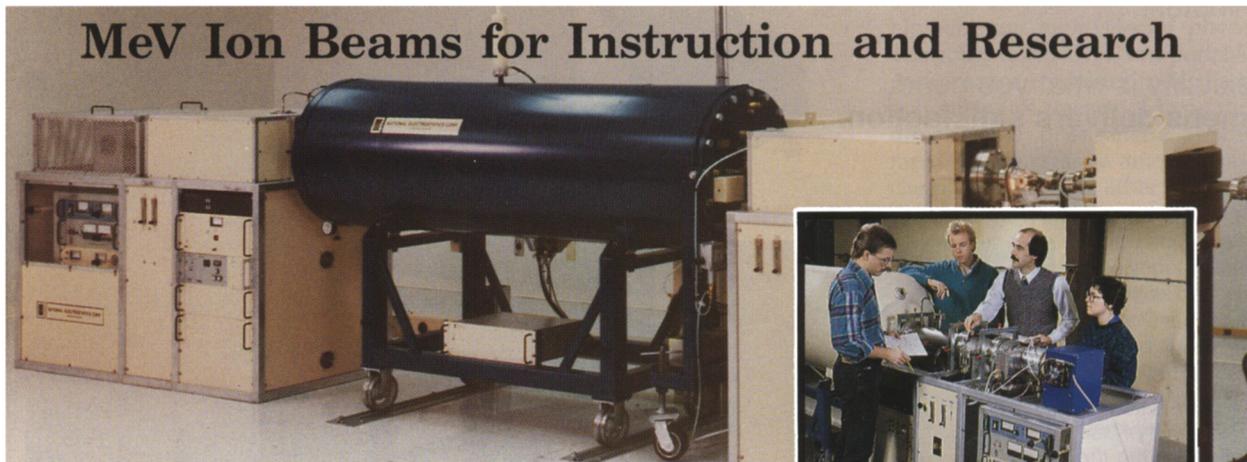
DOE Notes

Photovoltaics Procurement Is Largest Ever

A multi-year, \$50 million contract award involving seven companies represents the largest single procurement by DOE in the field of photovoltaics. The contracts will be cost-shared—approximately \$30 million by DOE, \$20 million by industry—and will implement the second phase of the Photovoltaic Manufacturing Technology Initiative, first announced in January 1990, and designed to overcome obstacles to improving PV manufacturing technology.

DOE, NASA Sign Technology Commercialization and Space Agreements

As part of the Bush administration's efforts to increase U.S. competitiveness and spur economic growth, DOE and NASA have signed agreements to enhance the commercialization of technologies developed in their laboratories. Areas of cooperation between the two include outreach to business and nonprofit research organizations, access to federal technology resources, training and education, dissemination of scientific and technical in-



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formation, technology commercialization policy and program analysis, and energy-related civil space activities. The agreement identifies the organizational units within each agency that will be responsible for implementing cooperation in technology commercialization.

66 Projects Selected for SBIR Grants

DOE has selected 66 projects for fiscal year 1992 funding under Phase II of its Small Business Innovation Research (SBIR) program. The awards, averaging about \$490,000 each for a two-year period, go to small, innovative firms working in areas of federally funded research and development.

The 66 projects cover a broad spectrum of energy-related research and development in the areas of conservation and renewable, fossil, and nuclear energy, as well as basic energy sciences, health and environmental research, magnetic fusion energy and high-energy, and nuclear physics.

Under Phase I of DOE's SBIR program, 172 projects were funded (out of 1,401 grant applications submitted) at about \$50,000 each for preliminary feasibility studies in 1991. These firms were eligible to submit applications to continue their work in 1992 under Phase II, the principal research and development phase.

