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Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files

OA/ID Number: 62010
Folder ID Number: 62010-006

Folder Title:
Invitations: General (4) [6 of 12] [1991]

Stack:

Row:

Section:

Shelf:

Position:

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"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120870

SPEECH: YES NO

FROM: CONSUMER ALERT, The Board of Director of

DATE OF EVENT: 04/15/91

LOCATION OF EVENT: RUSSELL SENATE OFFICE BLDG, ROOM 385

TIME OF EVENT: 06:30PM

SUBJECT: INVITATION TO ATTEND A RECEPTION AND PRESENTATION OF
THE CONSUMERS FIRST AWARD TO THE HONORABLE DICK
ARMEY AND THE HONORABLE CHRIS COX

P-invite
(Remarks)

RSVP:

CONTACT PERSON:

CONTACT NUMBER: 202/296-1148

INVITATION ACCEPTED?

~~YES~~ NO

COPIES TO:

You already have a commitment:
the AAU dinner/reception....

REMARKS: 3/27/91- Regretted!
h n

Marian

See them
- have commit

DATE OF LETTER: 3/25

DATE

FILE: INVITATION

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INVITATION ACCEPTED?

~~YES~~ NO

COPIES TO:

REMARKS: 3/27/91 - Regretted!
h n

DATE OF LETTER:

DATE RECEIVED: 03/25/91

FILE: P- INVITATION



*The Board of Directors of CONSUMER ALERT
invites you to attend
a reception and presentation of its*

CONSUMERS FIRST AWARD

to

Honorable Dick Armey

and

Honorable Chris Cox

Members of U.S. House of Representatives

in the

Russell Senate Office Building, Room 385

6:30 - 8:30 PM

Monday evening, April 15th 1991

R.S.V.P. by Thursday April 11th

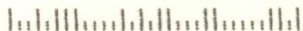
202 296-1148 or (209)524-1738



1024 J STREET, SUITE 425
MODESTO, CA 95354



00673
D. ALLAN BROMLEY
SCIENCE ADVISOR
THE WHITE HOUSE
WASHINGTON DC 20500



RECEIVED

91 MAR 25 P 5: 12

OFFICE
DIRECTOR

9120216

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120861

SPEECH: YES NO

FROM: BASIC BOOK AND NEW REPUBLIC BOOKS

DATE OF EVENT: 04/25/91

LOCATION OF EVENT: THE GALLERY HOUSE, 2022 R STREET, NW

TIME OF EVENT: 05:30PM

SUBJECT: INVITATION TO A RECEPTION IN HONOR OF ROBERT GALLO
TO CELEBRATE THE PUBLICATION OF "VIRUS HUNTING".

RSVP:

CONTACT PERSON:

CONTACT NUMBER: 202/223-2922

INVITATION ACCEPTED?

YES

NO

COPIES TO: Life Sciences

REMARKS: 3/26/91 - Regretted!

DATE OF LETTER:

DATE RECEIVED: 03/25/91

FILE: P INVITATION

Basic Books and New Republic Books

cordially invite you to a
reception
in honor of

ROBERT GALLO, M.D.

to celebrate the publication of
VIRUS HUNTING

AIDS, Cancer, and the Human Retrovirus
A Story of Scientific Discovery

Thursday, April 25, 1991
5:30 - 7:30 P.M.

The Gallery House
the home of

Dr. Ann Rose and Dr. Lowell Harmison
2022 R Street, N.W.
Washington, D.C.

R.S.V.P. by April 18
(202) 223-2922



Mr. D. Allan Bromley
Assistant to the President for Science
& Technology
Old Executive Office Building, Rm. 358
17th St. & Pennsylvania Ave, N.W.
Washington, D.C. 20506

91208261

RECEIVED

91 MAY 25 P 5 : 11

OFFICE OF THE
DIRECTOR

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120863

SPEECH: YES NO

FROM: AMERICAN BUSINESS CONFERENCE

DATE OF EVENT: 04/09/91

LOCATION OF EVENT: COMMERCE DEPARTMENT AUDITORIUM, MAIN ENTERANCE, 14

TIME OF EVENT: 02:00PM

SUBJECT: INVITATION TO ATTEND A SPECIAL ADDRESS BY THE
PRESIDENT OF THE U.S. FOLLOWED BY THE SYMPOSIUM ON
"CHARTING ECONOMIC GROWTH: POLICY MAKING IN THE
1990'S"

RSVP: 04/02/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

COPIES TO: Thomas Ratchford

REMARKS:

DATE OF LETTER:

DATE RECEIVED: 03/25/91

FILE: P. INVITATION



In Celebration of the 10th Anniversary of the American Business Conference

we invite you to attend
a Special Address by

THE PRESIDENT OF THE UNITED STATES

followed by a symposium on

CHARTING ECONOMIC GROWTH:
POLICY MAKING IN THE 1990s

with:

Martin Feldstein

President, National Bureau of Economic Research

James R. Jones

Chairman, American Business Conference

*Distinguished members of
Congress*

Moderator: Andrea Mitchell, NBC News

Tuesday, April 9, 1991

2:00 pm. Arrive by 12:45 pm for security clearance.

Commerce Department Auditorium

Main Entrance, 14th Street, NW

Washington, DC

Reply with enclosed card by April 2.

Please bring identification with

photograph and invitation for security clearance.

American Business Conference
10th Anniversary Symposium
Tuesday, April 9, 1991
2:00 pm, 12:45 pm Arrival
Commerce Department Auditorium

I ☒ will ☐ will not attend the April 9 symposium.

Full Name The Honorable D. Allan Bromley

Company Assistant to the President for Science & Technology

If attending, the following must be completed in full for admission.

Address Old Executive Office Building
17th St. & Pennsylvania Ave., N.W.
Phone 202/456-7116

Social Security Number 084-28-5959

Date of Birth 5/4/26

Reply by mail or by FAX (202)467-4070 by April 2.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120838

SPEECH: YES NO

FROM: TOLL, John S.: UNIVERSITIES RESEARCH ASSOCIATION,
INC.

DATE OF EVENT:

LOCATION OF EVENT: ILLINOIS OR WAXAHACHIE, TEXAS

TIME OF EVENT:

SUBJECT: INVITATION OF VISIT FERMILAB WHERE THEY OPERATE THE
TEVATRON, THE WORLD'S HIGHEST ENERGY ACCELERATOR AND
COLLIDER.

RSVP: 04/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED? YES NO

COPIES TO: Dr. Wong

REMARKS:

DATE OF LETTER: 03/18/91

DATE RECEIVED: 03/22/91

FILE: P - INVITATION

9/20838

UNIVERSITIES RESEARCH ASSOCIATION, INC.

1111 19th Street, N.W. Suite 400 Washington, D.C. 20036
(202) 293-1382

March 18, 1991

91 MAR 22 A 9:52

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology Policy
Office of Science and Technology Policy
OEOB 17th Street & Pennsylvania Avenue, N.W.
Room 360
Washington, D.C. 20506

OFFICE OF THE
DIRECTOR

Dear *Allan* ~~Dr.~~ Bromley:

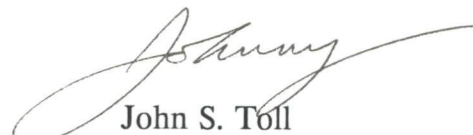
Enclosed is the 1990 Annual Report of Universities Research Association, Inc., contractor to the Department of Energy for Fermilab and the Superconducting Super Collider (SSC). The year was one of special importance to URA, when DOE's priority-setting procedures accorded first rank in high energy physics to initiatives at both laboratories: construction of the SSC was designated the most important project for the future of high energy physics, and the Main Injector at Fermilab was determined to be the most important project for high energy research during the period preceding operation of the SSC.

We invite you to visit Fermilab in Illinois, where we operate the Tevatron, the world's highest energy accelerator and collider. Or come to Waxahachie, Texas, around which we will build the SSC with twenty times the energy of the Tevatron, thereby magnifying twenty-fold our ability to examine the fundamental particles and forces of nature, with consequent tremendous potential for important discoveries. Universities and industries throughout the nation are involved in this coordinated program to understand elementary particles and interactions; the work draws on the best scientists and engineers and stimulates research and education in many fields. Previous work at URA facilities has already led to important advances in technology from medical instrumentation and computers to superconducting magnets.

Leadership in high energy physics is a mainstay of the United States' role in world science. As an association of seventy-eight major universities, URA will continue to assemble the talent it takes to keep that leadership position in the most dynamic and effective manner possible. The contributions of our universities, the URA boards, and the laboratory advisory committees have ushered in a new era of research management -- bringing global expertise to bear on the nation's premier science facilities.

Please let me know if you have any questions or if you would like additional material on URA, Fermilab or the SSC.

Sincerely,


John S. Toll
President

Enclosure

THE WHITE HOUSE

WASHINGTON

June 4, 1991

Dear Johnny:

Thank you for your letter of March 18, 1991, inviting me to visit Fermilab. I apologize for the much belated response.

I would very much like to visit the lab and especially to observe the Tevatron and, of course, am equally interested in visiting the SSC facilities. However, at the present time, I am unable to set a specific date. I will keep your kind invitation in mind and contact you when I am free to accept your invitation.

I appreciate your thinking of me. With warmest best wishes,

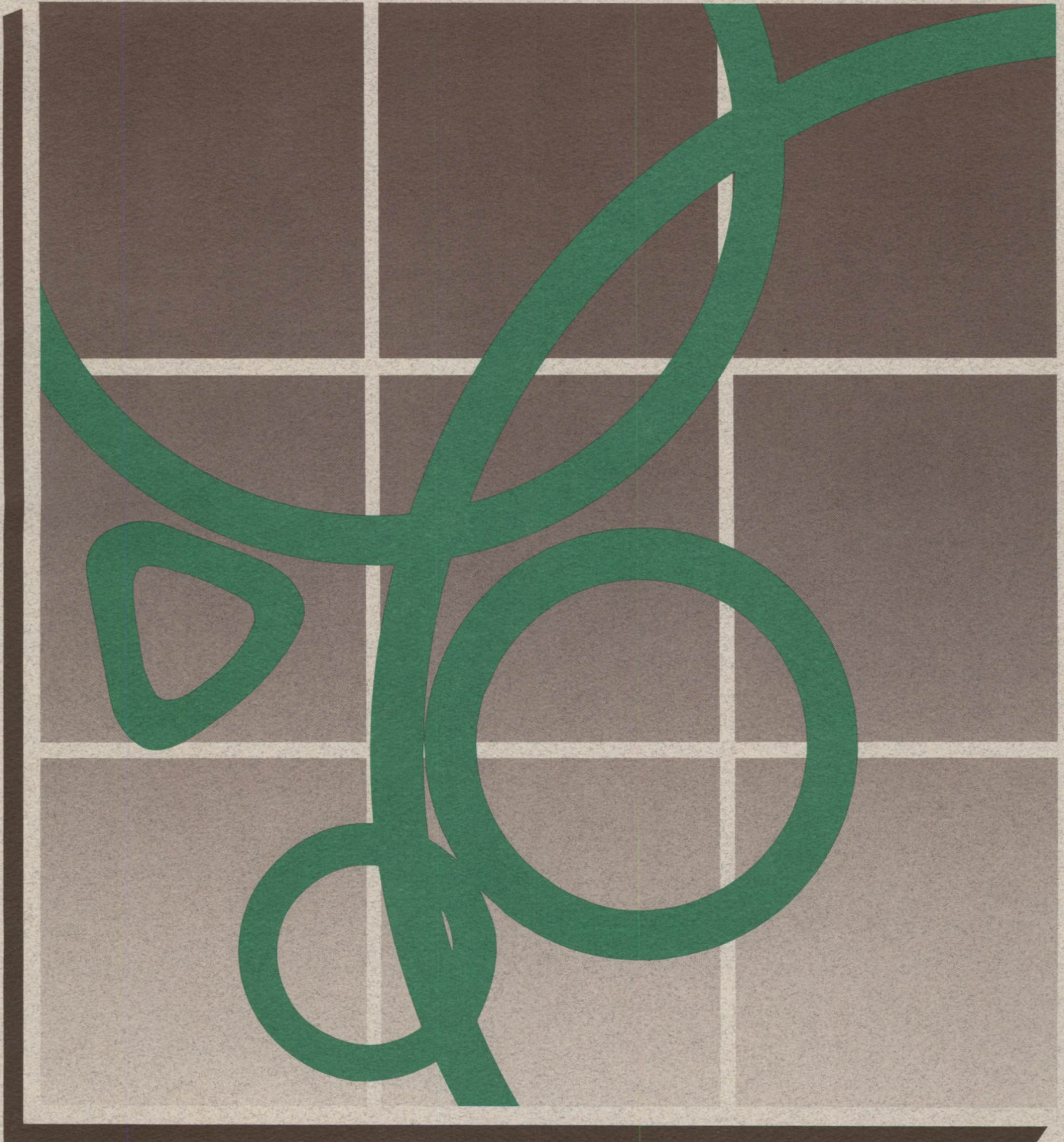
Sincerely yours,

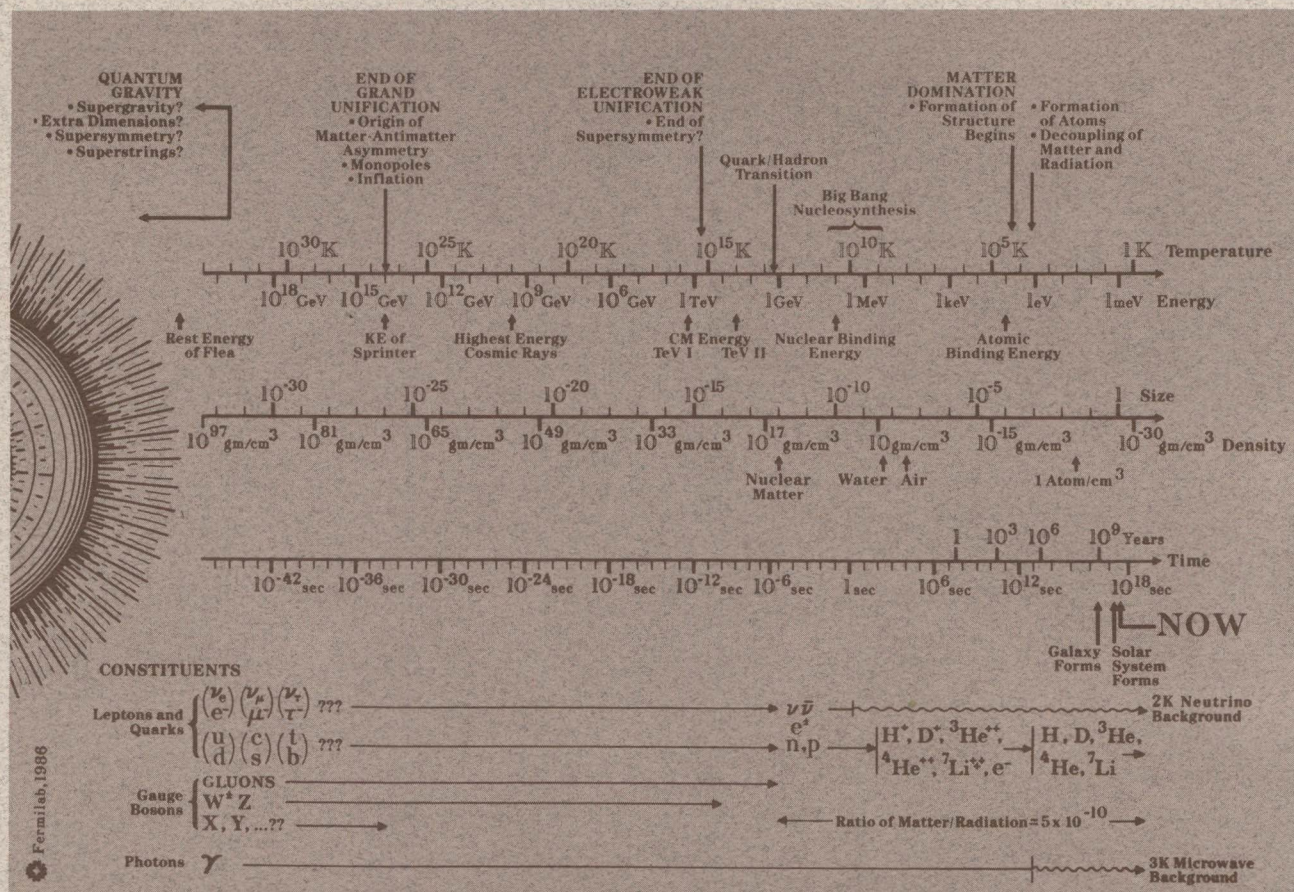


D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. John S. Toll
President
Universities Research Association, Inc.
1111 19th Street, Northwest
Suite 400
Washington, D.C. 20036

Universities
Research
Association, Inc.
Annual Report
1990





Particle colliders like the Tevatron and the SSC are designed to recreate conditions that occurred previously only during the Big Bang origins of the universe.

Universities Research Association, Inc.
 1111 19th Street, N.W. - Suite 400
 Washington, D.C. 20036
 (202) 293-1382

During 1990, programs of the two national laboratories operated by Universities Research Association were given the *highest* priority in U.S. high energy physics by major national review panels. We received mandates that will guide URA's efforts for the next few decades, during which time the laboratories have the greatest opportunity in the world for important discoveries of the fundamental particles and forces in nature.

In 1990, the baseline plan for the Superconducting Super Collider (SSC) and its schedule and cost estimate were accepted by the U.S. Department of Energy (DOE) after intensive reviews: In January, a distinguished scientific panel, chaired by Professor Sidney Drell and including five Nobel laureates, strongly recommended proceeding with the laboratory's plan for the SSC. The panel's scientific recommendation was endorsed by the High Energy Physics Advisory Panel (HEPAP) and then accepted by the DOE and the White House. In the next phase, three review teams analyzed the SSC Laboratory's cost estimates in great detail, culminating in DOE approval.

Similarly, 1990 was an important year of decision for Fermilab. An expert panel chaired by Professor Frank Sciulli held nationwide hearings to determine priorities for U.S. high energy physics in the decade preceding operation of the SSC. The Sciulli panel reported that the top priority is the "immediate commencement and speedy completion of construction of the Tevatron Main Injector at Fermilab," even in the case of a "constant budget" adjusted only for inflation. Because of the main injector's central importance for discovery of the top quark and other fundamental investigations, this recommendation was strongly supported by HEPAP and the DOE.

The assignment of top priority to the construction of both the SSC and Fermilab's main injector would normally assure expeditious and

Message from the President



John S. Toll
URA President

"The URA laboratories have embarked on the most exciting voyage of discovery of our time, seeking to understand the basic interactions of nature at higher energies and at shorter distances than have ever been explored before."

thorough public support. In these times of stringent budget limits, however, both must be actively defended.

In that context, we can report impressive achievements in 1990 at URA's laboratories. URA continued to receive overall annual ratings of "excellent" in its management of Fermilab. We began the year with the SSC Laboratory management still in the process of formation; by the end of the year, its management structure had been completed. The positions of general manager and

project manager as well as all associate directorships are now filled. The SSCL's excellent leadership team includes strong administrators with top project-management experience in government and industry and/or high energy physics.

Planning for the SSC experimental program got underway with active detector R&D, including funding for further development of proposals for two large, general-purpose detectors.

This report describes further details of the exciting scientific results from Fermilab and of the transition from planning to building the SSC. We are particularly pleased with the participation of outstanding scientists from nations around the world in the programs of both laboratories. The next two years will involve further negotiations to encourage foreign governments to contribute substantially to the SSC and its detectors.

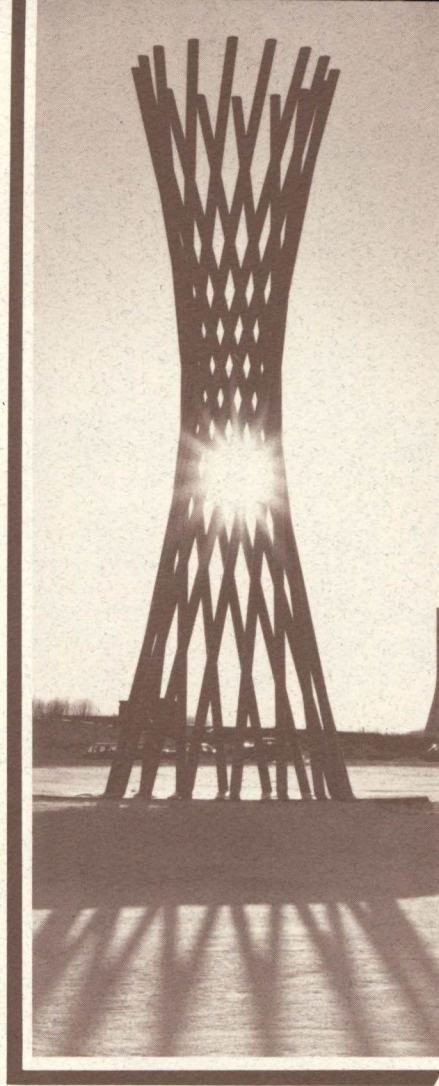
We also welcomed five new URA member universities in 1990: the University of Oregon, University of South Carolina, University of Texas at Dallas, Texas Tech University, and University of North Texas. Total membership is now 77, with further growth expected as additional universities qualify for membership.

The URA laboratories have embarked on the most exciting voyage of discovery of our time, seeking to understand the basic interactions of nature at higher energies and at shorter distances than have ever been explored before. Although some likely discoveries can be forecast, such as the top quark and the Higgs boson, the most important results probably cannot be anticipated. We also cannot specify the many useful applications that future generations will make of these results, but we are confident that they will occur.

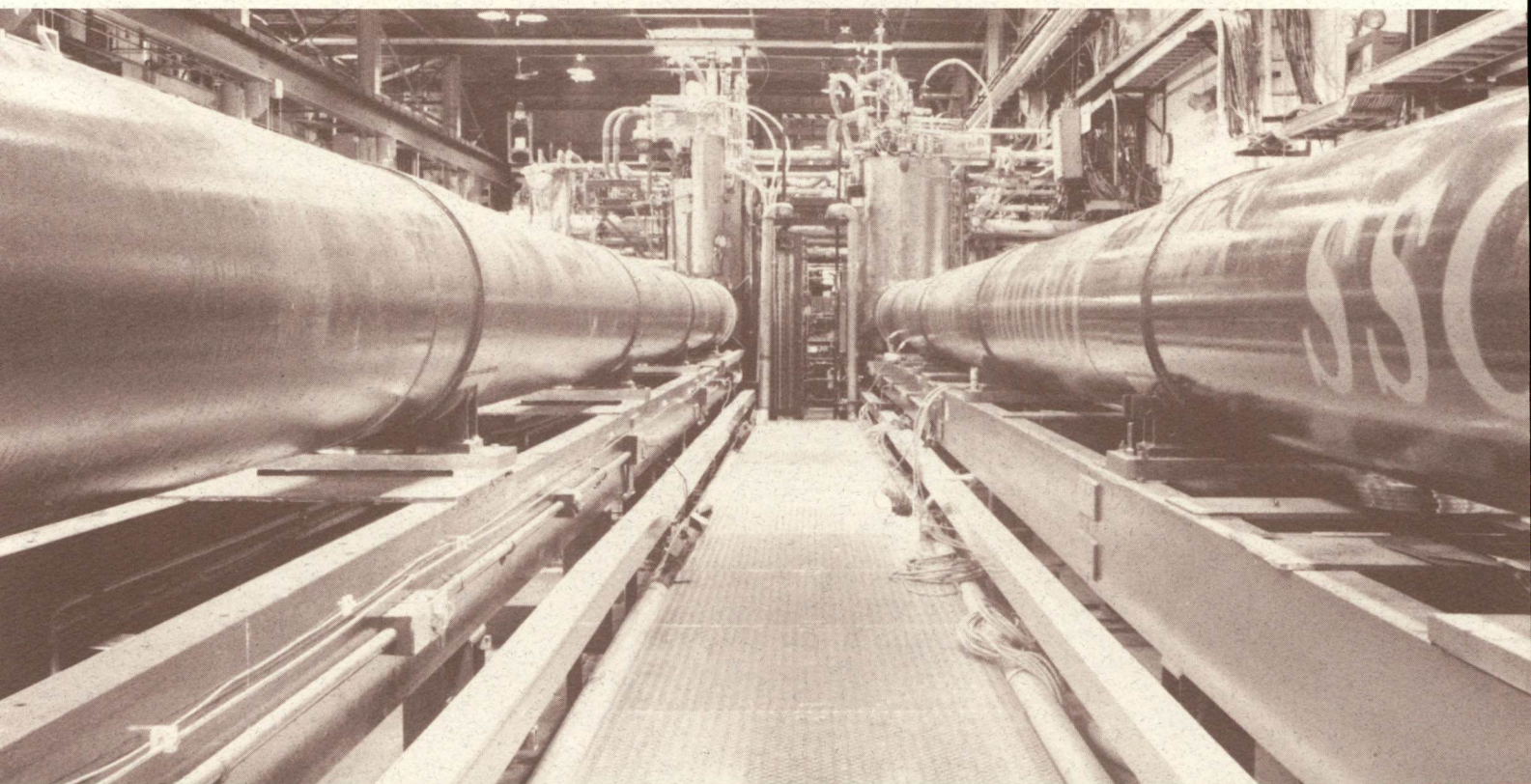
A stylized, handwritten signature of John S. Toll in dark ink.

John S. Toll
President

Tractricious (right), a sculpture designed by founding laboratory director Robert Wilson, and built with scraps from construction of the Tevatron, stands in front of the Industrial Center building at Fermilab. As the laboratory and its facilities evolve, architectural harmony is maintained with Wilson's continuing guidance. Fermilab, officially the Fermi National Accelerator Laboratory, was the first project of the newly incorporated Universities Research Association, Inc. When ground was broken for Fermilab in 1968, URA's membership had grown to 46 universities.



