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Invitations: General (4) [5 of 12] [1991]

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Document Originally
Attached to
Following Page

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Letter	To: Allan Bromley From: Ira Lon Morgan Re: Grant request, North Texas Research Institute [personal information redacted] (2 pp.)	3/25/91	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: Invitations: General (4) [5 of 12] [1991]

Date Closed:	2/18/2010	OA/ID Number:	62010-005
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

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Freedom of Information Act - [5 U.S.C. 552(b)]

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(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01b. Grant Proposal	Proposal for Development of North Texas Research Institute Facilities [personal information redacted] (39 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
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AR Disposition Date:		MR Disposition Date:	

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University of North Texas

Fact Sheet

The University of North Texas is the fourth largest university in Texas and the largest in the North Texas area. The long-term goal of UNT is to achieve recognition as a major research and teaching institution dedicated to meeting the needs of the region, state and nation. In its second century, the university is committed to an interactive role with business, industry, government and other educational entities, providing leadership in higher education and in the performance of many public services and assisting in the economic diversification of the region and the state.

Overview

While UNT continues to build on its traditional strengths, new areas of achievement and growth have occurred in recent years. The following items are of special significance to UNT, which observed its Centennial in 1990:

- In 1987, the state legislature authorized the university to change its name from North Texas State University to the University of North Texas in recognition of its evolving role as a major public university. The new name became official on May 15, 1988.

- In 1986, the Select Committee on Higher Education recommended that UNT be designated by the state as "an emerging national research university." The Carnegie Foundation for the Advancement of Teaching identified North Texas as a "Class I Doctorate-Granting Institution," a recognition first accorded UNT in 1976.

- Since its founding, North Texas has awarded more than 119,000 bachelor's, master's and doctoral degrees. It has offered master's degrees since 1935 and doctoral degrees since 1950.

- Enrollment grew from 17,158 in 1980 to 27,160 in 1990, making UNT one of the fastest-growing universities in Texas.

- During the last five years, external funding for research and sponsored projects quadrupled, reaching \$19.4 million in FY '90.

- The University of North Texas is believed to have more alumni (45,000) in the Dallas-Fort Worth region than any other university. Another 60,000 alumni reside elsewhere. The University of North Texas Alumni Association was rechartered in 1989.

- UNT announced the public phase of a \$35 million capital campaign in October 1990 that will provide a margin of excellence for the university not possible through state funding. Endowed scholarships, faculty support and physical plant needs are primary objectives of the campaign, which has already raised \$30 million.

UNT has received national recognition in two new areas:

- In 1988, then Secretary of Education William Bennett cited North Texas for its innovative approach to undergraduate education through its Classic Learning Core program. In 1989 and again in 1990, the program was praised by the National Endowment for the Humanities.

- In 1987, House Bill 2070 authorized UNT to create the Texas Academy of Mathematics and Science, which has become a role model for other states to follow. This program is designed to accept up to 200 high school juniors each year from across the state who are gifted in math and/or the sciences. Students concurrently earn high school diplomas and two years of college credit while in residence at North Texas. Twenty-two of the 66 graduates in the first class were National Merit Scholarship semifinalists. The graduates also won \$500,000 in scholarships to complete their bachelors degrees at various universities, including North Texas.

Breadth

- UNT is the largest and most comprehensive graduate and research university in the region, with 134 undergraduate and graduate degree programs. Approximately 6,500 students are enrolled at the graduate level.

- UNT provides key leadership in teacher education through such programs as the Meadows Excellence in Teaching Program, Quality Assurance Program and the Center for Research on Learning and Cognition. The College of Education has the highest entrance and exit standards of teacher colleges in the state, and among the highest in the nation.

- The UNT College of Music, which received the Yamaha Award in 1986, is internationally known for the One O'Clock Lab Band, UNT Symphony, A Cappella Choir and Center for Experimental Music and Intermedia.

- The art department, under active consideration to become a School of Visual Arts, is the most comprehensive in the region and the largest in the Southwest, with a faculty of international stature.

- In 1990, students and faculty in the industrial technology program designed and built the solar car "Centennial," which placed 18th out of 33 entries in the GM-sponsored Sunrayce. UNT was one of only three institutions without engineering programs invited to participate in the race and one of only two Texas institutions to compete.

- The School of Human Resource Management offers the only degree program in hotel and restaurant management in the region and has one of only three such programs in the state. The program now offers a master's degree.

- The Center for Marketing and Design combines the resources of the art, marketing, fashion merchandising and industrial technology programs to train students in all aspects of the fashion industry.

- UNT received state funding to establish the Texas Center for Educational Technology. The computer education and cognitive systems department in the College of Education focuses on the use of computers and technology in the classroom. North Texas also is one of six universities nationwide participating in a consortium that researches better uses for computer and other high-technology teaching tools in the classroom.

- The bachelor of science program in the computer science department is among 22 such programs nationwide and was the first one in Texas to be accredited. UNT constitutes one of the largest centers of instructional computing in the nation, encompassing computer sciences, business computer information systems and information science.

- Science and technology programs at UNT include all of the natural sciences and computational sciences. Highlighted are materials characterization, molecular genetics, mathematics, accelerator-based physics, environmental toxicology, neuroscience, biochemistry and organometallic chemistry.

- UNT has nationally accredited professional programs in many areas, including business, journalism, clinical and counseling psychology, counselor education, public administration, interior design, music, library and information sciences, social work, communication disorders, computer science and rehabilitation studies.

- The College of Business Administration is one of the largest in the nation, as well as the most comprehensive in the region, with an undergraduate enrollment of almost 6,200 students and more than 900 master's and doctoral students. The accounting department enjoys "preferred" status among major corporations, with special strengths in taxation, auditing and oil and gas accounting.

- UNT assists Texas in furthering its all-important economic diversification through the Center for Economic Development and Research, the Professional Development Institute (PDI) training programs in accounting and business and computer systems, the Information Systems Research Center and the Institute for Petroleum Accounting. This assistance to industry also extends to areas such as nuclear technology instruction, environmental research for product safety, remote sensing technology, geographic information systems and land-use analysis.

- UNT is the largest residential campus in the region, public or private, with more than 4,100 students in campus residence halls.

Research in Science and Technology

- The North Texas Research Institute was formed in 1989 to foster research partnerships with business, industry and government. NTRI performed almost \$800,000 worth of research in its first year.

- The National Science Foundation is supporting an Industry/University Cooperative Research Center at UNT to attack fundamental problems in materials science. Six corporations, including Texas Utilities and Texas Instruments, have invested in the center.

- The Center for Network Neuroscience studies nerve cell communication using cell culture and microelectronic methods. Research applications may include areas as diverse as improved computers and the mechanisms of nerve cell trauma in brain and spinal cord injury.

- The Institute of Applied Sciences focuses on helping Texas address its water quality needs. The Water Research Field Station, one of only six in the country, is an aquatic toxicology field station that helps government and industry assess the toxic effects of pesticides and other chemicals in the environment.

- The Center for Materials Characterization houses the only particle accelerator in the nation with the capability of analyzing the atomic structures of materials to the parts-per-trillion level. Equipment for the center was funded by contributions from industry and the state and federal governments.

- A major archaeological discovery was made recently by a UNT faculty member in conjunction with the Army Corps of Engineers. The discovery at Lake Ray Roberts appears to be the oldest, best-dated and best-preserved example of Clovis Indian culture in the Southern Plains area.

- Through UNT's department of biomedical sciences, UNT faculty cooperate with the faculty of Texas College of Osteopathic Medicine in Fort Worth in research and graduate education related to human health problems. The Gerontological Assessment Program also involves a cooperative effort between TCOM and UNT that provides special care for the elderly at sites in both Denton and Fort Worth.

- The research and headquarters unit of the Genetics Screening and Counseling Service of the Texas Department of Mental Health and Mental Retardation collaborates with UNT molecular biologists in research on human genetic disease.

- UNT's Center for Learning in the College of Education has established a brain topography laboratory for research on dyslexia and other learning disabilities.

University of North Texas

Denton, Texas 76203
817/565-2108



University of North Texas

Office of Research Administration

October 1, 1990

FY1990 ANNUAL REPORT of SPONSORED PROJECT AWARDS

In FY90, UNT faculty and staff obtained a record \$19,400,110 in new grants, contracts, and modifications (additional funding for existing awards) for sponsored projects. This constitutes a 27.8% increase over the FY89 total of \$15,175,925 and a 47.8% increase over the FY88 total. The FY90 total is more than quadruple the FY85 total of \$4,710,709.

FY90 sources of support were: Federal, 30.4%; State of Texas, 17.8%; and private (for-profit and non-profit), 51.8%. Total awards from the Federal government were up significantly (15.1%) over FY89 figures, reflecting the increased competitiveness of UNT projects at the national level. State awards grew by 8.1%, and private awards rose 46.5%.

If you wish additional information, please contact the Office of Research Administration, (817) 565-3940.

A handwritten signature in dark ink, appearing to read "Mark Elder".

Mark Elder
Assistant Vice President
for Research

ME:em

RESEARCH

UNT receives record \$15 million in FY89 research funding

UNT faculty and staff obtained a record \$15,175,925 in new awards for sponsored projects for fiscal year 1989. This represents a 15.6 percent increase over FY88 and a 51 percent increase over FY87 totals. The FY89 total is 3.2 times larger than the FY85 total of \$4,710,709.

FY89 sources of support were: federal, 33.8 percent; state of Texas, 21.1 percent; and private (for-profit and non-profit), 45.1 percent. The high proportion of private funding at UNT is unusual among public universities, and probably reflects an emerging tradition at UNT of strong connections between the university and private industry.

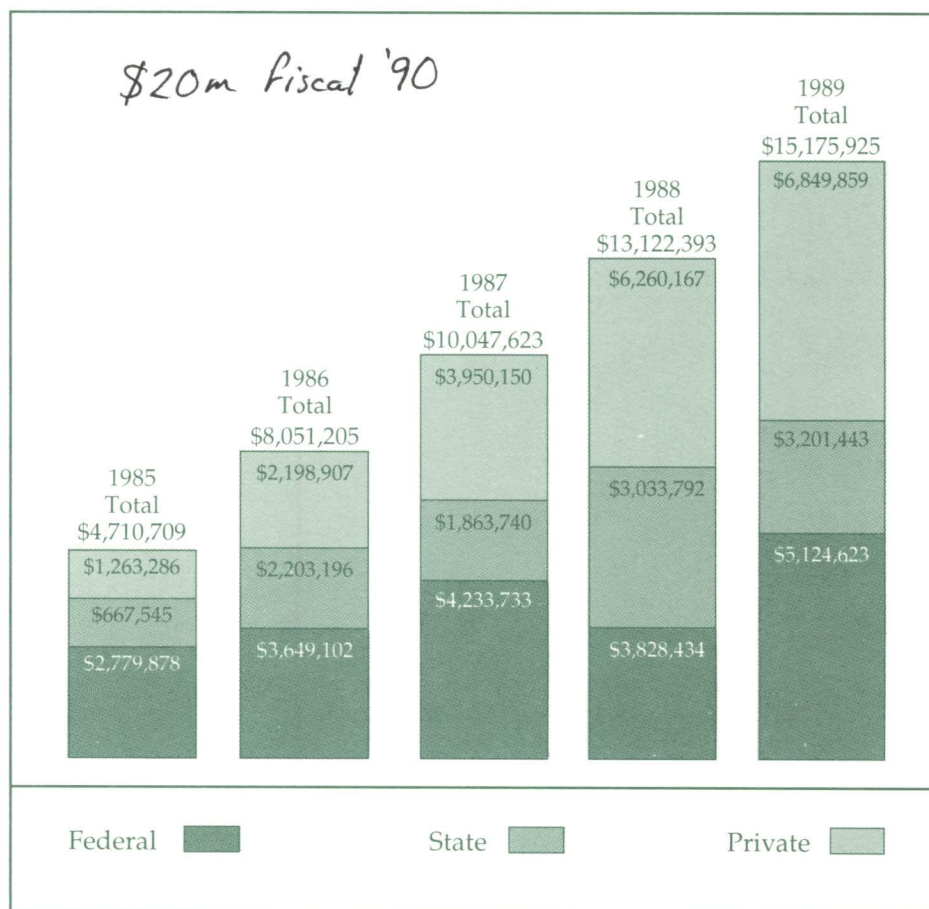
Major funding sources included the U.S. Department of Education, \$1,251,512; National Institutes of Health, \$977,204; National Science Foundation, \$925,291; Texas Rehabilitation Commission, \$786,534; Mobay Corp., \$744,525; and Texas Higher Education Coordinating Board, \$741,970.

Five units received more than \$1 million in awards during the year. The Institute of Applied Sciences received \$1,756,273, followed by the Department of Physics and Center for Materials Characterization, \$1,366,884; Department of Secondary Education, \$1,250,700; Department of Biological Sciences (other than Institute of Applied Sciences activities), \$1,204,165; and Center for Rehabilitation Services, \$1,090,884.

Institute of Applied Sciences research primarily focuses on environmental topics. Projects conducted at the Water Research Field Station are funded by government and industry to assess the environmental fate and biodegradability of agricultural chemicals. Studies for the city of Dallas are determining the impacts of different pollutants entering the Trinity River watershed. A major

continuing project is to salvage archaeology of the areas to be submerged by Lake Ray Roberts and Lake Lewisville. Connected with these studies was the discovery and investigation of the Aubrey Site, a campsite inhabited approximately 12,000 years ago by Native Americans of the Clovis culture. This site is the most complete Clovis site discovered to date in the Americas, and will be

Continues on page 2



featured in a 1992 issue of the National Geographic Magazine celebrating the Christopher Columbus quincentennial.

Ongoing physics/materials characterization projects include continued development and use of the 300 MeV tandem accelerator to identify and characterize trace elements in advanced semiconductor materials used in electronic devices and the metal alloys used in critical situations such as steam pipes and turbine blades. Other major projects include an investigation of the basic physical processes that control electron-ion interactions, including phenomena as disparate as the spark created in turning on a

light switch to the glow of interstellar gases.

Projects within the Department of Secondary Education include many continuing activities, such as the Upward Bound and Youth Opportunities Unlimited (YOU) programs for disadvantaged youths. New areas of support include recruiting and retaining minority students for the teaching profession.

Continuing projects within the Department of Biological Sciences include neuroscience research on information processing by the brain's micro circuits, how the visual and olfactory systems work,

and the neurochemistry of biological rhythms. The neurochemistry project ultimately may provide valuable information to enhance the effectiveness of antidepressant drugs. Another project is developing the use of the earthworm immune system as a biological monitor of pollutants in soils contaminated by industrial and agricultural activities.

Center for Rehabilitation Services projects include a variety of activities designed to improve services to clients. These primarily involve upgrading the training of rehabilitation professionals and the development of new services to meet specific needs.

Faculty receive Eisenhower grants

Four North Texas faculty members will work with area school systems in the coming year to provide workshops for teachers in the sciences and mathematics.

The projects were approved by the Texas Higher Education Coordinating Board and funded through the 1988 Dwight D. Eisenhower Mathematics and Science Education Act.

Drs. Gladys Crawford and Olivia White of the Department of Biological Sciences received \$44,087 to provide a general biology workshop for elementary school teachers. The workshop will be coordinated through the Denton Independent School District and the Texas Education Agency's educational service centers in Regions X and XI of North Central Texas.

Dr. Betty C. Crocker of the Department of Elementary Education received \$33,025 to provide a workshop for teachers in the Carrollton-Farmers Branch, Lewisville and Denton independent school districts on "Planning and Implementing Hands-On Science Activities in the

Elementary Schools."

Dr. Floyd Vest of the Department of Mathematics received \$35,980 to work with TEA's Region XI Educational Service Center in providing a workshop for secondary mathematics teachers.

Two projects have been funded through the coordinating board and the Carl D. Perkins Vocational Education Act. Perkins grant projects are designed to improve technical and vocational education.

Drs. Suzanne LaBrecque, dean of the School of Human Resource Management, and Sharon Smith of the HRM faculty received \$74,691 to offer seven regional workshops for staff members of community colleges and technical institutes on how to assess community needs, design a project and write grant proposals for funding.

Drs. LaBrecque and Bill Lovelace, a researcher in the School of Human Resource Management, received \$70,000 for their project, "Preparing Faculty To Work With Displaced Workers." Workshops

will prepare technical and vocational faculty to meet the special needs of dislocated workers and other unemployed adults.

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Winter 1990

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Researchers awarded \$1.8 million in state grants

UNT researchers received a total of \$1,814,156 as their share of the nation's largest competitive state-supported research grant program in 1989.

The Texas Legislature established the Advanced Technology Program for applied and basic research with the aim of improving the economic development and well-being of the state. Some \$62 million was awarded by the Texas Higher Education Coordinating Board to 469 of the 3,280 applications submitted (including 71 from UNT). A number of the awards are for collaborative efforts with Texas industry or agencies.

Following is the complete list of UNT awards in alphabetical order by researchers.

*Drs. Samuel Atkinson and Ken Dickson, assistant professor and director, respectively, of the Institute of Applied Sciences, received \$95,000 for "State-Wide Ground Water Protection Mapping Using Geographic Information Systems Modeling." By utilizing data from different research projects in the Geographic Information Systems, the researchers will be able to predict which groundwater (underground rivers, lakes and aquifers) is most vulnerable to contamination/pollution and which is safest. The information will be valuable to water districts, city planners, land developers, builders and others.

*Dr. Paul A. Fisher, chairman of the Department of Computer Sciences, received \$308,000 for "Finite Inductive Sequences and Pattern Recognition," his continuing research on a pattern recognition technique called Finite Inductive Sequence processing. Data from acoustic sensors is used to pick out aberrant sounds in the ocean. One possible use may be as an early warning system for stress or metal fatigue in offshore oil rigs.

*Dr. Guenter Gross, director of the Center for Network

Neuroscience, received two awards. One, for \$391,355, is a collaboration with Texas Instruments on how nerve cell networks function titled, "Internal Dynamics, Self Organization and Fault Tolerance of Small Nerve Cell Networks."

Gross' second award for \$200,000 is a collaboration with Southern Methodist University to develop improved, effective multichannel data acquisition systems which can then be used to collect higher quality data for his and others' research.

*Dr. Robert R. Kallman of the Department of Mathematics received \$146,624 for "Optical Techniques for Postal Letter Sorting," a collaboration with ElectroCom Automation of Arlington, the largest supplier of automation equipment for the U.S. Postal Service. Kallman has invented several numerical techniques for the design of spatial filters to aid machines in recognizing and reading machine-printed address blocks. The new techniques have the potential to read postal addresses at two to 10 times the speed of current digital methods and also may be able to read tilted or dot matrix characters.

*Drs. Daniel A. Kunz and Robert C. Benjamin of the Department of Biological Sciences received \$258,907 for their project, "Genomic Mapping of *Pseudomonas* Biodegradative Genes for Applications in Biotechnology." Their work into the genetic structure of *Pseudomonas*, a versatile bacterium, is expected to contribute significantly to biotechnology concerned with biological synthesis of chemicals and hazardous waste clean-up.

*Drs. John Neuberger, Alfonso Castro and Henry Warchall of the Department of Mathematics received a grant of \$109,000 for "Nonlinear Partial Differential

Equations of Hydrodynamics, Continuum Mechanics and Field Theory." The project is developing a series of nonlinear partial differential equations to describe a wide range of physical phenomena ranging from internal waves in the ocean to the behavior of plasmas in nuclear fusion reactors. The researchers received their first state grant for \$177,935 in 1988.

*Drs. Robert M. and Irma L. Pirtle of the Division of Biochemistry received \$131,353 for "Isolation and Analysis of cDNA Clones Expressing Human tRNA Modification Enzymes." They are working to develop a technique to facilitate the study of enzymes that interact with human tRNA.

*Dr. Sandra Terrell of the Division of Communication Disorders received \$91,451 for "Effects of Types of Medium Upon Word Learning of Preschool Children." She is comparing the effectiveness of a digital voice computer, a videotape or a book read aloud to teach verbs and nouns to preschool children. The state award follows a pilot study funded by the National Science Foundation.

*Drs. Dale Yeatts of the Department of Sociology and Social Work and Mary Thibodeaux of the Department of Management received \$82,466 for "Corporate Competitiveness and the Self-Managed Work Team," a longitudinal study of companies using self-managed work teams. The study will attempt to clarify strengths and weaknesses of the concept as it relates to American corporations.

"UNT is proud of the accomplishments of its faculty in gaining these awards," said Dr. Rollie Schafer, associate vice president for research and dean of the Graduate School. "The awards show the strong commitment of UNT to solving important problems in our region and state."

Composition wins dual band awards

*Then I can drown an eye, unused to
flow,
For precious friends hid in death's
dateless night,
And weep afresh love's long since
cancell'd woe,
And moan the expense of many a
vanish'd sight....*

Those lines from William Shakespeare's 30th sonnet and memories of friends and colleagues inspired Dr. Martin Mailman's award-winning composition, "For precious friends hid in death's dateless night." Mailman wrote the three-part song for wind ensemble, piano and female soprano shortly after reading the sonnet and soon made a little music history.

"For precious friends..." received the American Bandmasters Association/Ostwald

Award and the National Bandmasters Association/Bandsman Award for original compositions in 1988. Mailman is the first composer to win both awards in the same year.

"I think it's the finest piece I've ever heard Dr. Mailman do for a band," said Dr. Robert Winslow, who conducted the Symphonic Wind Ensemble in performances of the piece at the ABA and NBA national meetings. "It's a very intense expression of humanity. This piece affects you on a very human, emotional level."

Mailman, who chairs the composition division of the College of Music, also won the ABA's award in 1983 and has received an annual composer's award from the American Society of Composers, Authors and Publishers for 23

consecutive years — one a year since arriving at North Texas in 1966.

His most recent accomplishment is "Toward the Second Century," the official march for this year's University of North Texas Centennial.

While the pieces are very different — an elegy and a celebration — both were very satisfying for Mailman, though he never knows which of his compositions will be award winners.

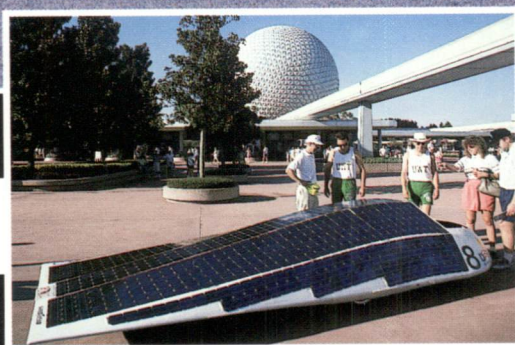
"Each piece I work on is going to be the one that I am most interested in, and hopefully it will be the most satisfying piece I've ever worked on," he said. "Sometimes it happens and sometimes it doesn't."

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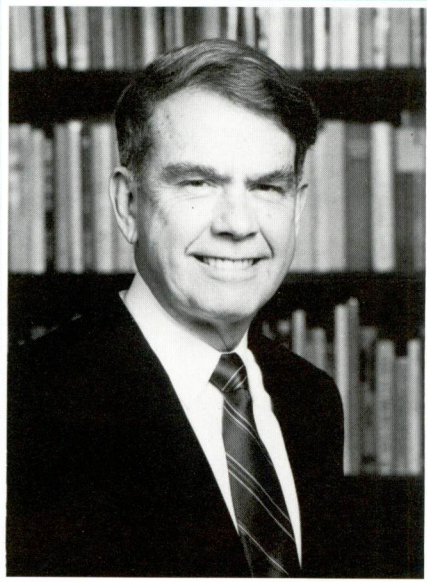


RESEARCH

THE UNIVERSITY OF NORTH TEXAS RESEARCH MAGAZINE



*UNT Shines in
Solar Car Race*



During 1990, the University of North Texas celebrates its Centennial Year. We are proud of this University's achievements over the past 100 years, and even more excited about its prospects as we move toward the 21st century.

