

Originally Processed With FOIA(s):
2005-0336-F

FOIA Number:
2005-0336-F

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the George Bush Presidential
Library Staff.**

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

OA/ID Number: 62017
Folder ID Number: 62017-002

Folder Title:
Invitations: Speech (1) [8 of 11] [1991]

Stack:

Row:

Section:

Shelf:

Position:

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"CORRESPONDENCE TRACKING"

TYPE: INFORMATION ON SPEECH

DOCUMENT NUMBER: 9120851

FROM: SAMIOS, N.P.: BROOKHAVEN NATIONAL LABORATORY

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/19/91

SUBJECT: MATERIALS ON THE AGS AND RHIC PROGRAMS

ASSIGNED TO:

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

COPIES TO: D. Allan Bromley
Steve Olson

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 03/22/91

FILE: ~~SPEECH FOLLOW-UP~~

P-Instruction Speech



9120851.
BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.

Upton, Long Island, New York 11973

Office of the Director

91 MAR 22
(516) 282-2772
FTS 666-06
OFFICE OF THE DIRECTOR
March 19, 1991

The Honorable D. Allan Bromley
Assistant to the President for
Science and Technology
Old Executive Office Building
17th & Pennsylvania, NW
Washington, D.C. 20506

Dear Allan:

Enclosed are some briefing material on the AGS and RHIC programs.

We look forward to your coming to BNL on April 12th and to hearing your remarks. We will, of course, be available for the entire time you are at Brookhaven. I understand that you plan to depart about 4:00 p.m.

Please let us know if there are any arrangements you want us to make either with your arrival and/or departure.

Thank you again for all your efforts.

Sincerely,

N. P. Samios
Director

Enclosure

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Report	Current Heavy Ion Programs at the AGS (3 pp.)		(b)(1)	

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: Speech (1) [8 of 11] [1991]

Date Closed:	2/23/2010	OA/ID Number:	62017-002
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]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

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

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(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. Report	Notes on RHIC (4 pp.)		(b)(1)	

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: Speech (1) [8 of 11] [1991]

Date Closed:	2/23/2010	OA/ID Number:	62017-002
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P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

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 (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

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9120820

SPEECH: YES NO

FROM: FLOWERS, Susan: WOMAN IN AEROSPACE

DATE OF EVENT:

LOCATION OF EVENT: WASHINGTON, D.C.

TIME OF EVENT:

SUBJECT: REQUEST TO BE THE GUEST SPEAKER AT THE SOCIETY'S MAY LUNCHEON.

RSVP:

CONTACT PERSON: SUSAN FLOWERS

CONTACT NUMBER: 703/883-4927

INVITATION ACCEPTED?  

COPIES TO: Dr. Wong

REMARKS: 3/25/91 Left request on answering machine - DAB
will be on travel.
mx

DATE OF LETTER: 03/20/91

DATE RECEIVED: 03/20/91

FILE: P INVITATION-SPEECH

9120820

WIA

RECEIVED

Women in Aerospace

6352 Rolling Mill Place
Suite #102
Springfield, VA 22152

91 MAR 20 All : 53

OFFICE OF THE
DIRECTOR

March 20, 1991

Dr. D. Alan Bromley
Science Advisor to the President
Old Executive Office Building
17th & Pennsylvania NW, Suite 358
Washington, DC 20506

Dr. Bromley:

Women in Aerospace is a non-profit, professional society which encourages and supports opportunities for the exchange of ideas and information about aerospace, career advancement and the development of educational opportunities for students and the public at large.

Each spring we hold a luncheon for the members and their guests. I hope you will consider being our guest speaker at our May luncheon to be held the third week. There typically are 150 in attendance and the luncheon is held at a Washington area establishment.

Our group is interested in your views on science education and supporting the President's initiatives regarding Space Station Freedom, developing a permanent lunar base and preparing our nation for a mission to Mars.

I will call your office in the near future to discuss this proposal. Should someone in your organization wish to reach me, my office number is 703-883-4927 or a message may be left on the organization's automated answering service, 703-644-7875.

Thank you for your consideration.

Sincerely,

Susan Flowers
Vice President, Programs

McDONNELL DOUGLAS ELECTRONIC SYSTEMS COMPANY

8201 GREENSBORO DRIVE, SUITE 500
MCLEAN, VIRGINIA 22102
703-883-3900

TO (ADDRESSEE): <i>Mr. Alan Bromley</i>	MAILCODE	TELEPHONE NUMBER <i>202-456-7116</i>
COMPANY	DATAFAX NUMBER <i>202-395-3261</i>	CLASSIFICATION ✓ MDC SENSITIVE UNCLASSIFIED
NO. ATTACHED PAGES <i>1</i>	MDESC HQ DATAFAX 703-883-3859	DATE <i>20 Mar 91</i>
FROM <i>Susan Powers</i>		TELEPHONE NUMBER <i>703-883-4927</i>

COMMENTS

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9120837

SPEECH: YES NO

FROM: JACKSON, Joseph C.: SACMA

DATE OF EVENT: 05/01/91

LOCATION OF EVENT: RITZ-CARTON, PENTAGON CITY, VA

TIME OF EVENT: 09:30AM

SUBJECT: INVITATION TO PARTICIPATE AS A GUEST SPEAKER AT THE
SEVENTH ANNUAL CONFERENCE ENTITLED, "GOVERNMENT
POLICY ISSUES IN ADVANCED MATERIALS."

RSVP: 04/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO: Perry Lindstrom
Thomas Ratchford

REMARKS:

DATE OF LETTER: 03/19/91

DATE RECEIVED: 03/22/91

FILE: p. INVITATION-SPEECH

THE WHITE HOUSE

WASHINGTON

April 8, 1991

Dear Mr. Jackson:

Thank you for your letter of March 19, 1991, inviting me to be your guest speaker at SACMA's Annual Conference scheduled to be held on May 1, 1991.

Advanced materials is high on our list of priorities in my office, but as much as I would like to join you for that occasion, I am scheduled to be out of town, so I must regretfully decline your invitation.

I appreciate your thinking of me and would like to wish you a successful meeting.

Sincerely yours,

A handwritten signature in dark ink, reading "D. Allan Bromley". The signature is written in a cursive style with a large, stylized "B" at the end.

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

Mr. Joseph C. Jackson
Executive Director
SACMA
1600 Wilson Boulevard, Suite 1008
Arlington, Virginia 22209



SACMA

Suppliers of Advanced
Composite Materials
Association

9120837

RECEIVED

91 MAR 22 AIO : 32

OFFICE OF THE
DIRECTOR

March 19, 1991

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

Dear Dr. Bromley:

Advanced materials represent a vitally important enabling technology and will be a determining factor in the global competitiveness of U.S. manufacturing industries in the 1990's and beyond. The ways and means by which the United States chooses to capitalize on the market opportunities of the "material revolution" will dictate in large measure the economic leverage and quality of life we, as a nation, will enjoy for the foreseeable future.

Government can play an important role by formulating a national advanced materials agenda which will raise awareness ... promote earlier adoption ... expand product markets ... secure U.S. leadership ... and accelerate the broadest societal benefits from these technologies. Helping to shape this agenda in some measure through a better understanding of today's political realities and tomorrow's opportunities is the reason for this letter.

The Suppliers of Advanced Composite Materials Association, commonly known as SACMA, is an international trade association including as members: producers of basic raw materials, e.g., fibers, resins, etc.; producers of intermediate stage materials, e.g., weavers, prepreggers, resin formulators; parts manufacturers; and other interested organizations which provide ancillary support or service to the advanced composite materials industry. Although international in scope, SACMA's principal mission is "...to grow the U.S. advanced composites business based on common, not competitive, interests."

On Wednesday, May 1, 1991, SACMA will host its Seventh Annual Conference from 9:30 a.m. - 12:00 Noon at the Ritz-Carlton (Pentagon City), Arlington, Virginia. This year's Conference is entitled, "Government Policy Issues in Advanced Materials." A preliminary program is enclosed.

Speaking on behalf of the SACMA membership, I cordially invite you to participate as a guest speaker at this upcoming event. In your pivotal role as the President's Science Advisor, we cannot think of an individual more politically attuned to material policy issues and personally outspoken on the proper role of government and industry.



SACMA
Suppliers of Advanced
Composite Materials
Association

Dr. D. Allan Bromley
Page -2-
March 19, 1991

With over 100 senior industry executives on hand, it is our hope you would use this forum to review OSTP's proposed "materials initiative" and "national critical technologies list" as well as to discuss the linkage between and role of relevant White House committees, e.g., NCMC, FCCSET, COMAT, CTI, etc.

We sincerely hope your demanding schedule will permit acceptance of this invitation. Since we're trying to finalize the Conference program before month-end, Gigi Healy (Director of Public Affairs) will phone your scheduler in the next week to confirm participation.

Sincerely,

Joseph C. Jackson
Executive Director

cc: A. Kahn, Esq.
P. Lindstrom, NCMC

SACMA Annual Conference
"Government Policy Issues in Advanced Materials"

Salon I
Ritz-Carlton (Pentagon City)
Arlington, Virginia

Preliminary Program

Wednesday, May 1, 1991

9:30 a.m. - 10:15 a.m. Technology Partnerships: Paradigms for Global Competitiveness

The Honorable Jeff Bingaman * (D-NM)
United States Senate

10:15 a.m. - 11:00 a.m. National Materials Policy for Global Competitiveness

Dr. D. Allan Bromley *, Director
Office of Science & Technology Policy

11:00 a.m. - 11:15 a.m. Coffee Break

11:15 a.m. - 12:00 p.m. National Interests in a Time of Globalized Technology

Dr. Robert M. White *, President
National Academy of Engineering

12:00 p.m. Adjournment

* Invited, Confirmation Pending

9120837

THE WHITE HOUSE
WASHINGTON

3/19

April 8, 1991

P-invite -
speech

Dear Mr. Jackson:

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I appreciate your thinking of me and would like to wish you a successful meeting.

Sincerely yours,

D. Allan Bromley

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

Mr. Joseph C. Jackson
Executive Director
SACMA
1600 Wilson Boulevard, Suite 1008
Arlington, Virginia 22209

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9120852

SPEECH: YES NO

FROM: PECK, Dallas L.: U.S. DEPARTMENT OF THE INTERIOR

DATE OF EVENT: 07/09/91

LOCATION OF EVENT: HYATT REGENCY CRYSTAL CITY, ARLINGTON, VA

TIME OF EVENT: 02:30PM

SUBJECT: AN INVITATION TO SPEAK AT THE JOINT FEDERAL/INDUSTRY
CONFERENCE ON GEOGRAPHIC INFORMATION SYSTEMS AND
SPATIAL DATA POLICIES IN THE FEDERAL GOVERNMENT.

RSVP: 04/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO: Dr. Wong
Nancy Maynard

REMARKS:

DATE OF LETTER: 03/20/91

DATE RECEIVED: 03/22/91

FILE: p- INVITATION-SPEECH

U.S. Geological Survey
101 National Center
Reston, VA 22092

Office of the Director

3/19/91

Dear Allan,

I hope you'll be able to participate in "GISDEX" meeting. It relates closely to an effort we're leading (we the USGS) to coordinate spatial data (i.e. map data) in order to facilitate the use of geographic and land information systems—under the oversight of OMB. It's an important activity and we'd like to brief you sometime.



gls

THE WHITE HOUSE
WASHINGTON

April 3, 1991

Dear Dallas:

Thank you for your letter of March 20 inviting me to speak at the GISDEX Conference scheduled for July 9, 1991, to be held at the Hyatt Hotel in Crystal City, Virginia.

Unfortunately, my schedule for that week is already very heavily committed and I will not be able to join you and your colleagues.

I appreciate your thinking of me and wish you a successful meeting.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley", written in a cursive style.

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

The Honorable Dallas L. Peck
Geological Survey
WGS-Mail Stop 590
12201 Sunrise Valley Drive
Reston, Virginia 22092



United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA 22092

In Reply Refer To:
WGS-Mail Stop 590

9120852
91 MAR 22 P 5: 09

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Washington, D.C. 20506

MAR 20 1991

OFFICE OF THE
DIRECTOR

Dear Dr. Bromley:

On behalf of the Board of Directors for the Geographic Information and Spatial Data Exposition (GISDEX), I am pleased to extend an invitation to you to give your views at this joint Federal/industry conference on geographic information systems and spatial data policies in the Federal Government. The theme of the conference is "Managing Change in the Information Age: Sharing Our Information Resources."

GISDEX will address issues on the applications of geographic information systems, spatial data coordination and management, and Federal policies for spatial data programs and funding. Senior representatives from the Office of Management and Budget, General Accounting Office, General Services Administration, other Federal agencies, and industry will discuss the importance of geographic information system technology to national and global economic and environmental issues, the investment of Federal dollars in geographic information system programs, and the public benefits that will be realized from these current and future investments.

GISDEX is being organized by senior executives from organizations such as the Departments of Agriculture and Interior, the Environmental Protection Agency, the National Aeronautics and Space Administration, and the Army Corps of Engineers, as well as industry leaders from IBM, SUN Microsystems, PRIME, the Intergraph Corporation, the Environmental Systems Research Institute, SPOT Image Corporation, and Earth Resources Data Analysis Systems.

Your perspective as Assistant to the President for Science and Technology will provide vital insights on the issues of managing spatial data in the Federal Government. We hope you will accept this invitation to speak during Plenary Session III, "GIS and Spatial Data Policies in the Federal Government," on July 9, 1991, between 2:30 and 4:15 p.m. at the Hyatt Regency Crystal City, Arlington, Virginia. A one-page overview and preliminary agenda for the conference are enclosed for your reference.

Sincerely yours,

Dallas L. Peck
Director

Enclosures



United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA 22092

In Reply Refer To:
WGS-Mail Stop 590

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Washington, D.C. 20506

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Sincerely yours,

Director

Enclosures

Geographic Information and Spatial Data Exposition (GISDEX)

Dates:

Conference: July 9-11, 1991 (Tuesday through Thursday)
Workshops: July 12, 1991 (Friday)

Place: Hyatt Regency (Crystal City) in Arlington, Virginia

Overview:

The theme of the Geographic Information and Spatial Data Exposition (GISDEX) is "Managing Change in the Information Age: Sharing Our Information Resources." The objectives of the conference include:

- increasing the awareness of the importance of geographic information system technology as a tool for evaluating national and global economic and environmental issues.