Fully instrumented test stands (below) for the SSC dipole magnets were designed and built at Fermilab, capitalizing on the Tevatron's technology and the expertise of laboratory scientists and engineers. Most of the SSC's superconducting magnets will be mass produced by industry in a new form of scientific-industrial partnership designed to accommodate the scale of the Super Collider and to provide design continuity and performance. By the time negotiations began in 1990 for the first industrial contract for dipole magnets, 77 universities in the United States and Canada had become members of URA.



Alabama
University of Alabama - Tuscaloosa

Arizona
Arizona State University
University of Arizona

California
California Institute of Technology
University of California - Berkeley
University of California - Irvine
University of California - Los Angeles
University of California - San Diego
San Francisco State University*
Stanford University

Colorado
University of Colorado - Boulder

Connecticut
Yale University

Florida
Florida State University

Hawaii
University of Hawaii - Manoa

Illinois
University of Chicago
University of Illinois - Urbana
Northern Illinois University*
Northwestern University

Indiana
Indiana University
University of Notre Dame
Purdue University

Iowa
University of Iowa
Iowa State University

Louisiana
Louisiana State University
Tulane University

Maryland
Johns Hopkins University
University of Maryland

Minnesota
University of Minnesota

Missouri
Washington University

Massachusetts
Boston University
Harvard University
University of Massachusetts
Massachusetts Institute of Technology
Northeastern University
Tufts University

Michigan
University of Michigan
Michigan State University

New Jersey
Princeton University
Rutgers University

New York
Columbia University
Cornell University
University of Rochester
Rockefeller University
State University of New York - Buffalo
State University of New York - Stony Brook
Syracuse University

North Carolina
Duke University
University of North Carolina

Ohio
Case Western Reserve University
Ohio State University

Oklahoma
University of Oklahoma

Oregon
University of Oregon

Pennsylvania
Carnegie Mellon University
University of Pennsylvania
Pennsylvania State University
University of Pittsburgh

Rhode Island
Brown University

South Carolina
University of South Carolina

Tennessee
University of Tennessee - Knoxville
Vanderbilt University

Texas
University of Houston
University of North Texas
Prairie View A&M University*
Rice University
Texas A&M University
Texas Tech University
University of Texas - Arlington
University of Texas - Austin
University of Texas - Dallas

Utah
University of Utah

Virginia
Virginia Polytechnic Institute
University of Virginia
College of William and Mary

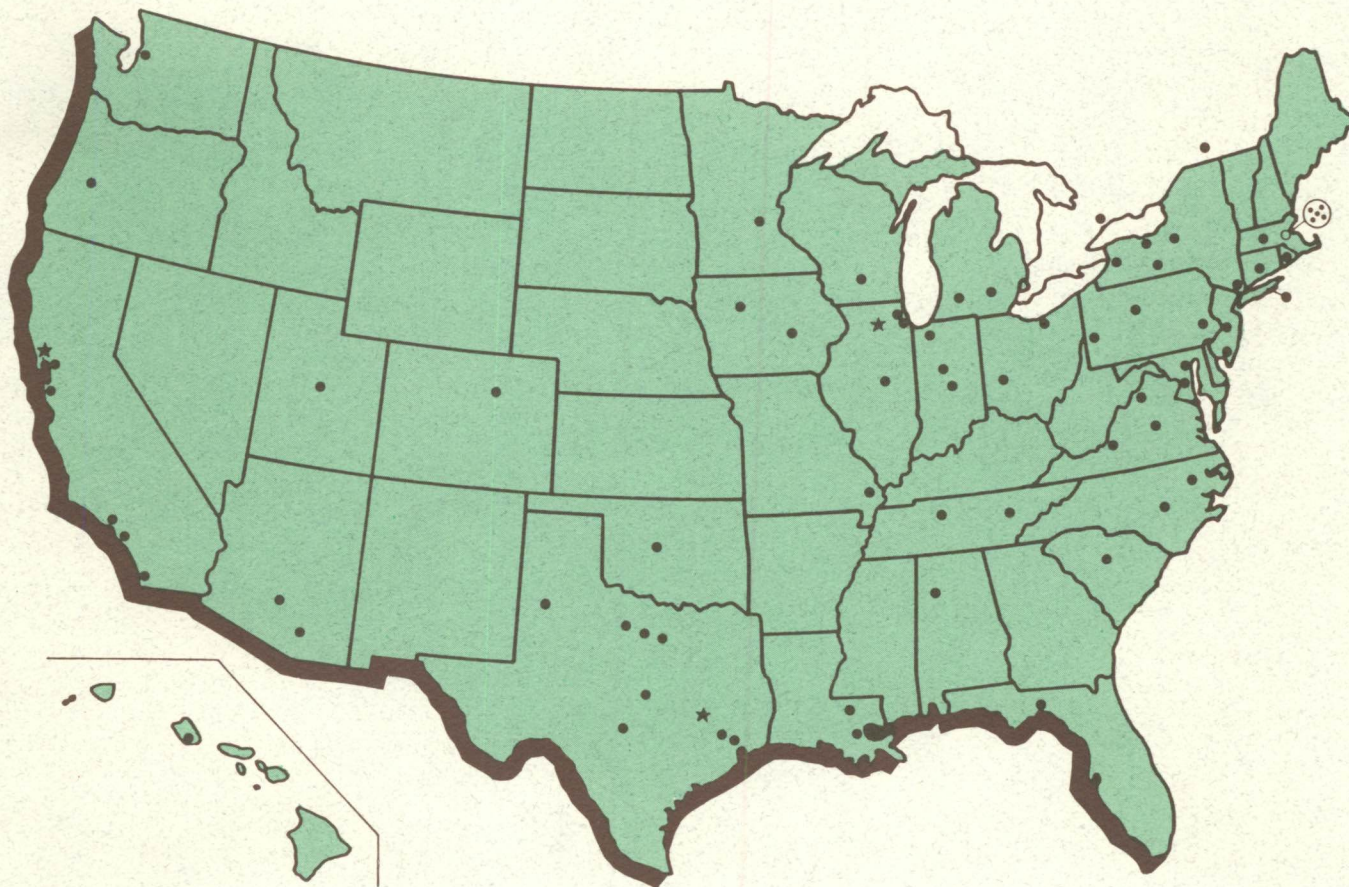
Washington
University of Washington

Wisconsin
University of Wisconsin, Madison

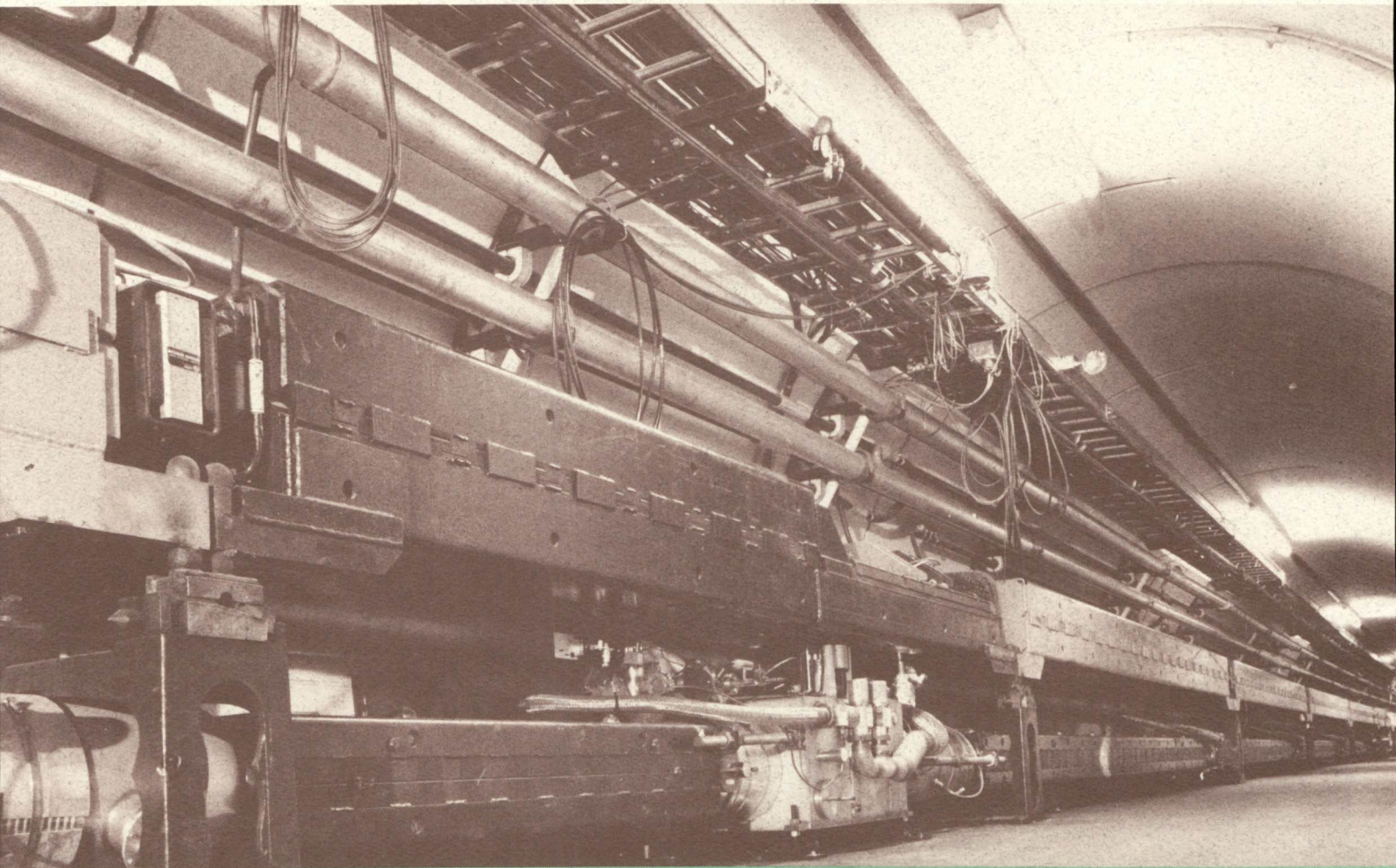
Canada
McGill University
University of Toronto

*Denotes an associate member institution

*Members of Universities
Research Association, Inc.,
contractor to the U.S.
Department of Energy for the
Fermi National Accelerator
Laboratory and the Super-
conducting Super Collider
Laboratory.*



URA: An International Consortium for Research



The Tevatron, world's first superconducting particle accelerator. In collider mode, rings of superconducting magnets focus and steer beams of protons and antiprotons into collisions at energies of nearly two trillion electron volts. The use of superconducting magnets for particle accelerators was pioneered by Fermilab physicists, four of whom were awarded the National Medal of Technology for their role in developing the Tevatron. Superconducting magnets will be the principal technology of the SSC, which will accelerate proton beams to roughly twenty times the energy of the Tevatron, allowing deeper probes into the nature of matter.

Universities Research Association (URA), Inc., a non-profit corporation founded in 1965, consists of 77 major research-oriented universities in the United States and Canada. Institutions with full membership have graduate study programs in science and are active in particle physics. Associate members have an interest or program in particle physics and hope to achieve full membership in the future.

Fermilab

Since January 1967, URA has been contractor to the Department of Energy (DOE) and its predecessor agencies for the design, construction, management, and operation of the first nationally managed accelerator facility for high energy physics, now known as the Fermi National Accelerator Laboratory (Fermilab) in Batavia, Illinois. The Tevatron at Fermilab, the world's first superconducting particle accelerator, is the highest energy instrument for physics research in the world.

The SSC Laboratory

Since January 1989, URA has been contractor to DOE for the design, construction, management, and operation of the Superconducting Super Collider (SSC) Laboratory. The SSC will be the largest and most energetic particle accelerator in the world when it is scheduled to begin operation at the end of the decade. Initial SSC activities were conducted by a separate URA subsidiary, the Central Design Group at Lawrence Berkeley Laboratory in California. After a Texas site in Ellis County was chosen, the center of SSC-related work transferred to Dallas-area offices.

The Research: Particle Physics and High Energy Accelerators

The URA corporation is eligible to submit management proposals to the federal government for facilities outside high energy physics, also known as elementary particle physics. Currently, Fermilab and the SSCL are the core of URA's mission.

Elementary particle physics involves the subatomic particles that make up matter and the forces that act on them. The particles are studied by accelerating them to very high energies and directing them either at a fixed target or, in a collider, at an opposing beam of particles. Computer-controlled electronic detectors record the patterns produced, providing experimental data for research.

Accelerators represent a radical leap from the origins of particle physics, when cosmic rays could be studied only as they occurred in nature. The advent of accelerator technology made possible re-creating on earth, energies at the level of cosmic rays.

Within the larger scientific community, particle physics shares investigations with nuclear, atomic, molecular, and optical physics. This branch also shares interests with condensed matter physics and with mathematics at basic theoretical levels. As shown at Fermilab, particle physics also has growing links with astrophysics and cosmology.

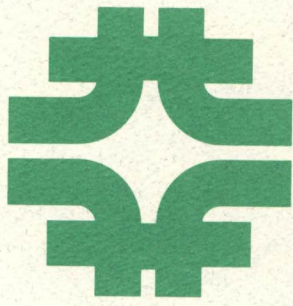
Scope, Scale, and Technology Transfer: A Quarter Century of URA Milestones

The incorporation of the URA consortium in 1965 represented a milestone in particle physics. For the first several decades of development,

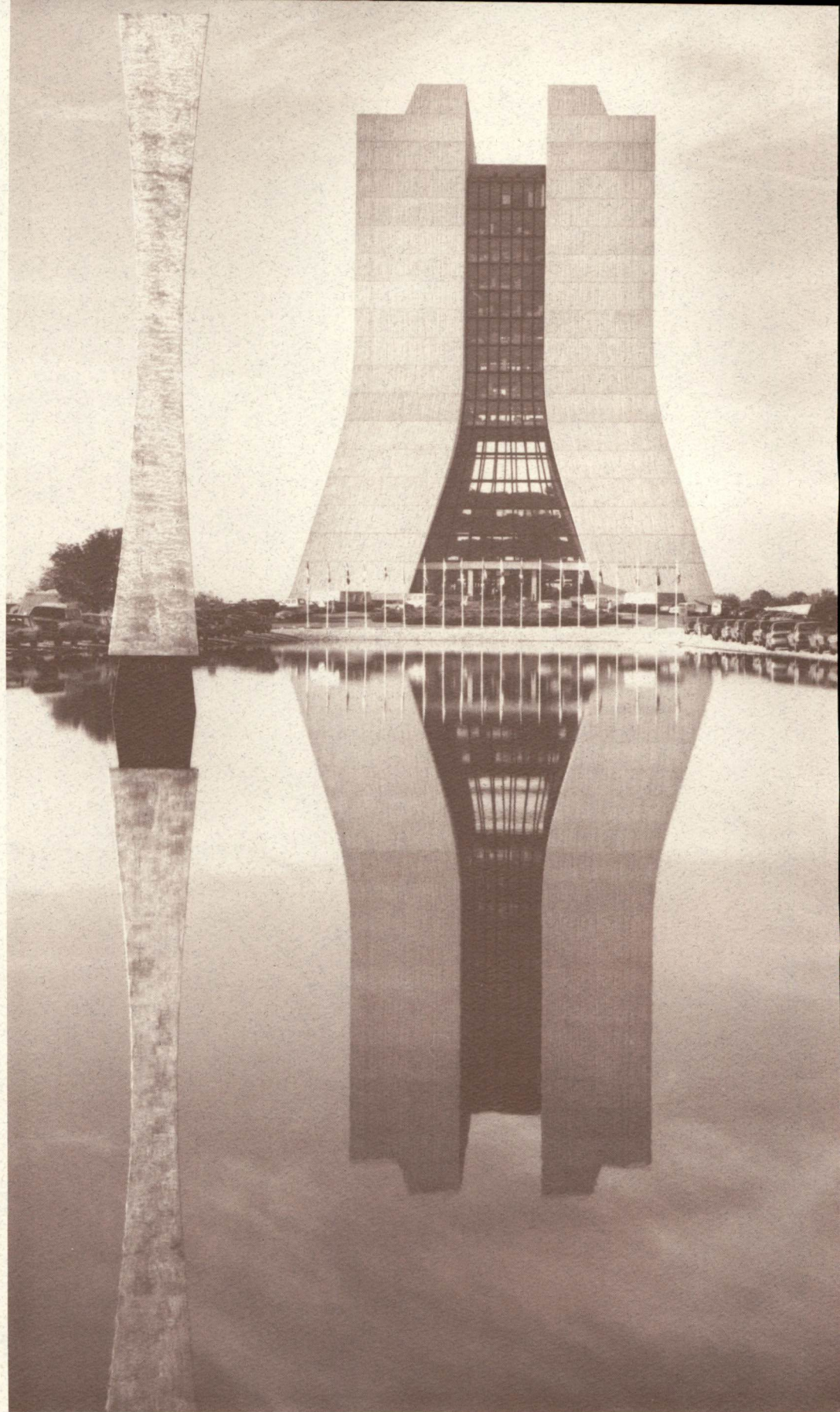
accelerator technology had been on a scale appropriate to individual universities and laboratories. With the success in the early 1950s of accelerators based on the alternate gradient focusing principle, it became apparent that an accelerator of much higher energy was technically feasible and scientifically desirable.

In 1962, a committee chaired by Professor Norman F. Ramsey of Harvard University, under the joint sponsorship of the President's Science Advisory Committee and the General Advisory Committee of the Atomic Energy Commission (AEC), issued a report recommending construction of a 200 giga-electron-volt (GeV) synchrotron. In the belief that a national organization was needed to construct and operate the accelerator, the president of the National Academy of Sciences called together the presidents of U.S. universities engaged in particle physics research. As a result of that initiative, 25 universities agreed to form an organization for that purpose, and in June 1965 the Universities Research Association was incorporated.

Another milestone, representing yet another new era of particle physics, was reached in December 1990 when URA's management-and-operating contracts for Fermilab and the SSC Laboratory were modified to implement provisions of the Technology Transfer Act of 1989 (Public Law 100-189). With these modifications, the laboratory directors may enter into formal cooperative research and development agreements with the private sector, thereby expanding opportunities for technology transfer. This move will advance the well-established program of the Fermilab Industrial Affiliates and the dynamic industrial program of the SSCL—and the competitive position of the United States.



Fermilab



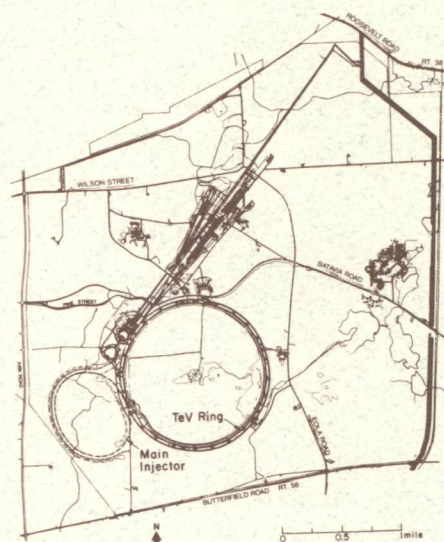
Robert Rathbun Wilson Hall at Fermilab. The 16-story building houses research laboratories and the administrative headquarters of the laboratory.

The AEC received 125 site proposals for the first national accelerator laboratory in the United States. The winning proposal from Illinois, selected in 1966, was for a location about 30 miles southwest of Chicago. The headquarters are in Wilson Hall, designed by the laboratory's first director, Robert Rathbun Wilson. Groundbreaking was in 1968, and in 1974 the laboratory was dedicated to the memory of physicist Enrico Fermi.

Fermilab now has about 2,300 full-time employees, including over 400 scientists and engineers. Approximately 3,500 visiting experimenters have conducted research at Fermilab and about 150 institutions—roughly half from the United States and half from abroad—are represented in the research program.

In related research, working with a grant from the National Aeronautics and Space Administration, Fermilab has established an astrophysics group—now recognized as a major center linking particle physics with astrophysics and cosmology. In November 1990, Fermilab announced that it will provide computing capability for a ten-year project to map the universe, requiring storage and analysis of ten

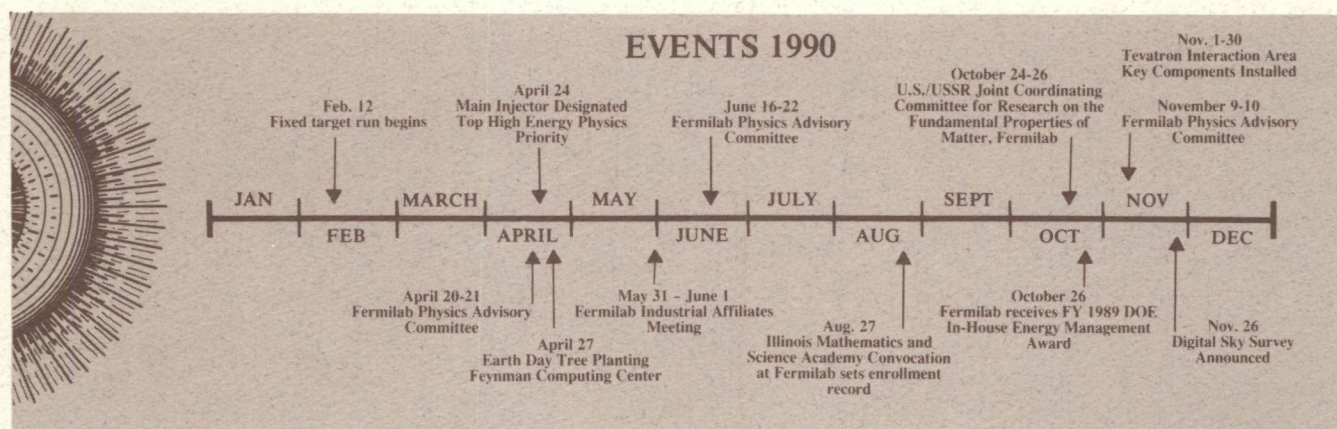
million megabytes of information. Scientists from the University of Chicago, the Institute for Advanced Study, and Princeton University will conduct this digital sky survey using a wide-angle telescope, a digital camera, and a robot-controlled spectrograph, reducing the time needed for the survey from 100 to ten years.



*John Peoples, Jr.
Fermilab Director*

Laboratory Director

In 1989, Dr. John Peoples, Jr. became Fermilab's third director. Dr. Peoples' history at Fermilab began with a collaboration in the early 1970s as an associate professor of physics at Cornell, a position he resigned in 1973 to join the laboratory. He served as head of the Proton Laboratory, head of the Research Division, and project manager of the Antiproton Source, which established the capability for making head-on collisions of protons and antiprotons. He also took a one-year leave to serve with the SSC Central Design Group in Berkeley as head of the Magnet Division, returning to Fermilab as deputy director. Dr. Peoples began his term as director on July 1, 1989.



Laboratory Leadership in Design and Performance

The Fermilab system of accelerators includes a four-mile main ring in which magnets curve the paths of particle beams. The circular structure achieves economies by using the same components repeatedly to accelerate and manipulate the beam.

Since the first facilities were built at Fermilab, several upgrades have enhanced the laboratory's capacity. The prime example is the world's first superconducting accelerator, originally known as the Energy Saver and now called the Tevatron. This machine can accelerate protons to higher energies with the magnets' superconducting properties reducing power requirements. The Tevatron accelerator, with a beam of approximately one trillion electron volts, or TeV (hence the name Tevatron), operated initially in 1983. The 1989 National Medal of Technology was awarded to the leaders of its design and construction: Helen Edwards, Richard Lundy, J. Richie Orr, and Alvin Tollestrup.

The next major upgrades enabled the transition to a collider-capable facility, which can create and accelerate antiprotons as well as protons at trillion-electron-volt energies. The first proton-antiproton collisions were achieved in 1985, and within two years Fermilab initiated the associated physics program. The Tevatron is also operated for fixed-target experiments.

The initial detector for events in the Tevatron in its collider mode is the Collider Detector at Fermilab (CDF). The experimental group that designed, built, and now uses it has more than 250 physicists from 18 U.S. universities, four national laboratories, three Italian

institutions, and two Japanese institutions. In 1990, the collaboration reported a new and more precise mass for the W boson. This result significantly advanced the search for the predicted top quark, which the Standard Model relates to the difference in mass between the Z and W bosons. In addition to CDF papers further defining the interactions of quarks at very high energy, a notable series of measurements was reported on the bottom quark. CDF's work also suggests the possible extension of measurements to basic symmetries implied by the Standard Model. CDF results in 1990 further confirmed Fermilab's central role at the forefront of world physics.

Installation and test activities are under way on a second major collider detector, D0 ("D-Zero"), scheduled to come on line in late 1991. The collaboration includes approximately 230 physicists from 29 institutions in the United States, France, Soviet Union, India, and Brazil. The D-Zero project made great strides in 1990. All of the detection elements needed for the experiment were completed. By year's end, the tracking detectors were completely installed, the large central calorimeter was in place and most of the muon detectors had been brought on-line. In addition, all detectors and the data-acquisition electronics were tested successfully in beams and with cosmic rays.

Fermilab III

To maintain its central role in world physics research through the 1990s and beyond, Fermilab has embarked on Fermilab III, a series of upgrades designed to realize the full potential of the Tevatron and to make significant advances in physics. The first construction project, to be completed in fiscal year 1992, will upgrade the Linear Accelerator.

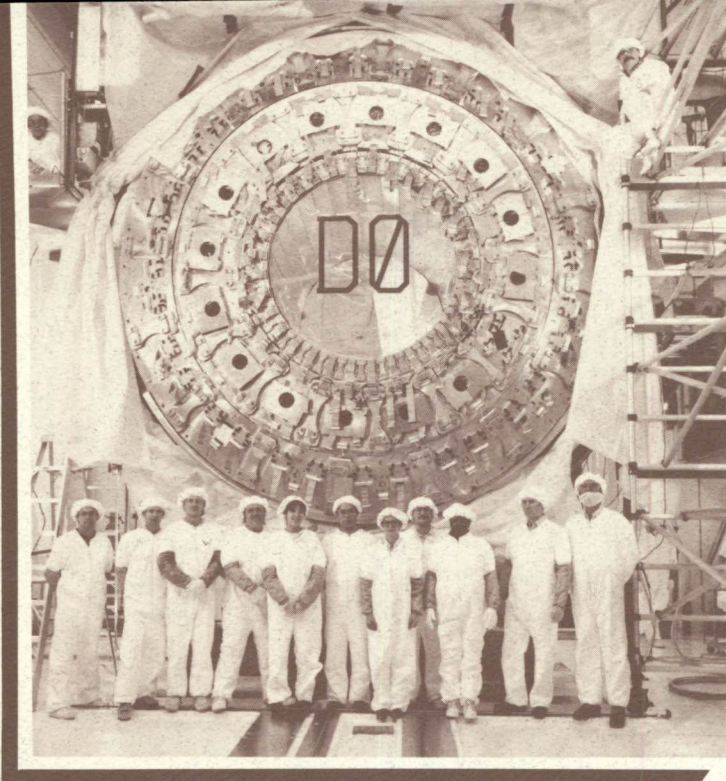
Designs are complete for the final construction project, a new Main Injector. If approved by the Department of Energy, it should allow Fermilab to observe the long-sought Top quark and would also provide scientific and technological steppingstones to the SSC.