Over the coming decade, our commitment will be to expand our connective role with our many constituencies in the Dallas/Fort Worth Metroplex, the state of Texas and across the nation. As an interactive, metropolitan university, UNT has a major role to play in dealing with the many concerns of our society. To this end programs such as those in aging, education, rehabilitation, business, public administration, health promotion and emergency management are producing

the next generation of professionals who will deal with these critical issues. At the same time, research faculty in materials characterization, neuroscience, educational technology, industrial technology, computer science, applied sciences, biological sciences, chemistry and biochemistry are interacting with industry to solve problems critical to the development of a healthy and stable economy.

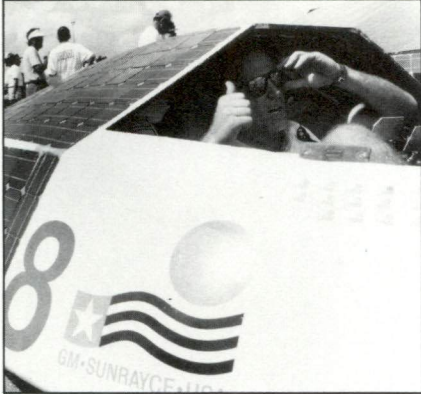
This issue of *ReSource* highlights just a few examples of the many contributions being made by UNT. Together they show not only some of the exciting work that is underway on our campus, but also the important interconnections between our faculty and the communities we serve.

Alfred F. Hurley
Chancellor

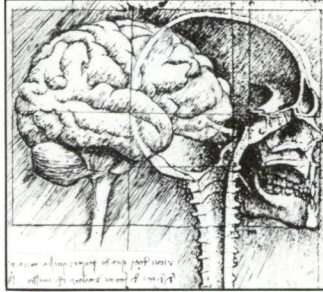
ReSource

THE UNIVERSITY OF NORTH TEXAS RESEARCH MAGAZINE

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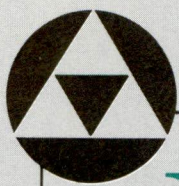
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First on the Disaster Scene,

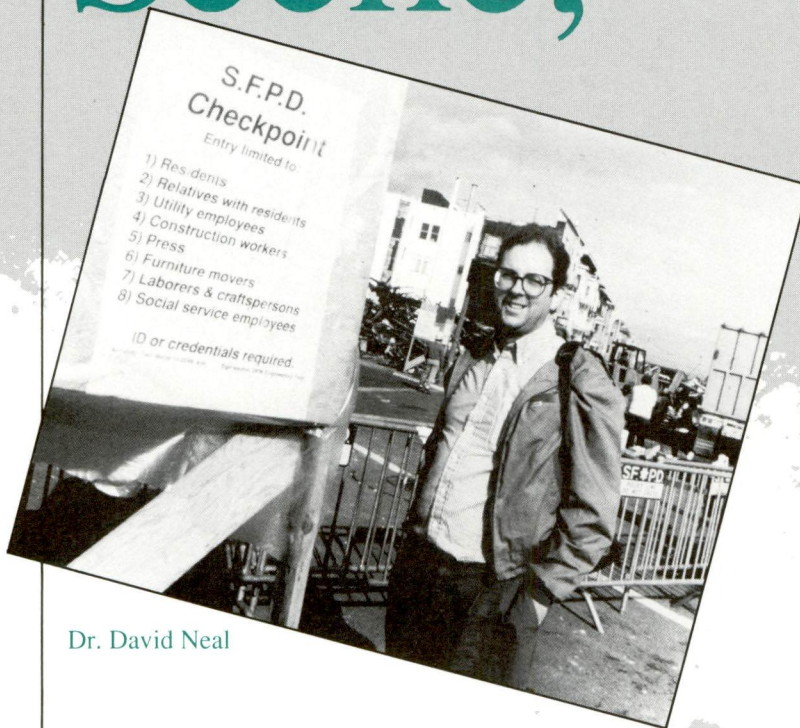
If Dr. David Neal of the University of

North Texas Institute of Emergency Administration and Planning were an attorney, detractors might label him an ambulance chaser, one who wastes no time reaching the scene of a disaster to solicit new business.

But as a faculty member in the institute, Neal has a viable research interest in what goes on after floods, hurricanes and earthquakes. UNT is one of only two universities in the United States that offers a bachelor's degree in emergency management, and Neal's research eventually benefits the students in that program and the community at large.

Neal's interest in the field began while he was working on his master's degree at Bowling Green State University in Ohio. He wrote his thesis on the response to blizzards that struck the town in successive years in the late 1970s.

After teaching full time for several years, Neal enrolled at Ohio State University to complete his doctorate. As a research assistant in OSU's Disaster Research Center, Neal traveled across the country in the wake of various disasters,



Dr. David Neal

but He's No Ambulance Chaser

By Carl Parks

compiling information on how governmental bodies, volunteer organizations and citizens responded.

"I think one of the reasons I became involved in this area is because I see this kind of research as a way to do some good. I can help people prepare for disasters and, after the disaster, to lessen the impact," he said.

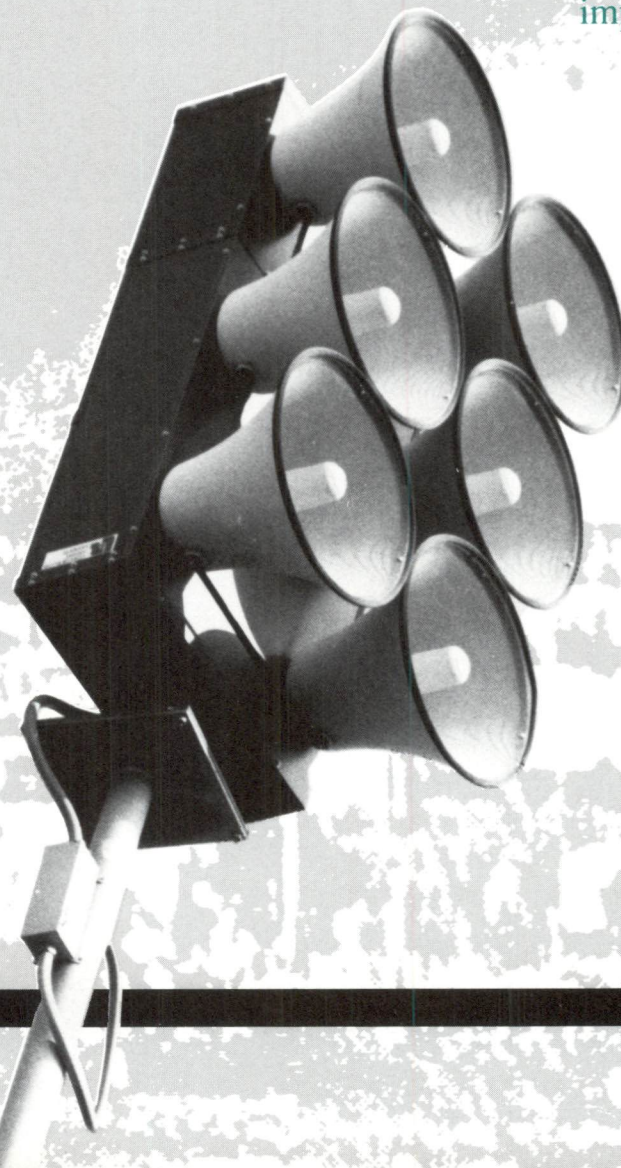
Since joining UNT, Neal has had many research opportunities — particularly in the past year. Four days after the massive San Francisco earthquake in October 1989, Neal — through a Quick Response Grant from the National Hazards Research and Applications Center/ National Science Foundation — was on an airplane headed for the West Coast. Once the earthquake struck, Neal phoned the university disbursing the grant money, verified the status of his application and hopped on a plane.

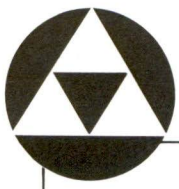
Disasters have different causes and effects, but Neal has developed a fairly systematic approach to his on-site research methods. Whenever possible, he likes to travel with a research associate. Having another person along helps him to plan his strategy, and also gives him someone to bounce ideas off of during the field work.

Most site visits start with a drive around the affected area — if possible — to get a mental map of the disaster's destruction. In San Francisco, the initial picture was somewhat deceiving.

"My initial impression was, 'Where did the earthquake hit?' There were areas with no obvious damage, not that people weren't affected. As I drove further I could see pockets of extensive damage. You have to go to the right places," he said.

'I think one of the reasons I became involved in this area is because I see this kind of research as a way to do some good. I can help people prepare for disasters and, after the disaster, to lessen the impact.'





The Marina District following the San Francisco earthquake.



Going to the “right” places can be overwhelming even to a veteran such as Neal. That makes it imperative to have a clear, specific research area in mind. Neal’s interest is the coordination of efforts among all emergency response groups, including governmental agencies and volunteer organizations such as the American Red Cross and the Salvation Army.

In the aftermath of the San Francisco earthquake, Neal’s initial impression was one of little integration or coordination between such agencies — surprisingly, with no real negative consequences. While there was little communication between various agencies, there was little duplication of effort. Pre-planning evidently emphasized the role of each group, and each group responded to the needs of its clients.

The researcher also noticed something in San Francisco that he has noticed following other disasters: the impression given by television often distorts what really takes place.

“Disasters bring out the best in people. There’s a lot of altruism. Images of panic and mass hysteria are just not the case. There might be one person out of a hundred or two hundred (who reacts negatively), but most people respond quite well,” Neal said.

He cited the story of the baseball player’s wife in Candlestick Park, where 50,000 people had been awaiting the start of the third game of the World Series. The media focused on one player’s wife as she screamed and hung over the railing, while most of the people in the stands remained relatively calm.

Neal describes his field work as being

'Disasters bring out the best in people. There's a lot of altruism. Images of panic and mass hysteria are just not the case. There might be one person out of a hundred or two hundred who reacts negatively, but most people respond quite well.'

similar to that of a reporter. Efforts are made to interview workers at various levels of responsibility in the organizations involved in the relief effort. Interviewing police captains, sergeants and patrol officers, for example, gives him a more complete picture of how the entire department dealt with the crisis. The same applies to volunteer agencies such as the Red Cross and Salvation Army, and Neal also talks to their clients.

Because disaster scenes usually are chaotic at best, Neal and others carry identification that indicates who they are and what research they are conducting. He can't recall an instance in more than 10 years of field work when he was denied a chance to do his research. From time to time, however, he has been asked to return at a later time or date.

Another recent chance for field research came this spring, when North Central Texas was hit by the worst floods in decades. Neal made two trips to the area, approximately five days apart, enabling him to make valid comparisons between initial and later responses. On those trips, he parked his car and walked the flooded towns, interviewing officials and taking photographs.

Back on campus, Neal begins compiling his findings. He uses qualitative and quantitative methods to reach his conclusions — "whatever technique best answers the research question. I like to think I can boil down the information simply enough for a lay person to understand."

Toward that end, a paper written by Neal will soon appear in a book written about the San Francisco earthquake.

By taking his research findings into the classroom, Neal is enriching the experience of his students. Almost 50 students have graduated from the emergency management program, with more than 100 students now majoring in emergency management. Many work in police, fire or rescue departments and see the degree as a career enhancement.

A recent graduate joined the United Nations in Geneva, Switzerland, and others are employed in the public and private sectors. Neal believes the need for graduates will continue to grow.

"These people will be the movers and shakers down the road. Rather than just working in the trenches, these people will be policy makers, controlling purse strings and wielding power," Neal said. "There's a great need out there, and we're providing the professionals in the field." ❄



Photo by Dan Santema



Dr. Sandra Terrell

As a speech-language pathologist, Dr. Sandra Terrell always is interested in new techniques to teach language to children. As a researcher, she has a disconcerting habit of challenging opinions with a quiet question: "Where's your proof?"

Terrell's concern has been what she sees as a trend to teach language skills to young children using computer or video aids as a substitute for human teachers, without sufficient proof of their effectiveness.

"I have been reading the speech and language journals and the product catalogs for a long time," she said recently. "I have read a lot of claims, and

a lot of opinions. I have read about a lot of programs set up in the schools. But I haven't seen many facts about how computer and video media compare to traditional methods."

Her "Where's the proof?" attitude led Terrell to conduct a pilot study on the impact of various technologies on children's language skills with a \$12,000 grant from the National Science Foundation. Based on the findings from that study, she was awarded a Texas Advanced Technology Research grant of \$91,500 in fall 1989 to continue her research.

"I am particularly concerned about using technology when no one has studied what this technology may or may not be actually contributing to child

Looking for Proof Among

Glupkas, DRUGS marps

By
Charlotte
Menger
Guest

learning," Terrell said. "I targeted language as a first step in testing because language always is involved in learning."

The pilot study, conducted from January 1987 to June 1988, studied 30 3- and 4-year-olds who had been tested for normal speech, language and hearing. Terrell studied their responses to a computer, a video and to a person reading.

A video of a popular children's program was chosen for testing. Terrell and student research assistants wrote a story to go with the segment using a series of nonsense nouns and verbs, words that none of the children had heard previously.

"It was difficult to find a segment with enough actions and objects that might not have familiar names the children already knew," Dr. Terrell said. "The segment we

computer with a human-sounding voice reading the text. The children could press the "return" key to start the program.

"I did not set up a program for much computer interaction because I am not looking for information on how a computer should perhaps be used. I am looking for data on how I see them actually being used," Terrell said.

The sample size was too small for significant differences to have occurred, she said, but trends were apparent. Overall, the children showed a slight tendency to learn more words with a human. They seemed to do fractionally less well with the video and, lastly, on the computer.

"I will emphasize that our results were not statistically significant, but they are interesting," the researcher said.

In the larger study now underway, she will use 5-year-olds, and substitute advanced real words for the nonsense verbs and nouns in the same story used in the pilot study, she said.

The new study will test 120 children, enough to establish significant statistical differences, if any.

"We may well find that different media are more effective at different ages," Terrell said. "Later, we will test the data to see if the results hold up with what we know about speech, language and hearing disorders. We have a long way to go."

She also wants to analyze each teaching mode by its characteristics, such as responsiveness, warmth, accessibility, clarity and interest, she said.

"I'm sure the list will lengthen," Terrell said. "Is the child's view different from the way an adult sees it? Do we view nurturing differently at different ages? Is nurturing a fundamental part of teaching the young or do they do just fine without it? If we change how we use the tools, can we improve how quickly or how well a child learns?"

"There are a lot of questions to be answered with some hard data. In fact, I don't see any end to the questions," she said. "For so long, we have taught children working from 'everybody knows' opinions. It's time we found some factual information on the best ways to teach our children." ❀

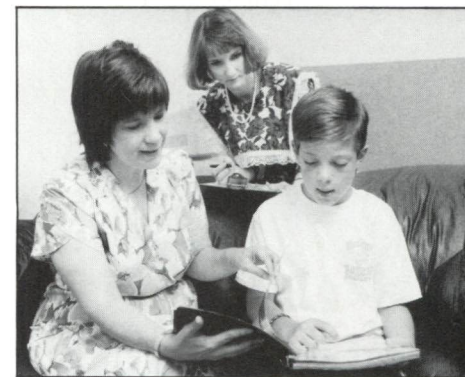
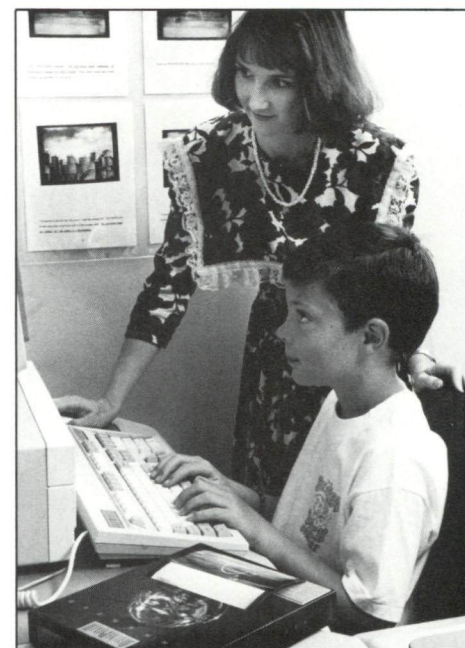
I am particularly concerned about using technology when no one has studied what this technology may or may not be actually contributing to child learning.'

chose is a story about a magic living ring. Well, that's unique. We called it a 'glupka.' And its rolling movement we named 'kazing.'

Nouns were "glupka," "drups," "marp," "parms" and "traf." Verbs were "kazing," "brishing," "bropping," "nushing" and "smapping."

The children were divided into six groups, two for each medium. One group was given a definition when the new word was introduced as part of the story. The other group simply heard the words used within the story. After hearing the story through one of the media, each child was given a post-test to determine the words that were learned.

The video was developed into still frames for use in a picture book with text. The still frames were programmed onto a



Research assistants Lisa Johnson, left, and Karna DeVille test the language skills of Adam Hafemeister by reading, television and computer.

University of North Texas archaeologist Dr. Reid Ferring was winding up his two-year archaeological survey at Lake Ray Roberts the December day in 1988 when he took his 8-year-old son on a hike along the lake's recently cut outlet channel.

Until then, his finds at the new reservoir six miles north of Denton had been interesting, but not likely to stir the archaeological community.

But that day, as he and his son gathered fossils, Ferring studied the lay of the land, overwhelmed with the feeling he had stumbled on to something special.

Soon, the archaeological world would confirm just how right Ferring was. Archaeologists from across the nation would visit the site. Media reports, too,

knew I was in the right time period."

His intuition was correct.

Ferring returned on a cold, drizzly day later that week with archaeologists from the U.S. Corps of Engineers, which provided funding for the site survey. There, along the rain-eroded channel banks, they discovered the distinctive spearpoint made by the oldest documented human culture in North America, known as the Clovis people.

But it was more than just evidence of Paleoindians. Ferring had discovered a rare, well-preserved 11,000-year-old site, one of only six west of the Mississippi.

When the investigation of his findings by a team of scientists is complete, Ferring expects to provide a glimpse into the last 11,000 years in North Central Texas history and fill in huge gaps of knowledge about what life was like as the Ice Age retreated and modern geologic times began.

"It (the site) was not only the right geologic contact between the Ice Age and recent time, but sandwiched in between those geologic units, we found a pristine record of Clovis people and what they were doing 11,000 years ago," Ferring said.

For a year, his team of archaeologists dug through 25 to 30 feet of sediment near the Elm Fork of the Trinity River, laying bare information on what the Clovis people ate and how they lived.

One section of the dig revealed a pond where bison, mammoths and other animals of the area came to drink and may have fallen prey to humans. Another section on slightly higher ground revealed a campsite, where the Clovis people cooked their food and perfected their tool-making, leaving behind tiny chips of stone taken from quarries 200 miles away.

The more than 10,000 chips are so small that all of them probably would fit inside a coffee can, Ferring said. Their tools and the stones from which they were created were precious commodities to the Clovis hunters. Only the pieces too small to be used for anything were left behind, he said.

BACK IN TIME



would spread news of the find, and National Geographic magazine would photograph the site.

But at the time, it was mostly a case of intuition, backed by Ferring's knowledge of geology as well as archaeology.

"The animal bones — bison, deer — had the feel of having been buried by human hands. I had a sense that not only was it the right period — a slice of life at that time — but that humans had been there," the 42-year-old scientist said.

"I didn't find one definite scrap of evidence that would allow me to prove humans had been there, but based on the geology and fossils we found there, I

B Y A N I T A B A K E R



Dr. Reid Ferring

One section of the dig revealed a pond where bison, mammoths and other animals of the area came to drink and may have fallen prey to humans.

What he diligently looked for but didn't find was any evidence of dwellings.

"We looked as hard as anyone ever looked and could find no evidence of any kind of structure, hut or tent," Ferring said. "I don't take that as proof that they did not have any kind of shelter. It's simply that we can't see it. It would be easy to imagine a skin-covered shelter that would leave no archaeological evidence — one rolled up and taken on to the next camp."

Ferring believes the site is much larger than the 300 square yards his team uncovered.

The archaeologists uncovered a slice following the banks of the channel, but if another cut were made in another direction from the bank, Ferring believes he might discover that the site extends over several acres.

"Right now it stands as one of the largest Clovis sites ever found in terms of the area in which artifacts and bones were distributed," he said.

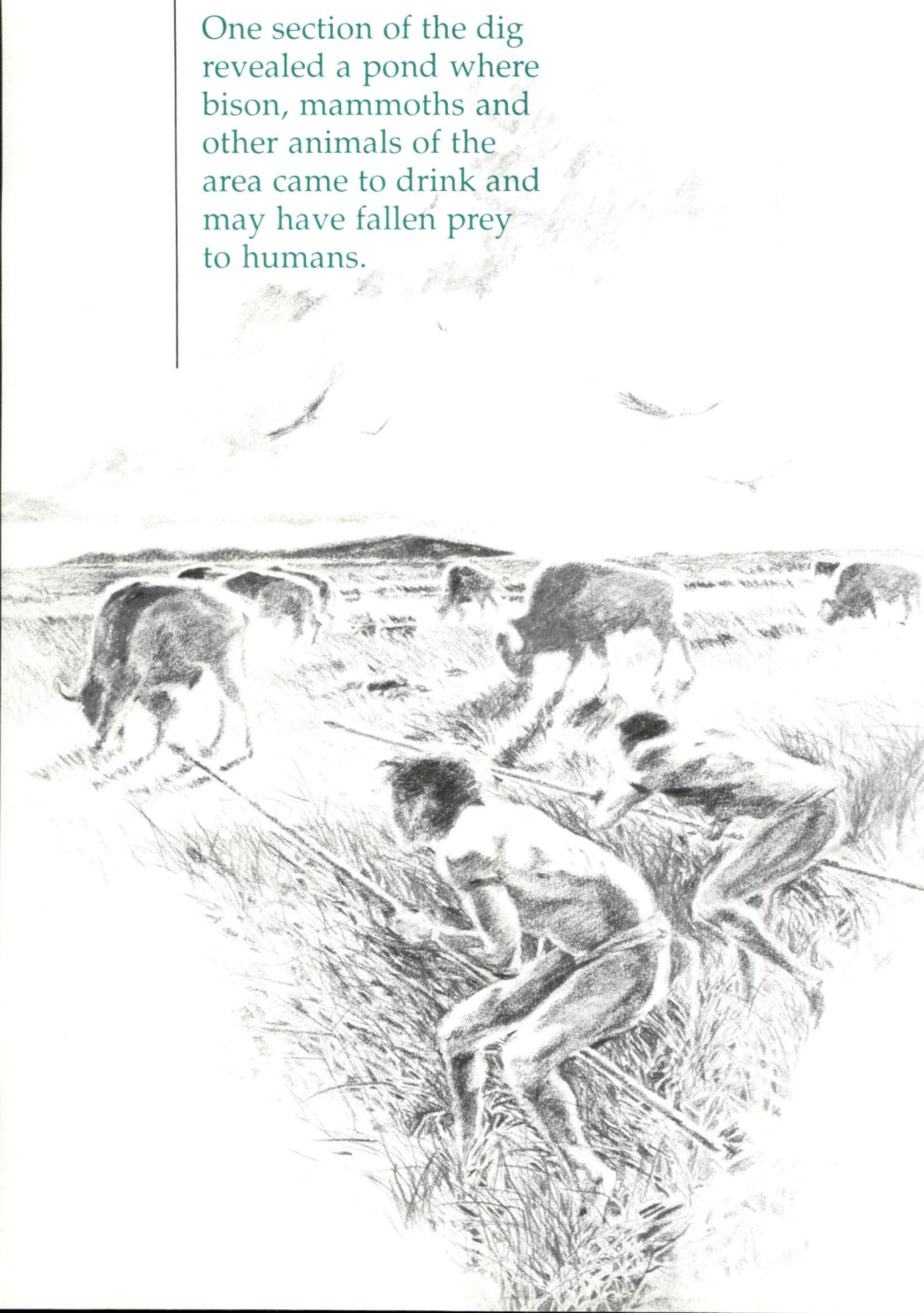
Taken from the site were numerous samples of pollen, insects and snails as well as bones of animals including extinct bison, mammoth, horse, peccary, deer, rabbits, squirrel and other rodents, turtles and snakes.