Museums to Receive Science Education Awards

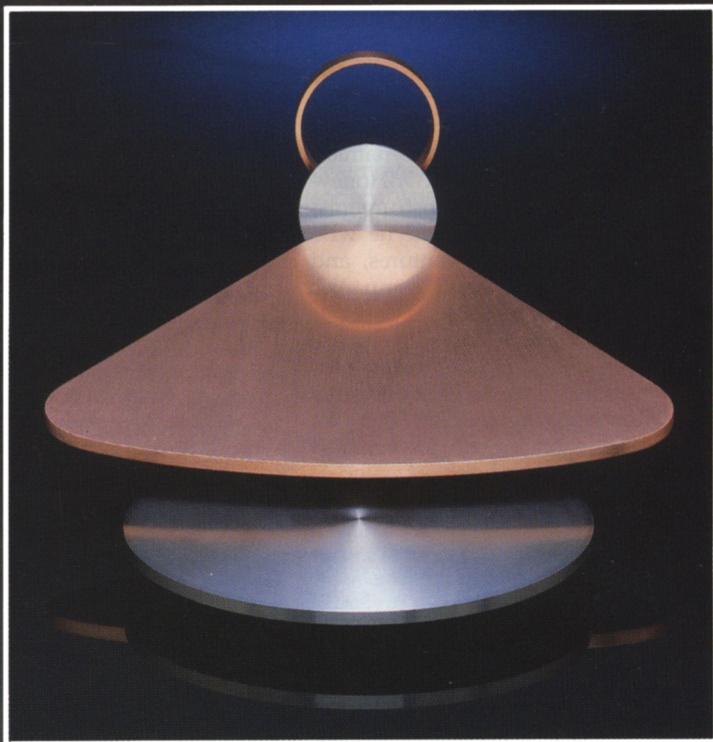
Ten museums, science centers, and other institutions have been selected to receive awards totaling \$848,000 to develop energy-related exhibitions, media, and activities through the Museum Science Education Program. This program, sponsored by DOE's Office of University and Science Education, is aimed at increasing public science literacy.

Applications were received from 41 institutions located in 25 states and the District of Columbia. The awardees and their collaborators represent ten states and propose a variety of projects relating to the fundamental energy sciences.

SBIR Conferences Help Small Businesses Get Federal R&D Money

The National Small Business Innovation Research (SBIR) Conferences, sponsored by the National Science Foundation and the Department of Defense, will provide a unique marketing opportunity this fall and next spring, bringing together scores of personnel from federal agency and major corporations in one place at one time. Representatives from NASA, the National Science Foundation, Environmental Protection Agency, the Nuclear Regulatory

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Commission, and the Departments of Defense, Health & Human Services (including National Institutes of Health), Energy, Education, Transportation, and Commerce—the agencies that control 98% of the approximately \$72 billion federal R&D budget—will discuss R&D opportunities at their agencies in seminars and one-on-one meetings. Also participating are representatives from more than 35 Fortune 500 companies such as Boeing, General Dynamics, Martin Marietta, Motorola, TRW, Honeywell, IBM, Hughes, Texas Instruments, United Technologies, and Teledyne who are seeking licenses, joint ventures, and other partnering with small companies having relevant technology.

Conferences will be held in Washington, DC, October 27-29, 1992; Phoenix, Arizona, November 17-19, 1992; and Minneapolis, Minnesota, April 27-29, 1993. An advance registration fee of \$125 covers all conference sessions and handout materials during the two-and-a-half-day program.

Registrations made at the door and less than fourteen days prior to the selected conference date will be \$140.

For more information, contact the Conference Coordinator at (407) 274-4005.

Minority Scholars Awarded Fellowships

Fellowships have been awarded to 100 minority scholars in two Ford Foundation programs, both administered by the National Research Council. In the Ford Foundation Predoctoral and Dissertation Fellowships Program, 55 predoctoral students and 20 doctoral dissertation candidates received awards. In the Ford Foundation Postdoctoral Fellowships for Minorities Program, fellowships also were awarded to 25 doctoral degree recipients. This year's fellows include 47 Black/African Americans, 28 Mexican Americans/Chicanos, 14 Puerto Ricans, five Native American Indians, and six Native Pacific Islanders.

Predocctoral Fellowships provide funds for stipends and tuition for three years of tenure. Dissertation Fellows receive a stipend for a nine- or 12-month tenure. The Predoctoral and Dissertation Fellowships Program seeks to increase the presence of underrepresented minorities on the nation's college and university faculties. The Ford Foundation Postdoctoral Fellowships Program identifies individuals of high ability and enables them to engage in postdoctoral research and scholarship in an environment free from the interference of their normal professional duties. In sponsoring these fellowship programs, the Ford Foundation endeavors to support scholars in achieving their full potential and in attaining greater recognition in their respective fields.

Plans for the 1993 fellowship competitions are now under way. Further information and application materials are available from the Fellowship Office, National Research Council, 2101 Constitution Ave., NW, Washington, DC 20418.