The Industrial Affiliates and Technology Transfer

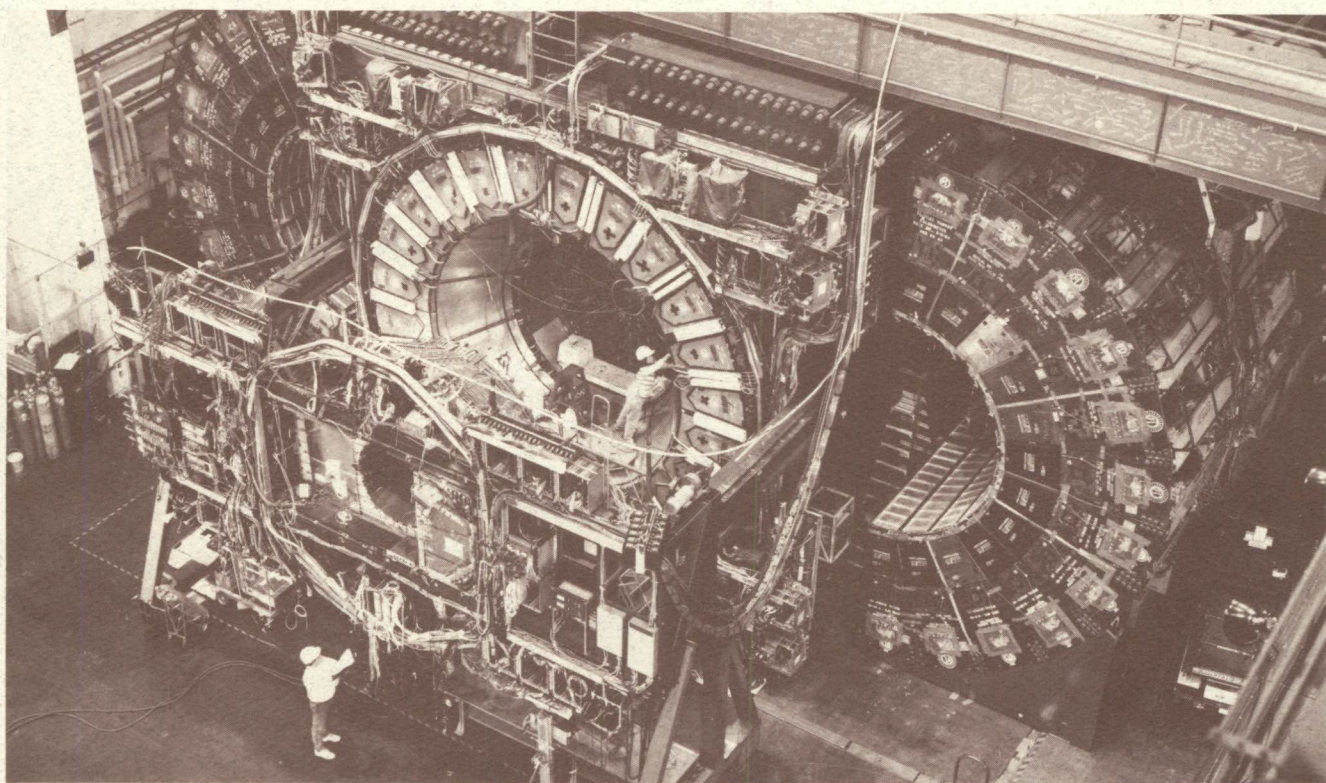
Fermilab has long been a leader in technology transfer. The Fermilab Industrial Affiliates group, active since 1980, stimulates transfer to private industry of the technical innovations resulting from the Fermilab basic research program. Symposia, tours, and exhibits are held at the laboratory to encourage the exchange of information between laboratory staff and the Affiliates.

Under authority of the Bayh-Dole Act (Public Law 96-517) and the Stevenson-Wydler Amendment (Public Law 96-480), URA already has entered into several licensing agreements with companies to foster commercialization of Fermilab inventions. As noted in the introductory section of this report, in December the URA contract was modified to enable the director of Fermilab to enter into formal cooperative research and development agreements with the private sector, significantly increasing the opportunity for technology transfer.

Exchanges and areas for transfer include developments in superconductivity, cryogenics, data processing, computer hardware and software, computer controls, fast electronics, ion beams and sources, high power radiofrequency designs, cryogenic vacuum technology, and particle detectors.

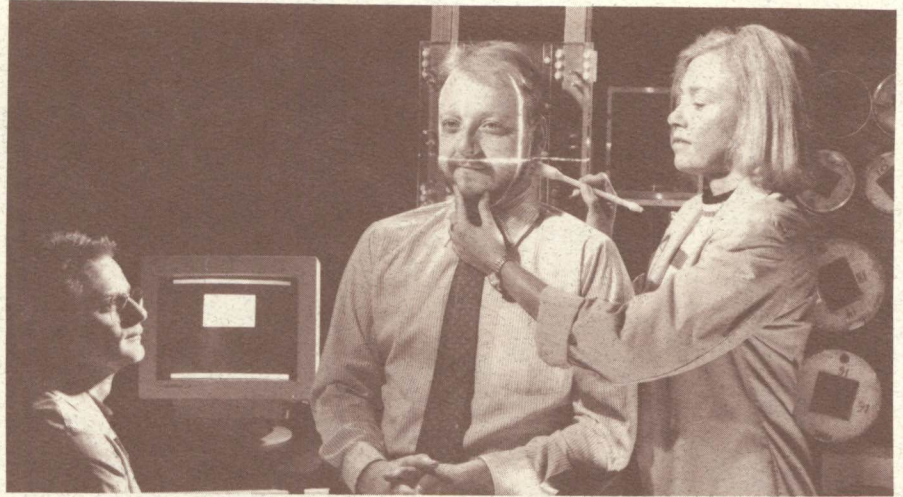


Central calorimeter modules for the D-Zero detector dwarf clean-room workers. The D-Zero detector will complement the CDF detector and allow sensitive searches for departures from the Standard Model of quarks and leptons and open many new windows in the search for particles.

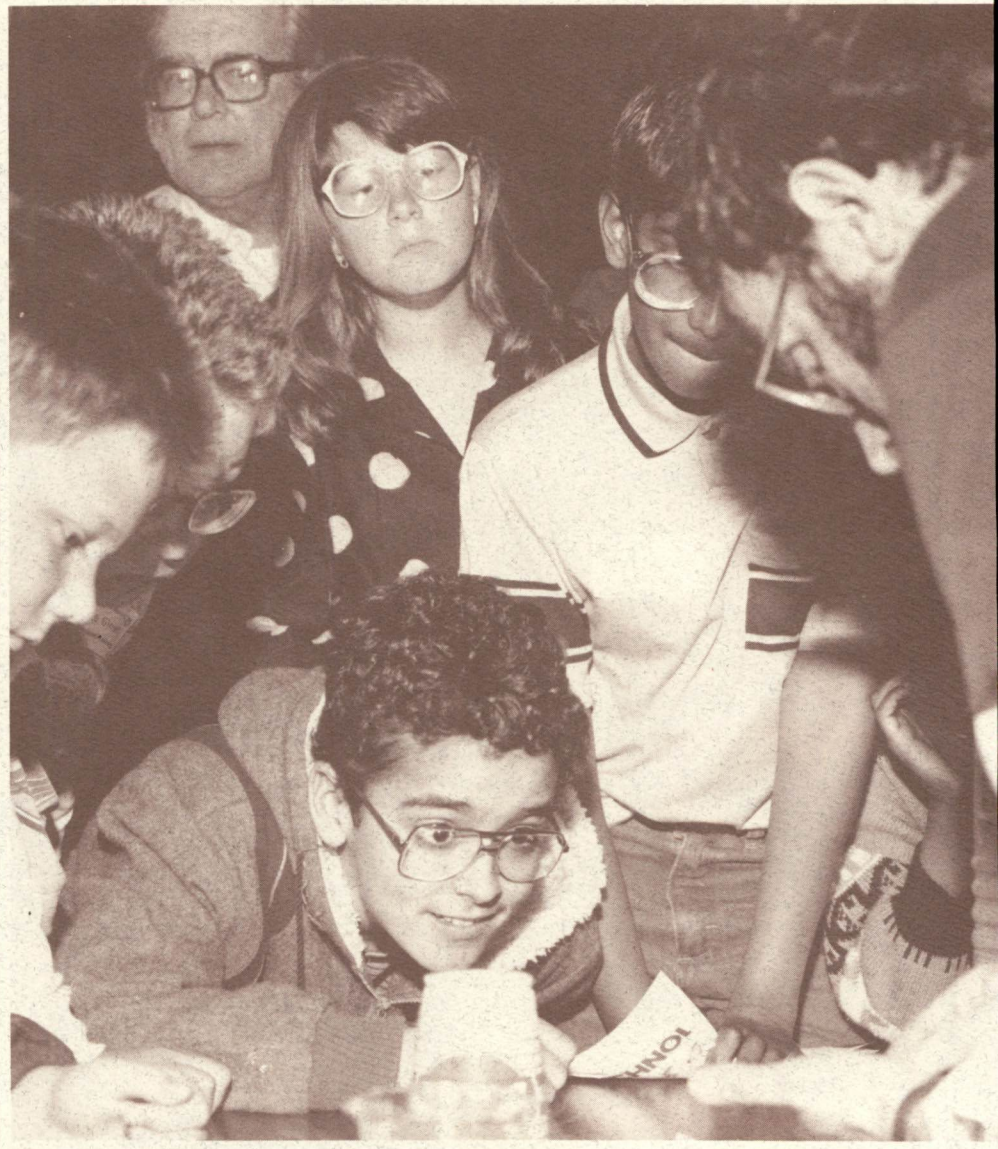


Collider Detector at Fermilab. The particle interactions produced when opposing beams collide are recorded by detectors such as the CDF. The data are studied to confirm existing theories or to reformulate them to explain unanticipated phenomena. Collaborations of scientists proposing SSC detector designs are currently forming in the U.S. and abroad.

Testing a new magnetic contouring device at Fermilab's Neutron Therapy Facility. Three-dimensional coordinates trace out a contour of the patient, and the intersecting beam of laser light defines the entry point for the neutron beam used in cancer therapy.



The Wonders and Magic of Science Show, a yearly event at Fermilab since 1986, has attracted approximately 500 elementary students and their parents during National Science and Technology Week each year. The program includes a show by a group of science teachers that call themselves "Weird Science" and distribution of demonstration kits based on the show's activities that the students can share with their classmates. Presentation of the Association of Science and Technology Centers (ASTC) Outstanding Science Teacher Award is made before the show.



Cancer Therapy

Fermilab scientists were among the pioneers of technology for particle-beam treatment of cancer. In June 1975, the National Cancer Institute awarded a grant for a Cancer Therapy Facility at Fermilab to explore the effectiveness of fast neutrons versus that of x-rays in the management of certain types of cancer. During its multi-phase transition to the private sector, the treatment facility was operated under contract with the Midwest Institute for Neutron Therapy. Currently it is under contract with Rush-Presbyterian St. Luke's Medical Center of Chicago.

Fermilab also built a 250-million-electron-volt proton accelerator for the hospital of Loma Linda University Medical Center in California for proton therapy. The accelerator was shipped to Loma Linda in 1989. The machine will supply proton beams to five treatment rooms that can handle 1,000 patients per year, and the first patients were treated in October 1990.

Conservation Programs

Fermilab is an acknowledged leader in the conservation of natural resources. In 1990, the laboratory was awarded DOE's In-House Energy Management Award for "significant contributions to energy conservation as a result of leadership and management excellence."

The laboratory was designed with various forms of conservation in mind. For example, to preserve the natural water supply, a recycling water system cools the booster accelerator ring and pumps the heated water into an outdoor waterway through a full circuit, providing habitats for fish, geese, ducks, and swans through the winter. The Nature Conservancy has supported the restoration of a prairie landscape on the 600 acres inside the Fermilab main accelerator ring,

and about 400 acres already have been planted, in part by several hundred volunteers from the area. A herd of buffalo is maintained, and deer and waterfowl thrive. In 1989, the laboratory was designated as a National Environmental Research Park by the Department of Energy.

Education Programs

The education of scientists is part of Fermilab's core mission, inseparable from the experiments at the facility. Since the physics program began, more than 500 students have been granted PhDs based on their work at Fermilab. In the 10-year period beginning in 1975, a yearly average of 40 PhDs were granted, representing 60 percent of the total doctoral degrees in high energy physics granted by U.S. institutions. Fermilab also sponsors and participates in a variety of undergraduate and precollege education programs, including internships and co-op programs. Over 10,000 students and 2,000 teachers participated in the precollege programs offered in fiscal year 1990. The Summer Internship Physics Program places minority students in research assignments with scientists or engineers. Summer Interns for Physics Majors is a similar program for students of high academic achievement. In two other programs, the laboratory works with undergraduate institutions to assign students to internships during the school year. Also, Fermilab participates in the National Consortium for Graduate Degrees for Minorities in Engineering and (with URA) in a graduate fellowship program in physics for minority students.

Fermilab sponsors 35 programs for precollege teachers and students. In fiscal year 1990, most of these programs came under the auspices of the new Education Office. External financial support for some of these programs is provided through Friends of Fermilab. Key programs for high school students

include Saturday Morning Physics, Target: Science and Engineering—for high-potential minority students—and the DOE High School Honors Research Program in Particle Physics. Key teacher enhancement programs include the DOE Teacher Research Associates Program, the Summer Institute for Science and Mathematics Teachers, the Summer Science Project, and Teaching Integrated Mathematics and Science. Topics in Modern Physics has produced instructional materials, suitable for introductory high school and college physics classes. Over 10,000 students and 2,000 teachers participated in the precollege programs offered in fiscal year 1990.

The range and vitality of Fermilab's undergraduate and precollege science education programs are in part the legacy of Fermilab's second director, Leon M. Lederman (1979-89). Dr. Lederman, 1989 Nobel laureate and current URA Trustee, continues his commitment to education in all fields of science as President of the American Association for the Advancement of Science.

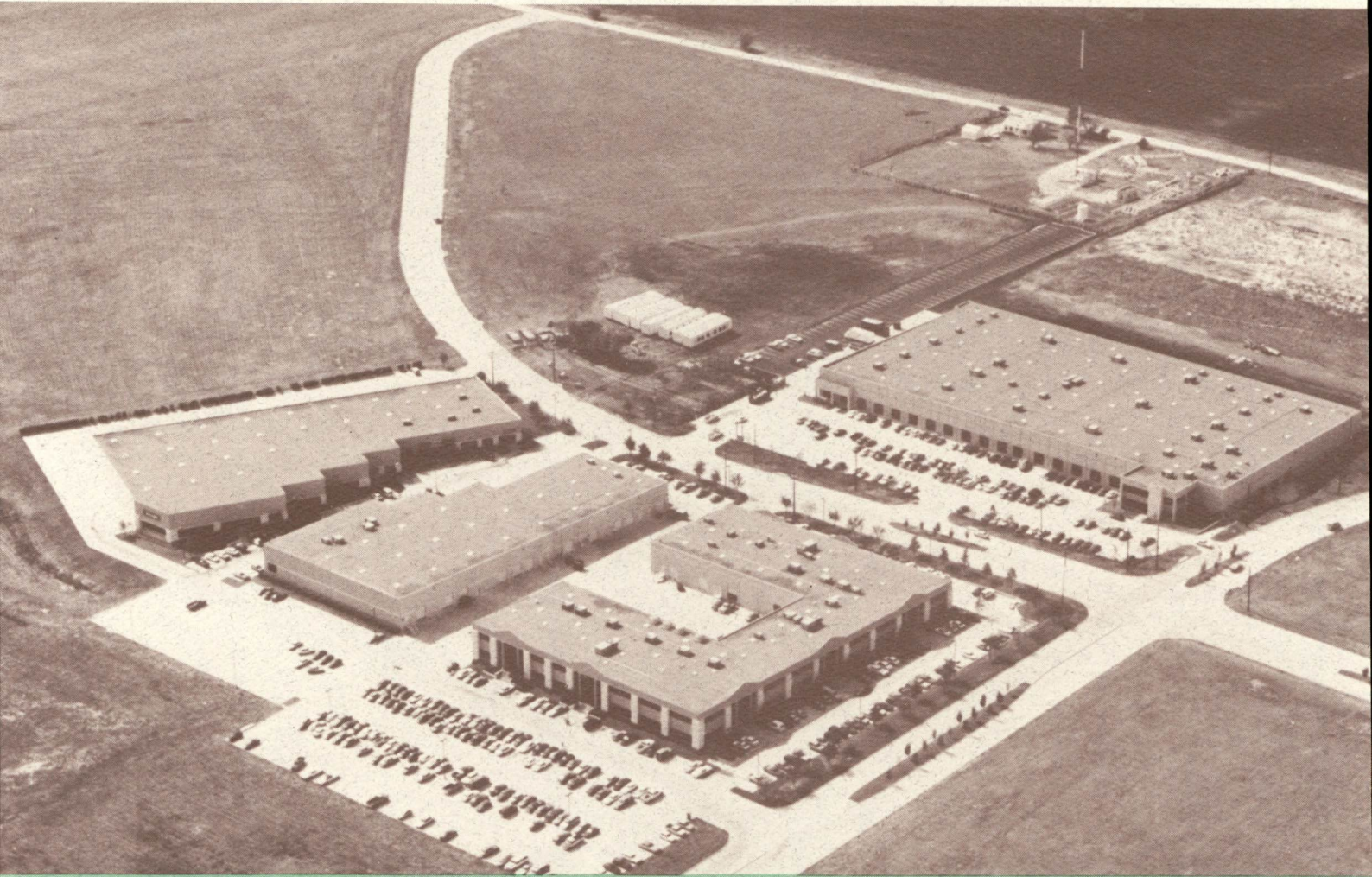
The Fermilab Community

Fermilab also sponsors cultural activities to which the public is invited. Laboratory employees volunteer in support of an arts series featuring dance, theater, and musical ensembles; physics colloquia and lectures on science and human values presenting guest speakers; international, documentary, and feature films; and an art gallery displaying work ranging from technologically produced and ethnic art, to painting, photographs and sculpture.

For further information on Fermilab: (708) 840-3351.



Superconducting Super Collider Laboratory



SSC Laboratory temporary offices in South Dallas. The laboratory will be located in Ellis County, 30 miles to the south, before the end of the century.

The Superconducting Super Collider (SSC), scheduled to begin operation near the end of the decade, will be the world's largest and most energetic particle accelerator. An underground oval tunnel about 54 miles in circumference will house the collider ring. Superconducting magnets will guide two proton beams in opposite directions at nearly the speed of light, with energies of 20 trillion electron volts each. The resulting head-on collisions will be recorded by detectors whose design and construction will expand the limits of computer technology.

Laboratory Director

The founding director of the SSC Laboratory (SSCL) is Dr. Roy F. Schwitters, former professor of physics at Harvard University. URA submitted Dr. Schwitters' name in its proposal to DOE to manage and operate the SSC Laboratory. Dr. Schwitters became the SSCL's first director when URA's proposal was accepted in 1989.

Dr. Schwitters had served as co-director and head of construction and operations for the Collider Detector at Fermilab and as a member of URA's SSC Board of Overseers. Prior to 1980, he was associate professor of physics at the Stanford Linear Accelerator Center, where he earned recognition for his developmental work on detectors that are now widely used in the field.

Origins of the Project

The SSC, a program of the Office of Energy Research of the U.S. Department of Energy, can be traced to the theoretical evolution of such a collider beginning in the late 1960s. The views of the U.S. high energy physics community began to crystallize during an American Physical Society meeting in Snowmass, Colorado, in 1982. A consensus developed that a multi-TeV particle collider was the next



*Roy F. Schwitters
SSCL Director*

needed step in the development of high energy particle accelerators.

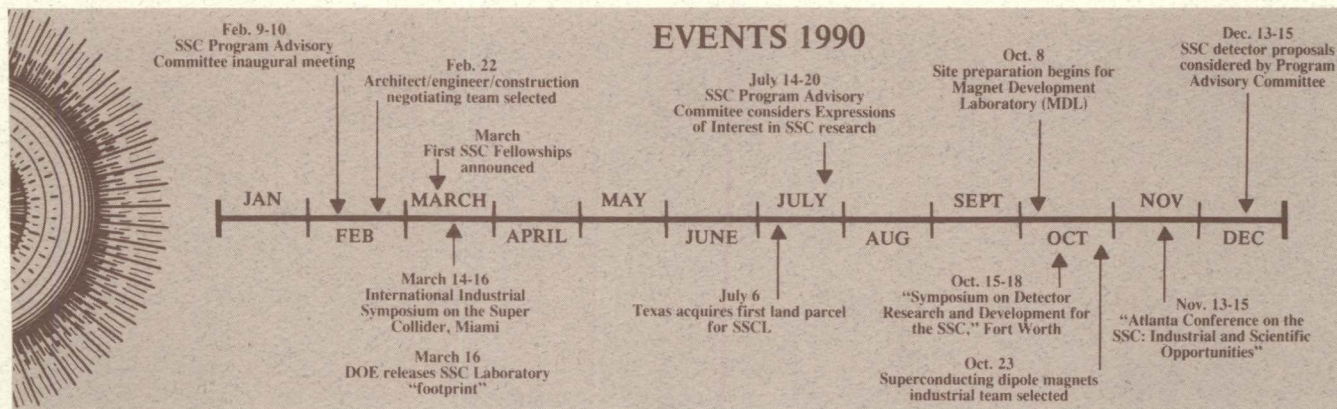
In 1983, DOE's High Energy Physics Advisory Panel endorsed the

initiation of a particle accelerator with beam energies between ten and 20 TeV. At about that time, the Tevatron at Fermilab, with beams at one TeV, validated the basic systems concepts needed for what became known as the SSC.

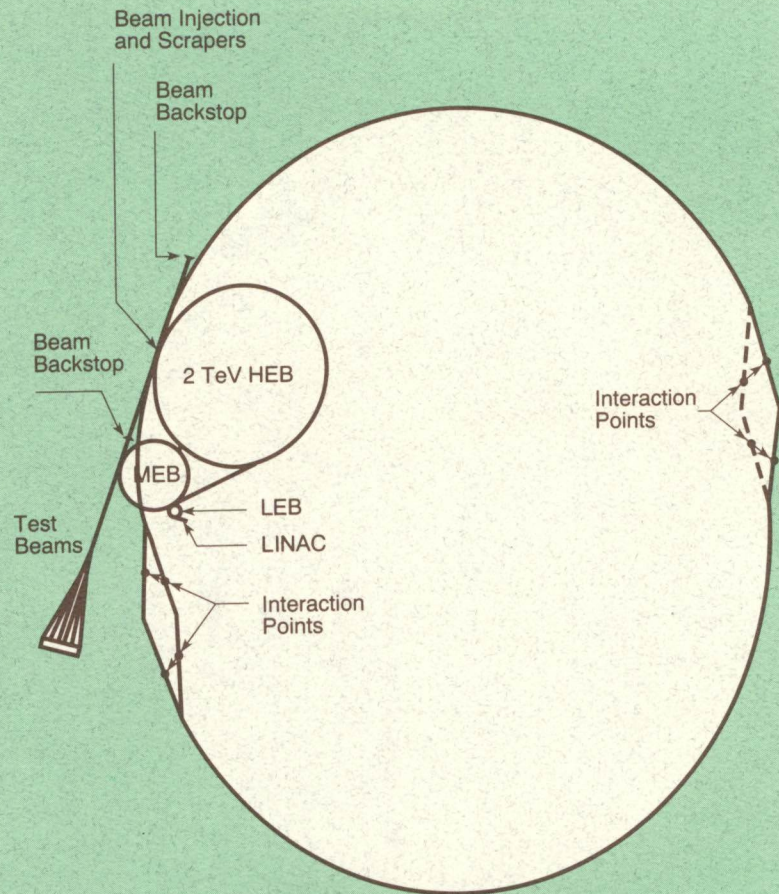
From Concept to Construction

After conducting reference design studies, in 1984 the Department of Energy contracted with URA to direct the SSC R&D program. Implementation was organized according to a Memorandum of Understanding endorsed by Associated Universities, Inc., Cornell University, Stanford University, Texas Universities Consortium, URA, the University of California, and the University of Chicago. URA established the SSC Board of Overseers, an advisory panel for the program. The Overseers then established the SSC Central Design Group, with Dr. Maury Tigner of Cornell University as director. Dr. Tigner was a 1990 recipient of the E. O. Lawrence Award for achievements in physics, including his work on the SSC.