One of the more exciting finds was the remains of a rich array of insects including land and water beetles, which are considered valuable clues to climate changes.

Analyses of artifacts, soils and animal bones are being completed at UNT laboratories. Other scientists around the country are performing radiocarbon dating studies, additional bone identification and analysis of pollen samples, fossil insects, snails, ostracods (microscopic crustaceans) and diatoms (freshwater algae).

"Each piece of evidence is a cross-check on everything else," Ferring said. "We have a complete circle of evidence. Now we can check our interpretations against multiple indicators."

Evidence indicates the Clovis people probably moved in large groups over long distances, working hard to survive. Ferring suspects it was the need for food more than curiosity that caused them to





'The animal bones—bison, deer—had the feel of having been buried by human hands. I had a sense that not only was it the right period—a slice of life at that time—but that humans had been there.'

scatter throughout North America in such a short period of time.

"I think when we are through, we will sort of bend the picture of Clovis people a little away from the popular and even scientific view that it was a land of plenty and garden of Eden, that they wandered at will pulling fruit from trees as they went."

Preliminary results show that between 13,000 and 10,000 years ago North Central Texas was harsh and dry. The Clovis people probably walked over dry, open grasslands lacking the canopies of trees that line river and creek banks today.

"I would compare it to western Oklahoma today—but not necessarily an area that supported a great amount of life," he said.

The site will be filled in and planted with protective vegetation when the contract is completed. Work at the site this spring was put on hold when flood water was released from the lake into the Elm Fork of the Trinity River. Although more excavation at the same site isn't likely in the near future, Ferring has hopes of opening new excavations nearby in two to three years.

"I'd be a fool not to go back there," Ferring said. "I will not let the iron get cold."

"We've seen such a small part of the site. By expanding our work by another

10 to 30 percent we will add immeasurably to our knowledge," he said.

Ferring still has many unanswered questions: How often were the sites used? How large were the groups that came there? Did they travel in groups of families or did they have a base camp where women and children remained while hunters looked for food?

"We are really floundering for evidence concerning the actual structure and character of the Clovis population and how they managed on this bleak landscape," he said.

Ferring's three years of work on the project were financed by \$2 million in grants from the Corps of Engineers. He hopes the importance of the find will bring in more grants.

Part of the credit for the find has to go to UNT, Ferring said. The work might not have been done as well without the state-of-the-art laboratory equipment and the staff provided by the university, he said.

"The world will look at us in terms of what we have done with the golden egg. It is not going to praise us for merely finding it," he said. "I am glad North Texas was ready to do this work. It will show everyone that luck was over with quickly, and that hard scientific research on the site is going to be done by one of the best teams of scientists around." ❁

Photos by Dan Santema



Left: Workers at the dig site.

Above: An overview of one section of the dig, located at Lake Ray Roberts.

What We Know About the Clovis People

Clovis sites are the oldest clear evidence of occupation in North America. Although the Clovis people may not have been the first to enter the New World, their sites provide the first evidence that can be used to study the earliest Americans in North America, and their lifeways and adaptations are extremely important aspects of American archaeology.

The Clovis Culture

The Clovis Culture is named for the town of Clovis, N.M. Near Clovis is Blackwater Draw, where the first Clovis points associated with extinct mammoth were found in 1932. Clovis archaeological remains are the first of the Paleoindian cultures in North America. The Paleoindian period of North American archaeology begins with Clovis (ca. 11,000 years ago) and ends about 8,500 years ago. The earliest Paleoindian cultures, Clovis and Folsom, made distinctive spearpoints with fluted bases.

Types of Sites

Two general types of Clovis sites are known: kill sites and camp sites.

Kill sites are those where Clovis artifacts are associated with animals — usually mammoths or bison, but also horses. Kill sites provide direct associations between Clovis artifacts and extinct animals, and also provide data on Clovis diet and hunting strategies.

Camp sites have direct evidence of Clovis habitation (cooking, tool manufacture, etc.). Camp sites are rare in the western United States; only about five have been well documented. Clovis camps have hearths, flintknapping areas and food processing areas. No evidence of structures or shelters has been found.

- Research conducted by
Dr. Reid Ferring
Department of Geography-Anthropology and Institute of Applied Sciences
University of North Texas

- Research supported by
U.S. Corps of Engineers
Fort Worth District

- Site discovered Dec. 3, 1988, by Reid Ferring.

- Site located on federal land at Lake Ray Roberts, 10 miles north of Denton.

- Site buried 23-28 feet below flood plain of Trinity River; depth probably chief reason why Clovis sites rarely are found. Two major camp areas are about 400 feet apart, one on the shore of an ancient pond, the other on the bank of a river.



More than 9,000 stone artifacts including spear points, scrapers, knives, flint blades and other tools as well as thousands of stone flakes and chips showing how tools were made, used and repaired at the site.

Nearest sources of flint found at the site are 200 miles away (Palo Duro Canyon and Alibates Quarry near Amarillo, Central Texas and New Mexico).

The site contains a uniquely detailed record of Pleistocene (ice age) through recent plants, animals and climate that will help explain the extinction of

Scientific Significance of the Site

One of five known Clovis camp sites west of Mississippi and one of few in North America.

Clovis occupation of site dates to 11,000 years ago.

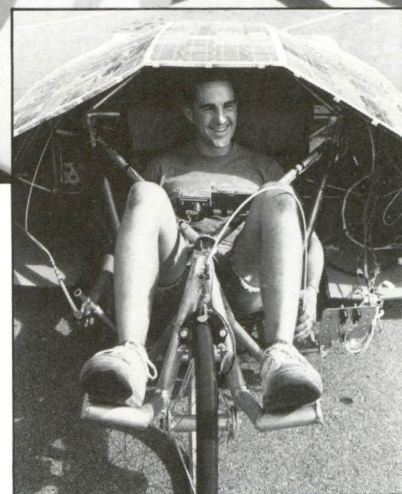
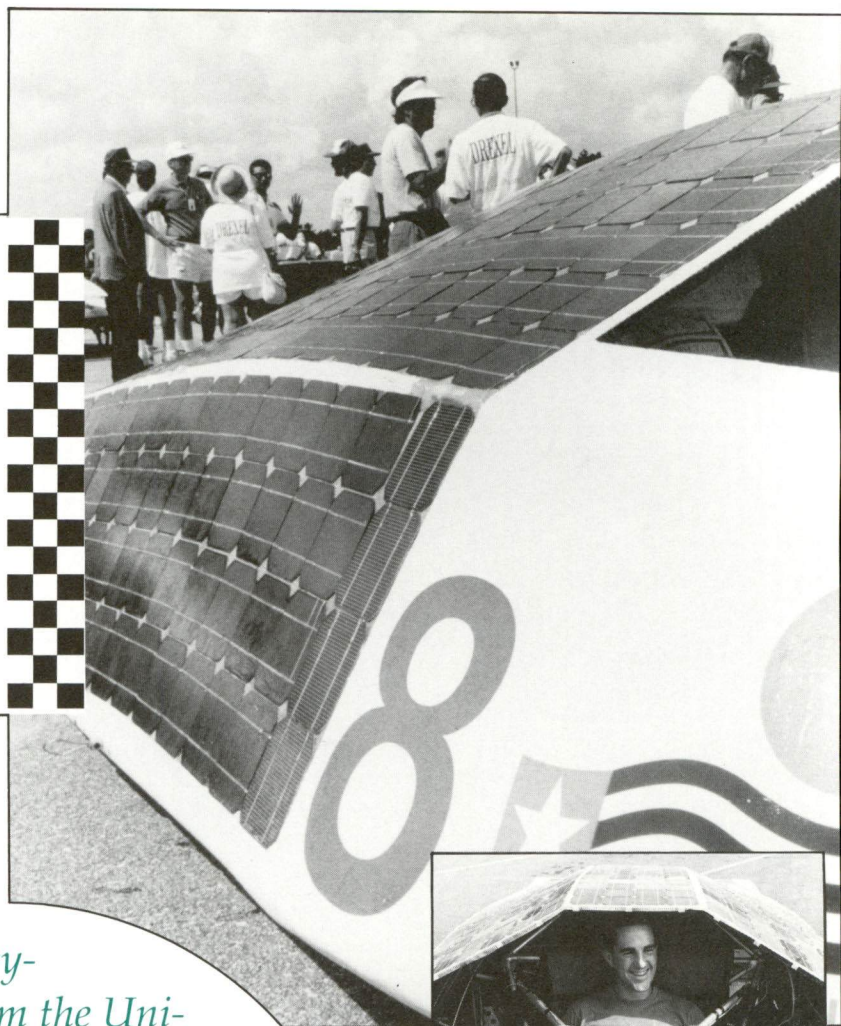
Animal bones recovered include extinct bison, mammoth, horse, peccary as well as deer, rabbits, squirrel, rodents, turtles, snakes.

American ice age mammals, glyptodons (giant armadillo-like creatures), sabre-toothed cats and others. These animals all became extinct within 500 years of Clovis people's expansion over North America. Whether these African-like animals became extinct because of environmental change or because of overkill by the Clovis people is one of the major debates in American archaeology. The Aubrey site has excellent evidence of past environments and Clovis culture and is shedding new light on these problems.

From Florida to Michigan, Solar Team Shines the Light for UNT

• By Susan Shelton

A faculty-student team from the University of North Texas Industrial Technology Department found its place in the sun this summer in a challenging 11-day race of solar-powered vehicles. Battling rain and overcast skies, the four-man team finished 18th in the General Motors Sunrayce USA, the largest competition of solar-powered cars ever held in the United States. The 1600-mile race from Orlando, Fla., to the General Motors Technical Center in Warren, Mich., tested the engineering skills of university students from the United States, Canada and Puerto Rico.



Photos by Dan Santema



The UNT team was one of 32 competitors chosen to participate from 60 initial entrants. The team with the fewest members and, at \$28,000, the least expensive car, the UNT group competed against the likes of the winning 28-member University of Michigan team with its \$800,000 car.

In the lightweight vehicle, named the Centennial in honor of UNT's 100th birthday, the team finished the race in just under 111 hours, about 38 hours behind the Michigan team. Second and third place winners were Western Washington University and the University of Maryland, respectively.

Although they didn't realize their goal of placing in the Top Ten, the team did outrace the only other Texas entrant, the University of Texas at Austin, which finished 22nd.

Team leader Lee Palmer, a May graduate of UNT, said outperforming UT was a sweet victory in itself. "We really

'We were like everybody's pet,' Mitchell said. 'They were amazed that six or seven people were able to put together a project like that. They really took us under their wing.'

wanted to beat UT and the only other school from the southwest, Arizona State University, which we did," he said.

After almost two years of designing, building, testing and refining the car, the team arrived in Florida ready to prove they had all the right stuff. In addition to Palmer, the team consisted of two other recent industrial technology graduates, Greg Mitchell, 23, and Jeff Curtis, 27, as well as John Dobson, the faculty adviser who designed the car and worked with the students for the duration of the project.

The qualifying rounds to determine each team's place in the starting lineup were held at the Daytona Speedway in Daytona Beach, Fla. Just as the UNT team began to perform in a series of braking, speed and maneuverability tests, a bolt in the brake line failed. Sent to the end of the line of qualifiers, team members quickly fixed the minor glitch and were about to prove themselves when a rainshower put an end to the day of qualifying.

The next day the Centennial, with Palmer at the wheel, turned in an outstanding performance by stopping in 18 feet, well within the 52-foot margin required for braking. Based on their qualifying results, the team started the race ranked 12th. "We felt relieved. Up until that point we were holding our breath about having to work on the electrical system," Palmer said. They were worried because David Sipp, the UNT student who built much of the car's



The members of the "Project Centennial" race team shown clockwise from the back row: Lee Palmer, Dr. John Dobson, Greg Mitchell, Jeff Curtis and Donovan Blackman.

electrical system, was unable to make the trip.

The race was run in 11 stages, with vehicles taking off in 30-second intervals based on the previous day's order of finish. Cars that didn't make it to the finish line by the end of the day were towed in and penalized in minutes added to their total time.

Up at 5 a.m., the group charged the car's batteries with sunlight for a couple of hours, raced for nine hours and charged the car again in the evening.

Team members took turns at 4 1/2-hour shifts at the wheel of the one-seater vehicle, which is steered with the feet. The 16-foot-long car is only 34 1/2 inches high at the tallest point in the front, tapering gently to a few inches at the end. At 377 pounds, the Centennial was the lightest car in the race, a plus for a car that runs off of a one-horsepower engine. "It's like pushing a piano with a Weedeater," Palmer said.

Driving the cramped vehicle, in which temperatures reached 105 degrees, was exhausting, Curtis said. "It wore us out pretty quickly. All the big schools were impressed with our ability to maintain our pace."

Crew members not racing the Centennial took turns driving a lead van provided to each team by GM and serving as navigator in charge of the thick set of maps and directions for the route.

At the helm of the rear-chase vehicle, Dobson followed the solar car in the presence of a race observer who made sure the team adhered to race regulations and traffic laws. Dobson served as strategist, monitoring the weather and helping the team decide how best to conserve the precious power in the batteries.

Communicating by radio, the lead and rear-chase cars guided the solar car driver through obstacles such as heavy traffic and potholes.

By the end of the first day of racing, the team was certain the attention to detail and the hours they had put into the car were going to pay off.

"We passed a lot of teams that were broken down and stranded. A lot of them had major problems," Mitchell said. "We had test driven our car for about 90 miles, and some of the others had not put any miles on their car before the race."

The car had seven flat tires during the trip, but otherwise suffered no major time-delaying mechanical failures.

Because of heavy rains that plagued the racers for most of the competition, efficiency, not speed, proved the key to competing well in the race.

When it is cloudy or rainy, solar cars, with their reliance on the sun for power, must use reserve energy stored in the batteries. Therefore, team members said, high-quality batteries were essential for winning the race.

UNT's car was one of only four to use lead-acid batteries, like the ones found in most automobiles. Those cost a total of \$300. The team would have preferred to use higher quality silver-zinc batteries, as did most teams, but their cost was prohibitive — at least \$10,000.

The disparity in the quality of the batteries made all the difference in the outcome of the race. "If we had had those batteries, we could have been in the Top Ten," Curtis said.

Lower-quality solar panels and energy converters also hurt UNT's performance. For instance, UNT's converters could only turn about 85 percent of the energy captured by the car's 808 solar discs into usable power. More expensive converters would have been 98 percent efficient.

Because of the rain and limited battery storage, strategy became all-important in

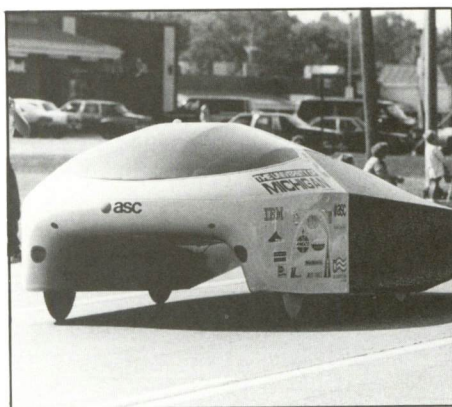
the team's performance.

In overcast conditions, the racers did what they call "sailing the clouds."

Mitchell explained it like this: "You look ahead for a break in the clouds, a patch of sunlight down the road, and then you go fast through the clouds, you sail them. Then go slow in the sun, to absorb the rays."

But sometimes, sailing the clouds wasn't enough. The rain was so heavy the third and fourth days of the race that the team opted not to race. By sitting out, they lost points, but conserved their precious battery resources. In the two days they didn't race, the team dropped to 22nd in the rankings.

While conserving power was a good reason for declining to race in the rain, safety was perhaps the most important.



The winning entry from the University of Michigan.

Less than two feet away from the driver's head, the car's electrical system posed a threat of shock if water leaked through the roof.

Although clouds followed the racers for most of the rest of the trip, the UNT team did not have to sit out again because of bad weather.

Driving at an average rate of 23 miles per hour was a good way to see the country, if a bit slow, team members said. Throughout the journey, the men enjoyed special moments such as a festive sendoff at Walt Disney World and waving crowds along isolated country roads throughout the trip.

For Curtis, the peak of the trip was a chance to drive two laps around the famed Indianapolis Motor Speedway in Indiana. "It was exhilarating. Since 1916, we were the only cars ever to drive there

except Indy cars."

Through their resourcefulness and adaptability, the team earned the respect and friendship of the other racers, many of whom had never heard of the University of North Texas. "We were like everybody's pet," Mitchell said. "They were amazed that six or seven people were able to put together a project like that. They really took us under their wing."

Still, it was difficult to watch other teams, even those with more crew members and more expensive cars, outrace them, Mitchell said. What was even more trying was the discipline needed to stick with their racing strategy, he said. "We would pull off to charge and see teams passing us. It was hard. It taught us to stick with our strategy. We developed a lot of discipline."

Dobson said the race was an excellent experience for the students and informative to others as well. "It was an educational experience, more so than sitting in a classroom. It was good for the department, because some people on campus had never heard of industrial technology and it was good for the university, because some haven't heard of it beyond Dallas."

The last day of the race, Palmer completed the course before crowds of people cheering in the rain. The feeling was bittersweet. "It hit us hard after we crossed the finish line that two years worth of work was finished. We started in the rain and finished in the rain — how fitting."

With the race over and a two-year effort behind them, the team has gone their separate ways to new jobs in different cities. Nevertheless, they dream of entering the World Solar Challenge in Australia, where top solar cars from around the world will compete. In reality they know they probably won't be able to raise the \$60,000 in entry fees, improvements to the Centennial and traveling expenses needed for the November race.

Regardless of their future in solar-car racing, they are proud of their accomplishments. "It put North Texas on the map," Curtis said. "It also proved to a lot of people that we could do it against all odds. It was a real confidence builder for all involved." ❁



UNT ESTABLISHES LANDMARK EDUCATIONAL TECHNOLOGY CENTER

By Charlotte Menger Guest

From left, Drs. Jim Miller, Jim Poirot and Ken Brumbaugh.

The University of North Texas, in collaboration with The University of Texas at Austin, has been awarded an \$800,000 state grant to establish the Texas Center for Educational Technology (TCET) on the UNT campus.

The center, awarded to UNT by the State Board of Education at its June meeting in Austin, also is supported by \$100,000 from UNT and \$15,000 from UT. The major thrust of the center, which became operational in June, will be research and development, with eight research laboratories on the UNT campus and three at UT.

TCET will conduct research, develop prototypes and disseminate findings about the applications of technology in education, according to Dr. James Poirot, chair of the UNT computer education and cognitive systems department.

School districts, universities, community colleges and private companies engaged in the development of computer software and hardware, educational materials, tests and related products will be invited to participate as members or associate members.

Poirot said the use of "educational technology" involves a lot more than computers and programming for Texas schools.

"We're talking about such simple things as speaker phones, overhead projectors, inexpensive hand-held calculators and computer linkups around

the state. A lot of these technologies are routinely used in business but we haven't translated their use into education," Poirot said. "It's time to look at what we can use to make teachers more productive and to assist students in learning."

In a letter to state board members, Texas education commissioner W.N. Kirby noted that proposals were evaluated by experts from other states who unanimously selected the proposal by UNT and UT.

Dr. Jim Miller, dean of the UNT College of Education, called the new center "a landmark event in the history of education in Texas."

"We are, indeed, honored to have been selected in collaboration with The University of Texas at Austin to undertake this important work," Miller said. "Research conducted in the center will move Texas schools into the forefront in the nation in the use of technology in the classroom."

"At this point, hardware technology has outpaced software development. We hope to close that gap. The potential is enormous for improving the opportunities for student learning — distance learning, computer-assisted instruction, artificial intelligence programs, telecommunications, as well as self-paced and individualized instruction," Miller said.

Dr. Ken Brumbaugh, an associate professor in computer education, is interim director. A permanent director

will be named later by the state board of education.

A governing board also will be appointed. Currently, members of a startup advisory board are Samuel W. Webster, manager of educational affairs at Texas Instruments; Dr. Tom Burnett, educational technology consultant for Apple Computers; Dr. Forrest Watson, superintendent of the Hurst-Euless-Bedford Independent School District; Dr. Hope Erickson, superintendent of the Eanes ISD; Dr. Richard Simms, associate dean of the UNT College of Education; Dr. Bill Lasher, associate dean of the UT College of Education; and Poirot.

Laboratories and researchers for the first year at UNT are: curriculum and instruction, Poirot; assessment of student learning and cognition, Dr. Jon Young; student learning and special populations, Dr. Wayne Hresko; teacher productivity and training, Dr. Cathleen Norris; instructional design and evaluation, Dr. Terry Holcomb; educational telecommunications and informatics, Dr. Gerald Knezek; emerging delivery systems, Dr. Paul Schlieve; and student learning and physiological factors, Dr. David Holmes.

Laboratories and researchers at UT are teacher retention and support networks, Dr. DeLayne Hudspeth; interactive multimedia, Dr. Wilhelmina Savenye; and design of computer-based instruction, Dr. Gayle V. Davidson. ❀

Drs. Harold Gross, left, and Bernard Weinstein.

They study, analyze, write, speak, probe and publish on topics as diverse as tort reform, the future of a major metropolitan city and its suburbs and the economic impact of an international traveling exhibition. And they do it at an amazing pace.

"They" are Drs. Bernard "Bud" Weinstein and Harold Gross, director and associate director, respectively, since June 1989 of the University of North Texas Center for Economic Development and Research.

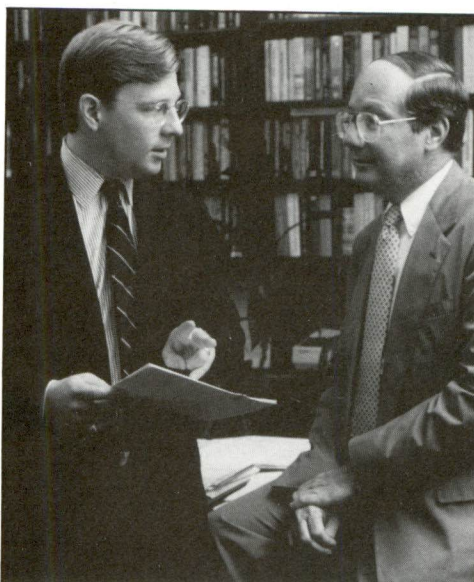
Prior to joining UNT, the two held similar positions in a high-profile center at Southern Methodist University in Dallas. The two met while Weinstein was a faculty member and Gross was a graduate student at the University of Texas at Dallas. Both later worked on the staff of the John Gray Institute at Lamar University in Beaumont.