- serving as a forum for understanding and sharing information about Federal Government GIS requirements, policies, applications, benefits, geographic data bases, and the technological and institutional problems and opportunities.

- providing the vision for the effective management of one of the Nation's future assets--a National Spatial Geographic Data Infrastructure. The conference seeks to gain support for additional investments as a benefit to the national economy.

- providing an understanding of the importance of Federal Government geographic data coordination, the mechanisms for coordination, and the advantages for developing and sharing the information cooperatively among Federal, State, and local governments and with the private sector.

An additional objective of the conference is to inform attendees about the revised Circular A-16 and the expanded role of the Federal Geographic Data Committee.

One of the most unique aspects of this conference is its emphasis on providing a high-level Federal forum in which policymakers and senior managers can learn about and discuss Federal GIS policies, data, and applications. The first day of the conference is devoted to informing key senior Federal policymakers about GIS technology and policy activities in the Federal Government.

GISDEX Conference Schedule

DRAFT

July 9, 1991 • Day One

8:15 - 8:30 am	Opening Remarks Program Chairmen Gale Teselle, Director CGIS Division, US Soil Conservation Service Fred Corle, Federal Marketing Manager, Sun Microsystems Federal
8:30 - 9:30 am	Keynote Session Global Competition in the Information Age/Information Management-The Competitive Advantage Congressman George Brown (Invited)
9:30 - 9:45 am	Coffee Break
9:45 - 11:00 am	Plenary I: Computing Architecture & People: Effective Use & Misuse Futurist: Walter Doherty, Manager, Watson Research Center
11:00 - 12:45 pm	Plenary II: Managing Spatial Data in the Federal Government User Panel: Department of Agriculture - John H. Beuter, Deputy Assistant Secretary for Natural Resources and Environment Department of the Interior - Frank Bracken, Deputy Secretary (Invited) Environmental Protection Agency - Charles L. Grizzle, Assistant Administrator, Administration and Resources Management (Invited) Department of Commerce - John Knauss, Administrator, National Oceanic and Atmospheric Administration (Invited) Army Corps of Engineers - LGEN H.J. Hatch, Commander National Aeronautics and Space Administration - Dixon Butler, Director, Modeling, Data, and Information Systems Program Office Moderator: Larry Ayers, Vice-President, Federal International Marketing, Intergraph Corporation
12:45 - 2:30 pm	VIP Luncheon and VIP Escorted Exhibit Tour
12:45	GISDEX Lunch
2:00 - 6:30 pm	Exhibits Open Plenary III: GIS and Spatial Data Policies in the Federal Government
2:30 - 4:15 pm	Policy Panel: Office of Management and Budget - Jack Arthur, Critical Information Support Project Manager/Robert Veeder, Chief, OIRA White House - D. Allan Bromley, Assistant to the President for Science and Technology (Invited) Congress - Ray Williamson, Office of Technology Assessment (Invited) General Accounting Office - Ralph V. Carbone, Assistant Comptroller General for Information Management and Technology (Invited) National Academy of Sciences - John Bossler, Chairman, Mapping Sciences Committee Moderator: Tom Hewitt, President, Federal Sources
4:15 - 6:30 pm	Exhibit Hall Reception

Tuesday

GISDEX Conference Schedule

DRAFT

July 10, 1991 • Day Two

8:15 - 9:45 am	Plenary Session I: GIS, Data, and Information Sharing Trends - Hardware and Communications	
	William J. Filpp, IBM Vice President and President, Advanced Workstation Division	
	Larry Hamby, President, Sun Microsystems Federal	
9:45 - 10:00 am	Coffee Break	
10:00 - 11:15 am	Plenary Session II: Geographic Data Issues	
	Information Trends—Software and Databases	
	Jack Dangemond, President, ESRI; Bob Thurber, Co-founder, Intergraph	
10:00 - 6:00 pm	Exhibits Open	
11:15 - 11:45 am	Plenary Session III: GIS Research Challenges	
	Jack Estes, Director	
	National Center for Geographic Information and Analysis	
	Lunch on Own & Exhibit Breakout	
11:45 - 1:30 pm	Plenary Session IV: Federal Geographic Data Committee Building a National Spatial Data Infrastructure	
	Moderator: Dallas Peck, Director, Geological Survey	
1:30 - 2:45 pm	• National Data Infrastructure—Gene Thorley, Assistant Division Chief, National Mapping Division, Geological Survey • National Geographic Data System—Stephen Gupilli, Chidman, Standards Working Group • Data Responsibility, Ownership, & Liability—RADM J. Austin Yeager, Director, Charting & Geodetic Services, NOS/NOAA • Data Preservation—National Archives & Records Administration,	
	Coffee Break	
2:45 - 3:15 pm	Data Forum I-Spatial Framework	Data Forum II-Resource Data
3:15 - 4:30 pm	• Geodetic-Charting and Geodetic Services, NOAA • Base Topographic Mapping-Geological Survey • Cadastral-Bureau of Land Management • International Boundaries-Department of State	• Soils-Soil Conservation Service • Vegetation-Forest Service • Wetlands-Fish and Wildlife Service • Geologic-Geological Survey
	Moderator: John Moeller, Deputy Assistant Director, Support Services, Bureau of Land Management	Moderator: Terry Gossard, Assistant Director for Standards and Evaluation, Forest Service
4:30 - 5:45 pm	Data Forum III-Resource/General Data	Data Forum IV-Cooperation Between the Federal and Non-Federal Communities
	• Ground Transportation-Department of Transportation • Cultural and Demographic-Bureau of the Census • Hydrographic-Geological Survey • Flood and Risk Mapping-Federal Emergency Management Agency	• Federal/State Liaison-David Moyer, National Geodetic Survey • Federal/Local Liaison-Soil Conservation Service
	Moderator: Robert Marx, Chief, Geography Division, Bureau of the Census	Moderator: Tommy Dewald, National GIS Program Manager, Environmental Protection Agency

Wednesday

GISDEX Conference Schedule **DRAFT**

July 11, 1991 • Day Three

Applications Track		Policy Track	
Plenary Session I: Introduction to Applications and Policies Use and Standards, Background & History An Agency's Venture into GIS Rex Hartgraves, Associate Deputy Chief for Administration, U.S. Forest Service		Policy Forum I - National and International Standards that Impact Spatial Data Technology • National Institute for Standards & Technology—Henry Tom, Manager, GIS Standards Laboratory • American National Standards Institute (ANSI)—Michael Hogan, Vice Chairman Advisory Committee of JTC1 TAG for International Standards Moderator: Denny Parker, Publisher, GIS World	
8:30 - 9:00 am		Policy Forum II-Agencies' GIS and Spatial Data Policies: Different Agencies' Perspectives • Environmental Protection Agency • Geological Survey • National Park Service • Soil Conservation Service • Army Corps of Engineers Moderator: John Antenucci, President, PlanGraphics	
9:00 - 9:30 am		Policy Forum III - Procurement Issues Relating to GIS Federal Programs • General Service Administration—Frank McDonough, Assistant Commissioner, Office of Federal R/M • General Accounting Office—Jayetta Z. Hecker (Invited) • Office of Management & Budget— Moderator: John Bossler, Director, Center for Mapping, Ohio State University	
9:30 - 10:45 am	Applications Forum I - Natural Resources • Forest Service • Bureau of Land Management • Geological Survey • Soil Conservation Service Moderator: Jim Spencer, President, Digital Resources Systems	Applications Forum II - Emergency Preparedness / Transportation • Army Corps of Engineers • Department of Energy • Federal Emergency Management Agency • Federal Aviation Administration Moderator: Ted Nanz, President, SPOT Image	
10:45 - 12:00		Lunch on Own	
12:00 - 1:00 pm		Applications Forum III - Conservation, Environment, and Facilities Management • Environmental Protection Agency • National Park Service • Fish and Wildlife Service • Army Corps of Engineers Moderator: S.J. Camarata, Director, Marketing and Systems Coordination, ESRI	
1:00 - 2:30 pm		Plenary Conference Wrap-Up Summary of Major Issues/Conference Conclusions Q & A - Joseph Berry, Principal, Berry & Associates and Associate Professor, Colorado State University - David Cowen, Chairman, Geography Department, University South Carolina - Gene Thorley, Assistant Division Chief, National Mapping Division, Geological Survey	
2:30-4:00 pm			

Thursday

GISDEX Conference Schedule

DRAFT

July 12, 1991 • Day Four — Management Workshops

Friday

	Data	Applications	Policy
8:30 - Noon	Spatial Data • Definitions • Major Spatial Data Models • Characteristics • Standards Obtaining Data • Collection Technologies/Conversion - Digitized - Remotely Sensed - GPS - Others • Integrating from Different Sources • The Need to Integrate • Problems in Integrating • Data Sources - In-house Collection - Sharing Across Agencies - Purchase/Lease • Costs • Maintenance Leader: Mickey Fair, President, Smartscan	Overview • Terminology/Definitions • Types of Data (Raster/Vector, etc.) • Sources of Data • Major GIS's Major Parts of a GIS Project • Data • Hardware • Software • People • Procedures Management Impacts • Budget • Workforce Skill Mix • Training • Organization • Mission • Liability • Mitigating Impacts Leader: Jim Spencer, President, Digital Resource Systems	Standards • Definition • Players • Importance/Advantages • Review of Present Standards Data Standards System Standards Implementing Standards Future Directions Data Sharing Policies • Sharing & Dissemination • Policies in Federal Agencies • Ownership, Responsibility & Liability • Procurement Policies • Data Policy Development Trends Leader: David Donelan, GIS Marketing Manager, Digital Equipment Corporation
12:00 - 1:00 pm	Lunch	Lunch	Lunch
1:00 - 4:30 pm	Data Management • Design & Maintenance of a GIS Database Emergence of a National Spatial Database • Dissemination • Ownership • Responsibility & Liability • Agencies' Policies & Practices • Agency Data Exchange • Coordinating Data Collection Activities - Linkages between Federal/State/Local Governments & the Private Sector - New Technologies Leader: John Antenucci, President, PlanGraphics	GIS Projects/Case Histories • Integrating Commonly Used Data Remotely Sensed TIGER DLG Others Management's Problems & Concerns Resolutions Successes Leader: Todd Everett, VP, Sales and Marketing, Strategic Mapping	System Procurement • Procurement Policy and Process • Getting the Job Done Within the Rules • Specifications for a Successful GIS Procurement • GIS Technology and Litigation - Issues and Problems • Agency Case Histories Leader: Jack Rothchild, Public Sector/GIS Industry Marketing Manager, Data General Corporation

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9120852

SPEECH: YES NO

FROM: PECK, Dallas L.: U.S. DEPARTMENT OF THE INTERIOR

DATE OF EVENT: 07/09/91

LOCATION OF EVENT: HYATT REGENCY CRYSTAL CITY, ARLINGTON, VA

TIME OF EVENT: 02:30PM

SUBJECT: AN INVITATION TO SPEAK AT THE JOINT FEDERAL/INDUSTRY
CONFERENCE ON GEOGRAPHIC INFORMATION SYSTEMS AND
SPATIAL DATA POLICIES IN THE FEDERAL GOVERNMENT.

RSVP: 04/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED? YES NO

COPIES TO: Dr. Wong
Nancy Maynard

REMARKS:

Sponsor: Geographical Information and Spatial Data Exposition
Subject: Spatial Data Policies in the Federal Government
Audience:
Date: July 9-Tuesday; 2:30-4:15 p.m.
Location: Arlington
Contact: Dallas Peck
Comments: A person note from Dallas is included.
Conflicts: You are giving a speech at the SIAM meeting that
morning.

YES

NO

file : invitation-speech
Speech already scheduled for that day. (And he wouldn't do it anyway.)

3/28/91

July 7

THE WHITE HOUSE
WASHINGTON

April 3, 1991

Dear Dallas:

Thank you for your letter of March 20 inviting me to speak at the GISDEX Conference scheduled for July 9, 1991, to be held at the Hyatt Hotel in Crystal City, Virginia.

Unfortunately, my schedule for that week is already very heavily committed and I will not be able to join you and your colleagues.

I appreciate your thinking of me and wish you a successful meeting.

Sincerely yours,



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

The Honorable Dallas L. Peck
Geological Survey
WGS-Mail Stop 590
12201 Sunrise Valley Drive
Reston, Virginia 22092

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9120854

SPEECH: YES NO

FROM: PUSH, Stephen: POWELL ADMAS & RINEHART

DATE OF EVENT: 05/22/91

LOCATION OF EVENT: WASHINGTON, D.C.

TIME OF EVENT:

SUBJECT: INVITATION TO BE A DINNER SPEAKER AT A WORKSHOP ON
NUTRITION OF THE ELDERLY, SPECIFICALLY AN ISSUE IN
PUBLIC POLICY THAT HAS AN IMPACT ON HUMAN NUTRITION.

RSVP:

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO: Life Sciences

REMARKS:

4/2/91 Regretted to Tom Bell!
mn

DATE OF LETTER: 03/22/91

DATE RECEIVED: 03/22/91

FILE: P- INVITATION-SPEECH

Powell Adams & Rinehart

An Ogilvy Company

9120854
1901 L Street, N.W.

Suite 300

Washington, D.C. 20036

Tel: 202-466-7590

Fax: 202-466-7598

March 22, 1991

RECEIVED

91 MAR 22 P 5:10

OFFICE OF THE
DIRECTOR

D. Allan Bromley
Assistant to the President and Director
Office of Science and Technology Policy
Old Executive Office Building, Room 358
Washington, D.C.

Dear Dr. Bromley:

On behalf of my client, Nestlé USA, I would like to invite you to be a dinner speaker at a workshop on nutrition of the elderly scheduled for May 22-24, 1991, in Washington, D.C. Although most of the workshop will be devoted to research topics, the participants would be pleased if you would speak about any issue in public policy that may have an impact on human nutrition.