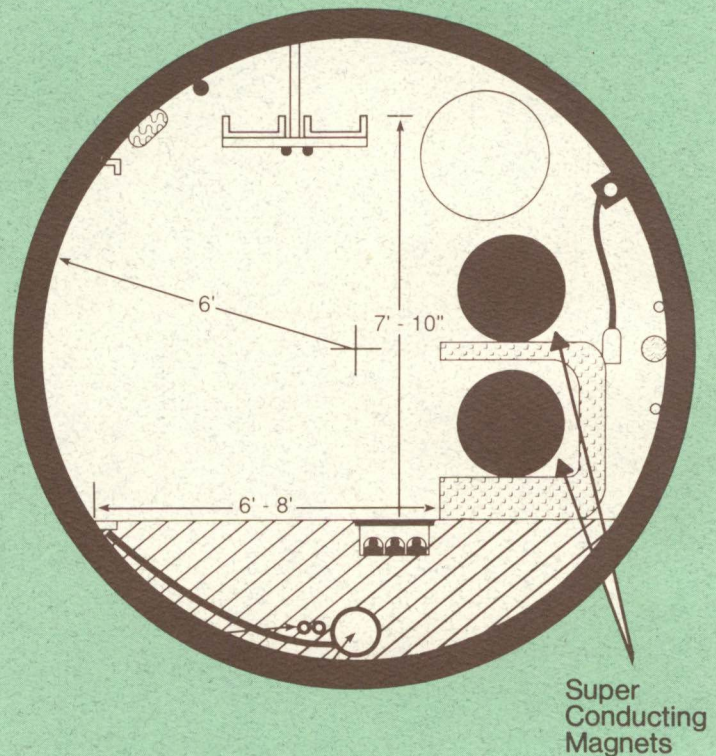
The site of the SSCL—Ellis County, Texas—was ratified in early 1989 by the administration after DOE selected it from 43 proposals and seven finalists. Laboratory offices were opened near the site in 1989, and construction began in 1990 on the Magnet Development Laboratory.



The SSC Ring, 54 miles in circumference. After particles are accelerated in the linear accelerator (LINAC), the particle beams' energies are increased in the low-, medium-, and high-energy boosters (LEB, MEB, HEB) before being injected into the main ring.



Cross-section of SSC tunnel, magnet rings, and accelerator systems. Superconducting magnets will focus and bend beams of protons in opposite directions, crossing the beams at interaction regions where individual particles collide.



Pathbreaking in 1990

Several critical milestones were passed in 1990 in the scientific and administrative arenas, as well as in industrial contracting and conventional site development.

- Management, Construction, and Contracting Milestones

On February 22, the team of Parsons, Brinckerhoff, Quade and Douglas of New York and Morrison Knudsen of Idaho, in association with CRSS of Houston, Texas, was selected from 14 competitors to begin negotiations to be the architect, engineer and construction manager (A-E/CM) for the SSC. The A-E/CM will be responsible for the design and construction of the tunnels, underground halls, and the campus.

On March 16, DOE released the SSC Laboratory "footprint," detailing the specific use of 17,000 acres of land at depths of 50-200 feet. By July 6, the first parcel of land was acquired by the state of Texas. Site preparation began on October 8 for the Magnet Development Laboratory, the first SSCL building on the Ellis County site.

In May, DOE completed the principal staff appointments to the department's SSC office in the Dallas area. On October 17, lab director Schwitters announced the management structure for the laboratory.

In July, the ion source that will constitute the first foot of the SSC was delivered to the laboratory by the Texas Accelerator Center. This device generates an intense beam of hydrogen ions, five times brighter than the best existing beams at present machines, and accelerates these ions to an energy of 35,000 volts. Operation of the ion source in 1990 was the first step in assembling the technical components of the Super Collider itself.

In October, the industrial team of General Dynamics and Westinghouse was selected to negotiate a contract to complete the design and begin the production of superconducting dipole magnets for the collider. General Dynamics will have the lead responsibility for acquiring and sharing with Westinghouse the technology developed by the SSC R&D program. After producing a series of prototype and preproduction magnets, the two firms will each build 251 production dipoles for installation and use in the collider. They will then compete to build the remaining magnets.

As noted in the introduction to this report, the URA contract was modified in December so that the laboratory director will have new authority to enter directly into cooperative research and development agreements with industrial partners.

- Scientific Program Initiation

As the necessary next step for experimentation in particle physics, the SSC will allow the study of phenomena at energies unattainable by any other existing or planned facility. Analysis of these phenomena depends on design and construction of detectors able to monitor, record and translate the experimental data. Guided by the SSC Program Advisory Committee (PAC, membership page 19), the laboratory began to focus in 1990 on the experimental possibilities and the options for SSC detectors, which have been the subject of generic research since 1986.

The inaugural meeting of the PAC, held on February 9-10, established a general framework for SSC research. From July 14 to 20, the committee

considered Expressions of Interest describing possible SSC experiments submitted by 15 collaborations representing a total of over 2,000 scientists. The PAC met again on December 13-15 to review Letters of Intent from three major collaborations, each with hundreds of scientists, that proposed to design and build large, general-purpose detectors for the SSC interaction regions. The recommendations of the PAC have been delivered to laboratory director Schwitters, who is scheduled to announce the decision in early 1991.

In related activities, the Scientific Policy Committee (membership, page 19) met in August and recommended that at least one such general-purpose detector be included in the initial SSC program. Medium-sized detectors, such as upgraded versions of the CDF or DØ detectors at Fermilab, might also be used. The Symposium on Detector Research and Development for the SSC was held October 15-18, drawing hundreds of participants from science and industry. A consensus emerged that very significant progress has been made toward meeting the technical challenge of operating particle detectors in the SSC environment.

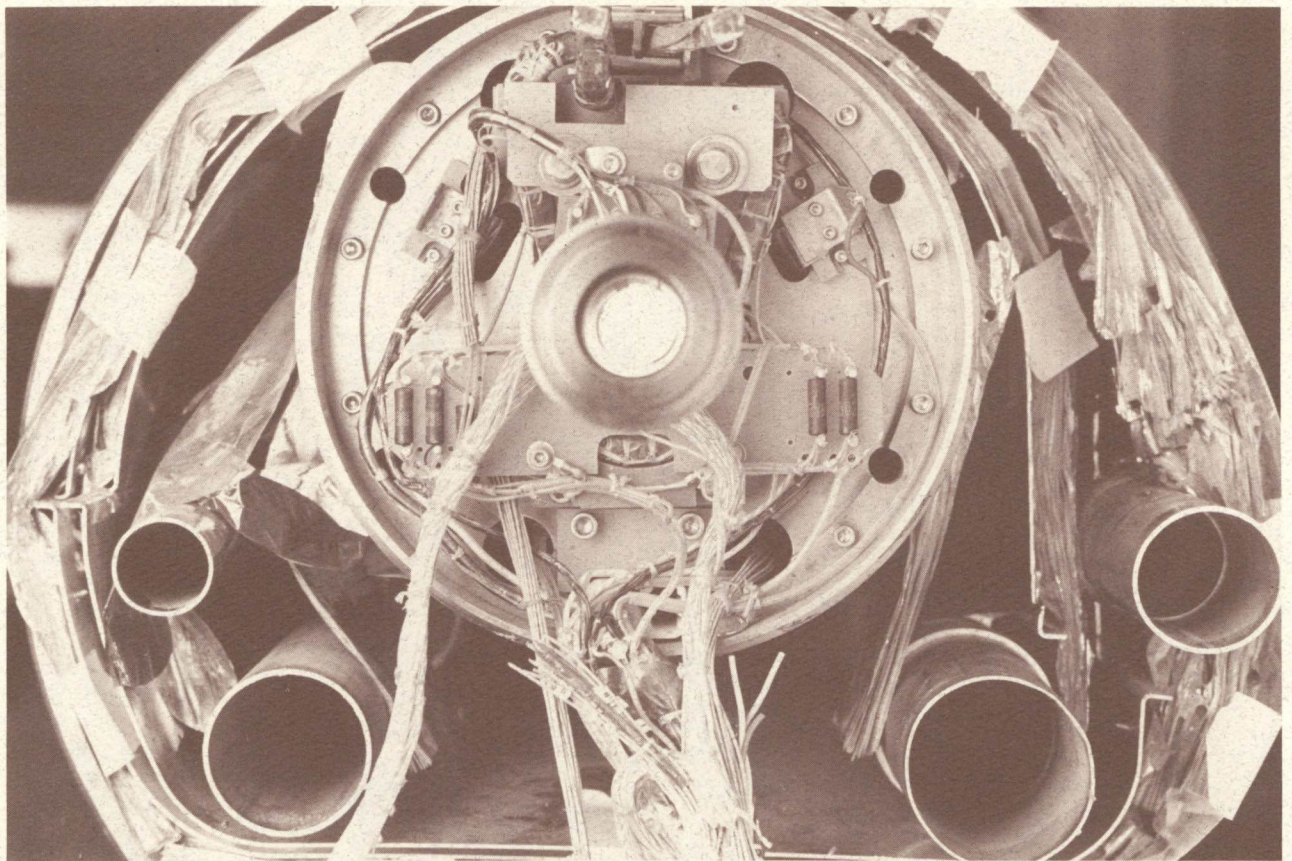
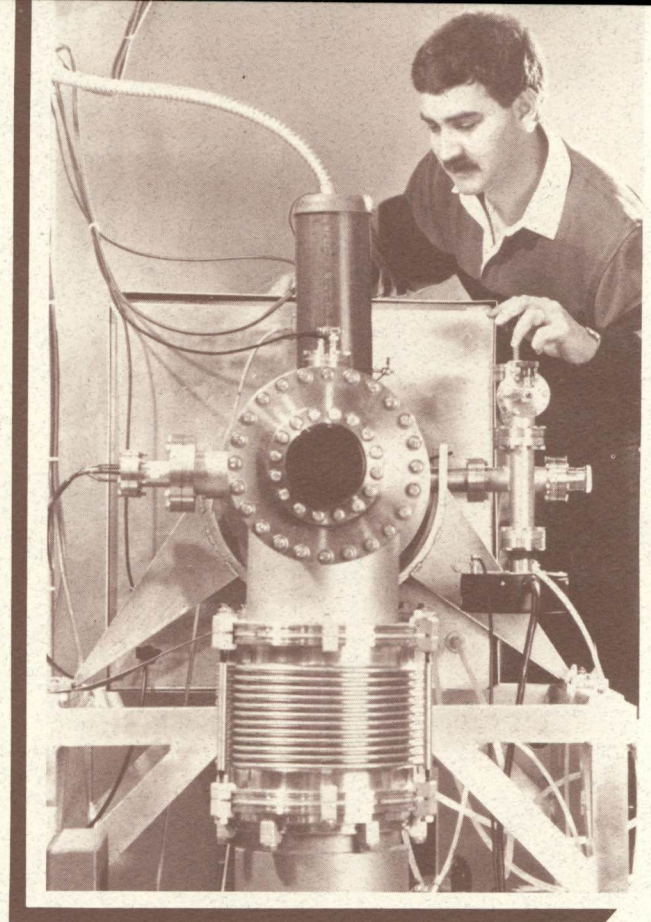
- Education Program Instituted

The SSCL will serve as a major resource for science education at all levels. A number of initiatives are already under way in precollege education—including teacher training, student internships, and elementary school programs. Many more are being planned for the coming year.

The SSCL will be an important training ground for graduate students, generating the kind of scientific problems that can inspire young scientists from many disciplines. Grants and fellowships are already being awarded to encourage universities and physics faculty to participate in the

'The Source.' The ion source is the beginning of the SSC accelerator. It extracts hydrogen molecules from a cannister of hydrogen gas and injects them into a chamber with a 1979 Datsun 280Z fuel injector. Inside the chamber, the hydrogen atoms become negatively charged hydrogen ions.

In the completed Super Collider, the ion beam will enter a 650-foot-long linear accelerator (LINAC), where pulses of electric energy will accelerate the beam of hydrogen ions. The LINAC will send the beam to the next booster accelerator, the low-energy booster, where the hydrogen ions will pass through a thin carbon foil that strips off their electrons, leaving protons—the nuclei of hydrogen atoms—to continue the process of acceleration.



Superconducting dipole magnet. Proton beams will be maintained near the center of these magnets at nearly the speed of light (186,000 miles per second—seven times per second around the earth, over 3,400 times around the SSC Ring).

advanced design of the research facilities. The first round of fellowships sponsored by the state of Texas through the Texas National Research Laboratory Commission were announced in March; the second in the fall.

- Industrial and Public Support Coalesced

One of the hallmarks of the Super Collider is industrial partnership on an unprecedented scale. In the design and construction of the laboratory itself and in anticipation of new downstream technologies, industrial contributions reflect the stimulus of SSC development.

In 1990, the annual "International Industrial Symposium on the Super Collider" was held in Miami, March 14-16. Corporate executives and technical experts associated with every aspect of the SSC's scientific and conventional facilities met with physicists and federal officials in workshops and seminars. From November 13 to 15, the "Atlanta Conference on the SSC: Industrial and Scientific Opportunities" gathered to update corporate and public officials on progress at the laboratory. The SSCL has also instituted a nationwide series of vendor seminars for prospective bidders, reaching Kansas by August and concluding the year with sessions in Maine, New Hampshire, Connecticut and Massachusetts.

The Super Collider Community

The SSC Laboratory will be configured as a university. The campus area will have 15 or more buildings, including the central laboratory, cafeteria, computer facility, auditorium, and conference rooms. Approximately 3,000 people will work there at any one time, including 2,500 staff and 500 visiting scientists.

For further information on the SSC: (214) 708-9000.



Electron Microscope. Powerful electron microscopes are used to analyze properties of the materials used in magnets for the SSC accelerator. The microscope magnifies up to 50,000 times and makes possible chemical and image analyses.



Laboratory Advisory Committees

In addition to the scientific and management guidance contributed by URA trustees and overseers (pages 20-23), Fermilab and the SSCL benefit from the expertise of internationally prominent physicists through formal advisory mechanisms.

URA Visiting Committee for Fermilab

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SSC Laboratory
Texas

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Florida

Hermann A. Grunder
Continuous Electron Beam
Accelerator Facility
Virginia

Kenneth Heller
University of Minnesota
Minnesota

Leland E. Holloway
University of Illinois - Urbana
Illinois

F. Russell Huson
Texas Accelerator Center
Texas

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Supercomputing Institute
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University of Rochester
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Brookhaven National Laboratory
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Carnegie Mellon University
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Michigan

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Fermilab
Illinois

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University of Pittsburgh
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Illinois

Andrzej Ziemiński
Indiana University
Indiana

User groups, led by executive committees, represent the interests and perspectives of scientists from around the world who use the laboratory to conduct experiments.



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UC-Riverside
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Thomas Kirk
Argonne National Laboratory
Illinois

Takahiko Kondo
KEK
Japan

Organization Structure



Membership and Boards

URA conducts its affairs under the authority of its member universities, through a Council of Presidents. The council appoints the Board of Trustees, which in turn appoints a Board of Overseers for each major research activity.

In order to give its boards a truly national character, URA has established seven geographic regions. The Council of Presidents elects one trustee from each of the regions; each regional trustee is president or the equivalent chief executive officer of a member institution in the region. In addition to regional members, up to eight members-at-large, frequently drawn from the industrial sector, may be appointed to the boards. URA trustees over the years have included chief executive officers of major industrial corporations, corporate vice presidents, and university presidents and vice presidents. Trustees have also included winners of major science prizes, including four Nobel laureates, as well as directors of the National Science Foundation and directors of major research laboratories.

Directors and staffs of URA-operated facilities are monitored by a separate Board of Overseers for each activity. Each board is responsible for oversight of the general management and operation of assigned programs. The directors of each major research facility (currently Fermilab and the SSCL) are selected by the Board of Trustees with the approval of DOE. The combined total number of URA employees at the corporate headquarters and at affiliated activities now exceeds 2,500. Daily operations are coordinated directly between facility management and the appropriate DOE operations office or DOE headquarters.

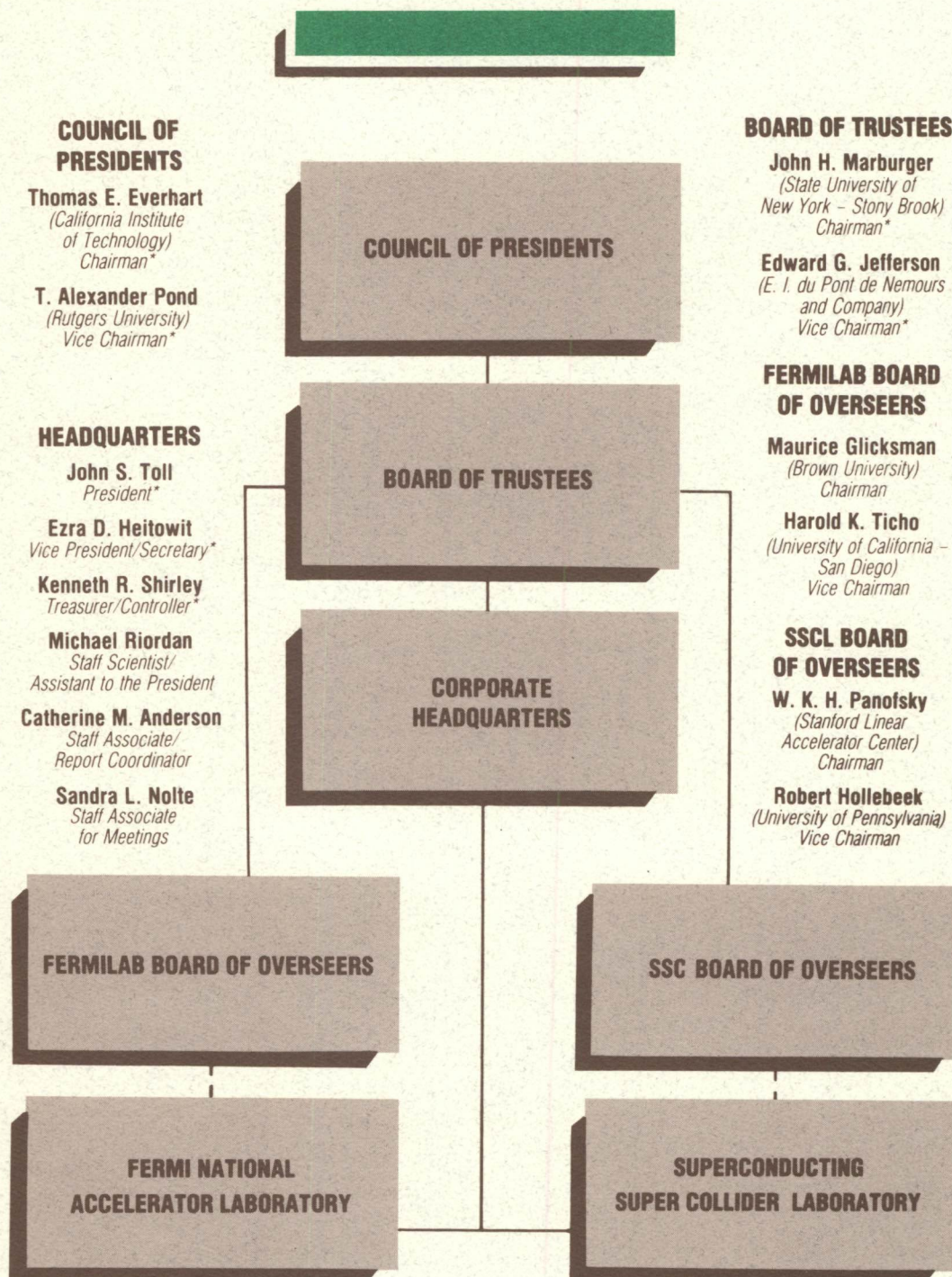
Each member university has agreed to contribute up to \$100,000 to URA on the call of the URA trustees. Since the formation of the corporation in 1965, assessments have totaled \$30,000 per member. The availability of these funds has been a great source of assistance to the corporation. For example, initial construction of buildings at Fermilab, later repurchased by the AEC, helped to save approximately one year in accelerator construction time. URA funds have been used almost exclusively for expenditures that, for one reason or another, could not be made with funds derived from the federal government.

Headquarters Corporate Office

Corporate officers include leaders of the URA governing bodies (Council of Presidents and Board of Trustees) and administrative officers at headquarters in Washington, D.C. Headquarters officers are the president, the vice president/secretary and the treasurer/controller. The Washington staff includes a staff scientist, a staff associate for communications, and a staff associate for meetings.

As chief executive officer, the president is responsible for overall policy development and general management of URA and its research facilities. The laboratory directors report directly to the president. The vice president is responsible for planning and coordination, with the assistance of the staff associate for meetings, in support of the Council of Presidents, the Board of Trustees, and the two Boards of Overseers; for management guidance of Fermilab and SSCL activities; and for administration of the DOE contracts. The treasurer manages corporate accounts, coordinates audits, and prepares financial statements. The staff scientist assists the president in providing liaison to the scientific community and responding to technical inquiries from the public. The staff associate for communications reports on legislative actions affecting URA and develops communications.

Organization Chart



* Officers of the Corporation

Board of Trustees

REGIONAL TRUSTEES

TERM EXPIRES

1	Henry Koffler	President University of Arizona	1991
2	Hanna Holborn Gray	President University of Chicago	1993
3	Bernard F. Sliger	President Florida State University	1992
4	Wesley W. Posvar	President University of Pittsburgh	1991
5	Joe B. Wyatt	Chancellor Vanderbilt University	1993
6	Harold T. Shapiro	President Princeton University	1992
7	*John H. Marburger	President SUNY – Stony Brook	1991

TRUSTEES-AT-LARGE

J. Fred Bucy	retired Chairman Texas Instruments Corporation (resigned 10/30/90)	1993
William R. Frazer	Vice President for Academic Affairs University of California System	1991
Emanuel J. Fthenakis	Chairman and CEO Fairchild Industries (elected 11/23/90)	1992
**Edward G. Jefferson	retired Chairman E. I. du Pont de Nemours & Company	1993
Leon M. Lederman	University of Chicago and Director Emeritus Fermi National Accelerator Laboratory	1992
George P. Mitchell	President Mitchell Energy & Development Corp.	1991
Robert C. Stempel	Chairman and Chief Executive Officer General Motors Corporation	1993
H. Guyford Stever	retired Foreign Secretary National Academy of Engineering	1992

* Chairman ** Vice Chairman

Fermilab Board of Overseers

SSC Board of Overseers

REGIONAL GROUP			TERM EXPIRES
1	Vincent Z. Peterson	Department of Physics University of Hawaii	1991
2	Leland E. Holloway	Department of Physics University of Illinois – Urbana	1992
3	George R. Kalbfleisch	Department of Physics and Astronomy University of Oklahoma	1992
4	David K. Scott	Provost Michigan State University	1993
5	Charles E. Putnam	Executive Vice President Duke University	1992
6	Paul F. Slattery	Chairman, Department of Physics and Astronomy University of Rochester	1992
7	Robert K. Adair	Sterling Professor of Physics Yale University	1993

AT-LARGE OVERSEERS

William V. Braun	Senior Vice President and Director of Research and Development Motorola, Inc.	1993
David H. Cohen	Vice President for Research and Dean of the Graduate School Northwestern University	1991
*Maurice Glicksman	Professor of Physics and Engineering Brown University	1993
Kenneth Heller	School of Physics and Astronomy University of Minnesota	1992
Joseph E. Lannutti	Department of Physics and Director of SCRI Florida State University	1991
**Harold K. Ticho	Department of Physics University of California – San Diego	1991
Robert R. Wilson	Professor Emeritus Cornell University Director Emeritus, Fermilab	1992
Harry Woolf	Professor Institute for Advanced Study	1991

* Chairman ** Vice Chairman

REGIONAL GROUP			TERM EXPIRES
1	Peter A. Carruthers	Chairman Department of Physics University of Arizona	1993
2	Uriel Nauenberg	Department of Physics University of Colorado – Boulder	1991
3	Neal F. Lane	Provost Rice University	1993
4	Homer A. Neal	Chairman Department of Physics University of Michigan	1991
5	George W. Wheeler	Department of Physics University of Tennessee – Knoxville	1991
6	**Robert Hollebeek	Department of Physics University of Pennsylvania	1992
7	Frank Sciulli	Chairman Department of Physics Columbia University	1992

AT-LARGE OVERSEERS

Roy Billinge	PS Division CERN	1991
Martin Blume	Deputy Director Brookhaven National Laboratory	1993
Robert A. Frosch	Vice President, Research Laboratories General Motors Corporation	1993
Boyce D. McDaniel	Professor Emeritus Cornell University	1992
Albert Narath	President Sandia National Laboratories	1992
*Wolfgang K. H. Panofsky	Director Emeritus SLAC	1992
George H. Trilling	Lawrence Berkeley Laboratory University of California – Berkeley	1991
Martin Walt	Director of Research Lockheed Missiles and Space Company	1992

* Chairman ** Vice Chairman

Fiscal Year 1990 Funding Profile

FERMILAB		\$ 203.0
OPERATIONS	161.5	
CAPITAL EQUIPMENT AND CONSTRUCTION	41.5	
SSC LABORATORY *		169.6
OPERATIONS	56.9	
CAPITAL EQUIPMENT AND CONSTRUCTION	112.7	
TOTAL DOE FUNDING		<u>372.6</u>

*During FY90 DOE provided an additional \$21.3 million directly to other organizations for work in support of the SSC project.

Publications



Fermilab Publications Office
P.O. Box 500
Batavia, Illinois 60510
708-840-3278

Fermilab

Annual Report of the Fermi National Accelerator Laboratory

The 1987 20th Anniversary issue includes specially prepared histories of the laboratory and its founders.

Fermilab Report

A bi-monthly compendium of articles on the laboratory's mission-related activities.

High Energy Particle Physics: Fermi National Accelerator Laboratory

A new pictorial publication of 1990 providing details of the overall mission, facilities, and programs of the laboratory.

SSC Laboratory Publications
2550 Beckleymeade Avenue
Dallas, Texas 75232
214-708-9000

SSCL

The SSCintillator

A general-interest newsletter featuring articles on various aspects of the SSC and SSC Laboratory.

To the Heart of Matter: the Superconducting Super Collider

A 40-page color informational booklet about high energy physics and the SSC Laboratory, updated in 1990 to include developments related to the Texas site. Bibliography and glossary.