UNT wants to play a larger role and offer more support in the public policy-making arena in North Texas, and the center is one way of providing that support, Gross says.

"We provide clients with dispassionate, third-party analysis of critical issues," he said.

The center's clients are a diverse group, but all share one common thread. All issues taken under study by the center must affect public policy.

"We go beyond what a lot of think



ECONOMIC RESEARCHERS

offer a

WINDOW

to the

FUTURE

By Carl Parks



Photos by Dan Santema

tanks do. We don't do studies just for the sake of doing studies," Weinstein said. "Even if the client has proprietary interest, there has to be an overriding public policy angle, and a role for the university in solving the problem."

A recent center project, and the one Weinstein considers the most important to date, was the "Dallas First" study. Released in April, the study analyzes the future relationship between Dallas and its suburbs. Such reports are bound to include sometimes controversial results, and both men emphasize that the center avoids taking sides in political squabbles.

The Dallas First project exemplifies their determination to stay above the fray. It's a commitment to objectivity that's appreciated by their clients.

"We gave Bud and Harold an absolutely blank check....We told them, 'Say what needs to be said,' and they did," said Forrest Smith, senior partner of Arter and Hadden, the law firm that commissioned the study. "We hired them because of the quality of their research. We weren't disappointed. I liked their judgment, the way they balanced the positive and negative findings and made recommendations. Not one recommendation is unattainable."

The center currently is conducting a study on the impact of the Canada-U.S. Free Trade Agreement on the Texas oil and gas industry, funded by the Texas General Land Office and the Canadian

government. The Texas Department of Agriculture also has engaged the center to study the overall effects of tax abatements and other incentives offered to lure industry to the state.

Weinstein recently interviewed department heads at Fair Park in Dallas. A group called Friends of Fair Park wants to know what that landmark could contribute to the area if refurbished. The need for continuing medical education in the Dallas-Fort Worth area is the focus of a study the center is conducting for the Metroplex Medical Council.

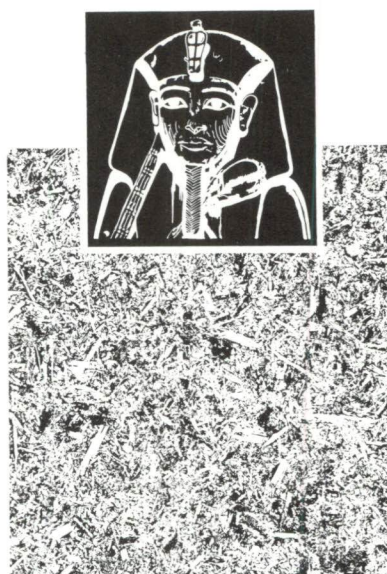
Most studies and analyses are requested by specific groups or agencies, but not all.

"We published a report called 'Short Term Fiscal Options for Texas.' We offered our solution to the (state's) fiscal crisis. We need a billion dollars, and we felt the least painful way to raise that amount was an overhaul and broadening of the sales tax base," Weinstein said. "We mailed a copy to every member of the Legislature, but they decided to raise the sales tax rate instead."

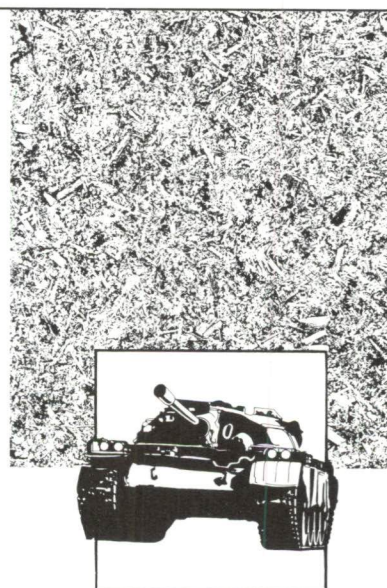
Studies such as these concern relatively large entities, but the center also prepares economic impact reports and feasibility studies for smaller groups such as the chambers of commerce in North Texas towns such as Denton, Keller and Southlake.

The center also has access to a vast array of experts — the UNT faculty. In addition to the data compiled by the center and other UNT faculty, studies utilize statistics provided by governmental agencies.

"The client may not like the numbers in the report, but we don't invent them," Gross said.



Published studies available from the center range from the economic impact of the Ramses II exhibit in Dallas to patterns of regional military procurement and the need for reforms in trucking regulation—and more than 30 others.



The center also publishes *The Western Tax Review* and *Perspectives*. The tax review is a semi-annual public policy journal, while *Perspectives* is a quarterly that summarizes economic indicators and projects for the state and its metropolitan areas. Published studies available from the center range from the economic impact of the Ramses II exhibit in Dallas, to patterns of regional military procurement and the need for reforms in trucking regulation — and more than 30 others.

Many Texans have read the views of Gross and Weinstein over their morning coffee — the two are frequent contributors to a host of newspapers. Column topics have included tort reform, the need for fuel diversification and needed reforms among state regulatory agencies.

"Sometimes we get a call from a newspaper, but sometimes we just get angry and bang something out. We do spend a lot of time talking to reporters and writing articles," Weinstein said.

Both Weinstein and Gross say the cooperation and support shown them by everyone at UNT have convinced them they made the right decision in 1989.

"I've been in higher education 30 years, and there are few universities where a center like this would be accepted," Weinstein said. "On a lot of campuses, people like Harold and I, who are out in the real world getting our hands dirty, would be looked at suspiciously.

"I think this is a very unique university with a unique mission and very enlightened leaders," he said. "The only public universities that will be well funded in the 21st century will be the ones that serve the community." ❀

I U C R C

Industry/University Cooperative Research Center

Drs. Jim Marshall, left, and Floyd McDaniel.

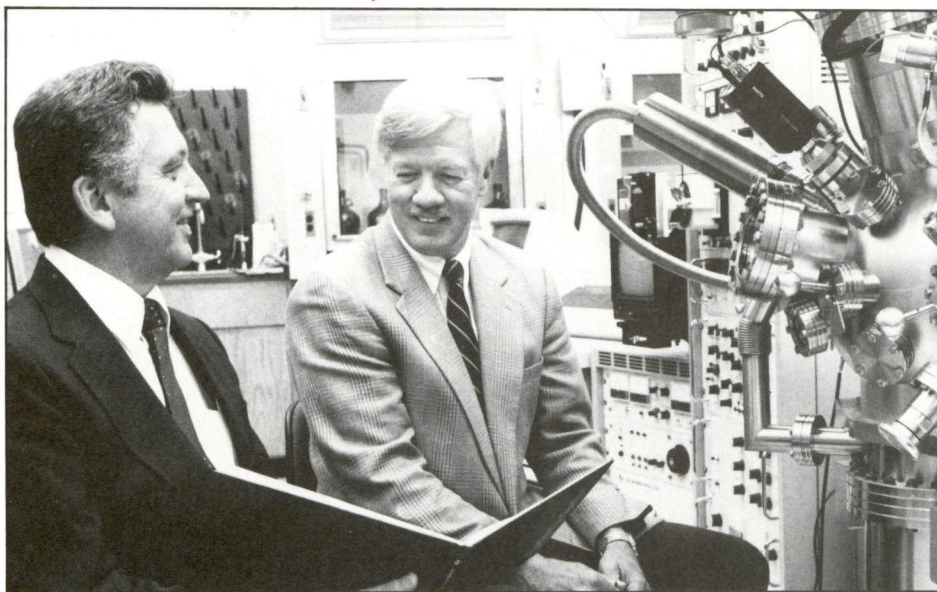


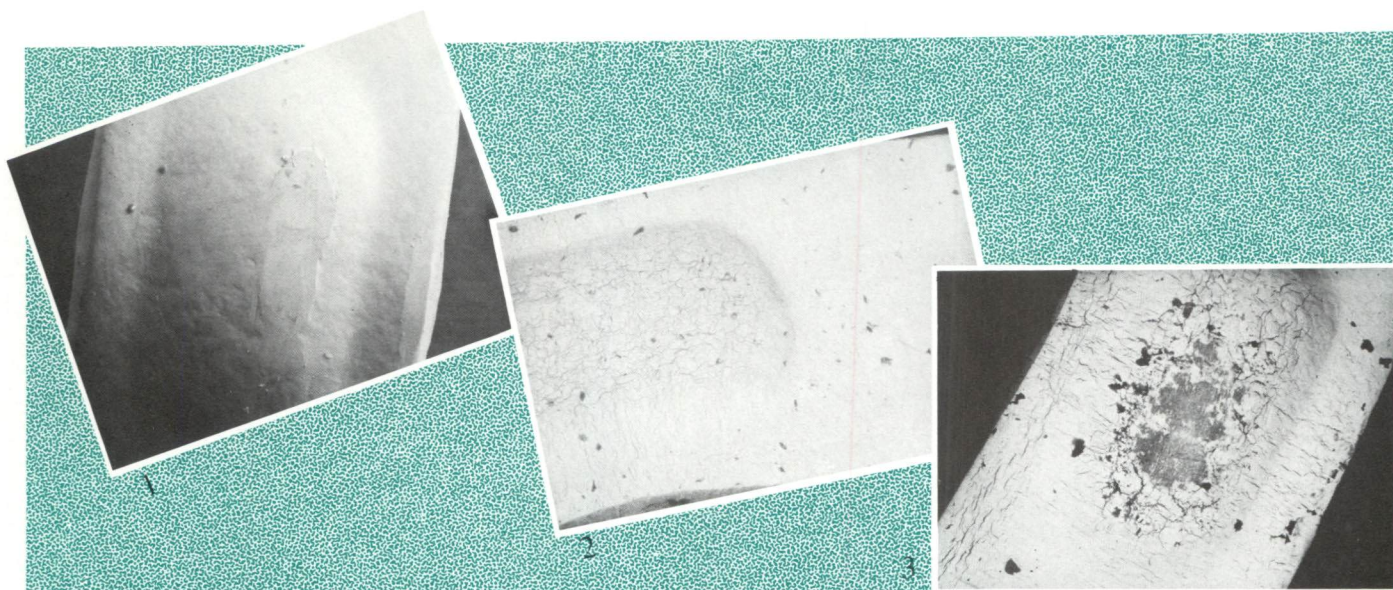
Photo by Dan Santema

*Helping
American
Industry
Regain the
Competitive
Edge*

Under the sponsorship of the National Science Foundation, scientists at the University of North Texas are teaming up with their industry counterparts to help American manufacturing regain its competitive edge. 

Scientists initially will focus on basic and applied research on the atomic structure of metal alloys and electronic materials.  They will attempt to answer questions such as why one semiconductor material outperforms another, why aircraft engine turbines and steam pipes in power plants fail, and whether the failure of crucial parts can be predicted accurately and the parts replaced before they fail.  Answers to these questions — and a hundred others — are vitally important to American manufacturers as they strive to compete in the world market. 

B Y R O L L I E S C H A F E R



On May 23, NSF announced a five-year \$250,000 grant to support UNT's Industry/University Cooperative Research Center (IUCRC) for Nanostructural Materials Research. The NSF will contribute \$50,000 annually which will be matched by five-year contributions of \$50,000 annually from six or more industrial partners. Officials expect the center to be self-supporting through industry contributions by the end of the NSF-sponsored five-year startup.

Through August, UNT had received commitments of support from International Digital Modeling Corp., Fluor-Daniel, LTV, Motorola, TU Electric, Texas Instruments, Rockwell and Westinghouse. The North Texas Research Institute, an affiliate of the University of North Texas, also is a contributing partner in the consortium.

Mike Montgomery of IDM Corp. was elected the first chair of the IUCRC's industrial advisory board. Phil Gray of Texas Instruments was elected secretary.

"Funding UNT's center is part of NSF's efforts to boost American industry's competitiveness by giving industry access to academic expertise and unique research facilities," said Dr. Joe Mathias, director of the National Science Foundation Cooperative Research Centers Program.

This year NSF is funding five new centers in the United States. These include centers for air conditioning research at the University of Illinois, grinding research at the University of Connecticut, coatings research at Eastern Michigan University, research on coordinate measurement technology for quality control at the University of Michigan and materials research at UNT.

The UNT research center is dedicated to understanding the atomic level structure, or nanostructure, of materials used in critical applications and manufacturing. Understanding why some materials perform well while others fail requires very specific knowledge of atomic level structure. The engineering properties of a material are determined by the kinds and amounts of atoms present in a material and their relationships to each other in forming the crystalline and molecular structures.

An understanding of atomic structure also is necessary to produce new "designer" materials tailored to highly specialized applications. The manufacturing needs of the future increasingly will require materials designed and built atom by atom, molecule by molecule.

The IUCRC initially will concentrate on basic and applied research on electronic materials and metal alloys.

A scanning electron micrograph of a properly gold-plated connector used in computer plugs.

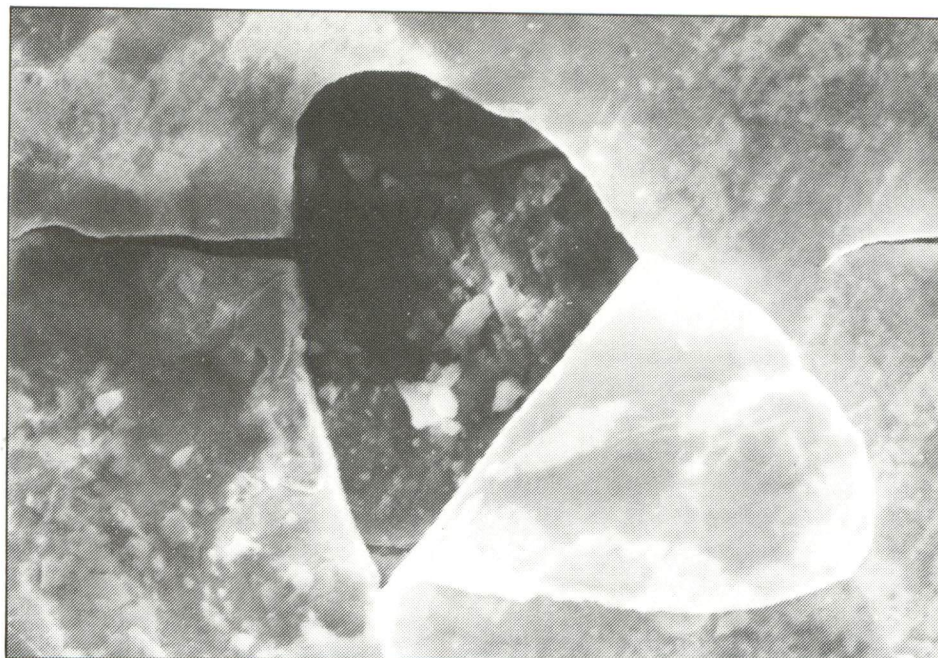
1 After a number of insertions and withdrawals, the gold is seen to smear, continuing to cover the base metal and protect it from corrosion.

An improperly gold-plated connector. Cracks already visible in electron microscopy are not visible to the unaided eye or even to light microscopy, which reflects light off metals.

2 The same defective gold-plated connector after several insertions and withdrawals into the back of a computer plug. The gold is wearing off and exposing the base metal, which then oxidizes in the atmosphere and forms a barrier to electrical current. The computer then fails — for this simple reason.

3

The unifying theme of the IUCRC will be the relationship between the atomic, crystalline and molecular structures of materials and their performance, durability, failure characteristics and manufacturability.



A magnification of the defective gold-plated connector, showing the peeling gold. It has been estimated that perhaps 90 percent of failures in electrical devices originate from defective connectors.

Other lines of research are likely to develop, such as composite materials and ceramics—even biomaterials. The unifying theme of the IUCRC will be the relationship between the atomic, crystalline and molecular structures of materials and their performance, durability, failure characteristics and manufacturability.

“UNT is particularly well-positioned to undertake this project, given its location adjacent to so many high-tech industries,” Dr. Jim Marshall, co-director of the IUCRC, said.

Dr. Floyd McDaniel, also co-director of the IUCRC, said that for the past four years UNT has been building a capability in materials characterization — the branch of materials science that concentrates on measurement and analysis of structure — that is unique in the Southwest.

“We have great intellectual and laboratory resources here at UNT,” he said.

Examples include a world-class accelerator mass spectrometry (AMS) system that can count atoms at the parts-per-trillion level and a high resolution electron microscope (HREM) that can image single atoms within a material. The AMS system is the most sensitive analytical technique in existence for determining the elements present in a material, and the HREM is one of only three such microscopes in the United States.

UNT’s researchers also are creating new characterization techniques, including a new kind of electron microscope that will be able to image the magnetic properties of the atoms making up a material.

NSF representatives and industry and university scientists have established a highly specific research agenda for the coming year.

The first major project funded by the industrial partners is the development of

What's a Nano?

Nano indicates a billionth of something, and the word nanostructure refers to atomic dimensions. A nanometer is one-billionth of a meter, or approximately the size of a single atom.

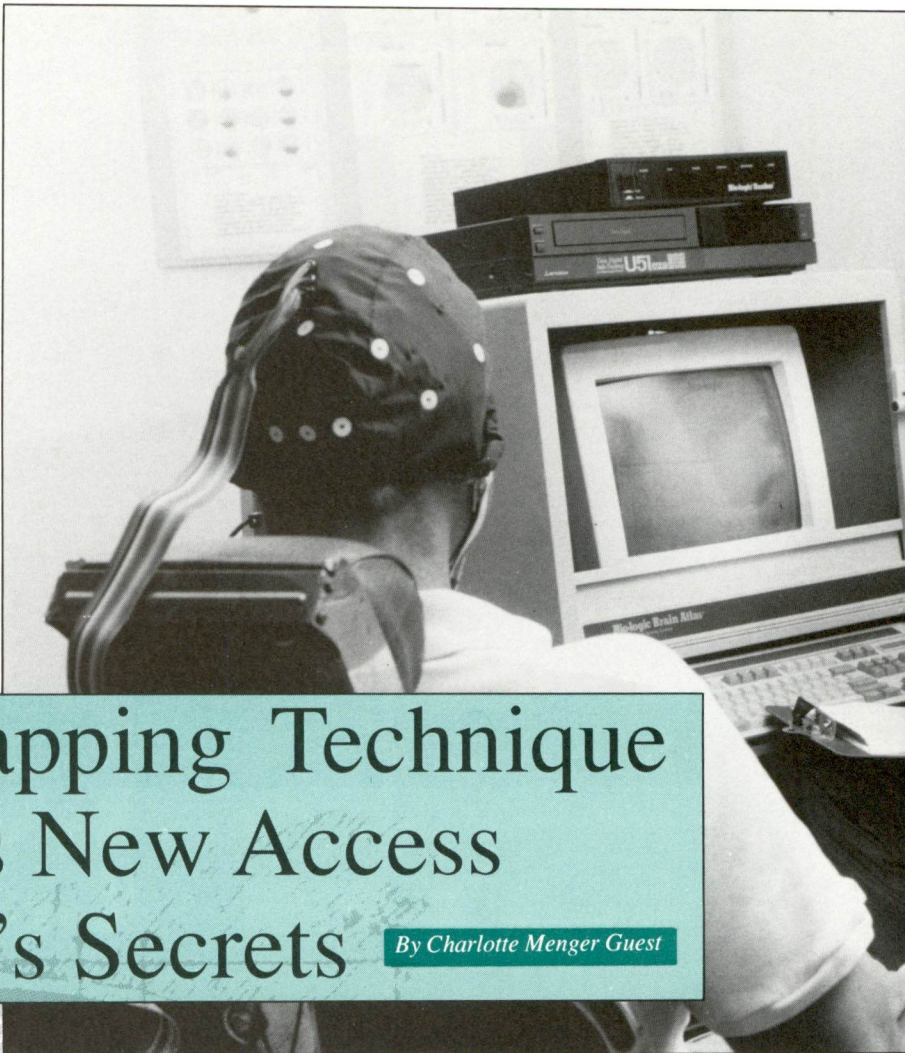
Dimension	Example of Size
Meter	A distance slightly longer than arm's length
Centimeter (0.01 meter)	Width of a fingernail
Millimeter (0.001 meter)	Thickness of a thumbnail
Micrometer (0.000001 meter)	1/7th the width of a red blood cell
Nanometer (0.000000001 meter)	Approximate size of an atom

a high- and low-energy ion implantation system for research. In ion implantation, materials are modified using a particle beam of fast-moving, electrically charged atoms that penetrate the surface of a material. Ion implantation is used in industry for applications as diverse as hardening bearings and modifying the electrical performance characteristics of semiconductors.

The center will be of great benefit to the university as well as the participating industries, said Dr. Lon Morgan, executive director of the North Texas Research Institute.

"The IUCRC will employ both undergraduate and graduate students in the research laboratories, and will help to support a level of sophistication in research at UNT that would not be possible without NSF and industry support," he said. "The benefit to the industries is access to UNT's unique facilities and research directed at each industry's special needs."

The center also will provide a natural connection between the university and individual industries that need research expertise beyond that covered by the IUCRC agenda. Each industry will benefit through individual and shared technology transfer from university laboratories to industry, and ultimately to improved manufactured products. ❁



M

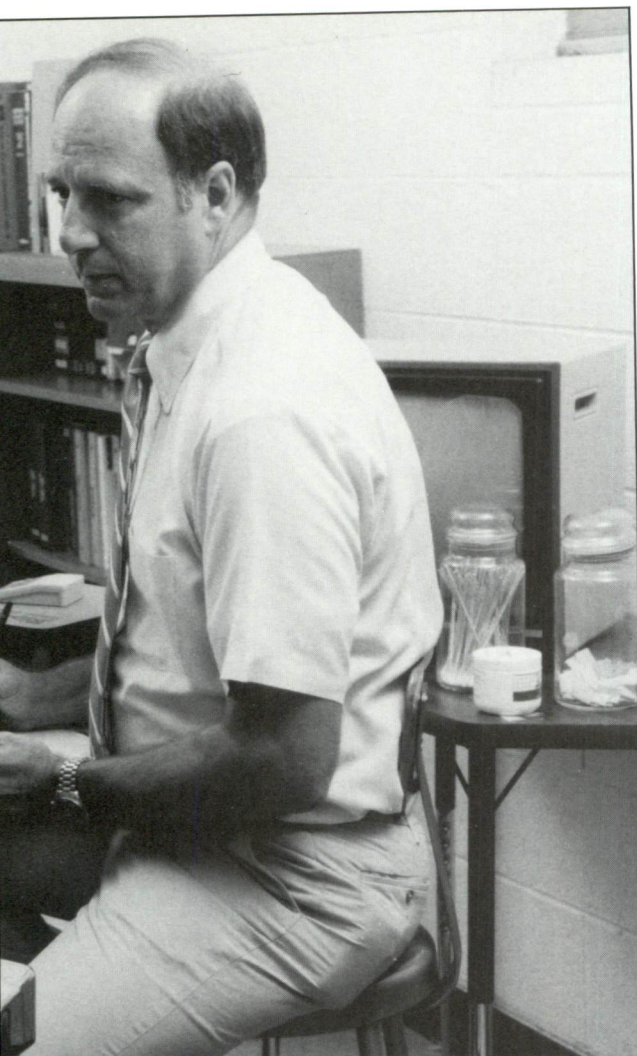
apping Technique Provides New Access to Brain's Secrets

By Charlotte Menger Guest

Brain mapping, a high-tech tool invented for medical diagnosis and research, now is being used at the University of North Texas to further research in such areas as audiology, biology and psychology.