The workshop is an annual event sponsored by Nestlé's research and development team to foster scientific communication on nutrition research. Participating in the workshop will be 25 senior researchers from leading universities and research institutes in the United States and several foreign countries. In addition, Nestlé will open the workshop to approximately 25 observers from government agencies, professional societies, public interest groups, and other organizations concerned about nutrition and health. The news media will be invited to attend.

Nestlé USA's units include Carnation Company, Nestlé Foods Corporation, and Stouffer Foods Corporation.

The workshop agenda is enclosed. We would be pleased if you would deliver a 20- to 30-minute address. Tom Beall of Powell Adams & Rinehart will call your office to discuss which evening, May 22 or 23, might be convenient for you.

Thank you in advance for your time and consideration.

Sincerely yours,



Stephen Push
Senior Associate

Enclosure

cc: Tom Beall

NESTLE NUTRITION SERVICES



29th NESTLE NUTRITION WORKSHOP

Washington D.C., USA

22 - 24 May, 1991

NUTRITION OF THE ELDERLY

To be held at : The Mayflower Hotel, 1127 Connecticut Avenue NW,
Washington D.C. 20036, USA

Tel. (202) 347 3000; Fax. (202) 466 9082; Tlx. 892324

Co-Chairmen : Hamish Munro, Boston, USA
Erich Lang, Erlangen, Germany

Tuesday 21 May

Arrival of participants and registration

20.00

Welcome cocktail party —

Wednesday 22 May

09.00 - 09.20

Welcome and opening

09.20 - 09.40

Introduction

Hamish Munro
Boston, USA

SESSION 1:

SOCIOLOGY

CHAIRMAN: ERICH LANG
Erlangen, Germany

09.40 - 10.00

Health and population statistics:
discussion and interpretation
Discussion

T.F. Williams
Bethesda, USA

10.00 - 10.30

10.30 - 11.00

Coffee break and group photograph

11.00 - 11.20

Sociology of aging in different
cultures
Discussion

J. Hautvast,
Wageningen, Holland

11.20 - 11.50

Lunch

SESSION 2:**PHYSIOLOGICAL CHANGES DUE TO AGEING****CHAIRMAN: HAMISH MUNRO
BOSTON, USA**

14.00 - 14.20	Water, electrolytes, kidney function	H.Sato
14.20 - 14.50	Discussion	Tokyo, Japan
14.50 - 15.10	Endocrine function	Malcolm Hodgkinson
15.10 - 15.40	Discussion	London, UK
15.40 - 16.00	Coffee break	
16.00 - 16.20	Digestive function	I.Rosenberg
16.20 - 16.50	Discussion	Boston, USA
16.50 - 17.10	Energy metabolism	J.Durnin
17.10 - 17.40	Discussion	Glasgow, UK
	Dinner	

Thursday 23 May**SESSION 2 (continued)****CHAIRMAN: SUSAN SCHIFFMAN
DURHAM, USA**

08.30 - 08.50	Brain function and behaviour	D.Blazer
08.50 - 09.20	Discussion	Durham, USA
09.20 - 09.40	Taste changes and appetite	C.Murphy
09.40 - 10.10	Discussion	San Diego, USA
10.10 - 10.30	Coffee break	
10.30 - 10.50	Immunodeficiency	A. de Weck
10.50 - 11.20	Discussion	Bern, Switzerland

SESSION 3:**SPECIFIC NEEDS OF THE ELDERLY****CHAIRMAN: J.HAUTVAST
WAGENINGEN, HOLLAND**

11.20 - 11.40	Energy	Zvi Glick
11.40 - 12.10	Discussion	Los Angeles, USA
	Lunch	
14.00 - 14.20	Protein	David Kritchevski
14.20 - 14.50	Discussion	Philadelphia, USA
14.50 - 15.10	Fatty acids	P.Nestel
15.10 - 15.40	Discussion	Adelaide, Australia
15.40 - 16.00	Coffee break	
16.00 - 16.20	Vitamins	Werner Kübler
16.20 - 16.50	Discussion	Giessen, Germany

16.50 - 17.10
17.10 - 17.40

Trace minerals
Discussion

William Mertz
Beltsville, USA

Dinner

Friday 24 May

SESSION 4:

SPECIAL DISEASES OF AGEING
AND THEIR PREVENTION

CHAIRMAN: PIERRE GUESRY
VEVEY, SWITZERLAND

08.30 - 10.30

Round table on Prevention of Osteoporosis

08.30 - 08.45

Calcium, phosphorus, magnesium,
vitamin D

Jean-Pierre Bonjour
Geneva, Switzerland

08.45 - 09.00

Hormones

P.D. Delmas
Lyon, France

09.00 - 09.15

Physical activity

C.Meredith
Davis, Ca, USA

09.15 - 09.30

Fluoride

P.J.Meunier
Lyon, France

09.30 - 10.30

Round table discussion

10.30 - 10.50

Coffee break

10.50 - 11.10

Senile dementia

J.A.Edwardson
Newcastle, UK

11.10 - 11.40

Discussion

SESSION 5

PRACTICAL ASPECTS OF NUTRITION OF
THE ELDERLY

CHAIRMAN : JOHN MORLEY
LOS ANGELES, USA

11.40 - 12.00

At home

L.Davies
London, UK

12.00 - 12.20

Discussion

12.20 - 12.40

Institutions

B.Steen
Göteborg, Sweden

12.40 - 13.00

Discussion

13.00

Conclusion

Erich Lang
Erlangen, Germany

Lunch

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9120786

FROM: HAMILTON, J.H.: VANDERBILT UNIVERSITY

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/11/91

SUBJECT: SYMPOSIUM ON REFLECTIONS AND DIRECTIONS IN LOW
ENERGY HEAVY-ION PHYSICS

ASSIGNED TO:

*Shaw not agreed to this and I
expect to be in Japan.*

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED: -----

COPIES TO: D. Allan Bromley
Steve Olson

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS: ENCLOSURES TO DAB.

DATE RECEIVED: 03/18/91

FILE: ~~SPEECH FOLLOW-UP~~

P- INVITATION- SPEECH

VANDERBILT UNIVERSITY



NASHVILLE, TENNESSEE 37235

RECEIVED

TELEPHONE (615) 322-7311

Department of Physics & Astronomy • Direct phone 322-2828

91 MAR 18 AM 11:42

OFFICE OF THE
DIRECTOR

March 11, 1991

Dr. D. Allan Bromley
Old Executive Office Bldg.
17th St. and Pennsylvania Ave., NW
Washington, DC 20506

Dear Allan:

I was very pleased to hear from Walter Greiner that you will accept our invitation to speak at the opening session of our *Symposium on Reflections and Directions in Low Energy Heavy-Ion Physics* which celebrates twenty years of UNISOR and ten years of the Joint Institute for Heavy Ion Research. This symposium is being held October 14 and 15, 1991 just before UNISOR hosts the *Second International Conference on On-Line Nuclear Orientation*, Oct. 16-19. In the opening session there will be several brief remarks by people from the State and Federal Government, including Lamar Alexander and some members of the U.S. Tennessee delegation, along with the Chancellors of Vanderbilt and the University of Tennessee and the Director of ORNL. We suggested a rather general title of "Universities-National Laboratories Cooperation" for your talk, but you are free to select another topic of your choosing.

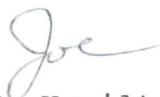
The other speakers for the symposium have been chosen from people who have worked at UNISOR and/or the Joint Institute. They have been asked to reflect for 10 minutes on the accomplishments in low energy heavy-ion physics and then to consider present and future science to be addressed in this field. I have included some recent information, as well as early information on UNISOR and the Joint Institute. Both of these programs continue to be highly successful. The Institute and its Visitors Program have made HHIRF by far the most used laboratory in low energy heavy-ion physics with 59 graduate students currently doing their Ph.D. research there. The Joint Institute and UNISOR are combining to have the major Center in Nuclear Structure Theory at HHIRF in the U.S.

Dr. D. Allan Bromley
March 11, 1991
Page 2

The State of Tennessee and our two leading research universities have played major roles in the location and development of HHIRF at ORNL, as you know. As final examples growing out of the continued cooperation of the State of Tennessee, Vanderbilt, and the University of Tennessee at ORNL, I enclose some information about our new generation recoil mass spectrometer lead by Vanderbilt and the new high performance computing center being proposed. Both of these are exciting developments.

We much appreciate your willingness to help us celebrate these two important milestones. With very best regards.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Joe", written in dark ink.

J. H. Hamilton
Landon C. Garland Professor of Physics

JHH:plm

Preliminary Announcement

SYMPOSIUM ON REFLECTIONS AND DIRECTIONS IN LOW ENERGY HEAVY-ION PHYSICS

CELEBRATING TWENTY YEARS OF UNISOR AND TEN YEARS OF THE JOINT INSTITUTE FOR HEAVY ION RESEARCH

The University Isotope Separator at Oak Ridge (UNISOR), collaboration was formed in 1971, and the Joint Institute for Heavy Ion Research (JIHIR), dedicated its first built in 1981 to begin operation. To celebrate twenty years of UNISOR and ten years of JIHIR, a *Symposium on Reflections and Directions in Low Energy Heavy-Ion Physics* is being planned for October 14 and 15, 1991, at the Joint Institute in Oak Ridge in conjunction with the *Second On-Line Nuclear Orientation Conference* hosted by UNISOR on October 16-19, 1991.

Speakers at the two-day symposium will, in part, reflect on the accomplishments in low energy (beam energy ≤ 25 MeV/A) heavy ion science, particularly as carried out at HHIRF, and then will emphasize the new directions and opportunities to be explored with low energy heavy ion facilities. The areas to be covered will include properties of nuclei far from stability, high spin states, hot dipoles, subbarrier fusion, transfer, fusion and partial fusion reactions, and atomic physics. Since the Joint Institute and UNISOR have placed a special emphasis on the development of theoretical work in nuclear structure physics, there will be one session devoted to structure theory. A final session will emphasize new research to result from facilities exhibiting radioactive ion beam capabilities, new generation recoil mass spectrometers, and sophisticated gamma-ray detector arrays.

Invited speakers will include R. Bengtsson, R. Broglia, P. Butler, T. Cormier, J. Dudek, A. Faessler, D. Feng, J. D. Garrett, W. Greiner, J. Y. Zhang, W. Nazarewicz, M. Riley, L. L. Riedinger, C. F. Maguire, D. Brink, C. Mahaux, A. Champagne, N. Stone, M. Thoennessen, and E. F. Zganjar. Speakers have been selected from the many scientists who have worked at UNISOR, the Joint Institute, and HHIRF. The planning committee includes F. Bertrand, K. Carter, D. Feng, J. H. Hamilton (Chair), L. L. Riedinger, and R. L. Robinson.

Symposium on Reflections and Directions
in Low Energy Heavy-Ion Physics

CELEBRATING TWENTY YEARS OF UNISOR AND
TEN YEARS OF THE JOINT INSTITUTE FOR HEAVY ION RESEARCH

October 14, 1991

9:00 am

Welcome and Overview -- J. Hamilton
Addresses by political, funding officials
University-National Laboratory Cooperation -- Allan Bromley

UNISOR History -- E. Zganjr, K. Carter
JIHIR History -- L. Riedinger

"International View of UNISOR and the JIHIR" -- W. Greiner

Tour of Facilities

Lunch

1:00 pm

UNISOR Overview
"Spectroscopy Results" -- two of K. Carter
A. Ramayya
W. Schmidt-Ott
J. Wood
B. Walters
E. Zganjar

"On-line Nuclear Orientation" -- N. Stone

"Laser-related research" -- C. Bingham

"Theory" -- R. Bengtsson

Coffee

4:00 pm

"High-spin Spectroscopy" -- two of M. Riley
R. Wyss
B. Herskind

"Heavy-ion Transfer" -- P. Butler

"HILI" -- C. Maguire

"Atomic Physics"

6:00-7:00 pm

Barbecue

7:00 pm

Theory Month -- three of four C. Mahaux
D. Brink
S. Landowne
J. Maruhn

October 15, 1991

9:00 am Nuclear Structure Theory at the Joint Institute
 A. Faessler
 J. Dudek
 W. Nazarewicz
 J. Y. Zhang
 Y. S. Chen
 D. H. Feng

12:00 pm Lunch

1:00 pm Hot Dipoles
 "Experiment" -- M. Thoennessen
 "Theory" -- R. Broglia

2:10 pm Coffee

2:30 pm Future Directions

 "Recoil Mass Spectrometer" -- T. Cormier
 "Radioactive Ion Beams" -- J. D. Garrett
 "Gammasphere" -- I. Y. Lee
 "Astrophysics" -- A. Champagne

 "Closing Remarks" -- J. Hamilton

Symposium Dinner 7:30 pm

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02a. Paper	New Research Facilities for HHIRF (16 pp.)		(b)(1)	

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: Speech (1) [8 of 11] [1991]

Date Closed:	2/23/2010	OA/ID Number:	62017-002
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]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

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

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(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.
02b. Letter	To: J. Erskine From: J.H. Hamilton Re: Proposal for Center for Computational Science (1 pp.)	2/20/91	(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: Speech (1) [8 of 11] [1991]

Date Closed:	2/23/2010	OA/ID Number:	62017-002
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]
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C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

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(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.
02c. Proposal	Proposal for Center for Computational Science (6 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
WHORM Cat.:
File Location: Invitations: Speech (1) [8 of 11] [1991]

Date Closed:	2/23/2010	OA/ID Number:	62017-002
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]
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PRM. Removed as a personal record misfile.

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"CORRESPONDENCE TRACKING"

TYPE:

INFORMATION-SPEECH

DOCUMENT NUMBER: 9120815

FROM:

BENDER, Charlie: OHIO SUPERCOMPUTER CENTER

TO:

DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/18/91

SUBJECT: INFORMATION ABOUT THE ROLE THAT OSU IS CURRENTLY
PLAYING TO FORWARD THE GOALS OF OSTP IN ANTICIPATION
OF THE MARCH 22nd COMMENCEMENT ADDRESS.