SSC Detectors — Looking to the Future (1989)

A color pocket-size booklet describing detectors and their role in the SSC. Text includes a brief history of detector technology and schematics of generic detectors for the SSC.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120835

SPEECH: YES NO

FROM: LARSON, Charles F.: INDUSTRIAL RESEARCH INSTITUTE

DATE OF EVENT: 05/05/91

LOCATION OF EVENT: WESTIN LA PALOMA, TUCSON, AZ

TIME OF EVENT:

SUBJECT: INVITATION TO ATTEND THE 1991 ANNUAL MEETING

RSVP: 04/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED? ~~YES~~ NO

COPIES TO: Dr. Phillips

REMARKS: 3/25/91 - Regretted to Pat Tender!
mn

DATE OF LETTER: 03/19/91

DATE RECEIVED: 03/22/91

FILE: P- INVITATION

912 0835



Industrial Research Institute, Inc.

RECEIVED

March 19, 1991
91 MAR 22 A 9:52

BOARD OF DIRECTORS 1990-1991

PRESIDENT
WAYNE G. BURWELL (1992)
DIRECTOR OF RESEARCH
UNITED TECHNOLOGIES CORPORATION

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W. R. GRACE & CO.

VICE PRESIDENT
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HOECHST CELANESE

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MOBIL R&D CORPORATION

E. ALLEN WOMACK, JR. (1993)
VICE PRES., RES. & DEV.
THE BABCOCK & WILCOX COMPANY

EXECUTIVE DIRECTOR
CHARLES F. LARSON

Honorable D. Allan Bromley
Assistant to the President for
Science & Technology
Executive Office of the President
Washington, DC 20506

Dear Dr. Bromley:

On behalf of I.R.I. President Wayne Burwell, it is my pleasure to invite you to attend our 1991 Annual Meeting, May 5-8, at the Westin La Paloma in Tucson.

Our "Call to Meeting," Preliminary Program, Registration Form, and other details are enclosed. We hope that you can be with us for the entire meeting. In addition, we would like you to attend the F.S.T. Committee meeting Sunday afternoon at 2:00 p.m. As our guest, your registration fee, room, and group meals during the meeting will be covered by the Institute.

If you can be with us, please fill in and return the Registration Form to I.R.I. headquarters promptly, indicating your choice of group meals and activities. We will make your room reservation at the hotel. A confirmation will be sent directly to you.

We look forward to seeing you in Tucson!

Sincerely,

Charles F. Larson
Executive Director

CFL:pt
Enclosures

cc: W. G. Burwell, A. W. Trivelpiece, and Jules Blake



Industrial Research Institute, Inc.

1550 M Street, NW, Washington, D.C. 20005 • (202) 872-6350 • Fax (202) 872-6356

March 15, 1991

BOARD OF DIRECTORS 1990-1991

To: **Member Company Representatives and Alternates**

PRESIDENT
WAYNE G. BURWELL (1992)
DIRECTOR OF RESEARCH
UNITED TECHNOLOGIES CORPORATION

Subject: **CALL TO 1991 ANNUAL MEETING, MAY 5-8, TUCSON**

PRESIDENT-ELECT
F. PETER BOER (1993)
EXECUTIVE VICE PRESIDENT
W. R. GRACE & CO.

This memo is your formal call to I.R.I.'s 1991 Annual Meeting, May 5-8, at The Westin La Paloma hotel in Tucson, Arizona. The Preliminary Program and Registration Form are enclosed.

VICE PRESIDENT
BRIAN M. RUSHTON (1994)
VICE PRES., RES. & DEV.
AIR PRODUCTS AND CHEMICALS, INC.

ATTENDANCE. As always, the meeting is open to Rep/Alts, company associates, Emeritus representatives, and official guests invited by the Institute. All Rep/Alts are encouraged to attend. HR and finance directors from member company R&D departments are also welcome.

PAST PRESIDENT
ALBERT R. C. WESTWOOD (1991)
VICE PRES., SCIENCE
MARTIN MARIETTA CORPORATION

COMPANION PROGRAM. Wives and husbands of Rep/Alts and guests are urged to attend, to help cultivate and facilitate business relationships. An excellent program has been arranged for them and is being mailed to your home address with a duplicate of the Registration Form. If your spouse plans to accompany you, do not return the Registration Form until the Companion Program has been received and activities have been selected.

CHARLES J. BISHOP (1992)
VICE PRES., CORP. TECHNOLOGY
A. O. SMITH CORPORATION

ALAN G. CHYNOWETH (1993)
VICE PRES., APPLIED RESEARCH
BELLCORE

ROBERT A. FROSCHE (1992)
VICE PRESIDENT
GENERAL MOTORS CORPORATION
GENERAL MOTORS RESEARCH LABS.

HOTEL ROOM. Room reservations must be received by the hotel on or before April 2. The reservation form was sent with my February 8 memo.

GRADY W. HARRIS (1992)
VICE PRES., RES. & DEV.
HOLLISTER INCORPORATED

JOHN MCSHEFFERTY (1991)
PRESIDENT
GILLETTE RESEARCH INSTITUTE

GRAHAM R. MITCHELL (1993)
DIRECTOR OF PLANNING
GTE LABORATORIES INCORPORATED

ROBERT L. MORRIS (1991)
CORP. VICE PRES. &
DIRECTOR TECH. AFFAIRS
CONTINENTAL BAKING COMPANY

DALE F. POLLART (1992)
DIRECTOR OF RESEARCH
TEXACO, INC.

ORA E. SMITH (1991)
VICE PRESIDENT &
CHIEF MARKETING OFFICER
CONDUCTUS, INC.

LEON STARR (1991)
CORP. VICE PRES., TECHNOLOGY
PRESIDENT, RESEARCH DIVISION
HOECHST CELANESE

JOHN J. WISE (1993)
VICE PRESIDENT, RESEARCH
MOBIL R&D CORPORATION

E. ALLEN WOMACK, JR. (1993)
VICE PRES., RES. & DEV.
THE BABCOCK & WILCOX COMPANY

MEALS. Tickets for group dinners Sunday, Monday, and Tuesday evenings, as well as for the President's Luncheon on Monday, should be requested in advance on the Registration Form. A complimentary continental breakfast will be available for Rep/Alts who wish to get together before our session each morning. Companions will have a similar arrangement at a separate location. Rep/Alts are requested not to use the Companions' Hospitality, and vice versa, to keep our counts with the hotel in order. Everyone attending the meeting is urged to register for the group dinners. An "early bird" cocktail party will be hosted by I.R.I. Emeriti Saturday evening. Newcomers will be invited to join a director or other "old-timer" for dinner on Sunday, following the Newcomers' Reception, to help them get acquainted quickly within I.R.I.

GRATUITIES/TAXES. Suggested minimum gratuities are as follows: Bellmen, \$2 per person in and out; Maids, \$1 per day. Gratuities for food and beverage service in the hotel restaurants or lounge are not automatically added to the bill. Room charges are subject to 6.5% tax.

REGISTRATION. To benefit from the early registration fee, the enclosed Registration Form should be received at this office no later than April 22 with a check to cover all fees. By registering early, you not only save money but help us in making final plans with the hotel for the dozens of events and activities scheduled during the meeting.

(over)

EXECUTIVE DIRECTOR
CHARLES F. LARSON

SPECIAL INTEREST SESSIONS (S.I.S.). The Preliminary Program describes the S.I.S. planned for Wednesday morning, May 8. Each S.I.S. will be offered twice, at 8:00 and 9:30 a.m. As attendance will be limited to 50 persons at each time, you must indicate your first and second choices for both times on the Registration Form. S.I.S. sign-up lists will be posted.

SPORTS. Golf and tennis tournaments have been planned for both Rep/Alts and companions. Rep/Alt events will be Tuesday afternoon, May 7. The companions' will be Tuesday morning. Golf foursomes will be posted at our registration desk. Tennis and golf times on other days can be reserved in advance by calling the hotel. Optional activities on Tuesday afternoon include visits to Kitt Peak, the Sonora Desert Museum, Pima Air Museum, and Biosphere 2. Some of these activities will also be available Sunday for those arriving early. Stop by the I.R.I. registration desk for information.

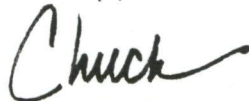
DRESS. Dress is casual during the sessions. It should be quite warm, with low humidity. Pack a bathing suit for the pool and a sweater for the air-conditioned areas. Directors will be in black tie and dinner jacket for the Medal Award Dinner on Tuesday. Black tie is encouraged for all others that evening. Western dress is suggested for the rodeo and group dinner at Old Tucson Monday evening. A jacket and tie will be in order Sunday evening.

REGISTRATION ENVELOPES. I.R.I. registration will be in the ballroom foyer on the lobby level from 9:00 a.m. to 7:00 p.m. on Sunday. Please pick up your envelope(s) as soon as you arrive. All fees should be paid to I.R.I. prior to that time (preferably by April 22). A final program, expected attendance list, tickets, and other information will be in the envelope.

CANCELLATION. If you should have to cancel your plans to attend (and cannot send an associate in your place), please notify I.R.I. headquarters and the hotel reservations coordinator, Bruce Lazarus, at 800-876-3683. Room deposits will be returned if cancellation is received 15 days prior to scheduled arrival date. If it becomes necessary to send someone in your place, advise I.R.I. and the hotel of the name of your replacement. Your prepayment will then be assigned to this person unless you request otherwise. Activity and meal refunds cannot be made for cancellations after April 29.

We look forward to seeing you in warm, sunny Tucson!

Sincerely,



Charles F. Larson
Executive Director

CFL:pt

Encls.: 1) Preliminary Program
2) Registration Form

P.S. A few openings are still available for the May 3-5 Tutorial in Tucson on "Competitive Intelligence as a Tool for R&D Managers." See the February 8 announcement.

REGISTRATION FORM
(Due April 22)

NAME: _____ TITLE: _____
(Circle one) Dr. Mr. Mrs. Miss Prof.

ADDRESS: _____
Company Street/P.O. Box
City State Zip Office Phone: _____

HOME ADDRESS: _____ Home Phone: _____

Is this your FIRST I.R.I. meeting? Yes _____ No _____ Will companion accompany you? Yes _____ No _____

Companion's FIRST meeting? Yes _____ No _____ Preferred FIRST name: YOURS _____ COMPANION _____

FOR COMPANY ASSOCIATES: Your I.R.I. Rep/Alt's name is: _____

ARRIVAL: DAY _____ DATE _____ TIME (approx.) _____

DEPARTURE: DAY _____ DATE _____ TIME (approx.) _____

ADVANCE PAYMENT: Circle the appropriate dollar amounts below and enclose a check payable to "Industrial Research Institute" for total amount due.

	REP/ALT	COMPANION
REGISTRATION		
On or before April 22.....	\$595	\$90
Tutorial Participants on or before April 22.....	495	90
After April 22.....	645	90
TOURS/ACTIVITIES (Check time where appropriate)		
Arizona Desert Museum Sun. p.m. _____ Tues. p.m. _____	25	25
Mon. p.m. _____ Tues. a.m. _____ Wed. a.m. _____	40	40
Biosphere 2 Tues. p.m. _____	75	75
Gliding (box lunch) Tues. p.m. _____	55	55
Hiking Mon. a.m. _____ Tues. a.m. _____ Wed. a.m. _____	45	45
Horseback Trail Ride Mon. a.m. _____ Tues. a.m. _____ Wed. a.m. _____	45	45
Tues. p.m. _____	165	165
Hot-Air Ballooning Mon. a.m. _____ Tues. a.m. _____ Wed. a.m. _____	60	60
Jeep Adventure Mon. a.m. _____ Tues. a.m. _____ Wed. a.m. _____	35	35
Kitt Peak (box lunch) Sun. p.m. _____ Tues. p.m. _____	40	40
Mission San Xavier (lunch) Mon. _____	45	45
Nogales/Tubac (lunch) Mon. _____	25	25
Pima Air Museum Sun. p.m. _____ Tues. p.m. _____	110	90
*Golf Tournament (incl. box lunch for Rep/Alts) Tues. _____	30	30
Tennis Tournament Tues. _____		
GROUP MEALS (Choice of meals must be checked)		
Sunday Evening Dinner (Baked Salmon _____/Filet Mignon _____)	50	50
Monday President's Luncheon.....	25	25
Monday Evening Rodeo and Barbeque.....	70	70
Tuesday Award Dinner (Grilled Swordfish _____/Veal Ribeye _____)	60	60
TOTALS \$ _____ + \$ _____ = \$ _____		

Meal and tour tickets refundable only if cancellation is received by April 29.

SPECIAL INTEREST SESSIONS, Wednesday, 8:00 a.m....(1st choice) A B C D E F G
(Attendance limited to 50 at (2nd choice) A B C D E G G
each session; circle one on
each line for both times. 9:30 a.m....(1st choice) A B C D E F G
(2nd choice) A B C D E F G

*Handicap or approx. score: Rep/Alt _____ Companion _____

_____ Please put me in a foursome.

_____ I have arranged a foursome. The others are: _____

RETURN TO: INDUSTRIAL RESEARCH INSTITUTE, INC., 11th Floor
1550 M Street, N. W., Washington, D.C. 20005
to arrive by April 22, so your name can be
included on the EXPECTED ATTENDANCE LIST.

(For office use only)
REP _____
ALT _____
COMPANY ASSOCIATE _____
EMERITUS _____
I.R.I. GUEST ☒

INDUSTRIAL RESEARCH INSTITUTE, INC.
1550 M Street, N.W.
Washington, D.C. 20005

PRELIMINARY PROGRAM

Annual Meeting, May 5-8, 1991
Westin La Paloma, Tucson, Arizona

THEME: "CREDIBILITY"

Saturday, May 4

5:30 to 7:00 p.m.	EARLY-BIRD RECEPTION Hosted by I.R.I. Emeriti	Terrace Patio
7:00 p.m.	Emeriti Dinner	Acacia

Sunday, May 5

8:30 a.m.	Board of Directors Meeting	Lantana
9:00 a.m.	REGISTRATION DESK OPEN	Arizona Foyer
Noon to 5:00 p.m.	OPTIONAL ACTIVITIES See descriptions on pages 19-20. Pre-registration required.	
2:00 to 5:00 p.m.	COMMITTEE MEETINGS*	
	Federal Science & Technology (2:00 p.m.)	Verbena
	International (2:00 p.m.)	Murphey II
	Pre-College Education (2:00 p.m.)	Finger Rock III
	Program (Tucson - 2:00 p.m.)	Acacia
	Public Communications (2:00 p.m.)	Aster II
	Research-on-Research (2:00 p.m.)	Lantana
	University Relations (2:00 p.m.)	Indigo
	Awards (3:00 p.m.)	Primrose
	Board of Editors (3:00 p.m.)	Finger Rock I
	Program (Chicago - 3:00 p.m.)	Acacia
	Seminar (3:00 p.m.)	Murphey III
	Management Development Advisory (4:00 p.m.)	Primrose

*All committee meetings except Awards open to any Rep/Alt or company associate--drop in if you are not already on a committee.

(over)

Sunday, May 5 (cont'd)

6:00 to 7:00 p.m.	DIRECTORS' RECEPTION FOR NEWCOMERS By invitation to new Rep/Alts and member prospects	Cottonwood
6:30 to 7:30 p.m.	SOCIAL HOUR	Arizona Deck/Foyer
7:30 to 9:30 p.m.	GROUP DINNER Entertainment	Canyon II & IV

Monday, May 6

5:30 & 6:00 a.m.	JEEP ADVENTURE & HOT-AIR BALLOONING See descriptions on pages 19-20. Pre-registration required.	
7:00 to 8:15 a.m.	COMMITTEE BREAKFASTS Management Study Groups Membership Plans & Policies Staff & Facilities Administration	Murphey II Murphey III Murphey I Primrose
7:30 to 8:30 a.m.	CONTINENTAL BREAKFAST	Grand Foyer
7:30 a.m. to 5:00 p.m.	REGISTRATION DESK OPEN	Arizona Foyer
7:30 a.m. to 5:30 p.m.	PRE-COLLEGE EDUCATION EXHIBITS Representatives of several organizations that are actively promoting improvements in pre-college education will be present to share their ideas and programs.	Arizona Foyer
8:30 a.m.	OPENING SESSION Theme: "Organization Behavior/Leadership" Chairpersons: Graham R. Mitchell Director of Planning GTE Laboratories Incorporated Waltham, MA Jerry A. Cogan President Milliken Research Corporation Spartanburg, SC	Grand Ballroom

Monday, May 6 (cont'd)

Speakers:

Lawrence H. Linden
Principal
McKinsey & Co.
New York, NY

"Crossing the Threshold to Corporate Leadership:
How R&D Managers Earn Credibility with Their CEO"

Paul H. O'Neill
Chairman and CEO
Aluminum Corporation of America
Pittsburgh, PA

"The CEO's Perspective"

Peter R. Bridenbaugh
Vice President, Research & Development
Alcoa Laboratories
Alcoa Center, PA

"The CTO's Perspective"

Frank V. AtLee
Executive Vice President
American Cyanamid Company
Wayne, NJ

"Leadership and the Credibility of the
Chief Technical Officer"

Ronald A. Mitsch
Senior Vice President, Research & Development
3M
St. Paul, MN

"R&D at 3M"

12:00 noon
to 1:30 p.m.

PRESIDENT'S LUNCHEON

Canyon Ballroom

President's Address:
Wayne G. Burwell

Executive Director's Report:
Charles F. Larson

Activities Reports:

- o Pre-College Education Committee -- Wesley E. Cravey, Chair
- o FST Committee -- Alvin W. Trivelpiece, Chair

(over)

Monday, May 6 (cont'd)

- o OSTP Activities -- Jules Blake, I.R.I. Fellow
- o Research-on-Research Committee -- Philip M. Brodsky, Chair

2:00 to
4:30 p.m.

SESSION II

Grand Ballroom

Theme: "Metrics: Forecasting Results and
Measuring Performance"

Chairpersons:

Dale F. Pollart
Director of Research
Texaco, Inc.
Beacon, NY

Walter L. Robb
Senior Vice President, Corporate Research & Development
General Electric Company
Schenectady, NY

Speakers:

Roland W. Schmitt
President
Rensselaer Polytechnic Institute
Troy, NY

"The Strategic Measure of R&D"

Francois van Remoortere
President, Research Division
W. R. Grace & Co.
Columbia, MD

"Project Tracking Systems at W. R. Grace"

Ronald A. Sills
Manager, Research Planning
Mobil Research & Development Corporation
Paulsboro, N.J.

"Measuring R&D Value: Current and Post-Audit Analyses"

James J. Tietjen
President and Chief Executive Officer
SRI International; and Chairman,
David Sarnoff Research Center, Inc.
Menlo Park, CA

"Contract Research--Its Values and Its Challenges"

Monday, May 6 (cont'd)

5:00 to 10:30 p.m.	SOCIAL HOUR, RODEO, AND WESTERN BARBECUE	Old Tucson
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Tuesday, May 7

5:30 & 6:00 a.m.	JEEP ADVENTURE & HOT-AIR BALLOONING See descriptions on pages 19-20. Pre-registration required.
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7:00 to 8:15 a.m.	COMMITTEE BREAKFASTS Advanced Study Groups Emeriti Finance Management Study Groups (Invitational) University Guests (Sign up at I.R.I. registration desk to have breakfast with our academic guests -- limit 25)	Murphey III Aster I & II Primrose Verbena Murphey II
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7:30 to 8:30 a.m.	CONTINENTAL BREAKFAST	Grand Foyer
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7:30 a.m. to 5:30 p.m.	REGISTRATION DESK OPEN	Arizona Foyer
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7:30 a.m. to 5:30 p.m.	PRE-COLLEGE EDUCATION EXHIBITS	Arizona Foyer
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8:30 to 11:45 a.m.	SESSION III	Grand Ballroom
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Theme: "Credible and Effective Communication"

Chairpersons:

Ora E. Smith
President and CEO
Illinois Superconductor Corporation
Evanston, IL

Brian M. Rushton
Vice President, Research & Development
Air Products and Chemicals, Inc.
Allentown, PA

Speakers:

Mary L. Good
Senior Vice President, Technology
Allied-Signal, Inc.
Morristown, NJ

"Communication of R&D to Management: A Two-Way Street"

(over)

Tuesday, May 7 (cont'd)

E. Allen Womack
Vice President, Research and Development Division
Babcock & Wilcox Company
Alliance, OH

"Credibility and Accountability--Responsibilities
of the Corporate Technology Executive"

David Campbell
Smith Richardson Senior Fellow
Center for Creative Leadership
Colorado Springs, CO

"Credibility in the Leadership Role"

Robert Pearson
Principal
Regis McKenna, Inc.
Palo Alto, CA

"R&D Communication Starts with Talking to Customers"

Robert M. White
Under Secretary for Technology
U.S. Department of Commerce
Washington, DC

"I.R.I. and the U.S. Department of Commerce: Working
Together in Support of U. S. Technological Competitiveness"

12:00 noon to 1:00 p.m.	LUNCHEON ON OWN	Desert Garden, Sabino's, Golf Club, or Courtside Cafe
12:15 p.m.	REP/ALT GOLF	La Paloma Club
12:30 p.m.	OPTIONAL ACTIVITIES See descriptions on pages 19-20. Pre-registration required.	
	o Visit to Kitt Peak -- 12:30 p.m. (includes box lunch)	
	o Gliding -- 12:30 p.m. (includes box lunch)	
	o Visit to Sonora Desert Museum -- 1:00 p.m.	
	o Visit to Biosphere 2 -- 1:00 p.m.	
	o Horseback Trail Ride -- 1:30 p.m.	
	o Pima Air Museum -- 1:30 p.m.	

Tuesday, May 7 (cont'd)

1:00 p.m.	REP/ALT TENNIS	Tennis Club
6:30 to 7:30 p.m.	SOCIAL HOUR	Arizona Deck/ Foyer
7:30 to 11:30 p.m.	MEDAL AWARD DINNER DANCE*	Canyon Ballroom

I.R.I. Medalist:

Mary L. Good
Senior Vice President, Technology
Allied-Signal, Inc.
Morristown, NJ

Introduction by:

Fred Poses
Executive Vice President
Allied-Signal, Inc.
Morristown, NJ

Transfer of gavel to F. Peter Boer

Wednesday, May 8

5:30 & 6:00 a.m.	JEEP ADVENTURE & HOT-AIR BALLOONING See descriptions on pages 19-20. Pre-registration required.	
7:00 to 8:00 a.m.	COMMITTEE BREAKFASTS Advanced Programs	Acacia
	Commerce Guests (sign up at I.R.I. registration desk to have breakfast with our guests from Department of Commerce - limit 25)	Murphey II
7:00 to 8:00 a.m.	CONTINENTAL BREAKFAST	Terrace Foyer
7:30 to 11:45 a.m.	REGISTRATION DESK OPEN	Arizona Foyer

*Directors, Medalist, and Introducer in black tie and dinner jackets;
encouraged, but optional, for all others.

(over)

Wednesday, May 8 (cont'd)

8:00 to
9:30 a.m.
and
9:45 to
11:30 a.m.

SPECIAL INTEREST SESSIONS

(To accommodate the wide variety of membership interests, and in recognition of the frequently expressed regret that only one S.I.S. could be attended, we will offer a new format at this meeting in which each S.I.S. will be offered twice, at 8:00 a.m. and 9:45 a.m. Please indicate your choice of S.I.S. for each time. Since we anticipate that both versions of each S.I.S. will take different tacks, there is no objection to registering for the same S.I.S. in both time periods. See pages 13-18 for descriptions.)

Chairpersons:

Joseph W. Raksis
Vice President, Organic and Polymer Research
W. R. Grace & Co.
Columbia, MD

John T. Marvel
Vice President, Research and Development
Ethyl Corporation
Baton Rouge, LA

(A) "Management of Global R&D"

Finger Rock I

Discussion Leader:

Theodore W. Schlie
Associate Professor of Technology Management
Center for Innovation Management Studies
Lehigh University
Bethlehem, PA

Panelists:

Leonard Berkowitz
Vice President, Technology Development
Exxon Chemical Company
Linden, NJ

Deb Chatterji
Managing Director, Technology
The BOC Group, Inc.
Murray Hill, NJ

Karl H. Zaininger
President & CEO
Siemens Corporate Research, Inc.
Princeton, NJ

Wednesday, May 8 (cont'd)

(B) "Strategic Partnerships"

Finger Rock II

Discussion Leader:

David H. Jones
Vice President, Advanced Technology
The Badger Company, Inc.
Cambridge, MA

Panelists:

George Farris
Acting Dean
Graduate School of Management
Rutgers University
Newark, NJ

Gene Slowinski
Lecturer
School of Industrial Management
N.J. Institute of Technology
Newark, NJ

(C) "Total Quality Management in R&D"

Finger Rock III

Discussion Leaders:

John McShefferty
President
Gillette Research Institute
Gaithersburg, MD

Lee Starr
Emeritus (formerly Corporate Vice President,
Technology, & President, Research Division)
Hoechst Celanese
Short Hills, NJ

(D) "DOC Technology Initiative --
Financing Technology"

Indigo

Discussion Leaders:

(To be announced)
Technology Administration
U.S. Department of Commerce
Washington, DC

Robert A. Frosch
Vice President
General Motors Research Laboratories
Warren, MI

(over)

Wednesday, May 8 (cont'd)

Panelists:

Thornton Parker
Senior Technology Economics Specialist
Office of Technology Policy
U.S. Department of Commerce
Washington, DC

Jules Blake
I.R.I. Fellow
Office of Science & Technology Policy
Washington, DC

Lynn W. Ellis
Emeritus
Clearwater, FL

(E) "DOC Technology Initiative -- Vertically Linked
Industrial Teams: A New Approach to Technology
Creation and Commercialization"

Discussion Leaders:

Aster

Deborah Wince-Smith
Assistant Secretary for Technology Policy
U.S. Department of Commerce
Washington, DC

William A. Owcarski
Director of External Technology Development
United Technologies Corporation
Washington, DC

Panelists:

Charles Ferguson
MIT Center for Technology Policy and
Industrial Development
Cambridge, MA

Lansing Felker
Acting Director
Office of Technology Policy Analyses & Studies
Department of Commerce
Washington, DC

Carmen Catanese
Vice President
Solid State Research Division
David Sarnoff Research Center
Princeton, NJ

Wednesday, May 8 (cont'd)

(F) "R&D Leadership: Credibility and
Accountability"

Lantana

Discussion Leader:

Graham R. Mitchell
Director of Planning
GTE Laboratories, Inc.
Waltham, MA

Panelists:

Alan Kantrow
Director of Practice Communications
McKinsey & Company
London, England

Larry Linden
Principal
McKinsey & Company
New York, NY

Susan Stock
McKinsey & Company
New York, NY

Bro Uttal
McKinsey & Company
New York, NY

(G) "Communicating Outside the R&D Laboratory" Verbena

Discussion Leader:

Francois van Remoortere
President, Research Division
W. R. Grace & Co.
Columbia, MD

Panelists:

Robert A. Bonewitz
Director, Product Design & Manufacturing
Alcoa Laboratories
Aluminum Company of America
Alcoa Center, PA

Richard J. DeIasi
Director, Corporate Research Center
Grumman Corporation
Bethpage, NY

Michael L. Losee
Group Vice President, R&D
The NutraSweet Company
Mt. Prospect, IL

(over)

Wednesday, May 8 (cont'd)

11:30 a.m.