One of the first to be located outside a medical school setting, UNT's brain mapping laboratory is located in the Center for Research on Learning and Cognition. The laboratory is directed by Dr. David Holmes, an audiologist, with Drs. Olivia White, a biologist, and Katherine Woodward, a psychobiologist, as senior research scientists.

Brain mapping harnesses the EEG (electroencephalograph) with a computer to provide a real-time image of the brain's electrical activity. Where an EEG takes a single reading every second from 21 simultaneous electrode sites on the subject's head, brain mapping uses the



Photos by Dan Santema



The computer can translate complex brain wave data from the EEG into a two-dimensional image of activity level, with red marking the heaviest activity and blue the lightest. It is, Holmes said, a little like watching radar images of heavy storms moving across familiar terrain.



computer to take 256 samples from each site, or 5,376 readings every second.

"The difference in data is enormous," Holmes said. "The computer is necessary not only to collect but to organize that kind of data."

The computer can translate complex brain wave data from the EEG into a two-dimensional image of activity level, with red marking the heaviest activity and blue the lightest. It is, Holmes said, a little like watching radar images of heavy storms moving across familiar terrain.

The machine that makes this possible was installed on the UNT campus in September 1989. Since then, Holmes said, he and others on campus have begun incorporating the tool into their research.

"Because of the relative scarcity of these machines, we have had to learn

how to use it as we actually work with it," he said. "The complexity makes the potential for application almost endless at this point."

Holmes said the impact of brain mapping research at UNT was apparent at the American Academy of Audiology meeting in New Orleans in April. Three of the seven student-authored papers accepted for presentation during the national meeting were from UNT. Holmes also was among the faculty and professional delegates who made presentations.

Papers were presented by graduate researchers Kevin Ballard, Leslie Morgan and Denise Wilbanks, who collaborated on the three papers and contributed to Holmes' research.

Ballard was principal investigator on the potential application of brain mapping

to audiometric testing. The research correlated brain map measurements with the subjective responses of persons being tested to determine the acuity of their range in normal hearing. The preliminary study was promising. If further tests support the initial findings, one possible development could be the use of brain mapping measurements to assist audiologists in fitting hearing aids, Holmes said.

Morgan was principal investigator on "Topographical Brain Mapping and Masking." Masking, a well-observed phenomenon, is poorly understood. Ears and brain work together so that, in a roomful of people, a person can focus on a companion's voice, block out noise, or pick a particular voice or sound out of a multitude of sounds of equal volume. Morgan's research studied areas of brain



Drs. David Holmes and Katherine Woodward.

activity when masking is occurring.

Wilbanks was principal investigator on "The Stenger Effect and Topographical Brain Mapping." The Stenger Effect is a hearing phenomenon in which a tone heard first in one ear during testing can seem to be heard in that ear when the identical tone is switched to the other ear. While the phenomenon is well established, no one knows what is going on in the ears or brain. Wilbanks studied brain activity during testing for the Stenger Effect.

Holmes presented his paper, "Topographical Brain Mapping of the ABR (Auditory Brainstem Response) Under Various Stimulus Conditions." Like his students, Holmes sought to establish a data base for auditory brainstem response testing under several conditions. He and his students are eager to continue their research.

Dr. Katherine Woodward is studying the loss of sensory perception with aging. She has tested touch with a specially designed machine that measures not only how far apart two pins are (subjects must distinguish whether one or two pins are felt, and if two, how far apart), as well as how much pressure was applied. The

latter, Woodward said, is a check on a possible link between skin elasticity and touch.

Her pilot study tested 42 subjects in three age categories: 19 to 30, 31 to 54 and 55 up. The study was small, she said, but provided unexpected findings. Those



in middle age appeared to have higher tactile response than younger or older subjects.

"I'm eager to continue," Woodward said. "This time I will develop an appropriate sample size, and I want testing correlated to brain wave activity. We have theorized that loss of sensory

perception may be related to decreased myelization in the nervous system, and this will give us information about that."

Dr. Kevin Kennelly, a psychologist on the UNT faculty, has found his ongoing research on brain coherency aided significantly by the new laboratory. UNT doctoral fellow Genevieve McGregor is applying the mathematics of chaos, fractal geometry and cluster analysis to the brain mapping images.

Brian Scott, owner of and senior scientist at Scott Laboratories in Denton, is collaborating with Holmes on a brain map pattern analysis based on algorithms Scott has developed for his voice-activated computer.

A second regional conference on brain function and learning will be held at UNT Oct. 12-13. Top researchers from the United States and Canada will report their findings to teaching specialists, speech pathologists, neurologists, psychologists and others.

"We have just begun," Holmes said. "The brain has been a closed book, without (using) risky invasive techniques. Now the book is open. It is impossible to imagine what we will be learning in the next 10 years." ❀

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120961

SPEECH: YES NO

FROM: BARCUS, James F.: SOCIETY OF MANUFACTURING
ENGINEERS

DATE OF EVENT: 04/17/91

LOCATION OF EVENT: RADISSION MARK PLAZA HOTEL, ALEXANDRIA, VA

TIME OF EVENT:

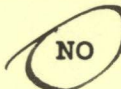
SUBJECT: REQUEST TO BE THE GUEST OF BARCUS AT THE SOCIETY OF
MANUFACTURING ENGINEERS', "INTERNATIONAL CONFERENCE
ON THE APPLICATION OF MANUFACTURING TECHNOLOGIES"

RSVP: 04/08/91

CONTACT PERSON: LYNN M. BASTIEN

CONTACT NUMBER:

INVITATION ACCEPTED?

COPIES TO: Thomas Ratchford
Dr. Phillips

REMARKS:

*4/5/91 - Regretted to Karen!
mn*

DATE OF LETTER: 03/25/91

DATE RECEIVED: 04/01/91

FILE: *P* INVITATION



**SOCIETY OF
MANUFACTURING ENGINEERS**

ONE SME DRIVE
P.O. BOX 930
DEARBORN, MICHIGAN 48121-0930 USA
PHONE: (313) 271-1500
TELEX: 297742 SME UR (VIA RCA)
FAX: (313) 271-2861

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OFFICE OF THE
DIRECTOR

March 25, 1991

D. Allan Bromley, Ph.D.
Assistant to the President
for Science and Technology
Executive Office of the President
Office of Science and Technology Policy
Washington, D.C. 20506

Dear Dr. Bromley:

Please be my guest at the Society of Manufacturing Engineers' newest event, the "International Conference on the Application of Manufacturing Technologies" (ICAMT), April 17-19, 1991, Radisson Mark Plaza Hotel, Alexandria (Washington, D.C.), Virginia.

Dr. John Sununu, chief of staff to the President, will be providing the Luncheon Address on April 18 entitled, "Engineers and Policy." Dr. Hiroyuki Yoshikawa also recently confirmed that he will be giving the Banquet Address entitled, "Joint Research into Manufacturing Systems for the 21st Century." Please refer to the enclosed brochure for details on these and other presentations.

If you would like to attend, please send this letter to the attention of Lynn M. Bastien, Senior Technical Program Administrator, c/o SME with a note outlining what days or presentations you wish to attend. She will personally process your registration.

On behalf of the ICAMT Committee, I hope that you will be able to join us at the "International Conference on the Application of Manufacturing Technologies" in April.

Sincerely,

James F. Barcus, Jr.

Enclosure
JFB/bgb



Sponsored
by the
Society of
Manufacturing
Engineers

Leaders in industry and academia from around the world will gather in Washington, D.C. to explore rapid integration of manufacturing technologies.

This convergence will have a dynamic effect on the face of global manufacturing.

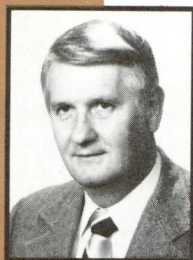


International Conference on the Application of Manufacturing Technologies

April 17-19, 1991

Radisson Mark Plaza Hotel
Alexandria (Washington, D.C.), Virginia
USA

Final
Conference
Program



Message from the President of the Society of Manufacturing Engineers



International Conference on the Application of Manufacturing Technologies

April 17-19, 1991
Radisson Mark Plaza
Hotel
Alexandria
(Washington, D.C.),
Virginia
USA

Dear Colleague in Manufacturing:

In light of global competitive dynamics and sweeping political and economic changes occurring worldwide, the international manufacturing agenda must consider and prepare for the race toward prosperity. The Society of Manufacturing Engineers created the International Conference on the Application of Manufacturing Technologies (ICAMT) as an avenue toward meeting this challenge.

Perhaps the most critical objective of the ICAMT is to enhance technology transfer in the areas of process systems, policy, and human resource challenges. Selected through research, reference and recommendation, 20 internationally-known thought leaders will give presentations addressing these areas in relation to this audience. Their fresh perspective may cause you to re-evaluate your current long-range strategy.

The ICAMT also strives to assess the state of manufacturing technology transfer in the world today. Making ideas, research results and prototypes available and useful to manufacturers presents a constant challenge to engineers. The ICAMT will help you to address the challenge by providing an ideal atmosphere for sharing international advances in manufacturing technology and its expedient application.

Naturally, this event will serve as a forum for international leaders to share experiences and techniques employed in technology transfer. Establishing international alliances, cooperative ventures, and realistic methods for transfer of new and evolving technologies through recognized leaders is one strategy for stabilization in this era of economic build-up.

Policymakers, strategists,—industry pacesetters—must lead the new world in its race to prosperity. For this reason, please make attending the ICAMT your priority, and plan to profit from an event which will positively impact your corporate philosophy.

James F. Barcus, Jr.
1991 SME President

ICAMT Committee

Chairman: **Alan T. Male, Ph.D.**, Westinghouse Electric Corporation

Ex-Officio: **James F. Barcus, Jr.**, Black & Decker (Retired)

Marvin F. DeVries, Ph.D., University of Wisconsin-Madison

Richard Kruck, Whirlpool Corporation

Philip Nanzetta, Ph.D., National Institute of Standards and Technology

Frode Maaseidvaag, Ph.D., Ford Motor Company

Otto K. Riegger, Ph.D., Tecumseh Products Company

SME Staff

David P. Rutt, Ph.D., Conferencing Division

Lynn M. Bastien, Conferencing Division

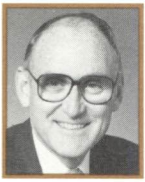
ICAMT Conference Objectives

The ICAMT committee assigned the following objectives to this groundbreaking event:

- ◆ To gain enlightenment from thought leaders representing companies and institutions worldwide where technology has been integrated into world class manufacturing operations.
- ◆ To determine methods of eliminating barriers to successful technology transfer.
- ◆ To recognize and understand the long-term effect of globalization on marketing, quality, and human resources.
- ◆ To encourage industrial and academic leaders to explore domestic and international joint efforts in manufacturing technology transfer.
- ◆ To consider the impact of the new global marketplace from the perspective of fellow attendees and speakers.
- ◆ To understand how other nations are effectively utilizing emerging technologies and resources.

Conference Highlight: Keynote Speakers

Conference Keynote Address



Bruce Gissing

Bruce Gissing, executive vice president-operations, and chairman, Boeing Canada, restructured his responsibilities in January 1991 in order to dedicate his efforts to the direction of the Continuous Quality Improvement program in the Boeing Commercial

Airplane Group. Gissing has served as executive vice president-operations since March 1990 and has been a senior vice president since August 1988. In his current role, Gissing directs Continuous Quality Improvement Activities including the Continuous Quality Improvement Center. Gissing has held virtually every position of responsibility in the commercial airplane operations since joining Boeing in 1966. In addition, he has been vice president-general manager, Boeing Engineering Company. Gissing also retains his position as chairman of Boeing Canada and will remain the Operations functional executive of the Commercial Airplane Group.

Lunch Address

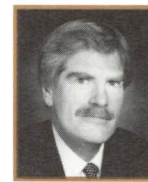


John Sununu*

Dr. John H. Sununu is chief of staff to the President of the United States, having been commissioned in January 1989. He earned three degrees in mechanical engineering at MIT, the bachelor's in 1961, master's in 1963 and doctorate in 1966. He was

chief engineer for Astro Dynamics Inc. from 1960-65, president of JHS Engineering Company and Thermal Research Inc. from 1965-82, has been an associate professor at Tufts University since 1966, and was associate dean of engineering at Tufts from 1968-73. He served in the New Hampshire house of representatives in 1973-74 and three terms as governor from 1982-88. He served on the President's Council on Environmental Quality and as chairman of the New Technology Educational Task Force of the National Governor's Association. A member of the National Academy of Engineering, AAAS, ASME, and Sigma Xi, he was named the 1971 "Outstanding Educator of America" and was presented the Ralph R. Teetor educational award of the Society of Automotive Engineers in 1972.

Summation Address



Keith E. Crain

Keith E. Crane is an internationally recognized publishing executive and a leader in the U.S. and Michigan corporate community. In addition, he contributes his time, talent and resources to numerous civic and professional organizations. Mr. Crain

was elected Vice Chairman of Crain Communications, Inc., in July, 1981. He is responsible for editorial direction of many of the company's twenty-five consumer, business and trade publications, as well as the business operations of Crain Communication. Crain Communications has specialized in business publications for seventy-four (74) years. The company publishes Advertising Age, Automotive News, AutoWeek, Business Insurance, Business Marketing, City & State, Crain's Chicago Business, Crain's Cleveland Business, Crain's Detroit Business, Crain's New York Business, Detroit Monthly, Electronic Media, European Rubber Journal, Modern Healthcare, Pensions & Investments, Plastics News, Rubber & Plastics News, Tire Business and Urethanes Technology, as well as American Trade Magazines.

Banquet Address

Hiroyuki Yoshikawa*

Chairman of the Committee

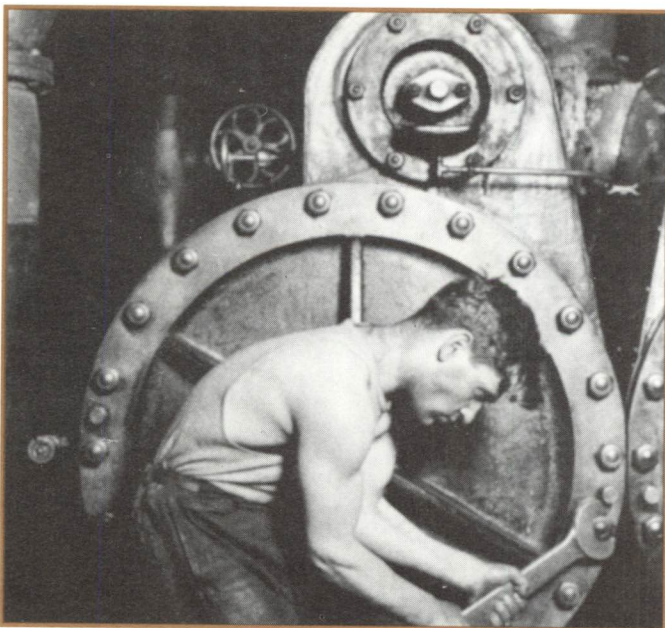
Joint International Research Programs, Intelligent Manufacturing System;
Dean, Faculty of Engineering, University of Tokyo, Japan

**Drs. Yoshikawa and Sununu are invited speakers.*

About the Society of Manufacturing Engineers

The Society of Manufacturing Engineers (SME) is an international professional society dedicated to advancing scientific knowledge in the field of manufacturing. Founded in 1932, SME today has over 80,000 members in 72 countries and sponsors over 300 senior chapters and over 190 student chapters.

SME offers a wide-range of services from publications, conferences, clinics and expositions to high technology member associations dedicated to your special interest. Thus, it provides a common ground and focal point from which manufacturing professionals can share ideas, information and accomplishments.



"Powerhouse Mechanic", Lewis Hine, 1925, Lehigh University Art Galleries, Museum Operation Work/Study Collection, LUF 79.1019

Conference Schedule

April 16

Evening Registration and Check-In:
4-9 p.m.

Welcome Reception:
5:30-6:30 p.m.

April 17

Conference Registration and Check-In:
7:00-8:30 a.m.

Conference Hours:
8:30 a.m.-5:00 p.m.

Lunch:
12:15-2:00 p.m.

Attendee Reception:
5-6 p.m.

Spirit of Washington Dinner Cruise on the Potomac:

Busses depart for boat docks beginning at 5:30 p.m.

April 18

Conference Hours:
8:30 a.m.-4:30 p.m.

Luncheon Address:
12 noon-1:30 p.m.

Attendee Reception:
4:30-5:30 p.m.

Conference Banquet and Address:
5:30-7:00 p.m.

Entertainment:
7-10 p.m.

April 19

Conference Hours:
8:30 a.m.-1:00 p.m.

Luncheon and Summation Address:
11:30 a.m.-1:00 p.m.*

*Travel arrangements should be made to coincide with the conference conclusion time.

SME is pleased to provide you with a smoke-free meeting environment.

Conference Agenda



April 17, 1991

Opening Remarks

Alan T. Male, Ph.D.,
ICAMT Committee Chairman

Welcome and Overview of Conference

James F. Barcus, Jr.,
SME President

Conference Keynote Address

◆ "When the Problem Isn't the Problem: Improving Quality Through Manufacturing Technology"

Bruce Gissing, Executive
Vice President, Operations
Boeing Commercial Airplane Group, United States

Policy Session: Government Industrial Partnerships and Their Effect on the Manufacturing Base

◆ "Models of Interaction Between Government and Industry: A Panel Presentation"



Panel Moderator:
Leonard J. Weaver, Chairman of the Board, Polymark Corporation, United Kingdom

Panel Members:

United States:
Deborah Wince-Smith,
Assistant Secretary for Technology Policy, U.S. Department of Commerce



Japan:
Yoriko Kawaguchi, Minister (Commerce), Embassy of Japan



Europe:
Hendrik Tent, Deputy
Director General, Science Research and Development, Commission of European Communities

Process Session: Science Base of Manufacturing

◆ "Science Base for Manufacturing Engineering"

Many issues of concern to manufacturing engineers have been dealt with on an *ad hoc* basis because of the absence of a rational framework for decision making. In order to improve the quality of our products, shorten new product time to market, execute concurrent engineering, and minimize the cost of products, we must use scientific principles for design, manufacturing, and related issues. One such approach is to use axioms, corollaries, theories, and various methodologies derived from the axioms.



United States:
Nam P. Suh, Ph.D., The V. Ralph E. & Eloise F. Cross Professor, Massachusetts Institute of Technology

◆ "Simultaneous Engineering and Producibility Design Evaluation Method"

The ever-increasing demand for higher-function products and shortened concept-to-finished-product times are factors driving today's rapidly changing consumer market. In the face of these market pressures, simultaneous engineering and producibility design evaluation provide a powerful alternative to the traditional serial engineering approach to product development. This presentation focuses on how research and develop-

ment are undertaken at Hitachi, Ltd., using the "Token" system, a special R&D project conducted on a company-wide basis in joint cooperation between Hitachi's factories and laboratories.

The Producibility Evaluation Method (PEM) development at PERL* is introduced and examples are given to illustrate how the method is implemented at the engineering level. PEM allows the manufacturer to reduce production costs and increase production efficiency by taking into account, in the early design stages, the level of design quality from the producibility viewpoint together with the desired production functions.

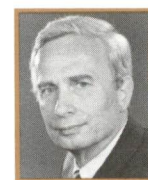
*Production Engineering Research Laboratory

Japan:

Dr. Seii Miyakawa, Senior
Chief Engineer, Production Engineering Research Laboratory, Hitachi, Ltd.

◆ "Precision Processes: A Prerequisite for Silicon Technology"

Microelectronics are based on the semiconducting effect and on the planar manufacturing technique. Silicon is the most commonly used substrate material for microelectronic components. The machining of silicon is critical to high quality standards especially to the development of new components—i.e., 64 Mbit chips. New research work into abrasive technologies is discussed.



Germany:
Prof. Dr.-Ing. Hans Kurt Tönshoff, Director, Institute for Production Engineering, University of Hannover

April 18, 1991

Process Session: Computer-Based Tools for Quality and Productivity

◆ **"Computer-Based Tools for Quality and Productivity Management"**

The market requirements for individual, high-quality, environmentally adjusted, technologically progressive and low-priced products with short delivery times cause rationalization measures to focus on product design. Here, the main problems are the specification of product characteristics, the reduction of lead times in product design and planning of production equipment, the storing and processing of product data, the influence on costs and the assurance of product quality.

This paper indicates solutions for the proper design process, as well as for the simultaneous planning of products and production equipment. For this reason, attention is focused on the use of Artificial Intelligence, the optimization procedure, simulation, evaluation methods for aptitude for assembly and variant diversity, the integrated product data model and simultaneous engineering.



Germany:
Prof. Dr.-Ing. Dipl.-Wirt. Ing. Walter Eversheim,
Laboratory for Machine Tools
and Production Engineering,
Aachen University of
Technology

◆ **"Application of Advanced Manufacturing Practices"**

Japan:
Teriyuki Yamazaki*, President and Chief Executive Officer, Mazak Corporation

◆ **"Simulation and Modeling in Early Design"**

Time to market and the cost of getting there are dominated by decisions made in the early stages of a design. The ramifications of this statement are examined by discussion of specific cases drawn from several different technologies. The relevance of simulation and modeling in early design is discussed and illustrated by examples

drawn from electronics, electrical engineering and mechanics domains. Interactions with the manufacturing enterprise via Design for Competitive Advantage and the forging of strong cooperative ties are shown to be an important current and future business strength.



United States:
Peter Will, Ph.D., Director,
Design Strategy, Hewlett-Packard Corporation

Lunch Address

◆ **"Engineers and Policy"**

The Honorable John H. Sununu, Ph.D.*, Chief of Staff to the President, White House, Washington, D.C., United States

People Session: People and Implementation

◆ **"People in the Unmanned Factory"**

The role of people in the so-called "unmanned factory" will be considered. The design, implementation, operation, maintenance, and management of advanced manufacturing systems will continue to depend on a highly educated workforce. The challenges of competing in today's global manufacturing environment will be addressed in this presentation.

United States:
Wilbur Meier, Director,
Division of Engineering
Infrastructure Development,
National Science Foundation

◆ **"Producing the 21st Century Engineer and Production Worker"**

Technology develops in four steps ... learning, imitation, innovation, creation. These steps cannot be achieved unless the entrepreneurial organization is committed to continually educating and training their people. This presentation will address the tools which academia and management must implement to prepare engineers and production workers to meet change efficiently.