ASSIGNED TO:

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

COPIES TO: D. Allan Bromley
Steve Olson
Dr. Wong

Steve Olson has the
action in this - for DAB's
speech

WHITE HOUSE TRACKING #:

CONTACT PERSON:

ICF

REMARKS:

DATE RECEIVED: 03/20/91

invitation -
FILE: SPEECH ~~XXXXXXXXXX~~



1224 Kinnear Road
Columbus, OH 43212-1163
(614) 292-9248
oscinfo@osc.edu

9120815
RECEIVED

91 MAR 22 4 10 PM '91

OFFICE OF THE
DIRECTOR

March 18, 1991

D. Allan Bromley
Director
Office of Science and Technology Policy
Executive Office of the President
Washington, DC 20506

Dear Dr. Bromley:

In anticipation of your commencement address at the Ohio State University on March 22, I am sending information about the roles that OSU and two other related organizations are currently playing to forward the goals of the office of Science and Technology Policy (particularly the High Performance Computing Initiative) as well as to offer to expand these roles wherever possible.

This document contains background materials about each of these organizations:

- * The Ohio Supercomputer Center (OSC)
- * The Ohio State University Office of Academic Computing
- * The Coalition of Academic Supercomputing Centers (CASC)

As a state initiative, the Ohio Supercomputer Center is supplying high performance technologies to a large, statewide academic constituency and to an approximate 25 commercial institutions. The Center is the hub of the Ohio Academic Resource Network (OARnet), which is one of the largest U.S. statewide networks and part of the National Science Foundation's NSFnet. Not only does OARnet provide service, but it has a research component, making it unique and forwardlooking among state and regional networks. The Ohio Supercomputer Center has become an integral part of Ohio's technological infrastructure and is helping lead Ohio's high technology expansion, both in terms of hardware/software and technology transfer. The OSC is looking for ways that it can contribute to initiatives in education and R&D, and recently accepted an NSF grant to establish a course in supercomputing for undergraduates. Though it started as a delivery system for CRAY computing cycles, the OSC is developing into a science and technology center for the state of Ohio.

The Office of Academic Computing at the Ohio State University (OSU) is developing a comprehensive plan to increase access to computing at all levels for students and faculty. Ohio State's lead in this arena will have a great impact on student life. Academic Computing at OSU would like to continue its efforts to broaden access to computing, high performance computing, and network capabilities in conjunction with the national effort.

The Ohio Supercomputer Center
Page Two
March 18, 1991

The Coalition of Academic Supercomputing Centers is comprised of more than 20 institutions across the country, including the NSF centers, who want to strengthen high-performance computing at their locations by joining forces, sharing knowledge, and cooperating on a national level. CASC is fully supportive of the High Performance Computing Initiative and would like to learn how its members can contribute to the HPCI's success.

There is a strong effort in Ohio and at The Ohio State University to be active in science and technology initiatives. The Ohio Supercomputer Center and the Ohio State University Office of Academic Computing are two organizations with great potential for contributing to the success of the goals of the Office of Science and Technology Policy, particularly the High Performance Computing Initiative.

I hope there will be an opportunity for you to visit the Ohio Supercomputer Center while you are on the campus of the Ohio State University.

Sincerely,

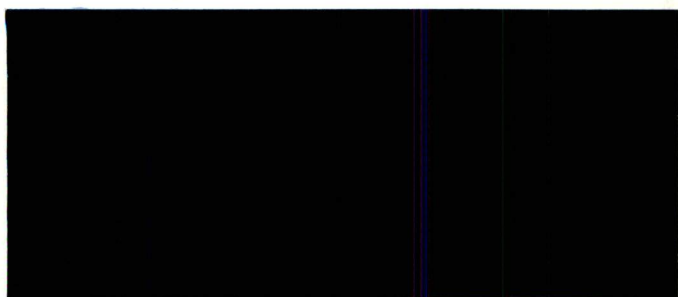
A handwritten signature in cursive script that reads "Charlie Bender". The signature is written in dark ink and is positioned above the printed name and titles.

Charlie Bender
Director, Ohio Supercomputer Center
Director, Ohio State University Office of Academic Computing
Chair, Coalition of Academic Supercomputer Centers

Enclosures

Ohio Supercomputer Center
1224 Kinnear Road
Columbus, Ohio 43212
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BRIEFING
MARCH 1991

OHIO
SUPERCOMPUTER
CENTER

Information Technology for Economic Development The Ohio Supercomputer Center's Role

The Ohio Supercomputer Center's Role in Information Technology for Economic Development

High-tech research and development have been identified nationwide as means of achieving future commercial prosperity. Last year the Ohio Science and Technology Commission (OSTC) echoed its support for the transfer to industry of innovative technology, including information technology. The recent OhioForward policy paper from Governor Voinovich states that "Ohio must compete in an information and technology-based world economy." This report discusses the potential for transfer of information technology from on-going Ohio Supercomputer Center (OSC) initiatives to Ohio industry.

The OSC is in a pivotal position with respect to information technology development and advancement. Access to national computing and networking programs and participation in national planning organizations keeps staff abreast of new developments in a range of sub-disciplines. By virtue of the computing done by university faculty throughout the state, OSC staff have access to university-based information technology and R&D. Quarterly meetings with the directors of the Ohio Higher Education Computing Centers (OHECC) and an internal database documenting university research projects are just two of the resources available for staff, who often function as facilitators of technology advancement.

Although technology transfer from the Center is already happening, it is a by-product, not a mainstay, of our mission. In the future, we hope to have the financial resources to make this thrust more central to our programs. We can list the following benefits for Ohio companies:

- better products and manufacturing processes as a result of access to high-end computing on a pay-as-you-go basis
- shorter product development time lines and lower costs when prototypes are simulated
- a reliable telecommunications infrastructure over which marketing, financial, and correspondence can occur
- stronger and faster company information systems because of exposure to the most up-to-date computing hardware and software
- access to a broad spectrum of computing devices for trial before making company purchases
- technology and computing instruction to ensure a technically outstanding workforce

apE: A Development Project Takes on Economic Worth

The apE visualization software package is one of the OSC's biggest economic development successes. The apE package has allowed scientists and engineers to visualize processes and products on the screen as information is output from medium-scale and large-scale computers. For example, a petroleum engineer, armed with an idea for improving her company's process for stimulating a domestic oil well, can now test – and simultaneously watch on the screen of her workstation – the boring of a path into the layers of a rock formation. New processes and procedures can be tested from an office building far away from any oil well, avoiding costly trials and time delays.

The announcement of apE version 2.0 in fall 1990 caused such an onslaught of attention that we are still addressing the hundreds of orders for software distribution. Of these orders, fully 48% are from the commercial sector. We are currently negotiating with a local firm who may take on marketing and supporting apE.

The apE product, which combines the power of a supercomputer with the ease of viewing of results on a video screen, has received international acclaim and major funding from Cray Research, the top supercomputer manufacturer in the U.S.

Ohio Technology Infrastructure Must Be Strong

The OSTC report asserts that we must "Ensure that Ohio science and technology infrastructure is sufficient to stimulate economic growth." The Ohio Supercomputer Center and the Ohio Academic Resources Network (OARnet), which operates communications for OSC and the Ohio Library Information Network (OhioLINK), are noted as examples of successful infrastructure investments.

The economic advantages for small and medium-sized companies of using the CRAY supercomputer and other resources at the Center are clear; computing time and consulting at cost-recovery rates can fill the gap for companies that cannot afford up-front equipment and software investments. Product development schedules can be shortened and manufacturing processes tested using supercomputer simulations.

Because the production of tempered glass is conducted on the supercomputer, Glasstech, a small Toledo-area company, is able to bring a better product to market more quickly than before. Computer simulations have quantified the conditions under which the manufacturing process should be carried out, and thus Glasstech avoids costly experiments and failed trials.

The quality of the end product is easily optimized through simulations of multiple test cases.

OARnet, the OSC's statewide network, is already providing businesses with communications support for correspondence and computing. In a few years OARnet's quick and reliable information delivery system could carry items such as product orders, marketing information, and financial and economic data instantly to Ohio companies. Through the OhioLINK program, which connects libraries and information resources, OARnet will actually become the communications medium for companies that will provide information services to all types of organizations.

Supercomputer and network resources are obvious benefits of the Center to economic development. The following section details some of the less apparent programs that have potential for furthering the development and exchange of information technology in Ohio.

The Industrial Program

The OSC industrial program offers cost-recovery computing services and expert consulting to Ohio companies conducting research and development. The number of companies contracting with OSC is doubling every year. With the growing role of computing in product design and development, we expect our program's size to increase.

While delivering high-quality computing services and consulting, the OSC has brought together an experienced and top-notch staff of information technology developers with backgrounds in education and industry. We find that the user support services we provide are becoming as important to companies as our supercomputing and graphics services. In fact, our training programs and the exposure of industrial personnel to technology is effectively providing continuing education for the work force. The combination of facilities, training, and consulting has put OSC in a unique position to affect the modernization and improvement of information systems within Ohio companies.

Technology transfer is a by-product of our contacts with companies. For example, TOSOH SMD, a manufacturing firm in Grove City, Ohio, has taken home technology to which they were introduced at an OSC facility. When the technology they were using at the Center brought demonstrable improvements in business, they installed similar facilities at their home base.

The statewide network, OARnet, is already a central player in the OSC Industrial Program. Over the network, companies, consultants, computer

engineers, administrators, and university faculty exchange information and computing data. The services delivered by the Industrial Program help develop the computer expertise in companies; each connecting organization receives extensive consultation on networking software and hardware options and operation procedures. The OARnet data network is growing in importance for computing and information services delivery to companies in Ohio.

Other Initiatives Underway at the OSC

The following technology initiatives, which have been developed in conjunction with the Center's service mission, include integrated computer systems and computer software that could be the basis for information technology development in the commercial sector. The initiatives listed below have attracted collaborators and users on a national level. In most cases, technology transfer to industry regularly occurs.

- *Ohio Visualization Laboratory.* The Ohio Visualization Laboratory supports computational research by providing state-of-the-art graphics equipment and software for scientific visualization. Academic and industrial researchers can visit the facility to take advantage of high-end graphics workstations and peripheral equipment, complete video editing and film services, and visualization consulting.
- *Benchmarking Laboratory.* The Ohio Visualization Laboratory at the OSC served as a benchmarking laboratory for TOSOH SMD, which was mentioned above. The experience, which is not unique to TOSOH's case, suggests that OSC could provide central access to and training on technology that can be tried by those who will use it. OVL provides a "vendor-free" environment for comparing the capabilities of computers and software for academic and industrial organizations interested in purchasing equipment. This process brings engineers and technicians in contact with technology and equipment to which they may not otherwise have access; inappropriate hardware and software expenditures could be minimized.
- *Mass Data Storage.* A mass storage system handles the growing data that computer users generate and must have available to them on a long-term basis. The OSC is developing interfaces that will control the relative storage on quick-access and long-term storage devices. The technology used and developed in this effort can be directly applied to information systems at medium-sized and large companies.
- *User Training.* The OSC teaches computer technology classes that are useful to users in many types of organizations. Classroom facilities at

OSC include a variety of workstation setups, a multi-media center, and overhead video projection. The classes deliver an entire "getting started" series in only three days, a timetable that is short enough to attract industry participants.

Recently OSC has begun delivering the first of a group of computer courses via computer based education. Computer-based education lends the student the freedom to learn complex concepts at his or her own pace. The interface demonstrates complex concepts in an easy-to-comprehend, graphical format. We are the first supercomputer center to use this emerging tool for distributed education.

Computer and Interface Development Efforts Applicable to Information Systems in Industry

The following information technology systems have clear potential for transfer to information systems used in companies.

- *The Visual Multicomputer Environment.* The Visual Multicomputer Environment, a project still under development, will allow researchers to simultaneously tap the efforts of the most innovative types of computers available today through a graphical user interface. The OSC is currently seeking federal funding for the research and development involved in this project.
- *Distributed Memory Supercomputer.* In conjunction with the Office of Academic Computing (OAC) at The Ohio State University, the OSC is endeavoring to build a prototype supercomputer from off-the-shelf microcomputer chips and connection hardware. The machine will run an existing operating system that has been developed for distributed memory parallel computers. The operating system, on which OAC and OSC engineers are continuing work, is currently running at over 130 sites at universities and companies in Europe and the U.S.
- *OhioLINK's Center for Electronic Library Technology Evaluation (CELTE).* The OSC will be housing the OhioLINK's CELTE project, which is a center for studying the use of OhioLINK and for testing new design concepts and capabilities. The OhioLINK project will electronically link the holdings of libraries of institutions of higher education and other information suppliers and databases in Ohio. Hardware, software, and user interfaces for OhioLINK will be developed by a third-party vendor, which has not yet been chosen. Libraries will purchase the configurations and make them available to librarians, faculty, staff, and students. The workstations will also be available to other organizations and individuals; provision for using OhioLINK resources from home and from personal and other computers.

The Next Step

Many promising transfers of technology take place as a result of our everyday activities. We would like to discuss the potential for taking better advantage of OSC initiatives for economic development with the Ohio Department of Development. Although we are interested in exploiting the potential for technology exchange with the commercial sector, our current charter and our financial resources do not currently point to that direction. Perhaps this report is a step toward having OSC take a more formal role in enhancing information technology development in Ohio.

**Special Report
on the State of the
Ohio Supercomputer
Center
March 1991**

The Payoff

What Ohio's Supercomputer Investment is Doing for Ohio

Ohio's Investment Is Generating Research Revenue.

Nearly half of the Ohio Supercomputer Center's (OSC) academic research groups are funded by external sources such as the National Science Foundation, the U.S. Department of Energy, and corporate grants. As part of Ohio's research infrastructure, the OSC is aiding these academic research groups to acquire and increase external funding, which in 1990 totaled \$21.8 million. Although it is impossible to fully quantify OSC's impact on Ohio's research improvements, OSC users represent at least \$21.8 million in external funding, signifying that the OSC is a critical leveraging tool for funds in the federal and national arenas.