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MRS President Delivers Public Statement to PCAST Panel on Research Universities

The President's Council of Advisors on Science and Technology (PCAST) held a meeting July 24 at the National Academy of Sciences in Washington, DC, inviting leaders of higher education associations and professional science or engineering societies to voice their views concerning the problems and challenges facing universities in these changing times. This meeting

was one of a series of public meetings held around the United States to gather information for the PCAST Project on Research Intensive Universities and the Federal Government, a study to assess the relationship between research universities and the federal government. PCAST is a group of high-level private sector scientists and engineers who provide advice to the U.S. President on science and technology matters of national importance.

The principal speakers, primarily representing higher education associations and

universities, discussed issues ranging from escalating university costs, earmarked science projects, and merit-based review to ideas for fundamental reform of university structure in response to fiscal constraints, demographic shifts, and work force redirection.

A public comment segment followed the principal presentations. The first statement in this segment, and the only one given by a representative from a scientific society, was presented by MRS President G. Slade Cargill III. His statement follows.

What is the MRS?

Thank you for the opportunity to present this statement as president of the Materials Research Society, a rapidly growing organization of more than 10,000 scientists and engineers involved in research on advanced materials. With about 45% of our members being university faculty, research staff, and graduate students, we have a special interest in the nation's research universities. Further, with 30% of our members in industrial R&D and 20% in national labs, we are dedicated to maintaining a vital and productive relationship between universities, industries, and the federal government.

Importance of and Concerns for University Research

We see the goal of federal support for university research in science and engineering as being to provide a fundamental knowledge base for the nation's commercial and government activities, and to provide well-trained people to work in industry and government and to staff our colleges and universities. Achieving these goals is key to the economic well-being and industrial competitiveness of the United States. However, our leadership and effectiveness in university research and graduate education are threatened. Universities are suffering from a depressed U.S. economy and from shortfalls and uncertainties in federal funding. If universities are to achieve their potential as key contributors in the United States, we need improved federal support, and, as I will discuss, we need strategic university/industry/government partnerships and increased emphasis on interdisciplinary research.

Interdisciplinary Research

The MRS is unique among professional societies because of its focus on *interdisciplinary* research. Most of today's challenges and opportunities in developing,

improving, and exploiting materials require knowledge, talents, and activities which are not confined to a single technical discipline. We believe that this is also true for many other areas of science and technology. The organization of both universities and federal funding agencies should be structured to encourage research which naturally bridges the boundaries of traditional disciplines.

University/Industry/Government Partnerships

We in universities, industry, and government must together do a better job of determining what areas of university research are most likely to benefit technology, and we must do a better job of conveying information from university research to potential users in industry and government. A new paradigm is needed for strategic university/industry/government partnerships. Joint programs are needed in areas of national importance, with a central role for government laboratories. The MRS and other professional societies can provide forums for discussions among these groups and can act as brokers for collaborations among them.

Funding for University Researchers

Universities in the United States have large numbers of talented faculty members who want to teach and carry out research, and this community can have a significant, positive impact in science and technology. However, even with good ideas, good students, good facilities, and good support, this is possible only if securing support does not become an all-consuming activity. The efficiency of the funding process must be improved to reduce the burden on university researchers while maintaining good peer-review participation. Increased competition without growth in available funding has led to disappointment and disillusionment and to lost opportunities. Available resources should be used to adequately support the best, most creative, and most productive individuals and groups,

with due attention to geographic distribution. We believe that the nation can benefit from additional resources being devoted to this important task.

Funding Modes and Collaboration

A wide spectrum of funding modes is needed. In some areas, a single investigator with one or two students can achieve fundamental breakthroughs, but this is much less likely as research becomes more sophisticated and requires access to a variety of expensive equipment. Collaboration is becoming ever more important and should be encouraged by multi-investigator grants. Funding for local, regional, and national research centers is also important in order to provide central experimental facilities.

Infrastructure

Lack of funds for capital investment is a critical problem. Most universities cannot afford to renovate existing laboratory space or to build new laboratories. Federal funding for such construction projects has been very limited in recent years and has come from case-by-case congressional actions. We believe that this should be reversed. Capital investments by the federal government for support of university research are very important, and allocation decisions should be made competitively, with peer review and full evaluation of the needs and potentials of all candidates for such support.