Japan:
Kaneichiro Imai, Former Senior Managing Director, Ishikawajima Heavy Industry; Vice President, Japan Society for Engineering Education; Director, Japan Technology Transfer Association

◆ **"Quality First: The Product at Porsche"**

Germany:
Prof. Dr.-Ing. Rudi Noppen, Member of the Board of Dr.-Ing. h.c.F. Porsche, AG

Banquet Address

◆ **"Joint Research into Manufacturing Systems for the 21st Century"**

Dr. Hiroyuki Yoshikawa*, Dean, Faculty of Engineering, University of Tokyo, Japan

April 19, 1991

Policy Session: Global Partnerships

◆ **"Establishing Global Partnerships"**

While the world's political and economic situation is filled with uncertainties, the manufacturing community should nonetheless realize there are some encouraging trends for the long-term. The globalization and melding of the world's economies afford opportunities for new partnerships and business relationships that ignore national boundaries. The evolving industrial revolution brought about by the microchip and advances in industrial applications, coupled with the opening of new markets, offer unprecedented opportunities to produce and sell high-quality, added-value products.



United States:
Richard Holder, President

and Chief Operating Officer, Reynolds Metal Corporation

◆ **"Partnership with the Environment"**

France:
Lucien Chabason, Ministry of the Environment, France

◆ **"Overcoming Cultural Barriers in Global Partnerships"**

Kiyohide Shirai was one of five pioneering engineers sent to San Diego in 1971 by Kyocera to set up manufacturing in the U.S. With a one-way ticket, Mr. Shirai had a clear mandate to stay and make it work. For 20 years, Mr. Shirai learned firsthand—often in dramatic terms—the realities of overcoming cultural and language barriers as well as integrating a strong business philosophy into a workforce unaccustomed to Kyocera's unique management style. In this conference he will share his views on this process, what worked, what didn't and what the company is planning to do in the future to strengthen their global partnerships.



Japan/United States:
Kiyohide Shirai, Chief Executive Officer, Kyocera America

Summation Address

◆ **"The Changing World: How Today's Environment Will Effect the Global Economy"**

Keith E. Crain, Vice Chairman, Crain Communications, United States

*Invited

Although changes are not anticipated, SME reserves the right to amend this program as necessary.



General Information

Proceedings Document

Each conference registrant will receive an ICAMT proceedings document. Please note that although every effort is made to secure complete copies of presentation handouts, slides, and viewgraphs, this is not always possible. SME cannot be responsible to provide copies of materials during or post-conference.

Conference Language

The official conference language is English.

Audio Tapes

Audio tapes of ICAMT Conference will be for sale during the event and post-conference.

Weather

Washington, D.C. area climate is typically mild and warm in April.

Bring Your Spouse and Family

Spouse tours are being arranged for conference attendees who wish to bring their spouse and/or family. Please see the description of these tours at the bottom of the page. For more information on the Washington, D.C. area, please contact the Convention and Visitor's Bureau at (202) 737-8866.



Special Conference Features

(The dinner cruise and banquet/entertainment are included in the registration fee.)

Spirit of Washington Dinner Cruise on the Potomac April 17, 1991

The Potomac waterfront is a spectacular sight, and there's no better way to experience its splendor and beauty than from the sleek decks of the Spirit of Washington. The combination of a narrated captain's tour with dining, dancing and a show will make this harbor cruise a delightful experience for ICAMT participants. Buses will depart from the Radisson beginning at 5:30 p.m. *Extra tickets are \$35.00 each.*

Banquet and Big Band Entertainment April 18, 1991

Following the ICAMT Conference Banquet, participants will swing to the sound of a big band orchestra. You are invited to sit back and listen to the standards, or get involved and cut-a-rug! Practice your jitterbug—the evening's sure to be hopping! *Extra tickets are \$35.00 each.*



Spouse Tours of Washington, D.C.

Indicate your interest in one or both of these tours on the registration coupon. Payment must be made in advance. Tickets will be reserved under the ICAMT Conference registrant's name. Tours are four (4) hours in length.

April 17, 1991—Tour A: Mount Vernon and Alexandria Departure: 9 a.m.

Fare: \$20.00

Across the Potomac, in Alexandria, Virginia, visit Christ Church (when available), where George Washington worshipped. View the many other attractions in the quaint seaport town that reflect Washington's life and times. Then, continue south to Mt. Vernon, George Washington's Plantation on the Potomac River. The gardens and home are a vivid reminder of this nation's early history. The tour

takes you past the Bureau of Engraving and Printing, National Airport, The Pentagon, Jefferson Memorial, and the Tidal Basin.

April 18, 1991—Tour B: Interiors of Public Buildings Departure: 9 a.m.

Fare: \$15.00

Drive down Pennsylvania Avenue, passing the F.B.I. and the Federal Triangle to visit Ford's Theater where Lincoln was assassinated. Time permitting, the tour will visit the Peterson House, where Lincoln died. You will pass the Treasury Building, view the Blair House and Renwick Gallery and stop at the White House. Upon reboarding, circle the Ellipse and continue past the Corcoran Gallery, DAR, Washington Monument, and around the Tidal Basin, stopping at the Jefferson Memorial. Your last stop is the Smithsonian Institution Museum of American History.

Special Thanks

The following individuals were instrumental in the coordination of this conference:

William Beebe
David Fitzpatrick
Roland Especel
Louie Papp

Rich Monroe
Gerry Temple
Munehiko Tonami
James McDowell

International Conference on the Application of Manufacturing Technologies

April 17-19, 1991
Radisson Mark Plaza
Hotel
Alexandria
(Washington, D.C.),
Virginia
USA



ICAMT Location and Lodging

Radisson Mark Plaza Hotel
5000 Seminary Road
Alexandria, Virginia 22311

Room Reservations: (703) 845-1010 (Mention SME to receive our reduced rates!) A block of rooms at reduced rates of **\$115.00 single or double** is being held at the Radisson Plaza Hotel at Mark Plaza for attendees of this Conference. Rooms in the block not reserved by **March 26, 1991** will be released. After this date, reservations will be accepted at the group rate on a space availability basis. Make your reservations by calling the hotel directly at (703) 845-1010.

Location: The Radisson Plaza Hotel at Mark Plaza is situated one block west of I-395. Washington National Airport is approximately ten minutes away and Dulles International Airport is 30 minutes away. The hotel features an Executive Health Club with fully-equipped exercise room, whirlpool, sauna, four racquetball

courts, two tennis courts as well as an indoor/outdoor swimming pool. Adjacent to the hotel is Winkler Nature Park featuring 80 acres of winding trails.

Transportation: Complimentary shuttle service is provided to and from Washington National Airport. Upon arrival, call the hotel to request pickup by utilizing the courtesy phones located in baggage claim. Vans are available from 6:00 a.m. - 10:45 p.m. Taxi service is available from Dulles International Airport for approximately \$31.00. The hotel has parking available for valet: \$7.50 per day; hotel guests: \$3.50 per day; and local guests: \$1.25 per hour with a \$5.00 maximum charge.

Registration Fee

SME Members: \$795.00
Nonmembers: \$895.00

(Sorry, SME Gift Certificates and similar discount certificates will not be honored for this event.)

Registration includes ICAMT Proceedings Document, three continental breakfasts, refreshment breaks, three luncheons, three reception/mixers, and dinner and entertainment both Wednesday and Thursday evening. Extra tickets for dinner and entertainment on Wednesday and Thursday are limited but available (see "Special Conference Features" for more information).

Three Ways to Register for the ICAMT:

1. Send your registration via FAX to 313/271-2861, or...
2. Phone your registration to the SME Customer Service Center at 800/733-4SME, or...
3. Complete and mail the registration coupon to SME at the address listed under Registration Information.

Questions? Call SME Customer Service!

In the United States, dial 800/733-4SME;
Outside of the United States, dial 313/271-1500, extension 629;
or send your questions via FAX to 313/271-2861.

REGISTRATION INFORMATION

TO ATTEND: Complete the registration form and mail to: Society of Manufacturing Engineers, Customer Service Department, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930 USA.

REGISTRATION INFORMATION: Registration fees must be paid in advance of the event. The fees includes attendance at all sessions, group luncheons, coffee breaks, and all reference materials. Your event materials and credentials will be prepared and waiting for you at the registration area. Attendance may be limited and only preregistered, prepaid registrants will be guaranteed access to the event. ON-SITE REGISTRANTS, with payment, will be admitted on a space-available basis.

To confirm your registration, phone SME directly at 1-800-733-4SME or mail the attached form. Upon receipt of your registration, SME will send an invoice confirming the arrangements. **MAIL ALL REGISTRATIONS AT LEAST 2 WEEKS PRIOR TO THE EVENT. ALL REGISTRATIONS AFTER THAT DATE MUST BE MADE BY PHONE.**

CANCELLATIONS: Registrations cancelled 7 days (or less) prior to the event are subject to a \$50 service charge; checks are refundable minus the \$50 service charge. You must obtain a cancellation number from our registrar to verify cancellations. Participants with confirmed registrations who fail to notify SME of a cancellation prior to the event are subject to the full fee. On-site cancellations are subject to a 50% service charge.

TAX DEDUCTION: An income tax deduction may be allowed for expenses of education (including registration fee, travel, lodging, and meals) undertaken to maintain and improve professional skills (Treas. Reg. Sec. 1.162-5). Deductions for business and educational meals are generally limited to 80% of the cost. The sponsor(s) will be subject to this limitation for meals provided by the sponsor(s). It is presently unclear whether the limitation will be applied to the participant as well. Participants should consult a tax advisor to determine whether this limitation is applicable.

METHOD OF PAYMENT: All checks should be made payable to SME in U.S. funds. Registration and payment must be made before the event date to guarantee admittance. If payment has not been received prior to the event date, you will be asked to guarantee payment against a credit card (VISA, MasterCard or American Express) or provide a company or personal check, money order, or traveller's checks. We suggest if your payment has not been mailed to SME at least 2 weeks prior to the event that you plan to pay on-site. You may register by phone using your VISA, Master Card or American Express credit card.

REGISTRATION FEE: SME Members: \$795.00 Nonmembers: \$895.00

NOTE: IF THE MEMBERSHIP NUMBER (for members of SME or one of its associations) IS NOT INDICATED, YOU WILL BE BILLED AT THE NON-MEMBER RATE.

ONLY PAID REGISTRANTS WILL BE GRANTED ADMISSION TO THE EVENT.

YES, I will attend the International Conference on the Application of Manufacturing Technologies, on April 17-19, 1991, at the Radisson Mark Plaza Hotel in Alexandria (Washington, D.C.), Virginia.

- ☐ Reserve _____ extra tickets for the "Spirit of Washington Dinner Cruise on the Potomac," April 17, 1991, at \$35.00 per ticket (payment must be included).
☐ Reserve _____ extra tickets for the "Conference Banquet and Address," April 18, 1991, at \$35.00 per ticket (payment must be included).
☐ Reserve _____ tickets for Spouse Tour A at \$20.00 per ticket (payment must be included)
☐ Reserve _____ tickets for Spouse Tour B at \$15.00 per ticket (payment must be included)

Please Type or Print

No. 28101

NAME _____

TITLE _____

COMPANY _____

DIVISION _____

COMPANY MAILING ADDRESS (include street and/or P.O. Box, City, State, Zip Code and Country)

TELEPHONE () _____ EXT. _____

AREA CODE _____

☐ SME Member No. _____

☐ SME Affiliate No. _____

☐ Nonmember

NOTE: IF THE MEMBERSHIP NUMBER IS NOT INDICATED, YOU WILL BE BILLED AT THE NONMEMBER RATE. MEMBERSHIP NUMBERS ARE NOT TRANSFERABLE.

METHOD OF PAYMENT

☐ Payment enclosed ☐ Authorized charge to my credit account

☐ This confirms telephone registration P.O. No. _____

(If you are charging your registration to a credit card, please complete this section) Note: For your reference only, this does not constitute payment)

Check one: ☐ VISA ☐ MASTERCARD ☐ AMERICAN EXPRESS

Signature _____

Card# _____

Exp. Date _____

SME CODE _____



Society of
Manufacturing
Engineers



Sponsored
by the
Society of
Manufacturing
Engineers

Leaders in industry and academia from around the world will gather in Washington, D.C. to explore rapid integration of manufacturing technologies.

This convergence will have a dynamic effect on the face of global manufacturing.

International Conference on the Application of Manufacturing Technologies



April 17-19, 1991

Radisson Mark Plaza Hotel

Alexandria (Washington, D.C.), Virginia
USA

Final Conference Program



Society of Manufacturing Engineers
Conferencing Division
One SME Drive, P.O. Box 930
Dearborn, Michigan 48121-0930 USA

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120909

SPEECH: YES NO

FROM: NATIONAL GALLERY OF ART, The Trustees of The

DATE OF EVENT: 04/18/91

LOCATION OF EVENT: NATIONAL GALLERY OF ART, EAST BLDG.

TIME OF EVENT: 06:30PM

SUBJECT: A RECEPTION AND PREMIERE OF THE FILM, "TO PAINT THE
STARS: THE LIFE AND MIND OF VINCENT VAN GOGH" AND A
VIEWING OF ART FOR THE NATION.

RSVP: 04/08/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO:

REMARKS:

DATE OF LETTER:

DATE RECEIVED: 03/28/91

FILE: D-INVITATION



*The Trustees of the National Gallery of Art
request the pleasure of your company
at a reception and premiere of the film*

*To Paint the Stars
The Life and Mind of Vincent van Gogh
and a viewing of*

*Art for the Nation
Gifts in Honor of the Fiftieth Anniversary
of the National Gallery of Art*

*on Thursday, the eighteenth of April
Nineteen hundred and ninety-one
from six-thirty until nine-thirty o'clock*

*National Gallery of Art
East Building
Washington*

*Valet Parking
Please reply by enclosed card*

*Film premiere at seven o'clock
Art for the Nation will be open
for viewing before and after the film*

*The Trustees of the National Gallery of Art
wish to express their thanks to the
North Star Fund
for its generous support of the film
and of the reception*

Vincent van Gogh, more than any other artist, has been the subject of diagnostic speculation within the field of medicine. Diagnosed variously as having had epilepsy, absinthe poisoning, Meniere's disease, schizophrenia, and manic-depressive illness, it is only recently that modern scientific and psychiatric diagnostic techniques have allowed a more rigorous exploration of what is known about van Gogh's life and work. Through interviews with artists, art historians, psychiatrists, and neurologists, *TO PAINT THE STARS* explores van Gogh in the context of modern psychiatry and ventures a diagnosis based upon biographical and medical data. The over one hundred and fifty paintings illustrating *TO PAINT THE STARS* come from private collections and thirty-eight museums, including the National Gallery of Art, and specifically its current exhibition, *Art for the Nation*.

TO PAINT THE STARS, produced by Georgetown Television Productions in cooperation with the Manic-Depressive Illness Foundation, is the second program in a four-part public television series focusing on manic-depressive illness and the arts. The first program, *MOODS AND MUSIC*, received the 1990 American Psychiatric Association Award for best national television program and was top finalist in the Houston Film Festival.

Host	Efrem Zimbalist, Jr.
Music written and performed by	Don McLean
Voice of Vincent van Gogh	John Julius Norwich
Executive Producer and Writer	Kay Redfield Jamison
Producer	Benjamin B. Magliano
Director	Alan Skog
Coordinating Producer	Richard Jed Wyatt

TO PAINT THE STARS has been supported by generous grants from the North Star Fund, the Eleanor Naylor Dana Charitable Trust, Abbott Laboratories, and the National Institute of Mental Health.

Art for the Nation: Gifts in Honor of the 50th Anniversary of the National Gallery of Art, on view March 17 – June 16, 1991, is one of the ways the National Gallery of Art celebrates the 50th anniversary of its opening by President Franklin Delano Roosevelt on March 17, 1941. The exhibition presents more than 320 works of art given to the nation by 150 donors from all over the United States and abroad. The generous spirit of these donors salutes the largest of the Gallery's Founding Benefactors, beginning with Andrew W. Mellon, and demonstrates that their philanthropic tradition lives on.

Art for the Nation: Gifts in Honor of the 50th Anniversary of the National Gallery of Art is supported by a generous grant from GTE Corporation.

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Art for the Nation: Gifts in Honor of the 50th Anniversary of the National Gallery of Art is supported by a generous grant from CTE Corporation.

Bush Library Photocopy

9120909

RECEIVED

91 MAR 28 A 9:16

OFFICE OF THE
DIRECTOR

National Gallery of Art

Washington, D. C. 20565



*The Honorable
D. Allan Bromley
and Mrs. Bromley
The White House
Washington, D.C. 20500*

Mr. ~~and Mrs.~~ D. Allan Bromley

☐ *Accept(s) the invitation for Thursday,
the eighteenth of April.*

☒ *Will not be able to attend.*

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120910

SPEECH: YES NO

FROM: KALOS, Malvin H.: CORNELL THEORY CENTER

DATE OF EVENT: 06/04/91

LOCATION OF EVENT: CORNELL UNIVERSITY CAMPUS

TIME OF EVENT:

SUBJECT: A SYMPOSIUM ON "SUPERCOMPUTING: THE NEXT FIFTY
YEARS" AND THE RESEARCH CONSORTIUM, INC. SYMPOSIUM
"COMPETITION ACROSS THE PACIFIC: JAPAN v. THE U.S."

RSVP: 04/26/91

CONTACT PERSON: DONNA SMITH

CONTACT NUMBER: 607/254-8614

INVITATION ACCEPTED? YES NO

COPIES TO: Dr. Wong
Thomas Ratchford
Dr. Phillips

REMARKS: 3/28/91 - Regretted to Liz.
mn

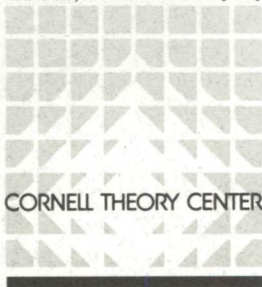
DATE OF LETTER: 03/25/91

DATE RECEIVED: 03/27/91

FILE: P- INVITATION

9/20910

Center for Theory and Simulation in Science and Engineering



RECEIVED

91 MAR 27 AM 11:34

OFFICE OF THE
DIRECTOR

March 25, 1991

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

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

Dear Dr. Bromley:

I'm very pleased to invite you to attend a symposium on "Supercomputing: the Next Fifty Years," being held this June 4th and 5th. The symposium is being held in conjunction with the formal dedication of the new Engineering and Theory Center Building on the Cornell University campus, and will feature talks on the successes of supercomputing and the challenges and promises of the future.

The enclosed program will give you an idea of the breadth of the symposium, which includes the following speakers:

- Dr. Erich Bloch, Former Director of the National Science Foundation and Distinguished Fellow at the Council on Competitiveness
- Dr. Carl Ledbetter, Advisor, Research Consortium, Inc. and President, Decision Point Systems
- Dr. John Hopcroft, Chairman and Professor, Computer Science, Cornell University
- Dr. James C. McGroddy, Vice President and Director of Research, IBM Corporation
- Dr. Gregory McRae, Associate Professor, Chemical and Mechanical Engineering, Carnegie Mellon University
- Dr. Walter Massey, Director, National Science Foundation (invited)
- Dr. David Mumford, Higgins Professor of Mathematics, Harvard University
- Dr. Charles Peskin, Professor of Mathematics, Courant Institute of Mathematical Sciences, New York University
- Dr. David Wallace, Tait Professor of Mathematical Physics and Director, Edinburgh Parallel Computing Centre, University of Edinburgh
- Dr. Margaret Wright, Member, Technical Staff, AT&T Bell Laboratories

On June 5th we will host the grand opening of the new facility, which brings the Theory Center together and provides for further collaboration with the Cornell community. I invite you to participate in this event, which is mentioned in the attached program. The building will be open during the late afternoon, with demonstrations, exhibits, and tours.

The Cornell Theory Center was established at Cornell University in 1984 and receives support from the National Science Foundation, Cornell University, New York State, IBM Corporation, and other members of the Center's Corporate Research Institute. Over 3,300 researchers from more than 320 institutions have used the Center's facilities to work on over 750 research projects. This work represents a diversity of scientific disciplines, from the physical to the social sciences. A variety of educational programs also are offered to high school, undergraduate, and graduate students, and their teachers.

You are also invited to attend the Research Consortium, Inc. symposium "Competition Across the Pacific: Japan vs. the U.S." on June 3, also at Cornell University. For more information, call the Research Consortium, Inc. at 612-835-9559.

I hope you will be able to attend the symposium and the grand opening—since participation in both events is by invitation, we must ask for your confirmation (call Donna Smith at 607/254-8614, donna@theory.tn.cornell.edu, or write to the address to the left) by April 26, 1991. If you receive an invitation to the grand opening from Cornell President Frank H. T. Rhodes, you do not need to RSVP by return card if you have called Donna Smith by April 26th.

Sincerely,



Malvin H. Kalos
Director

MHK:AER:kgw

Enclosure

AND

AIRLINE

AND HOTEL ARRANGEMENTS

Attendees are responsible for their own reservations. The Ithaca airport is serviced by USAir and Continental; some hotels provide transportation to and from the airport and the Cornell campus, as listed below. The Syracuse airport services all major airlines; plan on a one to one and one-half hour drive to and from this airport. Limousine service and rental cars are available at both airports.

The following accommodations are within a few miles of the Cornell Theory Center and many restaurants and shops. Paid parking is available on campus. Blocks of rooms have been reserved for the symposium and the grand opening—mention this when you make your reservation.

STATLER HOTEL, CORNELL UNIVERSITY

(607-257-2500)

Located on the Cornell campus. Shuttle service to and from airport.

SHERATON INN (607-257-2000)

Located at One Sheraton Drive. Shuttle service to and from Cornell campus and airport.

RAMADA INN (607-272-1000)

Located in downtown Ithaca at 222 South Cayuga Street. No shuttle service.

BEST WESTERN UNIVERSITY INN

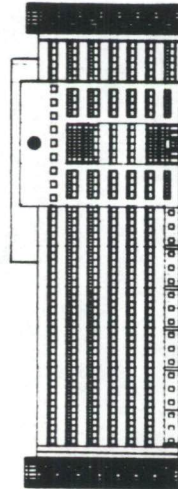
(607-272-6100)

Located at East Hill Plaza (just off campus), at the intersection of Rt. 393 and Judd Falls Road. Shuttle service to and from Cornell and airport.

HOLIDAY INN (607-257-3100)

2310 North Triphammer Road, Ithaca. Shuttle service to Cornell and airport limo service.

TO RSVP OR FOR ADDITIONAL INFORMATION,
CONTACT DONNA SMITH AT 607-254-8614 OR
DONNA@THEORY.TN.CORNELL.EDU



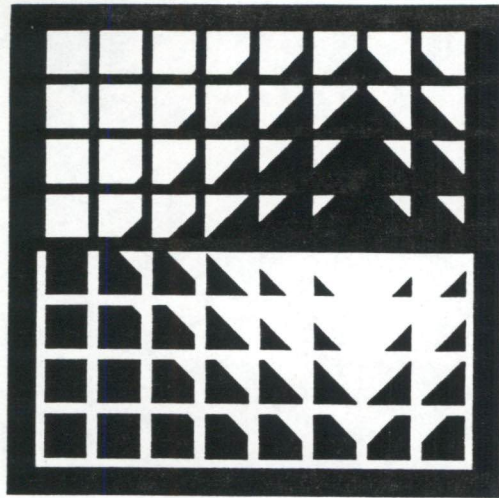
GRAND OPENING

CORNELL ENGINEERING AND THEORY CENTER BUILDING

The building, which actually opened in July 1990, now houses the entire staff of the Cornell Theory Center, the Cornell Program of Computer Graphics, and faculty and students from the Cornell departments of Computer Science, Electrical Engineering, Operations Research, and Mechanical and Aerospace Engineering.