ADJOURNMENT

11:45 a.m. to
2:00 p.m.

Board of Directors' Meeting

Udall

* * *

SPECIAL INTEREST SESSIONS

Wednesday, May 8, 1991

8:00 to 9:30 a.m.

9:45 to 11:30 a.m.

Chairpersons: Joseph W. Raksis
Vice President, Organic and Polymer Research
W. R. Grace & Co.
Columbia, MD

John T. Marvel
Vice President, Research and Development
Ethyl Corporation
Baton Rouge, LA

(A) "Management of Global R&D"

Finger Rock I

Discussion Leader:

Theodore W. Schlie
Associate Professor of Technology Management
Center for Innovation Management Studies
Lehigh University
Bethlehem, PA

Panelists:

Leonard Berkowitz
Vice President, Technology Development
Exxon Chemical Company
Linden, NJ

Deb Chatterji
Managing Director, Technology
The BOC Group, Inc.
Murray Hill, NJ

Karl H. Zaininger
President & CEO
Siemens Corporate Research, Inc.
Princeton, NJ

This session is sponsored jointly by the Research-on-Research and International Committees. The increasing globalization of competition, markets, science, and technology has had significant impact on both corporate and R&D strategy. Managing global activities conducted throughout the world is far more complex and difficult than when most R&D was centralized in the host country, with offshore R&D limited to that required to deal with local issues.

Both parts of this S.I.S. will explore issues related to the management of global R&D, each with a somewhat different focus. The sessions will begin with definitions of concepts and terms to provide a common framework for discussion, followed by brief presentations by three I.R.I. companies of their experiences relevant to the focus area. Join us, and think globally.

(over)

(B) "Strategic Partnerships"

Finger Rock II

Discussion Leader:

David H. Jones
Vice President, Advanced Technology
The Badger Company, Inc.
Cambridge, MA

Panelists:

George Farris
Acting Dean
Graduate School of Management
Rutgers University
Newark, NJ

Gene Slowinski
Lecturer
School of Industrial Management
N.J. Institute of Technology
Newark, NJ

This S.I.S. will report on the results of the R-o-R Committee project on R&D cooperative relationships between large and small firms. The purpose of the R-o-R study was to identify management factors that relate to success in these partnerships over time. Thirty-eight strategic partnerships were sampled in 1987 and restudied in 1990. Interestingly, only 50% of the relationships survived the three years. There seem to be three main reasons for partnership failure:

1. One of the firms, generally the larger firm, shifts its strategy away from the technology of the partnership.
2. A champion is moved on and replaced by a non-champion.
3. Unequal levels of technical competence between firms inhibits the technology transfer process.

Management factors related to success have been identified and will be discussed by the panelists. Strategic partnerships are growing in importance and value. Learn here about the do's and don'ts to prepare for the future.

(C) "Total Quality Management in R&D"

Finger Rock III

Discussion Leaders:

John McShefferty
President
Gillette Research Institute
Gaithersburg, MD

Lee Starr
Emeritus (Formerly Corporate Vice President,
Technology, & President, Research Division)
Hoechst Celanese
Short Hills, NJ

Total Quality Management (TQM) is a relatively new factor in most R&D managers' range of responsibilities. Because TQM is a very broad topic, Rep/Alts will share their experiences on three aspects in R&D:

1. How do you get started?
2. How do you keep up interest once it is started?
3. How do you know you are making progress (i.e., how can you measure the process)?

Be present to share your experiences with TQM in the areas listed above and in any other area that you feel is important to the success of quality in R&D.

(D) "DOC Technology Initiative -- Financing Technology"

Indigo

Discussion Leaders:

(To be named)
U.S. Department of Commerce
Washington, DC

Robert A. Frosch
Vice President
General Motors Research Laboratories
Warren, MI

Panelists:

Thornton Parker
Senior Technology Economics Specialist
Office of Technology Policy
U. S. Department of Commerce
Washington, D.C.

Jules Blake
I.R.I. Fellow
Office of Science & Technology Policy
Washington, DC

Lynn W. Ellis
Emeritus
Clearwater, FL

In many companies, there is a gap between the R&D manager who needs money and those who manage the money. This S.I.S. is about bridging that gap. It will consider how R&D activities affect a company's profit in the short and long terms, how profit fluctuations affect a company's stock price, and how this may affect the company's cost of capital and other concerns of management.

(over)

It will consider how R&D activities are evaluated financially and will explore alternative analytical tools that are available to justify R&D.

The S.I.S. will help directors of R&D understand and accommodate the financial situation of their companies. It will consider the financial concerns of a company when it considers a major new product or process upgrade, how companies with self-generated cash differ from companies that must raise outside funds, and how the capital structure of a company can affect its ability to sustain R&D and translate the results into products.

- (E) "DOC Technology Initiative -- Vertically Linked Aster
Industrial Teams: A New Approach to Technology
Creation and Commercialization"

Discussion Leaders:

Deborah Wince-Smith
Assistant Secretary for Technology Policy
U.S. Department of Commerce
Washington, DC

William A. Owczarski
Director of External Technology Development
United Technologies Corporation
Washington, DC

Panelists:

Charles Ferguson
MIT Center for Technology Policy and
Industrial Development
Cambridge, MA

Lansing Felker
Acting Director
Office of Technology Policy Analyses & Studies
U.S. Department of Commerce
Washington, DC

Carmen Catanese
Vice President
Solid State Research Division
David Sarnoff Research Center
Princeton, NJ

New, large-scale, generic-enabling technologies are often too expensive for a single firm to create and commercialize. The cost of these technologies is often prohibitive and they sometimes require a range of disciplines rarely found in a single firm. Even more important, the ability to use these new technologies fully -- and therefore recoup the high developmental costs -- typically requires applications in many product lines, often in several industries. Cost sharing of R&D through consortia of competitors is limited to pre-competitive areas and is often too uncertain or slow in moving the new technology to the market to be competitive.

This S.I.S. will explore the concept of vertically linked industrial teams (VLITs). These teams would allow supplier, manufacturing, and user "stakeholders" in specific technology "food chains" to overcome the limitations of traditional cooperation and individual firm efforts. Composed of non-competing firms, VLITs can aggregate the resources of member firms to fund and manage the creation and commercialization of large-scale technologies, with minimal antitrust concerns. The Japanese have demonstrated that such teams can spread the risk and cost of new technologies while achieving speed to the market. Be with us to share your views on this approach to technological competitiveness.

(F) "R&D Leadership: Credibility and Accountability"

Lantana

Discussion Leader:

Graham R. Mitchell
Director of Planning
GTE Laboratories, Inc.
Waltham, MA

Panelists:

Alan Kantrow
Director of Practice Communications
McKinsey & Company
London, England

Larry Linden
Principal
McKinsey & Company
New York, NY

Susan Stock
McKinsey & Company
New York, NY

Bro Uttal
McKinsey & Company
New York, NY

A working session to review and discuss the conclusions of an R-o-R Committee-sponsored series of in-depth interviews with CEOs, their counterparts in R&D, and other top business-unit or general managers. The purpose of these interviews is to build a better understanding of how CEOs think about the top-level management of technology in their corporations, how they organize relevant decision-making processes, and -- most important -- how their CTOs can play a central role in both. The panelists will outline key findings of their study (a draft report will be circulated in advance) and lead a discussion on their applicability to individual I.R.I. Rep/Alts and on their implications for future I.R.I. activities and programs. This project is one of the most important ever undertaken by the R-o-R Committee.

(over)

(G) "Communicating Outside the R&D Laboratory"

Verbena

Discussion Leader:

Francois van Remoortere
President, Research Division
W. R. Grace & Co.
Columbia, MD

Panelists:

Robert A. Bonewitz
Director, Product Design & Manufacturing
Alcoa Laboratories
Aluminum Company of America
Alcoa Center, PA

Richard J. DeIasi
Director, Corporate Research Center
Grumman Corporation
Bethpage, NY

Michael L. Losee
Group Vice President, R&D
The NutraSweet Company
Mt. Prospect, IL

R&D managers have a continuing obligation to communicate the significance of their research to key audiences and decision makers outside the research laboratory. One benefit of such communication is credibility. Communications are often directed to non-technical audiences, both outside and inside the corporation. Outside communications can be directed to the press, financial analysts, the local community, or the public at large, and are geared primarily toward enhancing the company's image, projecting longer-term developments, and educating the public about technical issues. Internal communications would be addressed primarily to senior corporate and business management to highlight technical developments and to continue to gain support for research activities. The panelists and other participants will share their communication experiences and describe the communication techniques used by their companies. Communications judged to be particularly successful or unsuccessful will be highlighted. This S.I.S. offers an excellent opportunity to find out what other companies are doing to develop credible communications.

Industrial Research Institute, Inc.
1991 Annual Meeting

OPTIONAL ACTIVITIES

Meeting participants and companions are offered a choice of several optional activities throughout the meeting. A brief description of each function follows. Pre-registration and pre-payment are required for all activities. Indicate your choices (and the time) on the I.R.I. Registration Form. If minimum registration is not met for some tours, another time will be offered or a refund will be made. All tours will leave from the front entrance of the hotel.

ARIZONA-SONORA DESERT MUSEUM (Sunday and Tuesday, 1:00 to 5:00 p.m.)

Called "the most distinctive zoo in the United States," the museum demonstrates that there is more to the desert than heat, sand, and cacti. Combining a zoo, aviary, botanical garden, and natural history exhibit, this living museum features more than 400 kinds of plants and 200 species of animals exhibited in re-creations of their natural habitats. Cost: \$25. 35 persons minimum each time.

BIOSPHERE 2 (Tuesday, 1:00 to 5:00 p.m.)

Dubbed "Planet in a Bottle, Home Sweet Biome, Noah's Ark--The Sequel, and Closed Encounters in the Desert," Biosphere 2 is designed as a stable, complex and evolving system containing seven biomes--tropical rain-forest, savannah, marsh, marine, desert, intensive agriculture, and human. Housed in a 3.15 acre air-tight, sealed, glass and frame structure, the ecological systems will recycle the air, water, and nutrients to maintain the 3,800 plant and animal species for two years. Cameras and recorders are not permitted. Cost: \$40. 35 persons minimum, 74 persons maximum.

GLIDING (Tuesday, 12:30 to 4:30 p.m.)

This bird's-eye view of the city and beautiful surrounding Sonora Desert is a wonderful experience for those who enjoy the adventure of friendly skies. Cost: \$75 (includes box lunch). 35 persons minimum.

HORSEBACK TRAIL RIDE (Tuesday, 1:30 p.m.)

See the Old West as the cowboys and pioneers did -- but now on gentle horses with fully trained trail guides who relate interesting facts about plants, animals, history, and rock formations unique to the Sonora Desert. Cost: \$45. 12 persons minimum.

HOT-AIR BALLOONING (Monday, Tuesday, Wednesday, 6:00 to 9:00 a.m.)

Spend 60 to 90 minutes drifting gently over the foothills of the Santa Catalina mountains. Travel in one of these quiet craft is a perfect way to see a panorama of the cacti and desert wild flowers. Cost: \$165. 5 persons minimum each flight.

(over)

JEEP ADVENTURE (Monday, Tuesday, Wednesday, 5:30 to 8:30 a.m.)

The mountains surrounding Tucson are truly spectacular. One of the best ways to experience their beauty is from the back of a four-wheel drive vehicle. The driver/guide is an experienced mountain and desert traveler. Stops are made along the way to look at unusual features or to point out plants, animals, and highlights of the Indian heritage.
Cost: \$60. 6 persons minimum each day.

KITT PEAK (Sunday, noon to 5:00 p.m.; Tuesday, 12:30 to 5:30 p.m.)

The largest, single collection of optical telescopes in the world is operated by the National Optical Astronomy Observatories for a consortium of universities funded by the National Science Foundation. The drive to the top is an exciting experience in itself. Caution for those with respiratory problems: uphill walking is required at an altitude of 6,882 feet. Tuesday's visit will offer a behind-the-scenes tour. Cost: \$35 (includes box lunch both days). 35 persons minimum each time.

PIMA AIR MUSEUM (Sunday and Tuesday, 1:30 to 5:00 p.m.)

Located along desert pathways are over 180 aircraft from World War II to the present. Each plane is identified with a brief history. Indoor displays consist of uniforms, paraphernalia, memorabilia, and models.
Cost: \$25. 35 persons minimum each time.

REP/ALT GOLF TOURNAMENT (Tuesday afternoon)

The I.R.I. annual classic is scheduled for the challenging La Paloma course, designed by Jack Nicklaus, with front and back tee times starting at 12:10 p.m. Box lunches will be in the carts. Be sure to indicate your handicap or approximate score on the I.R.I. Registration Form. If you have preferences for a foursome, indicate them on the form. Pairings will be posted Monday at the I.R.I. registration desk. Competition will be on a net-score basis using the Callaway handicap system. Prizes will be awarded for 1st, 2nd, and 3rd low net, for 1st, 2nd, and 3rd low gross, longest drive, and closest to the pin. The traditional martini pitcher will be awarded for low gross. Score cards are to be turned in to the Pro Shop immediately after playing for determination of winners.

Total fee is \$110 per person, payable to I.R.I., which includes prizes, green fees, golf cart, and box lunch with soda. There is no charge for club storage. Rental clubs are \$25. Be sure your name and "I.R.I." are on your golf bag when checking in (John Tancredi, coordinator).

REP/ALT TENNIS TOURNAMENT (Tuesday afternoon)

A round-robin doubles tournament will begin at 1:00 p.m. on the hotel courts. Participation will not be limited unless the sign ups exceed the courts available to us. Advance sign-up is strongly advised, since we will definitely accommodate those who do so. If interested in playing in the tournament, sign up on the I.R.I. Registration Form. Entry fee (for court time, balls, and prizes) is \$30 per person, payable to I.R.I. (Don MacLean and Gene Skiest, coordinators).



Industrial Research Institute, Inc.

1550 M Street, NW, Washington, D.C. 20005 • (202) 872-6350 • Fax (202) 872-6356

February 8, 1991

To: Member Company Representatives and Alternates

BOARD OF DIRECTORS

1990-1991

PRESIDENT
WAYNE G. BURWELL (1992)
DIRECTOR OF RESEARCH
UNITED TECHNOLOGIES CORPORATION

PRESIDENT-ELECT
F. PETER BOER (1993)
EXECUTIVE VICE PRESIDENT
W. R. GRACE & CO.

VICE PRESIDENT
BRIAN M. RUSHTON (1994)
VICE PRES., RES. & DEV.
AIR PRODUCTS AND CHEMICALS, INC.

PAST PRESIDENT
ALBERT R. C. WESTWOOD (1991)
VICE PRES., SCIENCE
MARTIN MARIETTA CORPORATION

CHARLES J. BISHOP (1992)
VICE PRES., CORP. TECHNOLOGY
A. O. SMITH CORPORATION

ALAN G. CHYNOWETH (1993)
VICE PRES., APPLIED RESEARCH
BELLCORE

ROBERT A. FROSCHE (1992)
VICE PRESIDENT
GENERAL MOTORS CORPORATION
GENERAL MOTORS RESEARCH LABS.

GRADY W. HARRIS (1992)
VICE PRES., RES. & DEV.
HOLLISTER INCORPORATED

JOHN MCSHEFFERTY (1991)
PRESIDENT
GILLETTE RESEARCH INSTITUTE

GRAHAM R. MITCHELL (1993)
DIRECTOR OF PLANNING
GTE LABORATORIES INCORPORATED

ROBERT L. MORRIS (1991)
CORP. VICE PRES. &
DIRECTOR TECH. AFFAIRS
CONTINENTAL BAKING COMPANY

DALE F. POLLART (1992)
DIRECTOR OF RESEARCH
TEXACO, INC.

ORA E. SMITH (1991)
VICE PRESIDENT &
CHIEF MARKETING OFFICER
CONDUCTUS, INC.

LEON STARR (1991)
CORP. VICE PRES., TECHNOLOGY
PRESIDENT, RESEARCH DIVISION
HOECHST CELANESE

JOHN J. WISE (1993)
VICE PRESIDENT, RESEARCH
MOBIL R&D CORPORATION

E. ALLEN WOMACK, JR. (1993)
VICE PRES., RES. & DEV.
THE BABCOCK & WILCOX COMPANY

EXECUTIVE DIRECTOR
CHARLES F. LARSON

Subject: **HOTEL AND TRAVEL INFORMATION --**
1991 ANNUAL MEETING, TUCSON, ARIZONA
SUNDAY TO WEDNESDAY, MAY 5-8, 1991

The enclosed hotel and travel information will allow you to make your reservations early for our 1991 Annual Meeting, May 5-8, at the Westin La Paloma hotel in Tucson, Arizona, on the theme, "Credibility."

Program

Credibility is the key to effectiveness in a corporate organization. Some R&D managers have it, others don't. Peter Boer's Program Committee will distill the wisdom and experience of experts, from both within and outside R&D, on how to build credibility (or lose it!), and on how to transmit these skills to your subordinates, to make them more effective. The subject will be examined from successful patterns of organizational behavior, quantitative systems that predict and measure results (accountability), and effective communications. Sessions are scheduled as follows:

- "Organization Behavior/Leadership"
(Monday a.m.)
- "Metrics--Forecasting Results and Measuring Performance"
(Monday p.m.)
- "Credible and Effective Communication"
(Tuesday a.m.)

Seven Special Interest Sessions will be offered twice, at 8:00 and 9:45, Wednesday morning, to give everyone an opportunity to cover two topics. Special addresses will be presented by the Honorable Robert M. White, Under Secretary of Commerce for Technology, by Mary Good, I.R.I. Medalist, and by Wayne Burwell, I.R.I. President.

Activities

Supplementing the General and Special Interest Sessions will be golf and tennis plus opportunities for hot-air ballooning, visits to Biosphere II and Kitt Peak, and other interesting options.

Social activities will include receptions each evening and special group dinners with entertainment on Sunday, Monday, and Tuesday. Our program will begin with committee meetings Sunday afternoon, followed by the

social hour at 6:30 p.m. Adjournment will be at 11:30 a.m. on Wednesday. Persons arriving Saturday to get a reduced air fare can gather for an early-bird, no-host cocktail hour at 5:30 p.m. and make arrangements for dinner in small groups.

Hotel

Enclosed are the room reservation envelope and a leaflet describing the hotel. La Paloma opened just five years ago and has developed into an outstanding conference facility. If you plan to attend the meeting, or believe there is a possibility you will attend, fill in the reservation form, enclose your deposit for the first night (or provide credit card number), and mail it for arrival by April 2. If you wish to arrive early, send your reservation promptly because the number of rooms available Friday and Saturday is limited. A written confirmation of your reservation will be sent to you promptly. Rooms set aside for I.R.I. but not requested by Tuesday, April 2, cannot be held in our block. Your deposit will be returned in full if a cancellation is received by the hotel up to 15 days before arrival. Telephone number of La Paloma is 602-742-6000 (for reservation information, call Bruce Lazarus, Group Rooms Coordinator, at 800-876-3683).

Travel

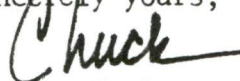
The airport in Tucson is 18 miles south of La Paloma, which is located at 3800 East Sunrise Drive, between Campbell and Swan. The airport in Phoenix is 100 miles north. A reservation form for van service from the Tucson airport to the hotel will be sent to you with the room confirmation. The fee is \$15.50 per person. A cab is about \$25 (negotiable).

Who May Attend

In keeping with I.R.I. policy, meeting attendance is open to member-company Rep/Alts and company associates, to emeritus representatives, and to official guests invited by the Institute. Rep/Alts are encouraged to invite a company associate, who is also welcome to attend any of the committee meetings.

Please write or call I.R.I. headquarters if you need additional materials or if we can be of assistance in any way. The Preliminary Program and Registration Form will be mailed March 15. Make your reservations early!

Sincerely yours,



Charles F. Larson
Executive Director

CFL:pt

Enclosures: 1. Hotel Reservation Envelope
2. Hotel Brochure

P.S. Accompanying this memo is an announcement on the Tutorial to be offered Friday to Sunday, May 3-5, on "Competitive Intelligence as a Tool for R&D Managers."

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120831

SPEECH: YES NO

FROM: JONES, James R: AMERICAN STOCK EXCHANGE

DATE OF EVENT: 04/09/91

LOCATION OF EVENT: DEPARTMENTAL AUDITORIUM, 12TH & 14TH ON CONSTITUTI

TIME OF EVENT: 07:00PM

SUBJECT: JAMES R. JONES AND THE BOARD OF DIRECTORS OF THE
AMERICAN BUSINESS CONFERENCE'S 10th ANNIVERSARY
RECEPTION AND DINNER.

RSVP: 03/29/91

CONTACT PERSON:

CONTACT NUMBER: 202/822-9304

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO:

REMARKS:

DATE OF LETTER:

DATE RECEIVED: 03/22/91

FILE: P- INVITATION

JAMES R. JONES

CHAIRMAN

CHAIRMAN, AMERICAN STOCK EXCHANGE

AND

THE BOARD OF DIRECTORS

AMERICAN BUSINESS CONFERENCE

REQUEST THE PLEASURE OF YOUR COMPANY

AT OUR 10TH ANNIVERSARY RECEPTION

AND DINNER

SPECIAL ADDRESS BY

THE HONORABLE MICHAEL BOSKIN

CHAIRMAN, COUNCIL OF ECONOMIC ADVISERS

TRIBUTE TO

THE HONORABLE ROBERT MOSBACHER

SECRETARY, DEPARTMENT OF COMMERCE

TUESDAY, APRIL NINTH

SEVEN O'CLOCK

DEPARTMENTAL AUDITORIUM

BETWEEN 12TH & 14TH STREETS

ON CONSTITUTION AVENUE, NW

WASHINGTON, DC

THE FAVOUR OF A REPLY IS REQUESTED

(202) 822-9304

BLACK TIE





The Honorable A. Allan Bromley
 and Mrs. Bromley
Assistant to the President for
 Science and Technology and
Director, Office of Science and
 Technology
OEOB, Room 358
Washington, DC 20506

9120831
RECEIVED

91 MAR 22 A10:37

OFFICE OF THE
DIRECTOR

Suite 1200
1730 K Street, NW
Washington, DC
20006

81

4/3

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120830

SPEECH: YES NO

FROM: DEPARTMENT OF THE NAVY

DATE OF EVENT: 04/03/91

LOCATION OF EVENT: WORDEN FIELD, ANNAPOLIS, MARYLAND

TIME OF EVENT: 03:30PM

SUBJECT: INVITATION TO ATTEND THE DRESS PARADE OF THE BRIGADE
OF MIDSHIPMEN.

RSVP: 03/25/91

CONTACT PERSON: PROTOCOL OFFICE

CONTACT NUMBER: 301/267-2403

INVITATION ACCEPTED?

~~YES~~ NO

COPIES TO:

REMARKS:

DATE OF LETTER:

DATE RECEIVED: 03/22/91

FILE: P- INVITATION



*The Superintendent of the United States Naval Academy
Rear Admiral Virgil L. Hill, Jr., U.S. Navy
cordially invites you to attend
the Dress Parade of the Brigade of Midshipmen
on Wednesday, the third of April
at half past three o'clock
Worden Field*

*R.S.V.P. by 25 March
Protocol Office
(301) 267-2307/2403*

*Canopy Section
Service Dress Blue
Civilian Informal*

*Reception following the
parade at
Buchanan House*

DEPARTMENT OF THE NAVY

• **United States Naval Academy
Office of the Superintendent
Annapolis, MD 21402-5000**



**Official Business
Penalty for Private Use \$300**

Dr. D. Allan Bromley
Office of Science & Technology Policy
Executive Office of the President
17th & Pennsylvania Avenue
Washington, DC 20506

RECEIVED

31 MAR 22 AID: 36

OFFICE OF THE
DIRECTOR

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-CONFERENCE

DOCUMENT NUMBER: 9120832

SPEECH: YES NO

FROM: PATEL C.K.N.: NATIONAL ACADEMY OF SCIENCES

DATE OF EVENT: 05/20/91

LOCATION OF EVENT: NATIONAL ACADEMY OF SCIENCES BLDG, WASHINGTON, D.C

TIME OF EVENT:

SUBJECT: INVITATION TO PARTICIPATE IN THE NATIONAL ACADEMY OF
SCIENCES CONFERENCE ON INDUSTRIAL ECOLOGY.

RSVP: 03/29/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

~~YES~~ **NO**

COPIES TO: Dr. Phillips
Nancy Maynard

REMARKS:

3/18

Sponsor: National Academy of Sciences -- NO SPEECH
Subject: Industrial ecology -- a systems view of industrial operations
Audience: 70 invited guests to conference
Date: May 20-21, Monday-Tuesday
Location: Washington, D.C.
Contact: Kumar Patel
Comments: This is an invitation to attend the conference.

3/28/91

YES

NO

No response really
necessary. This was not
an invitation to speak.

P-invite
make sure
remarks are
on file.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-CONFERENCE

DOCUMENT NUMBER: 9120832

SPEECH: YES NO

FROM: PATEL C.K.N.: NATIONAL ACADEMY OF SCIENCES

DATE OF EVENT: 05/20/91

LOCATION OF EVENT: NATIONAL ACADEMY OF SCIENCES BLDG, WASHINGTON, D.C

TIME OF EVENT:

SUBJECT: INVITATION TO PARTICIPATE IN THE NATIONAL ACADEMY OF
SCIENCES CONFERENCE ON INDUSTRIAL ECOLOGY.