Ohio has received nearly \$10 million from the National Science Foundation to establish a Science and Technology Research Center (STC) at Kent State University's Liquid Crystal Institute in collaboration with Case Western Reserve University and the University of Akron. The state of Ohio, including the Ohio Supercomputer Center, played major roles by pledging matching funds and computational resources. With support from the Ohio Department of Development, the Ohio Board of Regents, Defense Advanced Research Projects Agency (DARPA), and private industry, the Center will be the point of infusion of more than \$18 million over its initial five years. The new Center for Advanced Liquid Crystal Optical Materials (ALCOM) brings with it leading-edge research and national recognition in a new growth area for Ohio. Of the 143 proposals submitted to the NSF, Ohio's was the first to be funded. Kent State's was the only proposal from Ohio that made it to the final list. Included in the STC is a research initiative titled "Theory and Computation," which is buttressed by 2000 hours of OSC supercomputer resources. With the OSC CRAY Y-MP, the physicists and mathematicians will be able to attack previously intractable theoretical and technological problems.

Work in progress at the University of Dayton Research Institute illustrates that the availability of OSC's resources increases the value of research proposals. Dr. Joseph P. Gallagher reports that he is conducting structural integrity research on a number of contracts with various federal and private organizations; eight of the projects rely heavily on high-performance computing. According to Gallagher, several of the contracts were contingent upon availability of OSC resources. Dollar value of the contracts is estimated at \$2.5 million. Two of Gallagher's eight computing contracts are with Wright Research and Development Center at Wright Patterson Air Force Base, further illustrating the economic value of a high-performance computing resource in catalyzing cooperative efforts among Ohio institutions.

Ohio also receives \$750,000 a year in research grants from Cray Research, Inc., manufacturer of the CRAY Y-MP. Each year, Cray Research supports approximately 25 research projects throughout Ohio, providing an impor-

The state of Ohio created the Ohio Supercomputer Center to be a resource for science and technology. And just as good resources do, the OSC is attracting and generating additional resources: collaborations, ideas, funding, people.

tant source of funding for leading-edge, computationally-daring investigations. To date, Cray has provided over \$3 million.

Ohio's Investment Has Created a Locus for Research and High-Technology in Ohio.

Any Ohio supercomputer user will tell you, "I couldn't do what I do without the CRAY." Many are also finding that a great advantage they have gained from the OSC is the extramural collaborations and ideas spawned by a centralized, statewide, high-technology center.

Leading the effort to bring Ohio's research community together is OSC's Statewide Users Group (SUG). SUG, composed of users from each participating university, college, and industry, sets policies and programs and seeks to facilitate research in Ohio.

Dr. Janet Del Bene, a computational quantum chemist at Youngstown State University, reports that since joining the community of Ohio supercomputer users, she is working with colleagues at other institutions. Supported by the Ohio Academic Resources Network (OARnet), they work together daily from great distances just as if they shared an office. She comments, "OSC has led to collaborations with another quantum chemist at Ohio State University, and to our collaboration with an experimental chemist at the University of California. The CRAY has made it possible for me to pursue important projects which not long ago were beyond the realm of possibility; but just as important is the electronic communication network that is now available to me. Distance is no longer a factor in considering collaborative research efforts: we are all as close as our computers."

The Ohio Supercomputer Center actively fosters new collaborations throughout the state by conducting symposia, colloquia, and workshops on a variety of subjects. At these meetings, CRAY users and non-users meet and discuss common interests. Should they want to join forces, Ohio's research infrastructure, including the OSC and OARnet, is ready to support them.

A special collaborative program is bringing nationally renowned scientists to Ohio for yearlong stays. OSC's Visitor Program supports collaborations and exchanges between Ohio researchers and out-of-state researchers by providing large grants of CRAY resources to highly meritorious scientists with computationally-demanding research agendas. Two such scientists have come to Ohio through this distinguished program to work with their Ohio colleagues.

Finally, OSC users are experiencing what was suspected to be one of the greatest benefits of increased computing capability. They are conducting research that was previously impossible - and what's more, research ideas

are broadening as these researchers work and learn, unlimited by computer power. Bowling Green State University researcher Comer Duncan explains, "The supercomputer is creating a revolution in research. Five years ago, the types of research projects we're doing today were just not possible."

Duncan is working to explain phenomena which occur near black holes. He creates simulations of stellar objects colliding with black holes and watches the reactions with an eye toward identifying those kinds of events that astronomers might look out for. The simulations are so large in computational size that the only machine that can handle the calculations is a supercomputer. Duncan reports, "The powerful combination of the supercomputer and the Center's scientific visualization system, apE, enables me to gain intuition about these complex phenomena in a way which promotes real scientific insight."

Ohio's Investment Is Improving Ohio's Research Personnel.

The availability of the OSC to four year colleges throughout the state is an entirely new recruiting edge for these schools: they now can attract researchers and other faculty who are accustomed to having access to networks and high-end computing. OSC's supercomputing resources are directly responsible for attracting at least four of Ohio's Eminent Scholars as well.

Over the past three years, Ohio has seen expansion in the uses of supercomputing. In the early days of the OSC, most research was conducted in traditionally computational areas like chemistry, engineering, and physics. Researchers in those fields were comfortable with high-end computing. Since then, researchers investigating topics as diverse as sheep genetics, congressional voting patterns, and corn silo mechanics have come to the OSC for high-powered computational resources.

The number of new scientists and engineers using the CRAY has grown significantly. In 1987, about 150 scientists logged onto the CRAY X-MP. In 1990, more than 1400 individual scientists have accounts on the Center's CRAY Y-MP. About 550 of these users are known as principal investigators, the faculty-level leaders of research projects. The OSC encourages growth in its user base through publicity, training, and continuing education.

As use of the CRAY Y-MP grows, so does the quality and quantity of its users. Though difficult to quantify in dollars, these human assets are

University and Industrial Programs

priceless to Ohio's future.

University Program: Empowering Academic Research

OSC's University Program provides academic researchers with all of the tools needed to maximize their computational research efforts including:

- software
- telephone and on-line consulting
- training and workshops at sites throughout Ohio
- continuing education through special meetings
- documentation, newsletters, daily messages
- scientific visualization capabilities
- network access via OARnet
- on-line information services

There are approximately 1400 academic users of the Ohio Supercomputer Center: faculty, graduate students, and postdoctoral researchers. Through the Statewide Users Group and its subcommittees, academic users participate in all aspects of the operation and direction of the OSC. Consultants located at each of OSC's colleges and universities provide local support to users.

Industrial Program: Making Industry More Competitive

Glasstech Corporation has reported superior improvements in their development cycle of windshield-glass molding machinery; TOSOH SMD reports that the OSC has made them more competitive in the magnetic materials and semiconductor industries; and a utility is using the OSC to maximize seasonal use of natural resources. These are some examples of OSC industrial use.

Few companies can afford to buy a supercomputer; but plenty need a supercomputer's power. This is the premise of the OSC Industrial Program: providing a time-shared supercomputer makes this powerful tool affordable for even the smallest of companies and on an as-needed basis. From the company that only needs a supercomputer once a year to the company that uses the supercomputer daily, the OSC can provide time-sensitive computing power, as well as training, consulting, and continuing education. The OSC makes the CRAY a production tool for Ohio industry.

Every year since 1987, the OSC Industrial Program membership (and the cost-recovery revenues generated by industrial usage) has doubled. The kinds and sizes of industries vary from two-person consulting firms to Ohio's largest corporations, from engineering to chemical research. As word of the availability of the CRAY spreads, more and more businesses are learning how the OSC can assist them.

Industrial Program members are not only using CRAY computing time, but are working with the OSC to refine their research methods and computer

The largest constituency of the Ohio Supercomputer Center is its academic research community. The OSC has created a program for delivering not only CRAY cycles, but also a variety of services to enhance usage of the world's most powerful supercomputer.

The Ohio Supercomputer Center strives to provide supercomputing and related technologies to Ohio industry in belief that transferring technology to industry will make all of Ohio stronger.

codes, and are enjoying benefits from additional facilities such as the Ohio Visualization Laboratory and OARnet. The Ohio Supercomputer Center is transferring technology to Ohio industry, helping them help themselves.

Through marketing efforts such as Super Challenge Ohio, seminars around the state, and specialized mailings, the OSC is striving to reach the many Ohio businesses that can benefit from its services. Super Challenge Ohio, a seed-money program funded by Cray Research, Inc., introduced Ohio companies to supercomputing by providing free computing time to participants. The OSC has conducted industrial seminars in every major city in the state and is systematically contacting potential users through the mail. With these efforts, the OSC is gaining industrial participation throughout the state.

Ohio Supercomputer Center Industrial Program Members

AT&T Bell Labs
Aircraft Braking Systems
American Gas Association Laboratories
Battelle Memorial Institute
BF Goodrich
BP America
Columbia Gas System Service Corporation
Control Data Corporation
Copeland Corporation
Davis Besse/Toledo Edison
General Tire
GenCorp
Glasstech, Inc.
Goodyear Tire & Rubber Company
Ohio CAE, Inc.
Owens-Corning Fiberglass
Paul J. Ford and Company
Performance Computing Corporation
Procter & Gamble
Sandeep Vijayakar Consulting
Severn Inc.
Sherwin-Williams Company
Stanley-Bostitch, Inc.
Stevens Institute of Technology
Structural Dynamics Research Corporation
Technology Utilization Corporation
Teledyne CAE
The Timken Company, Timken Research
TOSOH SMD, Inc.
Tri-Tech Corporation
Technology Utilization Corporation
VRA, Inc.

Service Program Connecting People Throughout Ohio and Across the Country

High School Students Get a Leg-Up on Computing

The OSC is acting on the belief that Ohio's future computational scientists need early experience with technology and its concepts. The OSC is keenly interested in developing supercomputer users for the next century. Through its High School Program, the Center is introducing Ohio high school students to the concepts and applications of high-performance computing and graphics by conducting workshops, formal courses, trade show exhibits, and tours. Since 1987, the OSC has hosted more than 350 students in programs like the Governor's Summer Institute, the Martin Essex School for the Gifted, and Project Lead. The OSC also coordinates six-week internships for high schools students, placing them with computational scientists throughout the state.

New Program for Undergraduates

The National Science Foundation recently funded the OSC to establish a course in supercomputing for undergraduates. Slated to begin in June, 1991, OSC's "Research Experience for Undergraduates" course will explore computational research methods in fluid dynamics including scientific visualization. The junior and senior level undergraduates will work on the CRAY Y-MP and other high-end computers during the 10-week course.

Involved on a National Level

The OSC is a founding member of the Coalition of Academic Supercomputer Centers (CASC), a national consortium of over 20 centers, including all of the NSF supercomputer centers, working together to advance the uses of high-performance computing throughout the country. OSC's director, Charlie Bender, is serving as the first chairperson of CASC. Membership of the coalition includes many of the pivotal players in high-performance computing in the United States. Its powerful membership is actively supporting the federal High Performance Computing Initiative which, if fully supported, will mean broader technological resources for Ohio and all of the United States. CASC is also developing initiatives to improve the educational aspects of high-performance computing throughout the country.

Coalition of Academic Supercomputer Centers Members:

Alabama Supercomputer Network Authority
Arizona State University
California Institute of Technology
Cornell Theory Center (NSF)
Massachusetts Institute of Technology
Minnesota Supercomputer Center
National Center for Supercomputing Applications (NSF)
North Carolina Supercomputer Center

Service to the many communities of supercomputer users and friends is an integral part of the charter of the Ohio Supercomputer Center. Through the Service Program, the OSC demonstrates that housing the CRAY is only the tip of the iceberg of the responsibilities and opportunities of a high-performance computer center.

(CASC Members, continued)

Ohio Supercomputer Center

Pittsburgh Supercomputing Center (NSF)

Purdue University

San Diego Supercomputer Center (NSF)

Texas A&M University Supercomputer Center

University of Florida

University of Georgia

University of Kentucky

University of Michigan ITD Computing Center

University of Texas System Center for High Performance Computing

Utah Supercomputing Institute

Meetings Offer Wealth of Opportunities

Rich in reward for both provider and participant are the many meetings that the Ohio Supercomputer Center hosts each month. Catering to a variety of interests, the meetings cover timely topics, provide opportunities for making new colleagues, and spread appreciation for the advances and applications of high-performance computing to a large number of scientists, students, and laypeople. The meetings, many of which include international speakers and attendees, reflect positively on Ohio's commitment to science and technology and help publicize the OSC around the world.

Regular Meetings:

Monthly Colloquia Series

Bimonthly Statewide Users Groups

Quarterly Regional Supercomputer Overviews and Workshops

Major Symposia:

September 1988 First OSC Symposium on Supercomputing

June 1989 First Computational Fluid Dynamics Workshop

September 1989 Workshop on *ab initio* Chemistry Methods

September 1989 Computational Fluid Dynamics Interest Group

May 1990 Workshop on Density Functional Theory Methods

Technology Transfer

Connecting people and ideas creates opportunities for growth for Ohio. The OSC supports the efforts of technology-transfer alliances like the Ohio Computer Technology Center, the State of Ohio Edison Centers, the Columbus Area Chamber of Commerce, and the Dayton Area Technology Network. Active communication and participation with these groups ensures that the state's resources are shared and that new alliances and new ideas have a chance to be formed.

Research and Development Initiatives

OARnet

Piggybacking on Ohio's SONIC telecommunications links, OARnet was begun in 1987 to provide network access to the CRAY. The goals of the 1987 OARnet initiative have been achieved: OARnet's capacity has been increased to provide more efficient data transmission for users; and OARnet is attracting additional usage and resources, like OhioLINK. In the future, increased speeds may make videoconferencing commonplace, and scientific computing results will be visualized in real time from several hundred miles away.

apE

apE is software that helps researchers see in pictures what their computations say in stacks of data. It has become a national leader in scientific visualization technology.

In 1987, the apE initiative was undertaken to showcase the Ohio Supercomputer Center and to leverage existing capability from a graphics group at the Ohio State University. For three years, computer graphics specialists have been developing the apE software to help OSC's user community visualize the data created on the CRAY. apE is now in its second version, receiving national and international acclaim as a premier scientific visualization software environment. As a research initiative, apE represents the leading edge in visualization technology and gives Ohio the lead in research aimed at defining new computing environments.