CORNELL
UNIVERSITY

JUNE 5, 1991



SUPERCOMPUTING

THE NEXT 50 YEARS

The last decade has witnessed the tremendous success of the NSF National Supercomputing Centers and the acceptance of computational science as a broad, interdisciplinary field with great potential for achieving major advances in important research areas and in impacting our society for the better. In recognition of the impact of the centers, and in preparation for the grand challenges of supercomputing, the Cornell Theory Center is hosting the symposium, "Supercomputing: the Next Fifty Years."

JUNE 4 to 5, 1991

SYMPOSIUM PROGRAM

TUESDAY, JUNE 4, 1991
Alice Statter Auditorium, Cornell University

8:45 AM MALVIN H. KALOS
Director, Cornell Theory Center
Welcome

9:00 AM JAMES C. MCGRODDY
Vice President and Director of Research,
IBM Corporation

"Physics and Computers—A Two Way Street"

10:15 AM GREGORY McRAE

Associate Professor, Chemical and Mechanical Engineering, Carnegie Mellon University

"Engineering the Future with Supercomputing"

11:15 AM CARL LEDBETTER

Advisor, Research Consortium Inc.
President, Decision Point Systems

"The Disappearance of Supercomputing"

12:15 PM LUNCH, STALLER BALLROOM

SPEAKER: ERICH BLOCH

Former Director of the National Science Foundation and Distinguished Fellow at the Council on Competitiveness

"Technologies in the 1990s"

1:45 PM JOHN HOPCROFT

Chairman and Professor, Computer Science,
Cornell University

**"The Role of Simulation in Science,
Engineering, and Education"**

3:00 PM CHARLES PESKIN

Professor of Mathematics,
Courant Institute of Mathematical Sciences,
New York University

"Computer Simulation of the Heart"

4:00 PM DAVID MUMFORD

Higgins Professor of Mathematics,
Harvard University

**"Assessing the Computational Power of the
Brain and the Computational Needs of AI"**

WEDNESDAY, JUNE 5, 1991
Alice Statter Auditorium, Cornell University

9:00 AM MALVIN H. KALOS

Director, Cornell Theory Center

**"Science and Supercomputing: The Web of
Scientific Understanding"**

10:30 AM MARGARET WRIGHT

Member, Technical Staff, AT&T Bell Laboratories
"Supercomputing and Optimization"

11:30 AM LUNCH

SPEAKER: WALTER MASSEY

Director, National Science Foundation (Invited)

1:00 PM DAVID WALLACE

Tait Professor of Mathematical Physics,
University of Edinburgh and Director,
Edinburgh Parallel Computing Centre

**"Parallel Computing: Prospects and
Challenges"**

**PARTICIPATION IN THIS SYMPOSIUM IS BY
INVITATION—WE MUST ASK FOR YOUR
CONFIRMATION BY APRIL 26, 1991.**
CONTACT DONNA SMITH AT 607-254-6614.

THE CORNELL THEORY CENTER

The Cornell Theory Center was established at Cornell University in 1984 and receives support from the National Science Foundation, Cornell University, New York State, IBM Corporation, and other members of the Center's Corporate Research Institute. Over 3,300 researchers from more than 320 institutions have used the Center's facilities to work on over 750 research projects. This work represents a diversity of scientific and engineering disciplines, from the physical to the social sciences. A variety of educational programs also are offered to high school, undergraduate, and graduate students, and their teachers.

BUILDING DEDICATION

WEDNESDAY, JUNE 5, 1991
Alice Statter Auditorium, Cornell University

3:00 PM GRAND OPENING

Dedication ceremony for the Engineering and Theory Center Building Grand Opening, Alice Statter Auditorium

Speakers

FRANK H.T. RHODES
President, Cornell University

WALTER MASSEY
Director, National Science Foundation
(Invited)

MARIO CUOMO
Governor of New York
(Invited)

MALVIN H. KALOS
Director, Cornell Theory Center

WILLIAM STREETT
Dean, Cornell College of Engineering

Engineering and Theory Center Building

4:00 PM BUILDING DEDICATION

Dedication ceremony at the Engineering and Theory Center Building. Tours, demonstrations, and exhibits within the building, until 6:00 pm.

"SUPERCOMPUTING: THE NEXT FIFTY YEARS"

SPEAKER SELECTION COMMITTEE

MALVIN H. KALOS, Cornell Theory Center
KENNETH KENNEDY, Rice University
WILLIAM BUZBEE, NCAR
ENRICO CLEMENTI, IBM Corporation
ANTHONY INGRAFFEA, Cornell University

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9120918

FROM: KOLBE, Lisa R.: MATHEMATICS ASSOCIATION OF AMERICA, The

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/26/91

SUBJECT: A THANK YOU FOR AGREEING TO HOST THE RECEPTION AND
DINNER AT THE DEPARTMENT OF STATE 06/10/91.

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: 03/27/91

FILE: P- INVITATION FOLLOW-UP



9120918

The MATHEMATICAL ASSOCIATION of AMERICA

1529 Eighteenth Street, N.W. Washington, D.C. 20036 Telephone (202) 387-5200

RECEIVED

91 MAR 27 P 5:02

OFFICE OF THE
DIRECTOR

March 26, 1991

Dr. D. Allan Bromley
Assistant to the President
for Science and Technology
The White House
Washington, DC 20550

Dear Dr. Bromley:

Thank you very much for agreeing to act as our official host at the reception and dinner at the Department of State on June 10, 1991. This is certainly a special occasion as it marks the Twentieth USA Mathematical Olympiad.

The official invitations will be sent in early May and I have asked Janice Howell to review them as you will be listed as the official host. I look forward to meeting you and again thank you for keeping the USAMO ceremonies a tradition that the mathematical community looks forward to each year.

Sincerely,

Lisa R. Kolbe

Organizer, Twentieth USAMO Ceremonies

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120916

SPEECH: YES NO

FROM: CALLAN, Curtis G.: MITRE CORPORATION, JASON
PROGRAM OFFICE

DATE OF EVENT: 04/26/91

LOCATION OF EVENT: THE WILLARD INTER-CONTINENTAL HOTEL, CRYSTAL ROOM

TIME OF EVENT: 07:00PM

SUBJECT: INVITATION TO A RECEPTION BEING HOSTED BY JASON AND
THE ANNUAL JASON SPRING MEETING AT THE MITRE
CORPORATION, HAYES AUDITORIUM, MCLEAN, VA.

RSVP: 04/16/91

CONTACT PERSON:

CONTACT NUMBER: 703/883-6883

INVITATION ACCEPTED?

☒ YES ☐ NO

COPIES TO:

REMARKS:

DATE OF LETTER: 03/20/91

DATE RECEIVED: 03/27/91

FILE: P- INVITATION

NOSHP

Would be pleased to have you and your guest
attend the JASON Reception
Friday, 26 April 1991
7:00 - 10:00 p.m.

The Willard Inter-Continental Hotel
Crystal Room

1401 Pennsylvania Ave., N.W. Washington, D.C.

RSVP by 16 April 1991
(703) 883-6883

JASON
MITRE

The Office of the Assistant Secretary of Defense has formally notified MITRE/JASON that there is no objection to DoD personnel attending meetings, symposia, luncheons, dinners, etc. sponsored by JASON during 1991. This letter is available from the JASON Program Office.

The essence of this letter is the phrase:

"On reviewing The MITRE Corporation plans for their upcoming spring and fall JASON group meetings, the Assistant Secretary of Defense (Public Affairs) finds these events as meeting the standards for participation by DoD personnel under DoD Instruction 5410.20 and DoD Standards of Conduct Directive 5500.7. This finding does not constitute DoD endorsement of attendance, which must be determined by each DoD component."

JASON RECEPTION

April 26, 1991

☐ Will attend alone

☐ Will attend with guest _____
name

☒ Must regret

ALLAN BROMLEY

name

RSVP: 703/883-6883 by 16 April 1991

JASON MEETING

April 26 and 27, 1991

☐ Will attend Friday

☐ Will attend Saturday

☒ Must regret

ALLAN BROMLEY

name

RSVP: 703/883-6883 by 16 April 1991

9120916

JASON
MITRE

RECEIVED

March 20, 1991

91 MAR 27 P 4: 51

OFFICE OF THE
DIRECTOR

Curtis G. Callan, Jr.
Chairman, JASON Steering Committee

The Honorable D Allan Bromley
Asst to the President for Science and Technology
Office of Science and Technology Policy
Old Executive Office Building Room 360
17TH & Pennsylvania Avenue NW
Washington, DC 20506

Dear Dr. Bromley,

You are cordially invited to attend the annual JASON Spring Meeting on April 26th and 27th, 1991, at The MITRE Corporation, Hayes Auditorium—south lobby entrance—7525 Colshire Drive, McLean, Virginia (map enclosed).

Please respond to the JASON Program Office by filling out the enclosed card and dropping it in the mail. You may also leave a message at 703/883-6883. We would appreciate your response by April 16th.

Since several of the presentations may be classified, please forward confirmation of your TOP SECRET clearance to the MITRE Security Office (address below) by April 29th. Reference JASON Spring Meeting on your clearance verification letter (visit request).

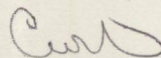
Please send **ONLY CLEARANCE INFORMATION** to:

The MITRE Corporation
Attention: Toni Halstead/Z236
7525 Colshire Drive
McLean, VA 22102
703/883-7272
FAX: 703/883-6059

You can be reached at 703/883-6123 while you are attending the meeting.

We also invite you to attend the reception being hosted by JASON on Friday evening, the 26th, from 7:00-10:00 pm at the Willard Inter-Continental Hotel, Crystal Room, 1401 Pennsylvania Avenue, N.W., Washington DC (please respond by April 16th). If you have any questions please call 703/883-6997.

Sincerely,



Curtis G. Callan
Chairman
JASON Steering Committee

Vjgh
Enclosures:
CC-SP91-0302

The MITRE Corporation
JASON Program Office
7525 Colshire Drive
McLean, Virginia 22102-3481
(703) 883-6997

JASON Spring Meeting

April 26 & 27, 1991
The MITRE Corporation
Hayes Building Auditorium
Phone: (703) 883-6123 (for messages)
Follow signs to South Lobby

Directions to The MITRE Corporation (Hayes Building)

From Dulles Airport Take the Dulles Airport Access Road and Toll Road to Exit 10. Take Exit 10A and follow the signs to Route 123 South, Tysons Corner. Bear right onto Route 123 (also called Dolley Madison Boulevard). Immediately after entering Route 123 move to the left lane and make a left turn at the first traffic light, onto Colshire Drive. Follow Colshire Drive to MITRE's Hayes Building (at the top of the hill).

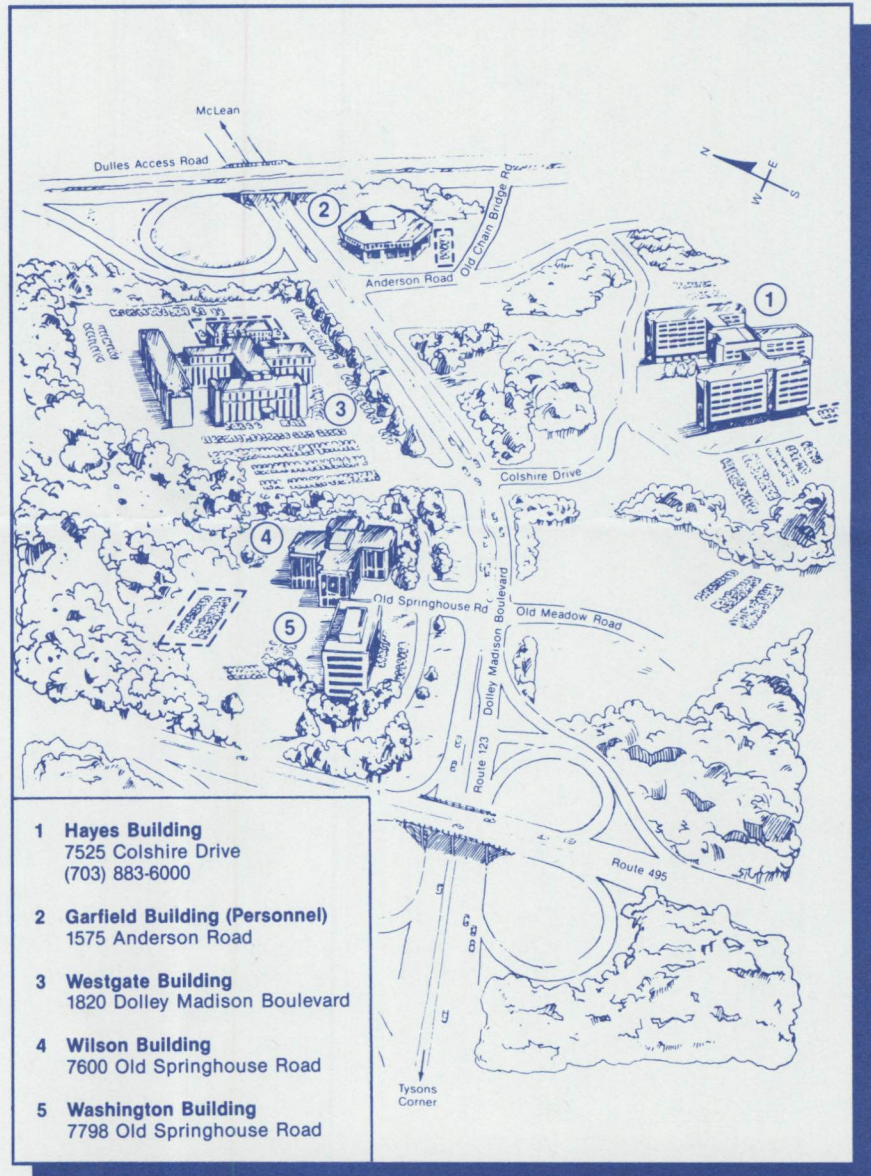
From National Airport Take the George Washington Parkway approximately 6 miles to the Route 123 South, McLean exit. Exit onto Route 123 (also called Dolley Madison Boulevard) and follow it south for approximately 4 miles to its intersection with Colshire Drive. Turn left onto Colshire Drive and follow it to MITRE's Hayes Building at the top of the hill.

OR

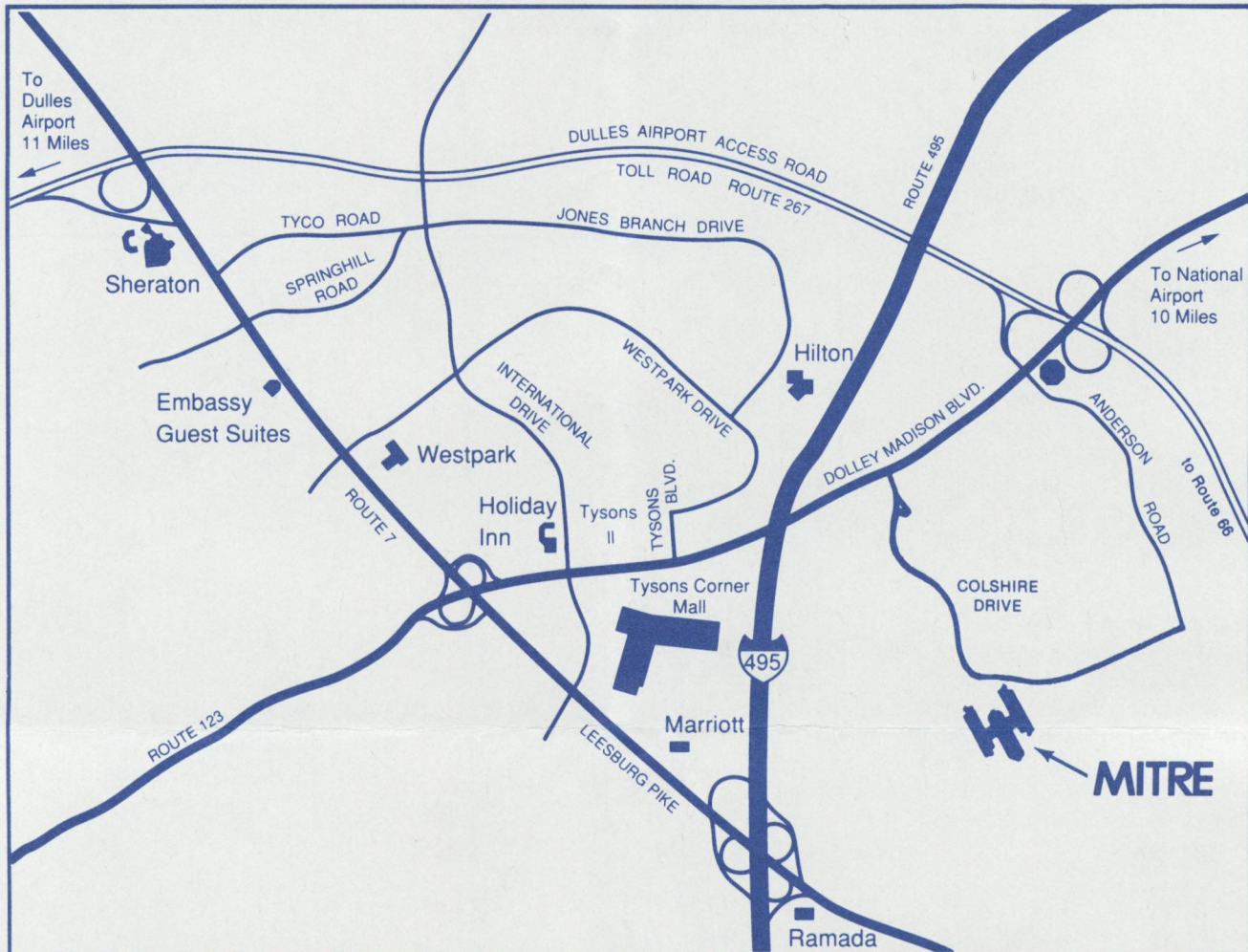
Take I-66 West. Exit at Route 267 (Dulles Airport extension). Take Route 123 (Exit 10A) towards Tysons Corner. Turn left at second traffic light on Route 123 (Colshire Drive).

From Route 495 (Beltway) from Maryland Coming from Maryland on Route 495, take Exit 11A (McLean, Route 123). Take Route 123 north to the second traffic light (at Colshire Drive). Go right onto Colshire Drive and follow it to MITRE's Hayes Building at the top of the hill.

From Route 495 (Beltway) from Virginia Coming from Virginia on Route 495, take Exit 11 (McLean, Route 123). After turning onto Route 123 north, go to the second traffic light (at Colshire Drive). Go right onto Colshire Drive and follow it to MITRE's Hayes Building at the top of the hill.



See Reverse for Detailed Directions for Lodging



From Dulles International Airport

Dulles Access Road East to Exit 8 (Spring Hill Road). Turn left at first light onto Jones Branch Drive. Hotel is one mile on left.

From National Airport

George Washington Parkway to I-495 South to Exit 11B (Tysons Corner/Rt. 123 South exit). Turn right at first light onto Tysons Boulevard. After one block, turn right onto Tysons Parkway/Westpark Drive. Turn right at next light (Jones Branch Drive) and continue two blocks to the McLean Hilton, on the right.

From Route 495

To Exit 11B (Tysons Corner, Rt. 123 South), then right at first light (Tysons Boulevard). After one block, turn right onto Tysons Parkway/Westpark Drive. Turn right at next light (Jones Branch Drive) and continue two blocks to the McLean Hilton, on the right.

From Washington, D.C. Downtown

I-66 West to Exit 20 (I-495/Baltimore/Dulles Airport) to Exit 10B (Tysons Corner-Rt. 123 South). Continue on Rt. 123 South under I-495, turn at the next light after underpass onto Tysons Boulevard.



*JASON Spring Reception
 Friday, April 26, 1991
 The Willard Inter-Continental Hotel
 Crystal Room
 1401 Pennsylvania Avenue, N.W.
 Washington, D.C.
 (202) 628-9100

To Drive
 From Rosslyn take the Roosevelt Bridge to Constitution Avenue. Then turn left onto 15th Street. Turn right onto F Street to the underground parking lot at The Willard Inter-Continental Hotel.

From McLean Hilton or MITRE, take Rte. 123 North to I-66 East, over the Roosevelt Bridge to Constitution Avenue. Then turn left on 15th Street. Turn right onto F Street to the underground parking lot.

Take Metro
 From Dupont Circle, take Red Line to Metro Center and transfer to Blue Line or Orange Line. Get off at Federal Triangle stop. When you exit the Metro Station you will be facing the Federal Triangle parking lot. Turn right and go to the first street, which is Pennsylvania Avenue. Cross Pennsylvania Avenue and you will see The Willard Inter-Continental Hotel to your left.

*FEDERAL TRIANGLE
 METRO STOP

3/29

Mary,

This has already been
closed out but here is the
original of the incoming
letter for the files.

Thanks,

Marian

please
match w/
copy in file

Document Originally
Attached to
Following Page

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120871

SPEECH: YES NO

FROM: AILES, Roger: SILES COMMUNICATIONS, INC.

DATE OF EVENT: 04/03/91

LOCATION OF EVENT: HANGER #3, ANDREWS AIR FORCE BASE, MARYLAND

TIME OF EVENT: 08:00PM

SUBJECT: INVITATION TO BE A MEMBER OF THE AUDIENCE WHEN CBS
WILL AIR A TWO HOUR LIVE TELEVISION SPECIAL,
ENTITLED "THE ALL STAR SALUTE TO OUR TROOPS"

RSVP:

CONTACT PERSON: SARAH BEAN

CONTACT NUMBER: 212/685-8400

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO:

REMARKS:

3/27/91 - Regretted to Judy Laterza!
mn

DATE OF LETTER: 03/25/91

DATE RECEIVED: 03/26/91

FILE: P- INVITATION

FAXED

Ailes Communications, Inc.

VIA FACSIMILE

March 25, 1991

Mr. D. Allan Bromley
Assistant to the President for
Science and Technology
358 OEOB
Washington, DC 20500

Dear Mr. Bromley:

On Wednesday, April 3, 1991 8:00 - 10:00pm, CBS will air a two hour live television special entitled "The All Star Salute To Our Troops". It will be a bipartisan event for the troops which will take place in Hanger #3 at Andrews Air Force Base near Washington, DC. Many Democratic and Republican members of Congress will be participating. Also several celebrities from the entertainment community including George C. Scott, Charlton Heston, Glenn Ford, The Judds, Jennifer Holiday, Tony Orlando and the United States Naval Academy Choir, to name a few, will take part in this special program. The live audience will be made up of about 3,000 members of our Armed Forces, many having recently returned from the Gulf.

We would very much like for you to join in this event as an audience member to add to our salute to these heroic Americans. If you consent to join us on this historic evening, please contact Sarah Bean at (212) 685-8400 or Judy Laterza at (703) 683-8326.

*Dress -- Business Attire

Sincerely,



Roger Ailes
Chairman

RA/eg

THE MEDIA TEAM

FAX COVER SHEET

TO: Mr. P. Allan Brouley

FAX NUMBER: 202.456.2397

FROM: Mr. Roger Ailes

DATE: 3.25.91 5pm

NUMBER OF PAGES (INCLUDING COVER PAGE): 2

IF THERE ARE ANY QUESTIONS, PLEASE CONTACT THE
MEDIA TEAM AT THE NUMBER BELOW.

NOTES:

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120869

Y.