RSVP: 03/29/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

NO

COPIES TO: Dr. Phillips
Nancy Maynard

REMARKS:

DATE OF LETTER: 03/18/91

DATE RECEIVED: 03/22/91

FILE: P- INVITATION

9120832

NATIONAL ACADEMY OF SCIENCES

2101 Constitution Avenue Washington, DC 20418

RECEIVED

March 18, 1991

91 MAR 22 AIO : 36

Colloquium on Industrial Ecology
May 20, 21, 1991

Mr. D. Allan Bromley
Office of Science and Technology Policy
The White House
Washington, DC 20500

OFFICE OF THE
DIRECTOR

Organizing Committee

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Braden R. Allenby

Dave Chittick

Lynn W. Jelinski

Robert A. Laudise

C. Kumar N. Patel

Richard Tarbox

Joan Woodard

Program Committee

Lynn W. Jelinski, Chairman

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Peter B. Linhart

Jagdish Narayan

George W. Parshall

C. Kumar N. Patel

R. Cynthia Pruett

Frank Sherwood Rowland

Wyck D. Seelig

Bruce Smart

Dear Allan:

I would like to invite you to participate in the National Academy of Sciences Conference on Industrial Ecology. The conference will be held on May 20 and 21, 1991, at the National Academy of Sciences building in Washington, DC. Attendance will be by invitation only, and will be limited to about 70 people.

Let me tell you what we are trying to accomplish, so you can see where your expertise fits in and why we very much hope that you will attend.

We believe that *Industrial Ecology* is an emerging concept and is likely to become a new field of scientific endeavor in this decade. Industrial Ecology is a systems view of industrial operations in which the total materials cycle — from virgin material, to finished material, to component, to product, to waste product, and to ultimate disposal — is optimized. In Industrial Ecology an industrial system is viewed not in isolation from its surrounding systems, but in concert with them. Industrial Ecology is a proactive, rather than reactive, approach to the environment.

The purpose of this conference is (1) to define the field of Industrial Ecology; (2) to delineate important issues and problems that need to be addressed; (3) to identify leaders and to coalesce thinking in the field; (4) to understand the disciplines encompassed by this field; and (5) to determine what further action is warranted by academia and industry to ensure that this nascent field prospers.

This Conference on Industrial Ecology is the first in a new series of symposia held under the aegis of the National Academy of Sciences. The format we envision includes about fifteen 30-minute talks and ample periods of discussion. We are counting on the invited attendees to contribute greatly to the discussion periods. I have enclosed a preliminary program so you can get a feel for the areas we are trying to address.

The 70 participants have been selected to provide balanced representation from academia, industry, and government. We feel that it is essential that high-level technical people (ecologists, chemists, materials scientists) be brought together with environmental economists, regulators, and lawyers, and that senior educators also be involved.

In hopes that you will be able to attend the Conference, I have enclosed registration material. **Please plan to register as soon as possible, and certainly before April 1, 1991.**

With best regards.

Sincerely yours,

Kumar Patel

Encl.

Registration Material
Preliminary Program

Dr. C. K. N. Patel
Executive Director,
Research, Materials Science,
Engineering, and Academic Affairs Division
AT&T Bell Laboratories
600 Mountain Avenue - Room 1A-222
Murray Hill, New Jersey 07974
Telephone (908) 582-3425
FAX (908) 582-3420

REGISTRATION/HOTEL DEADLINE APRIL 1, 1991

**National Academy of Sciences
Colloquium on Industrial Ecology
May 20, 21, 1991**

*2101 Constitution Avenue
Washington, DC 20418*

Please print or type:

Name: _____

Title: _____

Address: _____

Phone: _____

Meals:

Yes

No

May 20

lunch

dinner*

May 21

lunch

*National Academy of Sciences
Great Hall; please indicate any special
dietary requirements (e.g., no red meat,
no shellfish, vegetarian)

FAX: _____

Please enclose a check for \$65 payable to NAS/Colloquium on Industrial Ecology. There will be no on-site registration.

SEND THIS FORM WITH PAYMENT TO:

**Lynn W. Jelinski, Chairman, NAS Colloquium on Industrial Ecology
AT&T Bell Laboratories, 600 Mountain Avenue, Murray Hill, NJ 07974**

Wyndham Bristol Hotel
2430 Pennsylvania Avenue, NW
Washington, DC 20037
(202) 955-6400

The National Academy of Sciences has negotiated the following rates at this excellent hotel. (Sales tax and occupancy tax not included). Please do not call hotel directly.

Single: \$86/night _____

Double: \$106/night _____

Night of May 19, 1991 Yes _____ No _____

Night of May 20, 1991 Yes _____ No _____

Check one: _____ American Express _____ Visa _____ Master Card

Card Number: _____ Expiration date: _____

Signature: _____

This will guarantee your reservation. It will be confirmed by the hotel.

Proposed Program

*National Academy of Sciences
Colloquium on Industrial Ecology
May 20, 21, 1991*

INTRODUCTION AND OVERVIEW

Short Overview of What We are Trying to Accomplish

C. Kumar N. Patel
Executive Director
Research, Materials Science, Engineering
and Academic Affairs Division
AT&T Bell Laboratories
600 Mountain Avenue
Murray Hill, NJ 07974

Keynote Speaker
Dr. Frank Press, President
National Academy of Sciences
2101 Constitution Ave., N.W.
Washington, DC 20418

Overview of Industrial Ecology
Dr. Robert A. Frosch
Vice President
General Motors Research Laboratories
30500 Mound Road, Box 9055
Warren, MI 48090-9055

Industry as a Metabolic Activity
Mr. Bruce Smart, Jr.
Senior Counselor
World Resources Institute
1709 New York Avenue, N.W., 7th Floor
Washington, DC 20006

TECHNICAL COMPONENTS OF INDUSTRIAL ECOLOGY

Strategies for CFC replacement
Dr. Mac McFarland
Senior Research Associate
Du Pont
The Brandywine Building, Room 13230
Wilmington, DE 19898

Approaches to Eliminating CFC Use in Manufacturing
Mr. Walter S. Boyhan
Senior Staff Engineer
AT&T
131 Morristown Rd., Room B-2218
Basking Ridge, NJ 07920

Cradle to Grave Design Issues, Plastics Recycling
Professor Richard S. Stein
Polymer Science Department
University of Massachusetts
Amherst, Massachusetts 01103

Materials Derived from Biomass/Biodegradable Materials
Dr. Bill D. Luzier
ICI Bioproducts
ICI America's
Concord Pike
Wilmington, DE 19897

Efficient Energy use in Manufacturing
Prof. Marc H. Ross
Physics Department
University of Michigan
1067 Randall
Ann Arbor, MI 48109

Heavy Metals
Prof. Robert U. Ayres
Department of Engineering and Public Policy
Carnegie-Mellon University
Pittsburgh, PA 15213

AFTER DINNER SPEAKER

Industrial Ecology as a Competitive Advantage
to be determined

LEGAL, REGULATORY, ECONOMIC AND SOCIAL COMPONENTS OF INDUSTRIAL ECOLOGY

Building Public Policy

to be determined

Environmental Issues and the Law
to be determined

Economic Consequences of Industrial Ecology
Prof. William D. Nordhaus (tentative)
Yale University
Department of Economics
P.O. Box 1972 Yale Station
New Haven, CT 06520-1972

Industrial Input-Output Studies: Implications for Industrial Ecology
Prof. Faye Duchin
Director of Institute for Economic Analysis
New York University
269 Mercer Street, 2nd Floor
New York, NY 10003

Risk Assessment and its Role in Regulations
Dr. Michael Pariza
Director, Food Research Institute
Chairman of the Dept. of Microbiology
and Toxicology
Food Research Institute
1925 Willow Drive
Madison, WI 53706

WHERE DO WE GO FROM HERE?

Alternate Starting Materials for Industrial Processes
Dr. James Mitchell, Head
Analytical Chemistry Research Department
AT&T Bell Laboratories
600 Mountain Avenue
Murray Hill, NJ 07974

Thinking for the Long Term: Trends for the 21st Century
Mr. Gus Speth
President
World Resources Institute
Washington, DC 20006

Educating and Training Industrial Ecologists for the 1990s
Dr. David Troxell
Vice President, Quality and Health Services
International Technology Corporation
2790 Mossdale Blvd.
Monroeville, PA 15146

Environmental Education
Mr. Charles E. Hutchinson
Dean
Thayer School of Engineering
Cummings Hall
Dartmouth College
Hanover, NH 03755

Colloquium Summary
Mr. Jesse H. Ausubel
Fellow & Director of Studies
Carnegie Commission on Science, Technology & Government
The Rockefeller University
1230 York Avenue
New York, NY 10021

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120811

SPEECH: YES NO

FROM: CUMMINGS, W. David: UNIVERSITIES SPACE RESEARCH
ASSOCIATION

DATE OF EVENT: 03/29/91

LOCATION OF EVENT: CAPITOL HOLIDAY INN, THE LEWIS & CLARK ROOM, S.W.

TIME OF EVENT: 08:30AM

SUBJECT: INVITATION TO A SYMPOSIUM PRESENTING THE LATEST
RESULTS FROM THE GALILEO, MAGELLAN AND HUBBLE SPACE
TELESCOPE PROJECTS.

RSVP: 03/22/91

CONTACT PERSON: MS. GINNY BACHMANN

CONTACT NUMBER: 301/596-6131

INVITATION ACCEPTED? ~~NO~~ NO

COPIES TO: Dr. Wong

REMARKS:

DATE OF LETTER: 03/14/91

DATE RECEIVED: 03/20/91

FILE: P- INVITATION



UNIVERSITIES SPACE RESEARCH ASSOCIATION

THE AMERICAN CITY BUILDING, SUITE 212
COLUMBIA, MARYLAND 21044 • (301) 730-2656

WASHINGTON OFFICE
(202) 479-2609

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(Urbana-Champaign)
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New York, State University of (Buffalo)
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(Stony Brook)
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Princeton University
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Rice University
Rochester, University of
Rockefeller University
Sheffield, University of
Southern California, University of
Stanford University
Tel-Aviv University
Tennessee, University of (Knoxville)
Texas A & M University
Texas, University of (Austin)
Texas, University of (Dallas)
Texas, University of, Medical Branch at
Galveston
Toronto, University of
Utah State University
Virginia Polytechnic Institute
and State University
Virginia, University of
Washington, University of
Washington University (St. Louis)
William and Mary, College of
Wisconsin, University of (Madison)
Yale University

9120811
91 MAR 20 A 9:33

March 14, 1991

OFFICE OF THE
DIRECTOR

The Honorable D. Alan Bromley
OSTP, Room 358
17th and Pennsylvania, NW
Washington, DC 20506

Dear Dr. Bromley:

I am pleased to invite you to a short symposium presenting the latest results from the Galileo, Magellan and Hubble Space Telescope projects.

Dr. Torrence Johnson of the Jet Propulsion Laboratory will speak on the Galileo project. Dr. R. Steven Saunders of the Jet Propulsion Laboratory will address the group on the results to date of the Magellan project. Dr. Tod Lauer will present the results from the Hubble Space Telescope.

A program that includes the agenda and biographies of the speakers is enclosed.

Lunch will be served following the talks, and you are most cordially invited to be USRA's guest.

Our guests at the symposium and luncheon will include other individuals associated with the space program, particularly those in government, and representatives of the member universities of USRA who constitute USRA's Council of Institutions.

Please notify Ms. Ginny Bachmann at (301) 596-6131 if you or your representative plan to attend.

I am personally looking forward to hearing our distinguished speakers and to meeting you at the symposium.

Yours truly,

W. David Cummings
Executive Director

Enclosure: symposium program

Dr. Torrence Johnson

Dr. Torrence Johnson graduated with honors from Washington University in 1966 with a B.S. in physics. He completed a Ph.D. in planetary science in 1970 from the California Institute of Technology. Upon graduation he served as a Research Associate in the Department of Earth and Planetary Sciences at the Massachusetts Institute of Technology. He joined the Jet Propulsion Laboratory (JPL) as a Resident Research Associate in December of 1971 and has since served there as a Senior Scientist and Member of the Technical Staff, a Group Supervisor, and Research Scientist. He currently serves as a Senior Research Scientist at the JPL and as a Visiting Associate of Planetary Science at the California Institute of Technology. Dr. Johnson has been awarded the NASA Group Achievement Award (to Sodium Study Team), the NASA Certificate of Recognition (Principal Investigator in the Lunar Program), the NASA Exceptional Scientific Achievement Medal (Studies of the Galilean Satellites), the NASA Exceptional Scientific Achievement Medal (Interpretation of Voyager Imaging Data) and the NASA Group Achievement Award (Voyager Imaging Science Team). Dr. Johnson is the author of over 102 papers.

Dr. Johnson will focus his address on the recent Galileo Earth/Moon encounters and on the plans for the rest of the mission.

Dr. R. Steven Saunders

Dr. Saunders received his B.S. in geology from the University of Wisconsin in 1963. From 1963 to 1965, Dr. Saunders served as a geologist with the U.S. Peace Corps in Ghana, and from 1967 until 1969 he served as a geologist with the U. S. Geological Survey. He received his M.Sc. in 1968 and his Ph.D. in 1970 in geology from Brown University. In 1969 he joined the Jet Propulsion Laboratory (JPL) as a Senior Scientist and has served there as a Member of the Technical Staff; the JPL Planetary Development Program Leader; Supervisor, JPL Earth and Planetary Science Group; and Manager, JPL Planetary and Oceanography Section. Dr. Saunders currently serves as Senior Research Scientist; Project Scientist, Magellan; and JPL Regional Planetary Image Facility Director.

Dr. Saunders will be speaking on the latest data received from the Magellan spacecraft.

Dr. Tod Lauer

Dr. Lauer completed his undergraduate work at the California Institute of Technology and received his Ph.D. in astronomy from the University of California, Santa Cruz. He has recently joined the staff of the National Optical Astronomy Observatories after completing a six-year-research fellowship at Princeton University Observatory. Dr. Lauer is a member of the Hubble Space Telescope Wide Field/Planetary Camera (WFPC) Team. The WFPC is the primary imaging device aboard the Space Telescope. Lauer and fellow WFPC team members plan to use the camera to obtain images on everything from storms on Jupiter to embryonic galaxies in the early universe. His research interests include the structure of galaxies and astronomical image processing.

Dr. Lauer will review recent Space Telescope imaging results as well as the present capabilities of the telescope for research.

8:00 REGISTRATION

8:30 OPENING REMARKS

DR. WILLIAM A. CASSIDY
CHAIR, USRA COUNCIL OF
INSTITUTIONS

INTRODUCTION OF SPEAKERS

DR. PAUL J. COLEMAN, JR.
PRESIDENT, USRA

8:45 GALILEO EARTH/MOON
ENCOUNTERS

DR. TORRENCE JOHNSON
GALILEO PROJECT SCIENTIST
SENIOR RESEARCH SCIENTIST
JET PROPULSION LABORATORY

9:45 BREAK

10:00 LATEST DATA FROM THE
MAGELLAN MISSION

DR. R. STEVEN SAUNDERS
MAGELLAN PROJECT SCIENTIST
SENIOR RESEARCH SCIENTIST
JET PROPULSION LABORATORY

11:00 THE HUBBLE SPACE TELESCOPE:
IMAGING RESULTS FROM
THE FIRST YEAR

DR. TOD LAUER
MEMBER, WIDE FIELD/
PLANETARY CAMERA TEAM
HUBBLE SPACE TELESCOPE
PROJECT
KITTE PEAK OBSERVATORY

UNIVERSITIES SPACE RESEARCH
ASSOCIATION



A SHORT SYMPOSIUM
ON
SPACE EXPLORATION MISSIONS

FRIDAY, MARCH 29, 1991

8:30 AM - 12:00 PM

CAPITOL HOLIDAY INN
THE LEWIS & CLARK ROOM
550 C STREET, SW
WASHINGTON, DC

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION-AGENDA

DOCUMENT NUMBER: 9120816

FROM: HESS, D.K.: UNIVERSITY OF ROCHESTER

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/15/91

SUBJECT: AN AGENDA FOR DR. BROMLEY'S VISIT TO ROCHESTER MARCH
20th.

ASSIGNED TO:

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 03/20/91

FILE: P- INVITATION ~~FOLLOW-UP~~

UNIVERSITY OF
ROCHESTER

Vice President
Administration

9120816
RECEIVED

91 MAR 20 P 5: 08 March 1991

OFFICE OF THE
DIRECTOR

D. Allan Bromley
Assistant to the President
for Science and Technology
Old Executive Office Building
17th St. and Pennsylvania Ave., NW
Washington, DC 20506

Dear Allan:

Attached is the agenda that we have put together for your visit to Rochester. Also attached is the list of guests who will attend the dinner at President O'Brien's house on 20 March.

We have made a reservation for you at the Strathallen for the night of 20 March. (confirmation no. 10049257). The telephone number there is (716) 461-5010.

Should your staff need to contact you while you are visiting the University, they may call my office ((716) 275-5566) and Mrs. Kyle, my assistant, will get the message to you.

Paul Slattery will meet you in the airport just as you pass by the security check opposite USAir baggage claim.

Looking forward to seeing you.

Sincerely,



D.K. Hess

DKH:mgk
Attachments

D. ALLAN BROMLEY
Dinner
President Dennis O'Brien's House
Wednesday, 20 March 1991
7:30 p.m.

GUESTS:

Dennis O'Brien,
President

Brian J. Thompson
Provost

George N. Abraham
Associate Dean for Research, School of Medicine & Dentistry

Bruce W. Arden
Dean, College of Engineering and Applied Science

Robert K. Boeckman, Jr.
Professor, Chemistry

D.K. Hess
Vice President for Administration

Barbara H. Iglewski
Professor, Microbiology/Immunology

Robert J. Joynt
Vice President and Vice Provost, Health Affairs

Robert L. McCrory
Director, Laboratory for Laser Energetics

Duncan T. Moore
Director, Institute of Optics

Paul F. Slaterry
Chairman, Physics and Astronomy

Robert L. Sproull
President Emeritus

David G. Whitten
Professor, Chemistry

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120808

SPEECH: YES NO

FROM: THE WHITE HOUSE

DATE OF EVENT: 04/01/91

LOCATION OF EVENT: THE WHITE HOUSE

TIME OF EVENT: 10:00AM

SUBJECT: THE ANNUAL EASTER EGG ROLL

RSVP:

CONTACT PERSON: AMY

CONTACT NUMBER: 456-2322

INVITATION ACCEPTED?

YES

NO ?

COPIES TO:

REMARKS:

DATE OF LETTER:

DATE RECEIVED: 03/19/91

FILE: P INVITATION



*You and your children
are cordially invited to a family event*

**THE ANNUAL
EASTER EGG ROLL**

The White House

Monday April 1, 1991

*Present this card at
the VISITORS ENTRANCE • East Executive Avenue*

*Admittance from 10 am - Noon
Children 8 yrs and under*

NON TRANSFERABLE

*Please respond if attending
Amy 456-2322*

9120808

RECEIVED

91 MAR 13 P 4: 44

CHIEF OF THE
DIRECTOR

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120802

SPEECH: YES NO

FROM: INTELLECTUAL PROPERTY OWNERS, INC.

DATE OF EVENT: 04/11/91

LOCATION OF EVENT: CAUCUS ROOM, CANNON HOUSE OFFICE BLDG.

TIME OF EVENT: 05:30PM

SUBJECT: INVITATION TO ATTEND A RECEPTION HONORING THE 1991
INVENTOR OF THE YEAR.

RSVP: 04/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO:

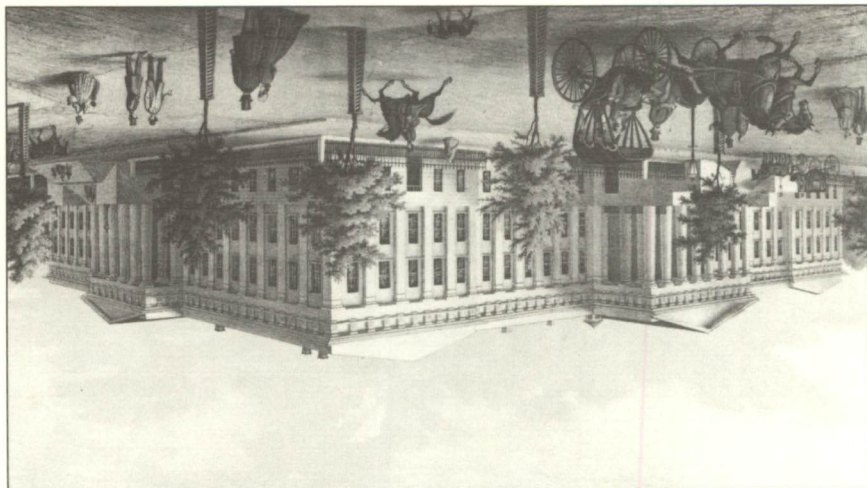
REMARKS:

DATE OF LETTER:

DATE RECEIVED: 03/19/91

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The Old Patent Office



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Michael W. Glynn
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Gary L. Griswold
3M

Robert C. Kline
E.I. du Pont de Nemours & Co.

William E. Lambert, III
Rohm & Haas Co.

Edward T. Lentz
SmithKline Beecham Corp.

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John P. McDonnell
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William E. Schuyler, Jr.
Attorney

Roger S. Smith
IBM Corp.

Herbert C. Wamsley
IPRO Executive Director

Richard G. Waterman
Dow Chemical Co.

Melvin P. Williams
United Technologies Corp.

Richard C. Witte
Procter & Gamble Co.

Allen S. Wuchenich
Westinghouse Electric Corp.

*The Board of Directors of
Intellectual Property Owners Foundation
cordially invites you to attend a
Reception Honoring the 1991 Inventor of the Year*

*The Inventor of the Year Award
to be presented by*

*The Honorable Carlos J. Moorhead
of California*

*Ranking Minority Member
House Judiciary Subcommittee on
Intellectual Property and Judicial Administration*

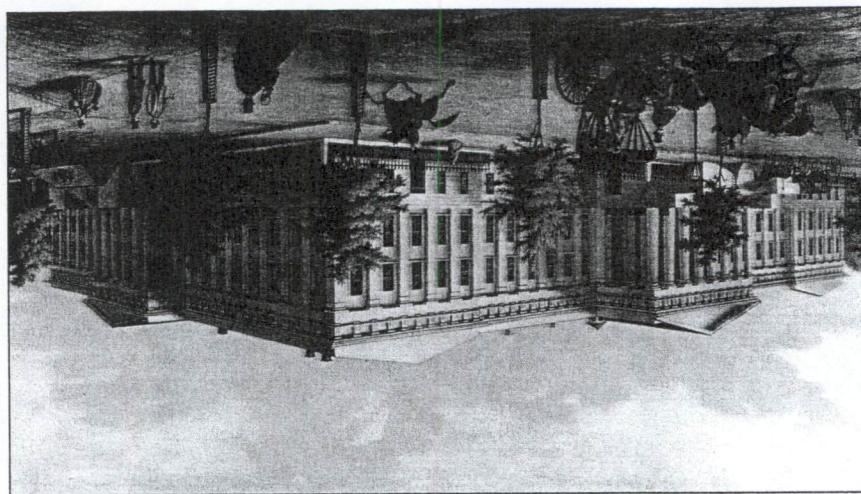
*Thursday Evening, April Eleventh
Nineteen Hundred Ninety One
Five-thirty to Seven-thirty o'clock*

*Caucus Room
Cannon House Office Building
Independence and New Jersey Avenues, SE
Washington, D.C.*

Cocktails and Buffet

R.S.V.P. by Friday, April 5

The Old Patent Office



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Robert L. Andersen
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3M

Robert C. Kline
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SmithKline Beecham Corp.

William F. Marsh
Air Products & Chemicals, Inc.

John P. McDonnell
AT&T

Alexander McKillop
Mobil Oil Corp.

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Gerard P. Rooney
Allied Signal, Inc.

William E. Schuyler, Jr.
Attorney

Roger S. Smith
IBM Corp.

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Richard G. Waterman
Dow Chemical Co.

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Westinghouse Electric Corp.

Cover: Lithograph by E. Sachse and Co., circa 1860. For more information, request a complimentary copy of "The Old Patent Office Building and the Act of 1836", published by Intellectual Property Owners, Inc.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120802

SPEECH: YES NO

FROM: INTELLECTUAL PROPERTY OWNERS, INC.

DATE OF EVENT: 04/11/91

LOCATION OF EVENT: CAUCUS ROOM, CANNON HOUSE OFFICE BLDG.

TIME OF EVENT: 05:30PM

SUBJECT: INVITATION TO ATTEND A RECEPTION HONORING THE 1991
INVENTOR OF THE YEAR.

RSVP: 04/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

~~YES~~

NO

You will be in New Haven.. *****

Marian

*Say that I am
out of town*

Inventor of the Year Award Reception

Name of Attendee _____

Social Security No. _____

(Required by Capitol Police for each individual)

Affiliation _____

Spouse or Guest _____

Social Security No. _____

(Required by Capitol Police for each individual)

FILE: INVITATION

Return in enclosed envelope

R.S.V.P. by Friday, April 5

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120778

SPEECH: YES NO

FROM: MACMILLAN/MCGRAW-HILL SCHOOL DIVISION

DATE OF EVENT: 03/28/91

LOCATION OF EVENT: DOUBLETREE HOTEL, LAMAR ROOM, HOUSTON, TEXAS

TIME OF EVENT: 06:00PM

SUBJECT: INVITATION TO ATTEND THE PRESIDENTIAL AWARDEES
RECEPTION.

RSVP:

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO: Damar Hawkins

REMARKS:

DATE OF LETTER:

DATE RECEIVED: 03/18/91

FILE: P- INVITATION



Macmillan/McGraw-Hill

SCHOOL DIVISION

Macmillan/McGraw-Hill School Division

Cordially Invites You To Attend

WHAT Residential Awardees Reception

WHEN Thursday 3/28

WHERE Doubletree Hotel / Lamar Rm.