The advantage to users of apE is that it was developed for and with the cooperation of Ohio computational scientists. The developers sculpted apE to be easy to use so that researchers can proceed with their research aided, not hindered, by visualization tools.

Computational Chemistry and Computational Mechanics

Specialization allows the OSC to focus its research efforts where a large number of its user community is working. The OSC has chosen to specialize its research initiatives in computational chemistry and computational mechanics. These areas come naturally to the state of Ohio where so much industrial and academic interest exists, from drug design to tire manufacturing, to aerospace applications.

As an investment in the future, the Center is looking to apply expertise from the two initiatives to a field that has tremendous possibilities for the state of Ohio: combustion research. The physics of combustion involve both chemistry and fluid mechanics. Ohio is a large supplier and consumer of fossil fuels, especially coal. The combustion of fossil fuels accounts for more than 80% of sulfur dioxide and oxides of nitrogen. These elements are responsible for environmental hazards like acid rain, air pollution, and

The tradition of the OSC has been to select special research and development initiatives that play on existing expertise in Ohio and that have the potential for positively impacting the Center's and the State's futures. OSC's first initiatives, both begun in 1987, were OARnet and apE. New initiatives include combustion research and future computing-center architectures development.

global warming.

With new technologies, Ohio can combat environmental damage and improve the use of coal resources by increasing the efficiency of coal combustion and decreasing the output of harmful gases. New combustion technologies are also applicable to the automotive and aerospace industries as well. The Ohio Supercomputer Center is looking to nurture development of these new technologies by catalyzing collaborative research efforts and by supplying expertise and computational resources.

Moving Toward the Future for Supercomputing in Ohio

Ohio must stay abreast of developments in information technology in order to survive in the next century.

The uncertainty of future supercomputing solutions is an advantage to the future position of Ohio in the supercomputing community. The OSC proposes to enhance the current supercomputer and aims to encourage medium-scale computing at universities to support the increasing computational appetites of scientific endeavors. These measures will leave time to explore alternatives for funding and future supercomputers. Solutions for the future will be refined as new technical alternatives come forth. In the long term, OSC's strategy is to use new technologies while updating old ones.

The CRAY Y-MP8/864 is a premier computing resource that will support Ohio research efforts for many years. While the OSC can expect to have the computing resources needed to address computational needs in the near future, it is setting forth a plan to support scientists who will use its resources in the future. One of the most important challenges facing the OSC is enhancing the Y-MP as computational needs grow.

To do this, the OSC is staying abreast of developments in high-performance computing, particularly in a promising technology called parallel processing. One way in which the OSC is looking to the future is by undertaking an initiative to develop software for parallel processing environments. The initiative is called the Visual Multicomputer Environment. A proposal for funding this initiative has been submitted to the National Science Foundation.

If funded, the Visual Multicomputer Environment initiative will create a "user friendly" atmosphere for bringing OSC researchers into the next century by making it as simple as possible for researchers to move their computations from the current environment to the future environment of parallel processing.

Infrastructure

The Foundation for Delivering Service

OVL: Visualizing Ohio's Computational Research Results

A picture is worth a thousand data points. The Ohio Visualization Laboratory (OVL) puts the power of visualization into the hands of Ohio researchers. OVL, an initiative of the Ohio Supercomputer Center, enables researchers who use the CRAY to produce high-quality visual output like video, slides, and on-screen displays. The OVL is an integral part of OSC's infrastructure because scientists depend on being able to see the results of their computations in pictures, not just as stacks of data printouts. The equipment and services of the OVL provide researchers with the essential tools for scientific visualization.

Mass Storage

The OSC is devising a Mass Storage System for its users. Mass storage is the electronic parking lot for the millions of pieces of data used by and generated by computational researchers. The system will accommodate current data storage needs and will be expandable to handle future needs as well. Designed by staff at the OSC, the system could become a model for other computing centers, businesses, and library institutions in Ohio and across the country which will be facing the need for large storage space and speedy retrieval of data. The Center will be working with industry to develop an integrated storage and retrieval solution that may be used for university library information systems and for commercial data systems in banking and other industries.

Linking Ohioans Together With OARnet, the Ohio Academic Resource Network

Begun in 1987 to connect early OSC users to the CRAY, OARnet has since taken on an independent role as a communication resource for many Ohioans, not just CRAY users. The Ohio Academic Resources Network (OARnet) brings computing and information services from around the world to Ohio desktops. Software and document delivery, access to supercomputers and bibliographic services, and communication with colleagues are only a few of the resources that are changing the way many Ohioans work. Reliance on OARnet is increasing throughout the state.

OARnet connections are available to Ohio academic institutions and corporations engaged in research, product development, or instruction. Colleges, universities, and industries currently use OARnet connections to communicate within the state and with colleagues across the country. OARnet is useful not only to faculty who do computing, but to those who have never used, and never will use, mainframe computing. OARnet means basic communications links between academic institutions for historians and anthropologists as well as engineers and physicists.

Fundamental to delivering OSC's university, industrial, service, and Research & Development programs is the nurturing of OSC's infrastructure. In addition to housing and operating the CRAY Y-MP8/864 supercomputer, the OSC also hosts a statewide data and communications network, a scientific visualization laboratory, and is developing an integrated system for storing the masses of data generated by the CRAY.

Research at Ohio's small state schools and private schools is being accelerated by OARnet access. Grants from the National Science Foundation have paid for much of the capital cost of adding these small schools to the network.

During Fall 1990, OARnet's main "backbone" of links was upgraded by 24 times in speed from 56 kilobytes per second to "T1," improving the rate at which researchers can communicate with the CRAY and other remote computers.

OARnet is making Ohio's unique resources accessible to scientists, educators, and libraries throughout Ohio and across the country. Ohio has the advantage of housing key service companies whose main product is electronically delivered information. This industrial sector, the educational institutions, and the libraries at those institutions are collaborating on projects and are creating an increasing demand for nationwide network access to Ohio. Convenient remote access to the supercomputer and the ability to transfer large amounts of data between the supercomputer and the user's home institution have been central to the success of the Ohio Supercomputer Center. Network services can be equally important to other establishments that are used via the network.

Demand for national network connectivity from Ohio is increasing. OARnet is meeting the need through connections to NSFNET, the national research and education network sponsored by the National Science Foundation, and to the Internet, which includes all the major international networks open to non-classified research.

OARnet advisors are working with academic institutions and industry across the state to evaluate future needs and to devise strategies, including federal grant proposals, for funding the network services provided to Ohio's researchers.

OARnet to Provide Networking for OhioLINK

OARnet has the potential to provide a great variety of services to the general public as well as scientists and engineers.

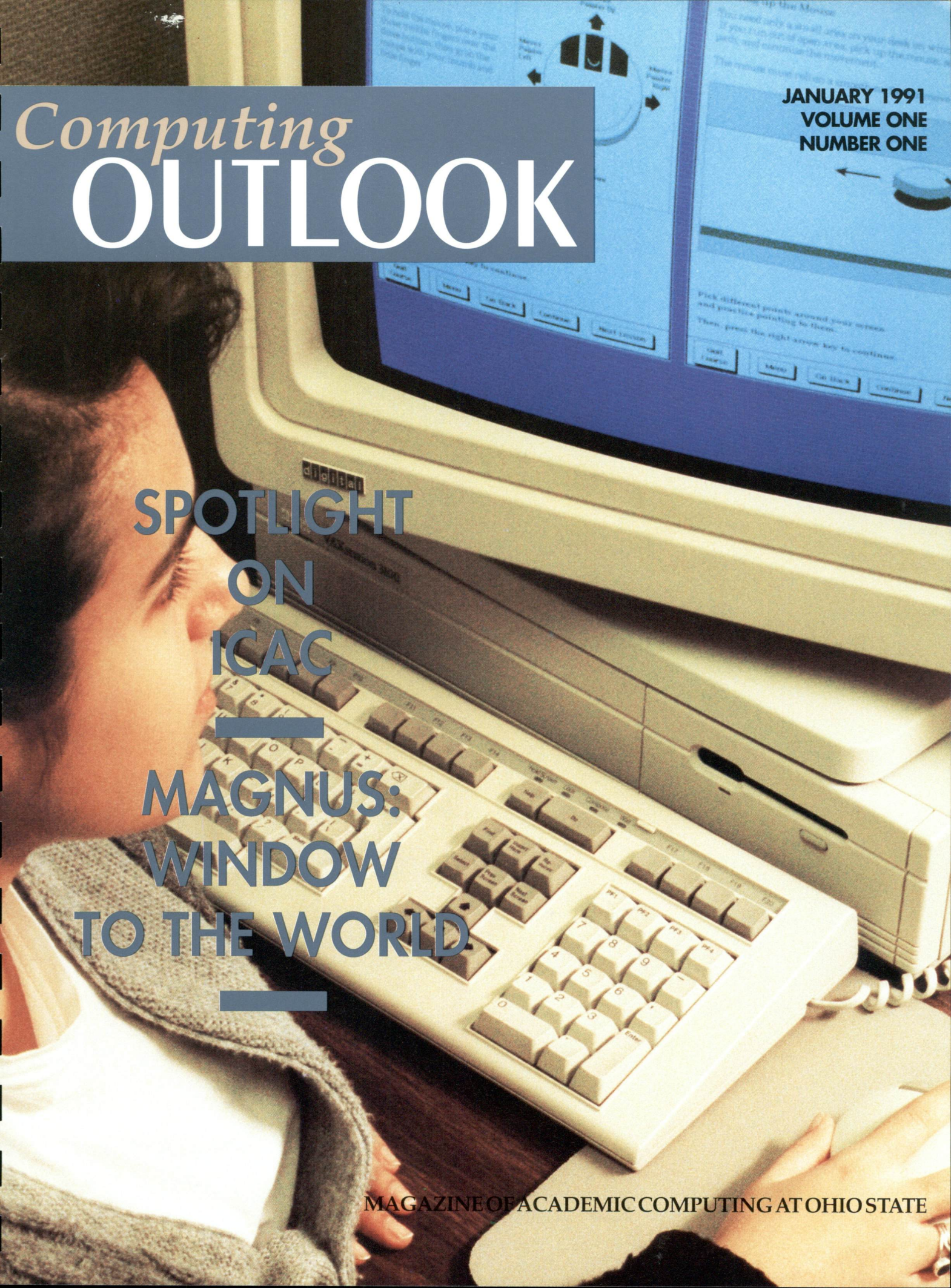
The Ohio Board of Regents has undertaken a project to build an integrated database and data delivery system between libraries at state academic institutions and at some private universities. Formerly known as OLIS, OhioLINK will automate access to circulation, bibliographic, and other information over OARnet. OhioLINK's scope will be more broad than Ohio libraries and their users, however; the system of information access machines will stretch from the individual campuses to OhioLINK Central, located at Wright State University, and extend into national and international networks. Six Universities, Bowling Green State University, Case

Western Reserve University, Central State University, University of Cincinnati, Miami University, and Wright State University, plan to install hardware and software for implementing OhioLINK over the next year and a half. By 1995, eleven other Ohio universities are expected to adopt the system. Helping users locate and retrieve data in useful formats from centrally-mounted databases anywhere in the networked world makes OhioLINK an information utility for the future of Ohio. The OhioLINK effort establishes only one of the spectrum of resources that will be available to users of OARnet.

A Final Word

The Ohio Supercomputer Center has become a nationally recognized high-performance computing center. The OSC is committed to excellence through continued service, deliberate development, and the pursuit of special initiatives which promise to lay the foundations for the future.

**THE
OHIO STATE
UNIVERSITY**

A woman with dark hair is seen in profile, looking at a vintage computer monitor. The monitor displays a blue screen with a mouse tutorial. The tutorial includes a diagram of a mouse with arrows indicating movement directions (Up, Down, Left, Right) and text instructions. The woman is wearing a grey sweater over a white shirt. The computer system is a beige tower unit with a keyboard and a mouse on a mousepad in front of it.

Computing **OUTLOOK**

**JANUARY 1991
VOLUME ONE
NUMBER ONE**

**SPOTLIGHT
ON
ICAC**

**MAGNUS:
WINDOW
TO THE WORLD**

MAGAZINE OF ACADEMIC COMPUTING AT OHIO STATE

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The Director's Viewpoint

*by Charlie Bender
Director of Academic Computing*

It's been a long two years. It was just in 1988 that we started rethinking the condition of academic computing at The Ohio State University. I can remember meeting with then-Provost Myles Brand and being asked the question, how can we do more, for less, to improve the computing situation on our campus?

Since then we have been through two phases and are well into the third. The first phase involved defining academic computing. Our approach was to get the faculty computing advisory committees to help develop the definition. After all, they were appointed by the provost to advise him on the state of academic computing. Incoming Provost Frederick Hutchinson reaffirmed the responsibility last fall.

The definition took shape and it centered on the computing needs of the faculty and students. Then it became clear that we had to shift the direction of central computing resources. Thus, we entered the second phase, and the Instruction and Research Computer Center, led by Bob Dixon, responded to this major challenge. More than 30

percent of IRCC resources were reprogrammed to focus on a future computing environment with distributed services to the academic communities, one that increases emphasis on instructional computing and yet supports the diverse needs of OSU researchers. The migration is well under way. There were pains; some things had to be turned off or at least scaled back, but in these tight financial times it had to be done.

We are now well into the third phase: moving forward with a vision. To involve the whole campus community, the provost asked us to develop a long-term blueprint for academic computing. We foresee this document as a planning aid to all university departments, schools, and colleges. We expect it to be distributed to the deans in January, well in time for planning the next academic year. Then we will enter the implementation phase. Three years ago, I never would have thought I'd be involved in such an activity! Our successes to date would not have been possible without the support of the provost, the advisory committees, the leadership of Bob Dixon, and the willingness to change on the part of his organization, the newly named Academic Computing Services. We're on our way.

The publication you are now reading is perhaps a good representation of what has and will continue to take place in this transitional era. Computers are more and more coming to be regarded simply as tools to get a job done, rather than as arcane objects of learning in themselves. To partially address that concept, we are pleased to introduce our new quarterly magazine, *Computing Outlook*, which will feature news of general computing interest. It also will occasionally cast a spotlight on those members of the campus community who are weaving this technology into the fabric of their own academic lives. We look forward to having you as readers, and to perhaps seeing you some day featured in these pages. Welcome.