Summary Conclusions

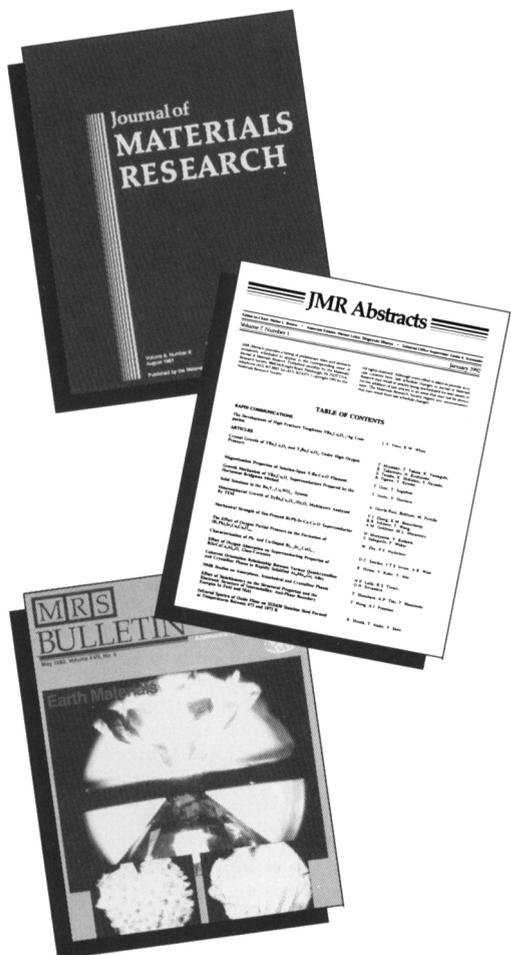
In conclusion, university research and graduate education in science and engineering are critical to our economic well-being and industrial competitiveness. Increased emphasis on interdisciplinary research, establishment of a system of strategic university/industry/government partnerships, and improved federal support are all needed if universities are to achieve their potential as key contributors in the United States.

The PCAST Project on Research Intensive Universities and the Federal Government is chaired by David Packard, co-founder of Hewlett-Packard, and Harold Shapiro, president of Princeton University. The study was initiated in May and is scheduled for completion by the end of this year. To receive the report on the project, contact Ms. Alicia Tenuta, Office of Science and Technology Policy, 744 Jackson Place NW, Washington, DC 20506 at (202)395-4692, fax (202)395-5078.

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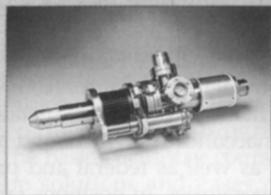
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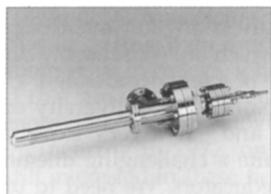
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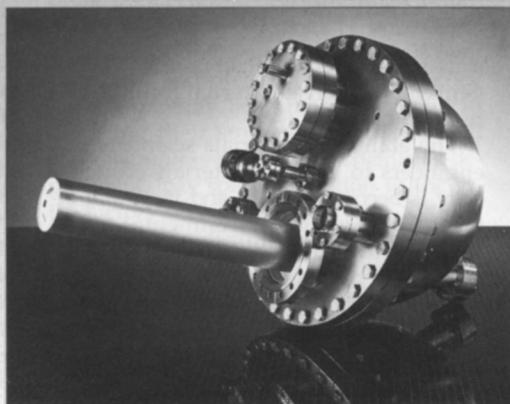


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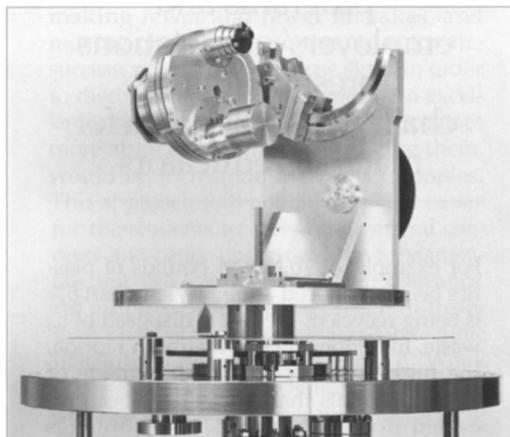


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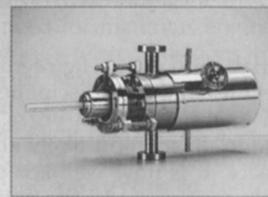
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