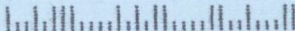
TIME 6:00 - 7:00 pm

NSTA

Houston, TX



Dr. D. Allan Bromley, Assistant
Office of Science and Technology
Old Executive Office Building
17th & Pennsylvania Avenue, NW
Washington, DC 20506



9/20778

Macmillan / McGraw-Hill School Division
4635 Hilton Corporate Drive
Columbus, Ohio 43232-4151

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91 MAR 18 AM 11:41

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"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120774

SPEECH: YES NO

FROM: KALOS, Malvin H: CORNELL THEORY CENTER

DATE OF EVENT: 03/21/91

LOCATION OF EVENT: LOEWS L'ENFANT PLAZA HOTEL

TIME OF EVENT: 10:30AM

SUBJECT: REQUEST TO VISIT THE CORNELL THEORY CENTER
DEMONSTRATION AT THE NATIONAL NET '91 CONFERENCE.

RSVP:

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO: Dr. Wong

REMARKS: 3/25/91 - Regretted to Nancy!
m2

DATE OF LETTER: 03/11/91

DATE RECEIVED: 03/18/91

FILE: *P* INVITATION

CORNELL THEORY CENTER

ADVANCED COMPUTING
RESEARCH INSTITUTE

CORNELL NATIONAL
SUPERCOMPUTER FACILITY

CORPORATE RESEARCH INSTITUTE

NETWORKING PROGRAM

CORNELL UNIVERSITY

ENGINEERING AND THEORY
CENTER BUILDING

ITHACA, NEW YORK 14853-3801

607/254-8686

FAX: 607/254-8888

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91 MAR 18 AM 11:41

March 11, 1991 OFFICE OF THE
DIRECTOR

Dr. Allan Bromley
White House Off. of Sci. & Tech.
Old Executive Off. Bldg.
Washington DC 20506

Dear Dr. Bromley:

I invite you to visit the Cornell Theory Center demonstration at the National Net '91 conference in Washington, D.C. next week. As you know, the Theory Center is supported by the National Science Foundation as one of the four National Advanced Scientific Computing centers. The Theory Center's expertise in technology and education has broad impact on the future of this country. We look forward to this opportunity to demonstrate some of our recent advances while in Washington.

Members of our technical staff will be on hand at the Loews L'enfant Plaza Hotel, 480 L'enfant Plaza, S.W., March 21st (10:30am - 6:30pm)--I will also take part in the demonstration this day--and March 22nd (10:30am - 2:00pm) to demonstrate three of the Theory Center's networking and visualization milestones:

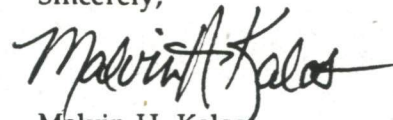
- The Global Basins Research Network, a multi-disciplinary scientific initiative involving 11 oil companies and eight universities: the ultimate goal of GBRN is to increase the effectiveness of oil discovery and recovery in the United States and around the world. The GBRN work is the first time that billions of dollars worth of accumulated data on the geology, chemistry, and physics of oil deposits off the coast of Louisiana are being combined to gain a complete understanding of how these systems interact to affect the location of oil. Through the integrated efforts of the Theory Center, UltraNet, and the GBRN members, visual images of this data will be created at National Net '91 using the supercomputers at Cornell, and transmitted over the network for our demonstration. Increasingly, science will be done this way in the future, combining and computing vast amounts of data from a number of sources into one concise, visual display that shows how processes interact.
- Networking to a number of smaller machines working in parallel at the Theory Center to give the power of a supercomputer: we will demonstrate key routines essential to all areas of supercomputing, using a chemistry program networked to Cornell and run on a cluster of IBM RISC/6000 workstations. Parallel processing is well known as the method to increase processing speed, and is used by all major computer manufacturers today. The demonstrated routines are critical to increasing the amount and complexity of science that can be done.

- The Scientist's Workbench, a system designed at the Theory Center for easy and transparent multi-system network access by researchers to quickly survey and use the computational tools at their command. Using resources over the national networks at a variety of sites, this system is as user-friendly to the scientist as a Macintosh is in the office environment. The Scientist's Workbench displays several computing sessions at once, and will be used as part of the GBRN demonstration.

Most of the technical advancements at the Theory Center are created to help advance research of our academic and government researchers and then filtered through the entire science and engineering education pipeline. The tools are used by graduate and undergraduate students in their courses and research, as they work with faculty; once in the work force, the students transfer this advanced technology to United States corporations and government offices. Furthermore, high school students in programs such as the national SuperQuest competition use simpler versions of these same tools, mastering them within weeks and returning to their schools with a new energy for scientific research. It is impressive to see high school students execute this level of study and research.

I've enclosed a copy of the National Net '91 program and some background information on the Global Basins Research Network and the Theory Center's Scientist's Workbench system for your information. I hope to see you at the conference next week.

Sincerely,



Malvin H. Kalos
Director, Cornell Theory Center

Enclosures

MHK/AER/kgw

Providing a Model for Scientific Collaboration— the Global Basins Research Network

The Global Basins Research Network (GBRN) has developed as a major scientific initiative involving a consortium of university partners and corporate affiliates. Formed in 1989, GBRN is an ambitious attempt to create a distributive network of scientists working to understand the coupled physical and chemical processes that control the movement of oil and gas in sedimentary basins. Using coastal regions along the Gulf of Mexico as a focal point of investigation, the GBRN researchers are working with the Cornell Theory Center to produce a model that explains the observations of fluid migration, past and present, and test this integrated model with an empirical database gathered over the past century by oil and mineral companies.

A major task of the GBRN is to compile an electronic data set that properly describes the geophysical, stratigraphic, structural, and geochemical (both organic and inorganic) status of a process-representative portion of the Gulf Coast. Only this level of data will allow integrated models to be tested. Work is moving ahead on a high-quality geological database that cost industry billions of dollars to collect, describes the physical and chemical conditions of the Gulf Coast Basin, and will eventually incorporate over 3 Gbytes of data.

The enormity of this project would have been unthinkable prior to recent developments in supercomputing (particularly parallel processing) that allows detailed computation of multiply coupled processes. The parallel processing capabilities of the Cornell Theory Center's IBM ES/3090 600J supercomputers allow researchers to compute separate features of the basin, including temperature, fluid flow, salinity, chemical alteration, sedimentation, salt movement, and faulting (at each timestep) so as to permit the coupling of the separate models into a process model describing basin evolution as it occurs in nature. Workstation technology allows the processing of massive amounts of diverse field data. The GBRN researchers have developed a model for collaborative research which includes the notion that each researcher has simultaneous access to the others' data. This allows researchers over long distances to collaborate 'in real time' and to develop applications which are fed from or which feed into applications developed by others'.

The GBRN includes partners from both academia and industry. The university partners include, in addition

to the Theory Center, Columbia University's Lamont-Doherty Geological Observatory, Cornell's Department of Geological Sciences, Louisiana State University, Michigan Tech, Texas A & M University, University of Tennessee, University of Texas, and Woods Hole Oceanographic Institution. Corporate affiliations, administered through the Theory Center's Corporate Research Institute, include Chevron, EXXON, AMOCO, ARCO, British Petroleum, Conoco, Mobil, Shell, Texaco, Union, and Halliburton Geophysical Services. According to Larry Cathles, a professor in Cornell's Department of Geological Sciences and co-director of GBRN, there are 16 or 17 active participants in the network from academia, oil companies, and other industries. Says Cathles, "the oil companies are convinced that GBRN will achieve exciting long-range results with important potential applications."

A growing number of corporate partners are giving GBRN important financial and technical assistance. Landmark Graphics Corporation in Houston, for example, has provided a number of workstations while Computational Mechanics in Knoxville, Tennessee has provided high-performance 3-dimensional FEM code that is currently operational on the Theory Center's supercomputers under the AIX operating system.

Cathles believes that GBRN can become a prototype organization for exploring new ways of achieving scientific collaboration. GBRN requires that its participants visualize tremendous amounts of geographically widespread data both in its own right and in comparison to output from integrated models. This means that in order to share ideas, geographically isolated researchers working on pieces of a problem must learn how to work together over an interactive network. "We are excited," says Cathles, "about the possibility of using networks to work out collaborative arrangements with diverse groups of people." The challenge, according to Cathles, is putting together and using a network to run an organization.

Roger N. Anderson, a researcher at the Lamont-Doherty Geological Observatory and one of the two co-directors of GBRN, says that one of the problems of dealing with people over such a wide network is the lack of intimate contact. "Our networking requirements force us to be something more than just an e-mail network," he says. Through multi-casting visual images and running

GBRN (continued from page 1)

code and sharing output in real-time, researchers can be motivated to work together in new ways. "The goal is to break down the red bricks so as to allow researchers to freely network together." According to Pete Siegel, Director of the Theory Center's Cornell National Supercomputer Facility, "in addition to interdisciplinary collaboration, the steering of scientific computation over a distance is important to both GBRN and the Theory Center."

Studying how fluids move in a subsurface appear to have ramifications for other kinds of research. Cathles thinks that 3-dimensional models applied to realistically defined surface conditions could simulate patterns of contamination and help with their remediation. The GBRN research could be used by companies to solve environmental problems. Says Anderson, "we are a test bed for melding science and engineering across a broad range of problems."

Recently, a Theory Center project intended to advance key technologies needed by projects like GBRN resulted in a different kind of collaboration. Through the integrated efforts of the Theory Center, Cornell Information Technologies, UltraNet, MCI, and NYTel, visitors to the Supercomputing'90 conference were able to view visual images of the Louisiana Basin that were being generated on the CNSF supercomputers from GBRN data and transmitted over a T3 network as they watched on a high-resolution frame buffer on the show floor. "This demonstration is another example of the importance of technical collaboration at all levels in making projects like the GBRN success," says Anderson.

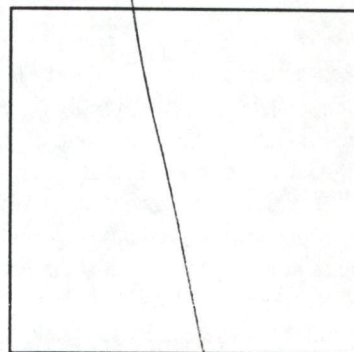
Fall 1990 Theory Center Lectures

The Fall 1990 Cornell Theory Center Lectures provided a variety of perspectives relating to supercomputing. Participating lecturers included Geoffrey Fox, Director of the Northeast Parallel Architectures Center; Chris Willard, Senior Industry Analyst for Dataquest's Technical Computer Systems Industry Service; Frederick W. Weingarten, Executive Director of

Computer Research Association; and Norris Parker Smith, Editor of Supercomputing Review.

Geoffrey Fox, in his talk on "High Performance Computing and the Future," stated that supercomputers

with teraflop capacity will be in regular production by the year 2000; this can be done by natural evolution of existing hardware designs. The major changes, he said, will come from software de-



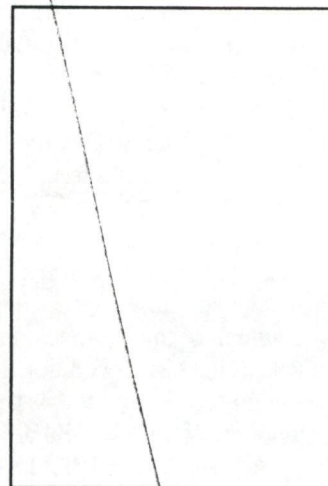
Frederick Weingarten

velopment motivated by the need to solve particular computing problems.

Dr. Chris Willard, lecturing on the "Dynamics of the Supercomputing Marketplace: Trends and Issues in a Changing World," discussed supercomputing applications and the various market segments, current events affecting supercomputing, the status of the market and industry dynamics, challenges to the supercomputer industry, and strategies for growth. Willard noted flat growth in the supercomputer industry in 1989 throughout most of the world, except in Japan, where the market is on a downcycle. Sales of Japanese super computers to Europe have been slow and almost nonexistent to the United States.

In his lecture on the "Politics of Computing Research," Frederick Weingarten noted that while information science, along with the biological sciences, are considered by scientists and politicians alike to be the leading fields for future research and development, information science is drastically underfunded.

Weingarten outlined a number of reasons for this, including the youthfulness of computer science, the struggle to make computer science a recognized discipline, and the lack of a unified political voice within the field. Weingarten said that with shrinking amounts of government money available for



From Forefronts,
the Cornell Theory Center
newsletter

Mar/April 1991

The Scientist's Workbench Environment: A Workstation/Supercomputer Integration Solution

by Wayt Gibbs, Student Staff Writer

With more than 2,000 researchers working on over 500 projects, the Cornell Theory Center supports supercomputer research in just about every area of science and engineering. Still, administrators at the Theory Center are continually searching for ways to broaden the range of research done on the Center's supercomputers, to improve the efficiency and productivity of that research, and to expand the pool of users.

To achieve these goals, a team of Theory Center programmers is developing a graphical environment for scientific computing that promises to increase markedly both the productivity of individual researchers and the range of problems that can be attacked by the supercomputer, while simultaneously reducing the level of programming expertise required of its users. The Scientist's Workbench Environment will be versatile, widely portable, and freely distributed and supported by the Theory Center. A beta-test version of the Scientist's Workbench should be available in the late spring, and the first public release is slated for September 1991.

The Problem

The project comes as a response to one of the most challenging and time-consuming aspects of supercomputer research: writing the program code to simulate complex scientific problems. Quite often the lion's share of a researcher's time is spent developing computing tools to help create, run, and visualize these simulations. And quite often problems that could be effectively solved with a supercomputer are never attempted because of the investment of time and energy necessary to learn a new operating system and its capabilities.

To help researchers overcome these obstacles, the Scientist's Workbench team has developed a software environment that promises to simplify and accelerate the construction of scientific applications. This environment integrates many of the tools of scientific computing into a unified, user-configurable, graphical menu-based interface, freeing scientists from much repetitive programming and allowing them to concentrate on their scientific problems.

The Scientist's Workbench provides researchers in science and industry with powerful building blocks with which to build supercomputer models quickly and easily. With its many tools, researchers will be able not only to reduce dramatically the time spent on programming and documentation, but also to take advantage of such new capabilities as high-resolution, 3-dimensional animation, automated video production, display PostScript, and sophisticated debugging and testing utilities. In addition, the AIX version of the Workbench will allow scientists to prototype the AIX supercomputer environment on their workstations, so that they can develop

their programs in their office, only requiring supercomputer time for actual final execution.

By incorporating support for distributed processing, researchers will also be able to divide their problems into components which can be executed simultaneously on whatever machine is most appropriate, regardless of location. According to Pete Siegel, director of the Theory Center's Cornell National Supercomputer Facility, "the Scientist's Workbench not only brings the supercomputer to more scientists' desks—it also allows researchers to tie several powerful supercomputing systems together to attack problems which would otherwise remain insoluble."

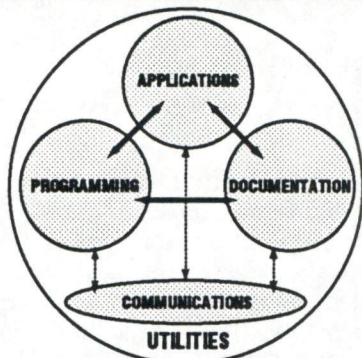
The Scientist's Workbench was conceived by Tom Rounds, Manager, Workstation Technologies, who leads the Workbench development team at the Theory Center. In the summer of 1988, Rounds began noticing that many users invested much of their time struggling with the operating systems and protocols of the various machines on which they worked, rather than spending that time more effectively on research itself. Current UNIX window managers provided little more benefit than the ability to log on to several machines simultaneously. Moving around on and integrating those machines still required a high level of proficiency in UNIX and the time required to type out long, complex command strings.

Rounds realized that the time had come for a graphical, menu-driven interface to UNIX. Picking the best elements from similar microcomputer software like the Macintosh System and Microsoft Windows, Rounds went a step beyond, proposing a completely user-configurable interface through which each user could customize the operating environment to his or her individual needs. He further reasoned that such an environment would be most useful if it was modeled according to the scientific method followed by most researchers. And he questioned the convention of using either graphic or text-driven commands—why not allow for both, so that expert users are not slowed down by having to switch to the mouse, and so that novices can begin work immediately without having to memorize a manual full of unfamiliar commands? After more than two years of planning and design, production work began on the Scientist's Workbench in the fall of 1990, and the first version should near completion just one year later.

The Concept

The Scientist's Workbench is both a concept and an environment. As a concept, it is a way of doing the business of scientific computation, an approach, patterned after the model-results-publication cycle of the scientific method, that uses portable automated tools for scientific modeling and experimentation, application development and testing to ob-

THE SCIENTIST'S WORKBENCH MODEL



- Programming, applications, and documentation environments support the "idea cycle."
- Communications environment is integral to the support of each.
- Utility set underlies entire environment.

tain and process results, and publication preparation through visualization and documentation tools.

As an environment, the Scientist's Workbench is both a unifying graphic user interface and an open and integrated set of tools. Designed for easy and transparent multisystem network access, the environment is highly portable and flexible, since it operates the same on all systems, from workstations to supercomputers. Designed for user-configurability and extensibility, it provides that most important prerequisite for evolution: standardization. Yet the requirements for this standard are minimal indeed: the Scientist's Workbench will run on any UNIX system which supports the X Window System, TCP/IP, and OSF/Motif. Any hardware configuration and window manager may be used to run the Workbench, provided these basic requirements are met.

The Design

In order to parallel the flow of the idea cycle inherent in the scientific method, the Scientist's Workbench divides the set of support tools into five functional categories: programming, applications, documentation, communications, and utilities. Each of these categories appears as a submenu in the Workbench organizer, and each can contain whatever options and applications the user chooses to put there.

The project-oriented programming support environment includes tools for integrated program editing, compilation, and test execution using a single visual interface. It also includes a program library tool, tools for automatic decomposition and dependence analysis for vector and parallel processing, and simulation environments for supercomputer architectures that allow users to prototype a supercomputer environment on their workstations for development, then execute the final application on an actual remote supercomputer.

The applications environment provides a menu into which users can snap those application programs, whether on their own workstation or a remote machine. Remote applications are run transparently, and the options for any application may be changed easily via the command line or via a user-de-

signed front-end interface. Such graphic interfaces to standard UNIX tools, utilities, and applications can be constructed almost effortlessly using an interface generator available in the utilities section, and once built, they can be copied and moved to any Workbench platform, where they will work equally well. Thus, as the Scientist's Workbench grows in use and popularity, its capabilities will also continue to evolve as users build on the base set of tools and share their enhancements with the scientific computing community.

Also bundled in the applications category are several visualization tools, including xim and xmovie, which can be used to preview supercomputer-generated still frame and animated images created using WaveFront. As technology develops, video animation and three-dimensional modeling will become the standard document format for simulation work under the Workbench. As a part of the application of AIX-specific technology to the Workbench, the development team is working with IBM to develop models that will bring personal video production capability to all Workbench users running under AIX.

The documentation support environment provides such functions as a document filer to assist in file management, easy access to the UNIX manual utility for online documentation, text processing with nroff, troff, TeX, and PostScript (as well as Display PostScript and hypertext, as these standards emerge), and previewing and printing tools. Additional drawing, painting, and graphing tools will be incorporated as they become available for the X Window System.

The communications environment contains tools for electronic mail, remote login and execution (which can also be configured to occur transparently), and file transfer. And finally, the utilities environment contains those tools which support the other environments, such as system backup and restore, file compression, an application visual interface generator, and so on.

The Result

By bundling together all the tools of scientific computing, uniting them with a unified graphic interface, and masking the technical details of remote execution and the complex syntax of UNIX commands, the Scientist's Workbench allows scientists to quickly survey the tools at their command and to begin using those tools to attack the problem at hand. By allowing for individual creativity and providing a standardized environment for creating portable scientific programs, the Workbench enhances scientific collaboration and the underlying economy of joint scientific research.

Thus, the key to the success of the Scientist's Workbench environment lies in its ability to assemble a comprehensive set of tools for those activities which scientists share in common, while permitting—indeed encouraging—the use of personal preferences in areas of long experience and of optimized tools in discipline-specific and high performance areas. The net result of the Scientist's Workbench will be a significant increase in the efficiency and productivity of its users, and a general boost to the scientific computing community as a whole.

NATIONAL NET'91

◆ **Towards a National Information Infrastructure**

◆ **March 20-22, 1991**

◆ **Loews L'enfant Plaza Hotel**

◆ **Washington, DC**

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Summary

1991 promises to be a year of great strides towards a national information infrastructure:

- "The High Performance Computing Act of 1990" passed the Senate in 1990
- Research projects are being developed for the gigabit facilities that are needed for the NREN
- Industry, higher education and government are focusing on the value of the NREN to our national research and industrial capacities

- National Net'91 concentrates on issues, problems and applications for the National Research and Education Network

Highlighting this fourth annual National Net conference are demonstrations on the nationwide high speed NSFNET. Interactive applications currently in use at universities, supercomputer centers, and research laboratories can be viewed throughout the conference.

Join your colleagues in Washington for National Net'91!

Preliminary Program

Wednesday, March 20, 1991

REGISTRATION

1:00 pm-8:00 pm

OPENING RECEPTION

6:00 pm-8:00 pm

Thursday, March 21, 1991

REGISTRATION

7:30 am-5:30 pm

CONTINENTAL BREAKFAST

8:00 am-9:00 am

WELCOME AND KEYNOTE SESSION

9:00 am-10:00 am

Kenneth M. King, President, EDUCOM

Keynote Speaker

Peter Likins, President, Lehigh University

PARALLEL SESSIONS

10:30 am-11:45 am

International Connectivity

Lawrence H. Landweber, professor of computer science at the University of Wisconsin-Madison, will chair this session on international connectivity, focusing on what is possible today, what lies ahead in the mid-90s, and how international communication will affect the way we study, work, and live.

Digital Library

High performance computers and advanced networks enable revolutionarily new methods of information access and distribution for which equally new architectures of research and education communication and information service delivery are needed. This session presents a variety of examples of such architectures and discusses steps that are being taken to test and realize them.

Networking for Effective Learning

The NREN will enable increased collaboration between student, teacher, and researcher for the benefit of instruction. Research tools from many disciplines may be used to improve the effectiveness and relevance of teaching

and learning. New applications of high performance computing and networking combined with multi-media presentation in the classroom will be discussed and showcased in this session.

User Interface

This session covers the lessons learned from existing on-line products, both success and failures, including how on-line products relate to print and CD ROM. Chaired by Myer Kutz, publishing and information services consultant, INSPEC on-line products will be discussed by James K. Ashling, director of electronic publishing products for IEEE. Ann Reinke Strong, executive vice president of Maxwell Electronic Publishing, covers the creation of the compact library on AIDS.

LUNCHEON ADDRESS

Noon-1:30 pm

Speaker:

To be announced

PARALLEL SESSIONS

1:45 pm-3:00 pm

Legislative Activities

Members of the House and Senate staffs and other observers will examine the current status of bills. What is the legislation? Which issues will be addressed? This session is chaired by Susan Fratkan, Fratkan Associates and Bob Gillespie, Gillespie, Folkner & Associates, Inc.

Federal Data

An increasing amount of information is being created and distributed by the federal government in electronic formats. This session provides background on the impact of this transition on ease and cost of use and offers proposals regarding the role of advanced networks in facilitating cost-effective access to such information.

Refereed Journals

Advanced networks have spawned a wide variety of new ways for researchers, educators, and students to communicate and collaborate. Recently, these networks have also begun to support refereed journals, the most important means of communication and collaboration in research

(continued next page)

Preliminary Program (continued)

and education communities. This session will overview the approach and experience of a number of these journals and discuss opportunities and challenges for increasing their presence in networked environments.

Progress Toward the Gigabit Network

Stephen Wolff of the National Science Foundation will moderate a discussion on the development of gigabit networking and the challenges surrounding the move to gigabit speeds.

PLENARY ADDRESS

3:30 pm-4:00 pm

Tim King, Vice President of John Wiley & Associates, will discuss the Association of American Publishers projects concerned with delivery of electronic information, as well as analysis of the issues of greatest concern to providers of network-accessible information.

PANEL DISCUSSION

4:00 pm-5:00 pm

A panel of technologists, librarians, and service providers will react to Mr. King's presentation and will provide background on the experiences and visions that shape their views.

RECEPTION

5:00 pm-6:30 pm

The evening is open for you to explore the many neighborhoods, restaurants and sights of Washington, DC.

Friday, March 22, 1991

CONTINENTAL BREAKFAST

7:30 am-8:30 am

REGISTRATION

7:30 am-Noon

PLENARY SESSION

8:30 am-10:00 am

Network Management Panel

As the Internet continues to grow, will the existing ad hoc management arrangements meet user requirements? A panel of network managers will debate their visions of management for the NREN and the Internet.

PARALLEL SESSIONS

10:30 am-11:45 am

Federal Networking Council

Charles Brownstein of the National Science Foundation and Chair of the Federal Networking Council will moderate a discussion about the present role of the FNC in guiding the development of the NREN.

Biomedical Networking

Walter Penko of the University of Michigan Medical Center will chair this session on the (largely unrecognized) central role of networking to the Human Genome Project and other computer-intensive cooperative biomedical activities.

Internet Engineering Task Force Report

Phill Gross, chairman of the Internet Engineering Task Force, will lead this session on IETF activities, including standards development, as they relate to the regional networks, the NSFNET, the emerging NREN, and the global Internet.

LUNCHEON ADDRESS

12:15 pm-1:45 pm

Speaker:

Eugene Wong, Assistant Director, White House Office of Science and Technology Policy

CLOSING REMARKS

1:45 pm-2:00 pm

PLEASE FILL IN REGISTRATION FORM ON BACK

Exhibits:
3/21 10:30-6:30pm
3/22 10:30am-2:00pm
← Theory Center exhibit

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**REGISTRATION
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NATIONAL NET'91

March 20-22, 1991

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Early Registration \$295
Late Registration (after February 22) \$345

**Payment must be received by February 22 for early
registration and March 20 for late registration.**

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at 202-484-1000.

Room rates are: \$145/single
\$160/double

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