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Design by Lynda Mackey
Cover photo by Geoffrey Hulse

Academic Computing Services (ACS, formerly the Instruction and Research Computer Center) introduced its newest computer to The Ohio State University campus in October, when it began moving DECsystem-20 users to MAGNUS, a UNIX-based machine.

MAGNUS is an acronym for Mail and Global News User System. It's a grand title, but ACS Director Robert Dixon feels sure that MAGNUS will live up to its billing. He believes that MAGNUS represents more than just a new computer for the university; it introduces a new way of life for campus computing. MAGNUS, as a conduit to electronic information in many forms, will serve as a window to the world for thousands of faculty, staff, and students.

Internet, a national network of computers at academic, research, government, and commercial organizations, and all of them are potential connections for the CWIS.

Soon to be placed on the menu are encyclopedic, bibliographic, statistical, and scientific measurement databases. But that is just the tip of the iceberg. Ohio State is joining with other universities around the country to make their CWISes compatible with and accessible to each other. This would mean that faculty, staff, and students here would be able to access all of the databases and information systems available at those other universities.

Also on the CWIS menu are electronic mail services. Last June Dixon announced that ACS

WINDOW TO THE WORLD

MAIL



AND



GLOBAL



NEWS



USER



SYSTEM

Computing has a new paradigm, Dixon says, and it is called the information age. In the beginning, computers were number crunchers and tools for researchers, but in recent years, computers have come to be used as much for text processing as for heavy statistical applications.

Enter MAGNUS, or more precisely, the Campus-wide Information System, sometimes referred to as CWIS. Eventually, MAGNUS will fade into the background as the CWIS moves to prominence. (ACS hopes to find an appropriate name soon for its new service; the CWIS at Princeton, for example, is called PNN.)

Right now the CWIS on MAGNUS is able to provide campus computer users with access to nearly 800 worldwide electronic bulletin boards from the USENET network. The newsgroups are actually forums on every imaginable topic from cold fusion to the fine arts.

To make novices feel at home, the CWIS sports a menu system. Even someone with no computer background can easily access and search not only the library catalog of The Ohio State University, but catalogs at institutions across the United States. Currently, more than 80 libraries nationwide are connected to the

was making free electronic mail accounts available to everyone on campus who wanted them, and the requests have been pouring in at the rate of 100 per week. MAGNUS is now ACS's primary computer for sending and receiving electronic mail for all these new users. MAGNUS has an easy-to-use mail system so that members of the Ohio State community can communicate freely with each other and with colleagues around the world. Users can send small mail messages or transfer large text files anywhere in a matter of seconds, making global collaboration a reality.

ACS is currently moving customers from two of its mainframe computers to MAGNUS. The older and more costly mainframes will be retired from public service and the newer, less expensive yet more powerful MAGNUS will take their place. Free additional accounts for OSU students, faculty, and staff will be available early in 1991 according to Dixon. Dixon says it is his hope that every person on campus will be able to have a computer account on either an ACS computer or on their own departmental computer connected to the campus and national networks.

William Miller is leader of Marketing and Customer Services for Academic Computing Services.

by William Miller

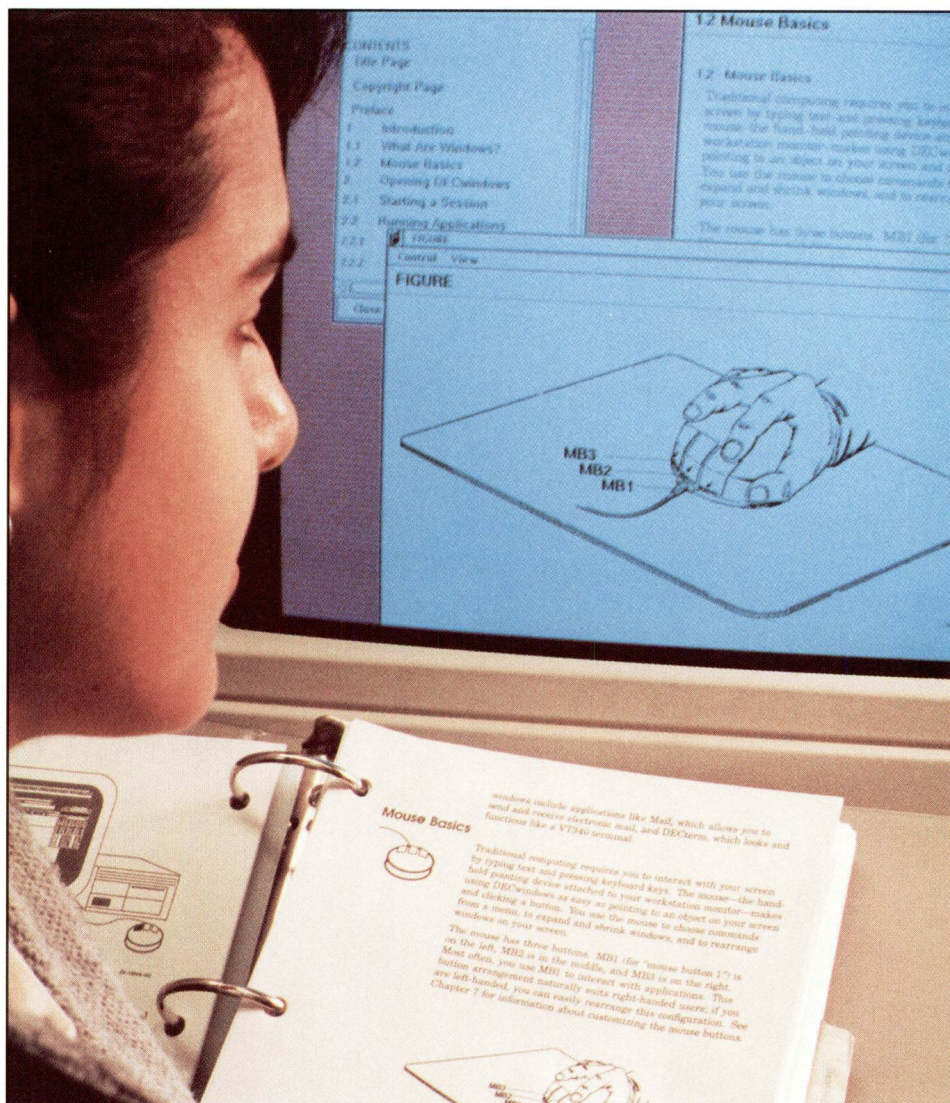
Getting an Early Start

by Geoffrey Hulse, System Manager
Koffolt Computer Graphics Laboratory

This fall, the Koffolt Computer Graphics Laboratory (KCGL) staff instituted a new program for the Department of Chemical Engineering to familiarize students with computers early in their undergraduate work. The Department's intent is to get students to think of the computer as a problem-solving tool integral to their professional lives rather than as just another part of an assignment to be completed.

For the first time, chemical engineering undergraduates are being given VAXcluster computer accounts that they can keep until they graduate. In the past, students were granted computer accounts only for the duration of the class they were enrolled in. Because the VAXcluster is connected to SONNET, the students have permanent e-mail addresses.

"I believe that getting the students to start using computers early in their chemical engineering education will prove to be beneficial," says Umit Ozkan, professor in Chemical Engineering and instructor of the 200-level course that initiates the new program. "After they complete their freshman level programming courses, they will start using computers in the chemical engineering curriculum instead of



GEORGEY HULSE

waiting until their junior year [to use] the computer skills that they acquired." And since coursework gets more demanding by the third year, students who already know how to use the computer will be one step ahead.

KCGL is operated by the Facilities Management Division of Academic Computing Services (ACS, formerly IRCC) for the College of Engineering. The KCGL staff wanted to teach hundreds of students about the complexities of computers and to do it without discouraging them, causing faculty to lose interest, or overworking the staff.

KCGL staff studied the situation and identified specific problems: lack of access to systems; long periods between computer assignments for students; lack of user-friendly tools and applications; and insufficient documentation and training.

As part of the solution, the department revised the Chemical Engineering 200 course. Sophomores are given a comprehensive assignment involving the use of workstations (powerful desk-based computers that feature some form of windowing system and a multitasking operating system), computer-based instruction, and commercial software applications. The assignment requires students in this class to accomplish the following:

1. Complete a series of courses on the computer, edit a file containing a quiz, and send the completed quiz to the instructor via electronic mail.
2. Use the computer's editing capabilities to edit and compile a FORTRAN program, then review it for errors.
3. Enter data and perform calculations in a spreadsheet computer program.
4. Graph the data from the spreadsheet using another program.

Successful completion of the assignments acquaints students with applications they can continue to use in all their major assignments. What's more, they learn how to use them in an integrated fashion—cutting and pasting between applications or using one program as input to another.

All this would have been difficult using the traditional terminal-to-computer environment, which requires that students learn complex syntax for the computer's operating system. KCGL staff wanted to give students a more comfortable introduction to the workstation environment and installed an application of the X window system called DECwindows on the VAXstations.

DECwindows supplies a graphical user interface called FileView that serves as the user's primary means of interaction with the computer's operating system. FileView enables students to choose commands and operations from lists called menus, which are displayed on the screen in graphic boxes called windows. A FileView window displays file directories on one side and files from the current subdirectory on the other. By pointing and clicking on a directory name with a mouse, students can access any subdirectory and its files. As a result, unsophisticated users can execute commands without having to know much about how the computer operates.

Computer-based instruction courses, which are self-paced, teach the students how to use tools such as DECwindows. DECwindows Training, for instance, starts up automatically until the students individually decide they no longer need it. All DECwindows Training courses use numerous illustrations and exercises. The first section features a module for using the mouse and is accompanied by pictures explaining the various buttons.

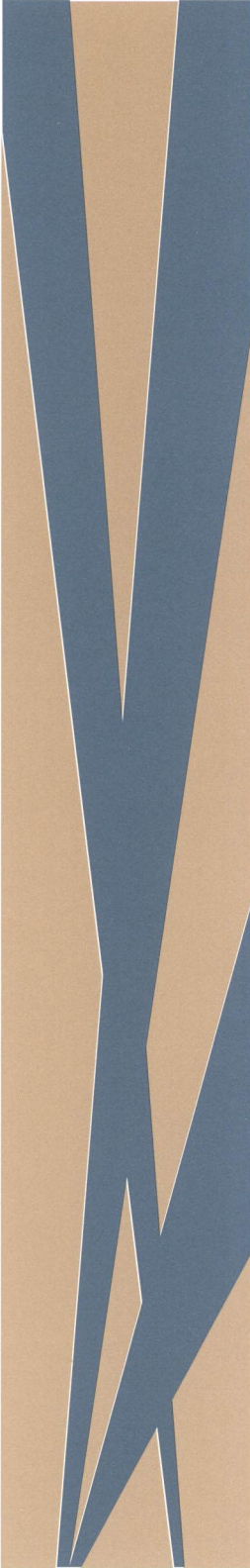
Once the students are comfortable with the nuts and bolts of DECwindows, they learn how to design, create, and debug programs assisted by CASE (computer-aided software engineering) tools such as the language-sensitive editor and the VAX symbolic debugger.

Complete manuals for these and other applications are available via the Bookreader, one of DECwindows' built-in features. Bookreader enables students to read documents containing text, graphics, charts, etc, from their workstations. Bookreader documentation is located on a disc called a CD-ROM, which is similar to a compact audio disk and can store a volume of information equal to an encyclopedia. The disk contains a full document set including application guides and languages (FORTRAN, Pascal and C); it is maintained by ACS and is accessible over the SONNET campus network.

Most of this software would have been unaffordable without the help of some ACS services: the Campuswide Software License Grant program that licenses more than 240 Digital Equipment Corporation software products at no charge; the Digital Education Software Library that provides media and documentation for a selected group of products including the necessary language compilers; CASE tools and DECwindows; and the CD-ROM online documentation.

What is being done at KCGL is a logical outgrowth of the trend towards both distributed and personal computing. The program recognizes that computers are first and foremost an instrument to solve problems. Once students grasp the idea that they can use computers to reduce their workload, they will come to think of them as a help, not a hindrance. Ozkan concurs. "They will recognize computers as indispensable tools which will make their work easier and more effective," she says. "This in turn, will help them become better and more competent engineers."

Opposite: Online manuals, viewable from the Bookreader application, are facsimiles of the printed versions, including all illustrations.



SPOTLIGHT ON ICAC

by Sally Hritz

When determining the course of computing at The Ohio State University, the administration receives input from those in the know—the technical experts in the Office of Academic Computing (OAC) and its service group, Academic Computing Services (ACS, formerly IRCC). These units and the administration keep in touch with faculty needs and expectations through the Instructional Computing Advisory Committee (ICAC) and the Research Computing Advisory Committee (RCAC).

The Instructional Computing Advisory Committee held its first meeting in January, 1988, but both ICAC's and RCAC's roots go back more than a decade. In 1977 the Advisory Committee on Academic Computing was chartered under Provost W. Ann Reynolds, although the group did not become active until 1981 under Provost Diether H. Haenicke. In that 1977 charter, which was revised in 1981, the committee was charged with advising the provost regarding the operation and direction of computing for instruction and research. The committee would provide input on present and future needs; policies and priorities for facilities and services; computer systems, peripheral equipment, software, and support services; and the coordination of facilities and services involved in academic computing.

The committee was to be made up of the director of academic computing, a representative from the Department of Computer and Information Science, 17 faculty members selected by the deans of their respective colleges, eight faculty members selected at large from among the major users of academic computing facilities, four graduate or professional students, and four undergraduate students. The original Advisory Committee on Academic Computing met at least quarterly during the next six years.

In 1987, Provost Myles Brand decided that the administrative units for instructional and research computing should be separated, and he reorganized the original large committee into two smaller groups. Instead of choosing representatives from the various colleges, he appointed faculty members who had an interest in or actively used computers. They, in turn, would make recommendations on faculty priorities to the provost and to ACS, whose

mission is to implement the recommendations and supply computing services.