SPEECH: YES NO

FROM: McBAY, Shirley M.: QUALITY EDUCATION FOR
MINORITIES NETWORK

DATE OF EVENT: 04/12/91

LOCATION OF EVENT: OMNI GEORGETOWN HOTEL

TIME OF EVENT: 07:00PM

SUBJECT: INVITATION TO THE OPENING RECEPTION OF A WORKING
CONFERENCE ENTITLED, DEVELOPING A NATIONAL AGENDA
FOR MATHEMATICS, SCIENCE AND ENGINEERING EDUCATION
OF MINORITIES.

RSVP: 03/29/91

CONTACT PERSON: SUSAN RINSCHLER

CONTACT NUMBER: 202/659-1818

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO: Thomas Ratchford

REMARKS: 3/27/91 - Requested to Susan R.
mr

DATE OF LETTER: 03/22/91

DATE RECEIVED: 03/25/91

FILE: P INVITATION

9120 829
QUALITY EDUCATION FOR MINORITIES (QEM) NETWORK

RECEIVED

1818 N Street, NW • Suite 350 • Washington, D.C. 20036 • 202/659-1818 FAX: 202/659-5408

31 MAR 25 P 4: 24
March 22, 1991

OFFICE OF THE
DIRECTOR

Honorable D. Allan Bromley
Assistant to the President for Science & Technology
Office of Science & Technology Policy
17th & Pennsylvania Avenue, N.W.
Washington, DC 20506

Dear Mr. Bromley:

The Quality Education for Minorities (QEM) Network is pleased to invite you to the opening reception of a Working Conference entitled **Developing A National Agenda For Mathematics, Science, and Engineering Education Of Minorities**, on Friday, April 12, 1991 from 7:00 pm-9:00 pm at the Omni Georgetown Hotel. The hotel is located at 2121 P Street, NW; the telephone number at the hotel is 202/293-3100. The Conference itself will end at 1:00 pm on Sunday, April 14.

The QEM Network, with support anticipated from the National Science Foundation, Department of Energy, National Aeronautics and Space Administration, and the National Institutes of Health, has invited representatives from several institutions that have played a leadership role in developing programs to increase minority participation in mathematics, science, and engineering. Limited funds have restricted the number of institutions invited to approximately 30. The goal of the Conference is to initiate development of a detailed strategic plan for achieving increased minority participation in mathematics, science, and engineering fields.

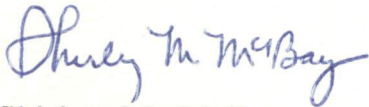
The QEM Network was established in July 1990, as a non-profit organization in Washington, D.C., dedicated to improving education for minorities throughout the nation and to implementing the recommendations in the report: **Education That Works: An Action Plan for the Education of Minorities**. This conference is in keeping with our efforts to serve as a national resource and catalyst to help unite and strengthen educational restructuring efforts to the benefit of minority children, youth, and adults, while advancing minority participation and leadership in the national debate on how best to insure access to a quality education for all citizens.

The enclosed Overview summarizes the objectives of the Working Conference. Also enclosed are the list of invited institutions and a brochure describing the QEM Network.

Please RSVP to Susan Rinschler at 202/659-1818 by March 29, 1991 regarding this invitation to the opening reception.

I look forward to your participation in this memorable event. Please contact Albert Bridgewater or me at 202/659-1818, if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Shirley M. McBay". The signature is fluid and cursive, with the first name "Shirley" being more prominent.

Shirley M. McBay
President

Enclosures:

Overview
List of Invited Institutions
QEM Network brochure

Overview

Network Strategies for Increasing Minority Participation in Mathematics, Science, and Engineering Fields

Introduction

Three concept papers (**Summer Residential Science Academies, Teacher Training Institutes, and Faculty Career Centers**) have been prepared to address increasing minority participation in mathematics, science, and engineering (MSE). The concept papers are intended to describe key components of a coordinated national effort.

Summer Residential Science Academies (SRSA) can increase the number of minority students with high potential entering undergraduate schools as MSE majors. SRSA's also can test innovative instructional programs and train current and prospective MSE teachers.

Teacher Training Institutes (TTI) can increase the number and quality of minority MSE teachers. TTI's also can develop and disseminate innovative instructional programs.

Faculty Career Centers (FCC) can increase the number of minority MSE faculty members. FCC's also can develop future college and university leaders, interested in (and committed to) understanding and addressing issues related to MSE education for minorities.

A coordinated effort must involve three levels: local, regional, and national. Local or regional issues, needs, and priorities in MSE education can be supported through the efforts of Local QEM Network Alliances or through Regional MSE Alliances. Large scale strategies for increasing minority MSE participation require a national perspective. Ultimately, localities and regions benefit from the opportunities created by national programs.

The QEM Network has established a Mathematics, Science, and Engineering Program to: (1) develop national support for innovative programs intended to increase minority MSE participation (e.g., Summer Residential Science Academies, Teacher Training Institutes, and Faculty Career Centers); (2) assist regions throughout the country in building coalitions, in mobilizing the region, and in pooling regional and national resources to carry out major MSE education reform; and (3) support local and state MSE education reform through the Local QEM Network Alliances. This effort will be undertaken with the assistance of the following QEM Network programs: Public Policy and Legislation, National Communications Network, and Research and Evaluation.

Overview

3/20/91

Page 2

Mathematics, science, and engineering education is an area in which it may be possible to develop a common national agenda for HBCUs and predominantly minority institutions. HBCUs and predominantly minority institutions have much to contribute, and the subject is sufficiently important to the nation's future to justify large scale funding at the national level.

The QEM Network is holding a working conference of HBCU/MI representatives to plan further steps to develop the concept papers and acquire national funding resources.

Summer Residential Science Academies

The QEM Network proposes that science-oriented federal agencies support a program to develop a network of **Summer Residential Science Academies** for high-potential minority students in grades 7-12, who would begin participation as 7th or 8th graders and would participate each summer until graduation. The goal is to ensure that the MSE academic achievement of minority youth is at a level that will enable them, upon graduation from high school, to enter college fully prepared to be successful and not in need of remedial education. They will also have increased knowledge of and exposure to science, mathematics, and/or engineering as careers which will facilitate their making realistic career decisions based on the full range of options available.

Summer Residential Sciences Academies would target minority students (both males and females), children from disadvantaged backgrounds; students with difficult home lives; bilingual students with limited English backgrounds; youth in stressful school situations; and especially youngsters who would be the first in their families to attend college. However, admission would be open to children from all backgrounds and income groups of American society.

Teacher Training Institutes

The QEM Network proposes that science-oriented federal agencies support a program to develop a network of **Teacher Training Institutes**. Minority teachers provide important role models for students and facilitate

QEM

Overview

3/20/91

Page 3

relationships between schools, homes, and the community. Economic and social trends have greatly reduced the number of new minority teachers while, simultaneously, demographic trends are greatly increasing the number of minority students, especially in urban areas. The science-oriented federal agencies should support collaborative, multi-faceted projects that significantly increase the number of minority students who graduate well prepared for teaching careers in mathematics, science, or engineering (MSE).

Faculty Career Centers

QEM Network proposes that science-oriented federal agencies support a program to develop a network of **Faculty Career Centers**. Projects should address: (1) identifying a pool of high-ability undergraduate students prepared for graduate study in MSE; (2) retaining these students through graduate school; (3) strengthening their academic and research performance; and (4) providing them research-initiation support in tenure-track faculty positions at the participating institutions.

National Networks

Collectively, the **Summer Residential Science Academies**, the **Teacher Training Institutes**, and the **Faculty Career Centers**, should form **National Networks**. Their programs and projects should have **national impact** and be developed through strong **collaboration**, in which each participating Academy, Institute, or Center would draw on the resources and experiences of the others to develop local and joint initiatives. The **National Networks** should expand and increase the capacity of the participating institutions, and assist in the development of strong programs. The **National Networks** should accomplish this by pooling resources, whenever appropriate and necessary, and carrying out joint programs that can serve as models for institutions nationwide.

Collaborations should include schools, colleges and universities, federal laboratories, private foundations, professional societies, other nonprofit organizations, business, and industry, as appropriate. **Priority should be given to institutions that have a strong history of preparing minority faculty members and serving and inspiring minority students.**

Overview

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In order to address the entire **K-20 pipeline**, the **National Networks** should develop appropriate collaborations with other exemplary strategies including: Saturday Science Academies; after-school "Hands-On" science activities; trips to science museums and centers; interactive science videos; and children's science television programs. These collaborations should strengthen elementary mathematics and science education, and create smooth paths for the transfer of youth from programs addressing the needs of elementary school students to programs addressing the needs of middle school and high school students.

Working Conference
INVITED INSTITUTIONS

Invited participants are from among a larger group of institutions that have played a leadership role in developing programs to increase minority participation in mathematics, science, and engineering. Limited funds have restricted the number of institutions invited. They are:

Alabama A&M University
Albany State College
Bethune-Cookman College
California State University - Los Angeles
City College of New York City College
City University of New York Hostos Community College
Clark Atlanta University
Cuyahoga Community College
Florida A&M University
Florida International University
Grambling State University
Hampton University
Howard University
Jackson State University
Maricopa County Community College
Morehouse College
Morgan State University
New Mexico Highlands University
Norfolk State University
North Carolina A&T State University
Northern Arizona University
Prairie View A&M University
Sistema Universitario de la Fundación Educativa Ana G. Méndez
Southern University, Baton Rouge
Spelman College
Tennessee State University
Texas A&I University
Tuskegee University
University of Puerto Rico, Rio Piedras
University of Texas at San Antonio
University of Texas-El Paso
Virginia State University
Xavier University

EDUCATION THAT WORKS

The QEM Network is based on the premise that every child has a right to a quality education and that every child can learn.

Although exemplary programs for minority students do exist, nowhere is there an effective and comprehensive approach to the education of minorities offering educational options from pre-school through higher education. The present system of learning—a mass education for mass production model—is inadequate to meet the demands the 21st century will place on our children.

But we do not wish to be misunderstood. Nonminorities need not lose in order for minority children to gain. Indeed, we believe that the educational vision we have will benefit all children.

We do not seek to build a new set of school rooms on the old foundations; we want to build a new foundation for all children.

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State University

Dr. Isaura Santiago-Santiago
President, Hostos
Community College

Mr. George W. Tressel
Director, Literacy Project,
Children's Television
Workshop

*The task before us is clear.
America must put an end to
the educational neglect of our
children . . . we must do so
not only because it is right,
though that is reason enough,
but because the future well-
being of the nation—
nonminority and minority—
has placed that task
so unmistakably before us.*



Sharon Wright

QUALITY EDUCATION FOR MINORITIES (QEM) NETWORK

AN AMERICAN CRISIS: THE MINORITY EXPERIENCE IN EDUCATION

Across America, a grievous injustice persists in our schools: millions of minority children are left behind their nonminority peers, not because they are incapable or undeserving, but because society's embrace of their potential is still halfhearted, and educational programs that work are only reluctantly supported.

Too many of our children must not only overcome poverty and prejudice, but also the structured expectation that they will fail.

This pervasive and divisive reality has caused an educational crisis in America, a crisis that touches every American. Our children are not being fully prepared; their futures and America's future are threatened.

It is in the schools, the increasingly minority schools, that America's future will be decided.

We, the African American, Alaska Native, American Indian, Mexican American, and Puerto Rican peoples are 48 million strong. It is essential that the needs of our children be addressed. For if we fail, America will surely fail.

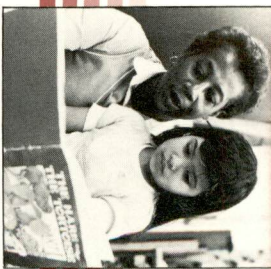
QUALITY EDUCATION FOR MINORITIES (QEM) NETWORK

Shirley M. McBay, President

Bernard L. Charles, Senior Vice President

QUALITY EDUCATION FOR MINORITIES (QEM) NETWORK

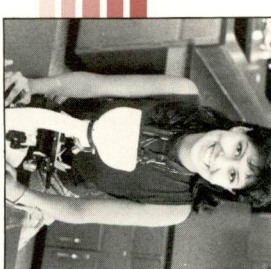
1818 N Street N.W. • Suite 350 • Washington, D.C. 20036 • 202/659-1818



Karen R. Preuss

QEM NETWORK GOALS

CALL TO ACTION



Dean Jones

“By the year 2000, we believe that it is possible to have in place an educational system that will deliver quality education to minority youth. Such a system can be achieved if we act now, if we reallocate some existing resources as well as invest new money now, and if we coalesce around a set of national goals for the education of minorities now.”

*Education that Works:
An Action Plan for the
Education of Minorities*
A report of the Quality Education for
Minorities (QEM) Project.*

ONE

Ensure that minority students start school prepared to learn.

TWO

Ensure that the academic achievement of minority youth is at a level that will enable them, upon graduation from high school, to enter the workforce or college fully prepared to be successful and not in need of remedial education.

THREE

Significantly increase the participation of minority students in higher education, with a special emphasis on the study of mathematics, science, and engineering.

FOUR

Strengthen and increase the number of teachers of minority students.

FIVE

Strengthen the school-to-work transition so that minority students who do not choose college leave high school prepared with the skills necessary to participate productively in the world of work and with the foundation required to upgrade their skills and advance their careers.

SIX

Provide quality out-of-school educational experiences and opportunities to supplement the schooling of minority youth and adults.

The Quality Education for Minorities (QEM) Network is committed to restructuring America's educational system to ensure a brighter future for our children, and for the nation.

Preparing our children and youth to participate fully and productively in their own futures and as members of the American community is of necessity a multi-lateral effort.

A broad spectrum of individuals, groups, and institutions, minority and nonminority, acting in concert, sharing a common vision and common goals, must provide the necessary resources and support. This includes:

- Minority Families and Communities
- Teachers and Other Professionals
- Librarians and Museum Directors
- Athletes and Entertainers
- Religious and Educational Organizations
- Sororities and Fraternities
- Local School Districts
- State Education Agencies
- Higher Education Institutions
- The Federal Government
- The Private Sector
- Foundations
- The Media

The QEM Network will monitor, evaluate, support, and disseminate information about successful educational change for minorities. QEM Network staff will work within existing coalitions and support the formation of new alliances to help ensure that:

Diverse national organizations are aware of each other's advocacy and program initiatives and are working together as appropriate;

Community-based coalitions are built to address the needs of minority students through restructuring efforts;

Proven pedagogical strategies are replicated;

The general public and policymakers are well informed about the experiences of minorities in education; and

Minority families and communities play an increasing role in the education of their children.

Join with us and others around the country to help put an end to the educational neglect of children.

*The Quality Education for Minorities Project was a three-year effort based at the Massachusetts Institute of Technology and funded by the Carnegie Corporation of New York.

The QEM Network is the non-profit successor organization to the QEM Project.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120868

SPEECH: YES NO

FROM: HILL, Christopher T.: THE MANUFACTURING FORUM

DATE OF EVENT: 06/19/91

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

TIME OF EVENT:

SUBJECT: INVITATION TO A NATIONAL ACADEMY OF ENGINEERING
SYMPOSIUM, "FOUNDATIONS OF MANUFACTURING SYSTEMS"

RSVP:

CONTACT PERSON: JOE HEIM

CONTACT NUMBER: 202/334-1255

INVITATION ACCEPTED?

~~YES~~ NO

COPIES TO: Dr. Wong
Dr. Phillips

REMARKS:

DATE OF LETTER: 03/22/91

DATE RECEIVED: 03/25/91

FILE: D INVITATION

Response card for the symposium:

FOUNDATIONS OF WORLD-CLASS MANUFACTURING SYSTEMS

June 19, 1991
National Academy of Engineering
Washington, D.C.

Attendance by Invitation

Please complete and return no later than April 10, 1991.

The Honorable D. Allan Bromley Assistant to the President for Science &
Name and Title (please print) Technology

Affiliation

Old Executive Office Building 17th St. & Pennsylvania Ave. NW
Address

202/456-7116
Telephone No.

202/395-3261
Fax No.

☐ YES, I plan to attend.

☒ NO, I cannot attend.

9/2

THE MANUFACTURING FORUM

National Academy of Engineering National Academy of Sciences
2101 Constitution Avenue, N.W.
Washington, D.C. 20418

RECEIVED
91 MAR 25 P 4 24
Telephone: 202/334-1579
FAX: 202/334-2290
BITNET: CHILL@NAS.BITNET

March 22, 1991

OFFICE OF THE
DIRECTOR

The Hon. D. Allan Bromley
Director
Office of Science and Tech. Policy
17th & Pennsylvania, N.W.
Washington, DC 20506

Dear Allan:

As a member of the Manufacturing Forum, you and/or your designee, are invited to a National Academy of Engineering symposium, *Foundations of Manufacturing Systems*, to be held at the National Academy of Sciences in Washington, D.C., on June 19, 1991.

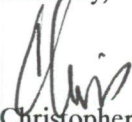
This symposium will present the results of the NAE's study on *The Foundations of World-Class Manufacturing Systems*, which has been led by Manufacturing Forum member, Dale Compton. The audience will include key members of the nation's manufacturing and higher education communities. A preliminary program is enclosed.

Dale and his committee have conducted an intensive two-year search for the elements of a manufacturing systems discipline. You may recall that he presented an overview of this project to us at the initial Forum meeting, and some of the work done for it has been the basis for his discussions with us of "best practices" in manufacturing.

If you or your colleagues can attend the symposium on June 19, please complete and returned the enclosed response card by April 10, 1991, or fax your response to (202) 334-2290. Upon receipt of your response, the NAE will forward additional information to you about symposium events, accommodations, and travel arrangements. Regrettably, the Academy cannot pay for the lodging or travel expenses for this occasion.

If you have any questions concerning the symposium, please call NAE Fellow Joe Heim in the NAE Program Office at 202/334-1255.

Sincerely,


Christopher T. Hill
Executive Director

CH/mk

ADVANCE NOTICE OF

A NATIONAL ACADEMY OF ENGINEERING PUBLIC SYMPOSIUM

**Foundations
of World-Class
Manufacturing Systems**

Wednesday, 19 June 1991
8:00 a.m. - 5:00 p.m.

Location
Auditorium
National Academy of Sciences Building
2101 Constitution Avenue, N.W.
Washington, D.C.

Reception
5:30 p.m. - 7:00 p.m.

This symposium marks the completion of a two-year study, *Foundations of Manufacturing Systems*, undertaken by the National Academy of Engineering to identify basic practices, principles, rules, or laws that must be considered and used by those companies that aspire to be "world-class" manufacturers. These operational guidelines, or "foundations," are the essential elements of a wide range of manufacturing.

The study and symposium begin with the premise that U.S. manufacturers *have* improved product quality, modified management practices, and increased production efficiencies. In recent years, to meet the demands of global competition, they have become more responsive to changing market conditions and customer needs, and they have formed new industry coalitions to explore the early ramifications of emerging technologies.

While the actions that have been taken are significant, the competitive environment is never static. Improvements by overseas manufacturers continue unabated as new products, processes, and services are introduced at an increasingly rapid rate. For manufacturers to survive in this environment, they must continuously scan the world to determine the level of performance that others are achieving; effectively organize and use their human, financial, managerial, and technical resources; establish measures by which continuous improvement can be managed; and employ new technologies as one means of sustaining a competitive advantage. Firms must aggressively pursue fundamental understanding of their manufacturing systems if they intend to raise their performance to world-class standards, and only by becoming a "world-class manufacturer" does a firm have any assurance that it will survive.

This symposium is intended to provide a forum in which to explore the manufacturing enterprise in the context of a collection of operational principles identified as *The Foundations of World-Class Manufacturing Systems*. The focus of the symposium will be the challenges confronting manufacturing management and the necessity of describing and predicting the performance of manufacturing systems to enhance a company's competitive capabilities.

Discussion panels will be chaired by members of the NAE Committee on Foundations of Manufacturing Systems: **W. Dale Compton** (chair), Lillian M. Gilbreth Distinguished Professor of Industrial Engineering, Purdue University; **H. Kent Bowen**, Ford Professor of Engineering, Massachusetts Institute of Technology; and **Harry E. Cook**, Grayce Wicall Gauthier Professor, University of Illinois; **James F. Lardner**, Retired Vice President of Tractor Components Operations, Deere & Co., and currently Chairman of the Manufacturing Studies Board of the National Research Council; and **A. Alan B. Pritsker**, Chairman and CEO of Pritsker Corporation.

Discussants for each of the panels will be drawn from the authors that contributed papers to the NAE Foundations of Manufacturing Systems study: **Nancy Badore**, Manager of Management and Organizational Planning, Ford Motor Company; **Harold E. Edmondson**, Vice President Corporate Manufacturing, Hewlett-Packard Company; **Philip A. Fisher**, Fisher & Company; **John E. Gibson**, Commonwealth Professor, University of Virginia; **William C. Hanson**, Vice President, Manufacturing, Digital Equipment Company; **Dan Krupka**, Department Head, Manufacturing Systems Engineering, AT&T Bell Laboratories; **John D. C. Little**, Institute Professor, Massachusetts Institute of Technology; **David B. Marsing**, Intel Corporation; **Joseph H. Mize**, Regents Professor and Director, Center for Computer Integrated Manufacturing; **James J. Solberg**, Professor of Industrial Engineering and Director, Engineering Research Center for Intelligent Manufacturing Systems, Purdue University; **G. Keith Turnbull**, Vice President, Technology Planning, ALCOA; **Albertus D. Welliver**, Corporate Senior Vice President, Engineering and Technology, The Boeing Company; and **Richard C. Wilson**, Professor Emeritus, Industrial and Operations Department, University of Michigan.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9120866

SPEECH: YES NO

FROM: FORBES, Malcolm S. Jr.: FORBES MAGAZINE

DATE OF EVENT: 04/11/91

LOCATION OF EVENT: CAPITOL YACHT CLUB, 1000 WATER STREET, WASHINGTON

TIME OF EVENT: 06:30PM

SUBJECT: INVITATION FOR DINNER AND A POTOMAC CRUISE ABOARD
THE HIGHLANDER.

RSVP: 04/02/91

CONTACT PERSON: JACKIE DEMARIA

CONTACT NUMBER: 212/620-2488

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO:

REMARKS: 3/27/91 - Regretted to Jackie De Maria!
mr

DATE OF LETTER: 03/20/91

DATE RECEIVED: 03/25/91

FILE: P. INVITATION

91208266
FORBES MAGAZINE RECEIVED

91 MAR 25 AII : 34

MALCOLM S. FORBES, JR.
PRESIDENT & CHIEF EXECUTIVE OFFICER
EDITOR-IN-CHIEF

OFFICE OF THE
DIRECTOR

March 20, 1991

The Hon. D. Allan Bromely
Assistant to the President for
Science and Technology
The White House
Washington, DC 20500

Dear Mr. Bromely:

The Forbes family would be honored if you and Mrs. Bromely could join us and a few Capitol friends for dinner and a Potomac cruise aboard THE HIGHLANDER on Thursday evening, April 11th.

We'll depart the Capitol Yacht Club (1000 Water Street) at 6:30 PM and tie up not later than 9:30 PM.

We guarantee smooth sailing and our young chef promises a buffet that will make breakfast redundant.

Having you on board will make the evening complete.

Please say, "Yes!"

Cordially,



Malcolm S. Forbes, Jr.

RSVP: Jackie DeMaria (212) 620-2488