On January 11, 1988, the first meeting of the Instructional Computing Advisory Committee convened with nine faculty members and two ex officio members. Associate Dean Robert Redmond from the College of Engineering was named chairperson. Redmond's first report to the provost included a recommendation from the committee for more public use of the microcomputer teaching laboratories, noting that microcomputers provide a variety of productivity tools for general use by students and can, with appropriate software, be usefully incorporated into the instructional program. They also provide students a first step toward developing computer related skills and the ability to use computers as tools in their education and future careers."

ICAC now meets twice monthly. Since members serve from one to three years, the current participants are almost entirely new, and Professor Andrea Lunsford from the English Department now chairs the committee. Currently ICAC has eight faculty members and five ex officio members. Two ex officio members come from the Office of Academic Computing, one is Director Charlie Bender and the other is Associate Director for Instructional Computing, Steven Gordon, who is also a professor of city and regional planning.

Over the past year, Lunsford says, the faculty group has articulated a set of procedures to review any proposal for new or enhanced computer labs, which is now being used by instructors, departments, and colleges. ICAC also has drawn up a policy statement to guide the scheduling of existing instructional computing facilities with the goals of tracking faculty and student use, resolving scheduling conflicts, and improving the overall efficiency of computer lab management.

ICAC, RCAC, OAC, ACS, and the newly formed Dean's Computing Caucus are now occupied with a five-year plan for academic computing. The plan's intent, when fully implemented, Lunsford says, is to reduce confusion and duplication of effort in the area of campus computing and to involve the faculty and students in the maximum efficient

(continued on page 12)

COMPUTING OUTLOOK

FACULTY & COURSEWARE

by Sally Hritz
staff writer and associate editor,
Academic Computing Services

Courseware, or computer-assisted instruction (CAI), enjoys pockets of popularity on campus, although its use is not yet widespread. Generally, computer applications function effectively as supplements to the usual classroom work. Teaching computer use is not the object of courseware; the technology is simply a tool to enhance the learning process.

Educational software can be created with microcomputer programs. CAI elements are packaged in computer modules that are usually full of graphics and take a get-down-to-business approach. Or they can be adapted to interactive video using laser disc technology. No matter which medium is employed, the imaginative applications engage student interest by offering hands-on experimentation that approximates what they might encounter in real-life situations.

Some courseware challenges students' analytical skills by presenting issues that ask for solutions, then provides immediate feedback by showing students the outcomes of their choices. Some, such as the videodisc application, display the perfection in an athletic skill and break down the movements into digestible chunks. Some courseware even exhibits a sense of humor, such as the element in one module that digresses to its musical soundtrack and gives a lesson in dancing the cha cha.

The bottom line, of course, is to provide students with a memorable learning experience. The following faculty members have made forays into the world of educational software and developed courseware to add to their instructional bag of tricks.

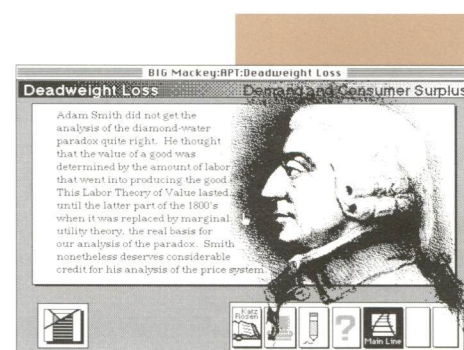
Depending on the quarter, 150 to 270 students use the computer and **Howard Marvel's** courseware as supplements in economics 501, 570, and 580 classes. Marvel, a professor of economics, developed the program, called *Applied Price Theory*, using a Macintosh computer and HyperCard software. HyperCard is a Macintosh product that Apple Inc. currently includes with the system disks of all Macintosh models.

"I knew a lot about computers," Marvel says, "but I didn't know beans about courseware." So, he spent many hours creating his computerized instructional tool and sought help from several sources. Academic Computing Services (ACS, formerly IRCC) loaned him a computer; Lizabeth Alecusan and Donna Williams from the Center for Teaching Excellence designed icons and tested the program with students; and graduates students Laura Boyd, David Boyd, and Sung Bong Cho helped write the HyperCard "stacks." Still, he refers to the endeavor as "a labor of love."

Marvel says he was guided by several considerations as he created his software. He decided to cover the same material in the program that he covers in lectures. "There's something about a live lecture," he says, "but I'm trying to get them to understand the material, and they are going to understand it better with this program. However, it's a terrible mistake to do it all for them."

Engaging student interest was a prime concern. "We tried to sprinkle humor throughout and give enough alternative ways to navigate through the material that they would want to go on," he says. Once students are exposed to this kind of computerized learning, he believes that they expect to see more of it.

Perhaps the only thing students might fuss about with Marvel's program is that everyone knows when someone makes a mistake. Indeed, those computer lab classes must be noisy affairs. He has included the *Twilight Zone* theme as part of the soundtrack, and the



**Howard
Marvel's
Applied
Price
Theory
brings
economics
to life.**

program hoots at students for mistakes and applauds them for right answers. (If they take too many wrong stabs at answering a question, a picture of 18th century economist Adam Smith pops up to help.)

He points out that the courseware is more than a computerized slide show. Applied Price Theory contains nine stacks that cover topic areas such as Consumer Choice, The Market, and The Firm. A control panel that remains constant throughout the stacks provides options for taking and printing screen notes, getting help, digressing to diagrams and maps, and moving among screens.

Marvel has written a manual and instructions for Applied Price Theory and is negotiating with a publisher to distribute it. "If you're inventing instructional software for your own use, you're making a big mistake," he advises. "It should go out the door so other people can benefit from it." ♦

Professor **J. Brooks Breeden** and Associate Professor **John Simpson** in the Department of Landscape Architecture have adapted material for the computer from two of their courses. Both were designed using Authorware, a Macintosh-based software program that enables instructors with no programming knowledge to create their own computer-based instruction for student use.

Breeden developed a program called *MacLarch* for his class, 322/626 Landscape Construction: Layout Controls. *MacLarch* consists of five modules: *MacSurvey*, *MacRoadway*, *MacRoadeo*, *Lots of Parking*, and *MacRainBarrel*, and asks students to perform tasks such as designing a parking lot, planning a roadway, and charting water flow and land characteristics. "MacLarch virtually teaches itself," Breeden says, adding that it has seen him through some rough spots when he was caught with 60 students and no teaching assistants. He notes that students like the time-

shifting aspect of educational software. Relieved of the necessity of showing up at a scheduled time, they can work on it over evenings and weekends.

Simpson has two graduate courses and one undergraduate course in landscape architecture that use his educational software called *Ethical Dilemmas in Environmental Stewardship*. He and Breeden created it together, with Simpson adapting portions of his lectures and Breeden leading the Authorware "programming." *Dilemmas* contains eight sections dealing with such issues as global population, multinational corporations, sustainable agriculture, and an intriguing model called "In My Backyard" that brings environmental problems down to the local level.

"We had a good time putting it together," Simpson says. He estimates that he and Breeden built the program in about a month working half-time. Their creation has attracted interest and

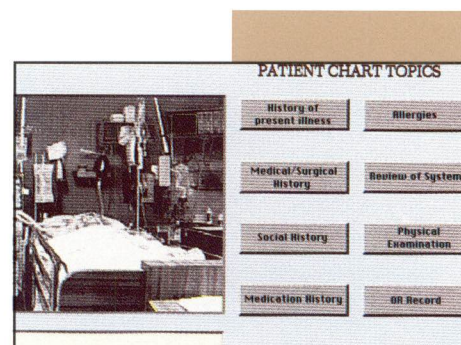
Computer use in most fields of medicine is fairly common says Associate Professor **Joe Dasta**, but not so in his area of expertise—pharmacy education. Dasta has laid out a game plan to develop a series of computerized case studies on different diseases and hopes to have them completed in the next year. He even took a sabbatical to begin the project and has just completed the first module. Currently he's in the debugging and testing phase and gathering student feedback.

Although he used mainframe computers in college, Dasta says he started the project as a Macintosh novice. After evaluating several courseware packages, he opted for Macintosh-based Authorware, partially on the recommendation of the specialists at the Center for Teaching Excellence (CTE). It certainly helped that the university licensing agreement provided by ACS made Authorware accessible. If the application is used only on university-

owned computers for educational purposes, the program is free with exchange of seven diskettes. "Best of all," Dasta adds, "Authorware is relatively easy to learn—a priority because I am not a programmer and have no desire to become one."

Dasta has retained the services of Bryce Bate and Nancy Vlasko at CTE, who are handling most of the courseware design for his program (although he does some of it himself). His goal is to give students a simulated experience monitoring patient drug therapy in a surgical intensive care unit. The program's intended audience is students in the second year of the professional pharmacy doctoral program. They've already spent a year in the classroom and now they're gaining practical experience in the various disciplines.

The advantage of Dasta's courseware is immediately apparent. The interactive program presents a color photograph of



Joe Dasta's courseware lets students safely practice pharmacy skills.

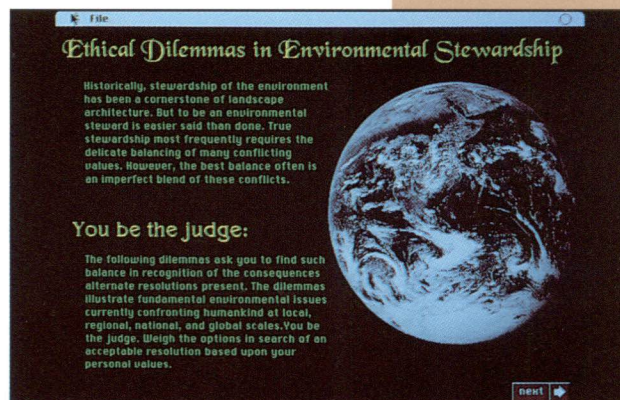
now they're selling copies to other universities, government agencies, and environmental groups.

After a year of use in the classroom, Simpson has observed that the program is generally effective, although he is dismayed that to some undergraduates, it is a "page-turner." In other words, students are engrossed by the presentation and flip through the modules without giving thought to the questions posed. Or they tend to accept exactly what the information conveys without engaging in further contemplation on their own. He notes that graduate students and other people who have used the program understand that there are no set answers to the questions the program raises, consequently they appreciate Dilemmas as an educational tool.

Refinement of both courseware products continues. Simpson realizes that Dilemmas needs more of a tree structure to trigger student interaction, and he intends to build more branching into it.

"What we value more than anything else," Breeden says, "is feedback." Breeden has even considered offering grade points to students who provide documented bugs in MacLarch, which he has already substantially modified since its inception last year. ♦

A screen from Ethical Dilemmas: challenging students to explore.



a hospitalized patient, provides the patient's chart and bedside flowsheet, and asks students to make decisions about drug therapy. Depending on how they respond, the condition of the computerized patient either improves or worsens. The program also intervenes to offer assistance if students take too long to answer or become confused. Such simulated opportunities seem advisable over real-life experiences until students know what they're doing.

Dasta says that creating the first program was "absolutely a good experience. I'm hoping the things I'm doing at this college will spread and that I can get my colleagues interested." He recommends this kind of enterprise to fellow faculty members with the caveat that they need to be aware of the time investment involved. "Developing courseware," he notes, "doesn't just happen by telepathy." ♦

Faculty members in the School of Health, Physical Education and Recreation have developed computer-assisted instruction for use in a teacher preparation program and added the same program as a supplement in a graduate and an undergraduate course in physical education.

Associate Professor **Mary O'Sullivan**, and Assistant Professors **Sandra Stroot** and **Deborah Tannehill** created their interactive video program to analyze performance of the long jump. Their final product is a one-and-a-half-hour learning tool for skills analysis. Tannehill says that the undertaking required written text, video and computer graphics, and video taping.

As the production team, part of their task was to assemble knowledgeable people. Partially funded by a university seed grant, they were able to secure the services of graduate teaching assistant Chien Chou, who helped with com-

puter expertise and design. They also turned to Bryce Bate, Donna Williams, and David Brickner from the Center for Teaching Excellence who advised on hardware selection and suggested options. O'Sullivan, Stroot, and Tannehill wrote the supporting text and handled videotaping themselves.

Interactive video is a union of video and computer technologies and the medium is particularly adaptable to instructional settings. The group chose interactive video because of the subject matter, Stroot says. Videodisc, which requires a videodisc player and a monitor, is more suited to realistic presentation of movement than a computerized rendering would be. Connected to a computer program that lets students follow their own branching tendencies during analysis, the two technologies interface with ease. "Movement is nonpermanent," O'Sullivan sums up. "Video lets you capture it and the computer lets you analyze it."

(continued on page 12)

TELECOMMUNICATIONS

This software continues to be the most popular. Telecommunications packages enable users to communicate with ACS mainframe computers from home or office. Each package has been edited to access university computers. *ProComm* and *Kermit* are distributed for PCs and *MacKermit/RedRyder* is available for Macintosh.

VIRUS DETECTION

A computer virus at best can be an annoyance, and at

worst, a disaster for critical files. ACS distributes virus detection software for both PCs and Macintoshes. *IBM Vir-Scan* checks DOS and OS/2 files for known computer viruses that infect executable files and boot sectors. *Disinfectant* detects and removes various Macintosh computer viruses. When new viruses are discovered, ACS acquires updated detector programs and begins distributing them as quickly as possible, usually within a couple of days.

STATISTICS

Statistical analysis has moved to the microcomputer, and ACS maintains site-license agreements for packages that meet different needs. *SYSTAT* is a mid-level statistical program available for both PCs and Macintosh. *SYSTAT* has the advantage of requiring five megabytes of disk space compared to the other available packages, *SAS* and *SPSS*, which both require 20 megabytes. (*SYSTAT* will soon have a Macintosh version that will require slightly more than

one megabyte of space.) *SPSS*, a high-level statistical package, and *SAS* are available only for PCs. *SAS* is restricted to use on university computers, while *SPSS* and *SYSTAT* may be used on home computers.

COURSEWARE

Faculty members who want to supplement classroom work with computerized instruction will be able to find suitable educational software from among the site-licensed selections. PC users can choose between *PC PILOT* and *PROPI*. For Macintosh users, *Authorware* is available, which handles color graphics, animation, digitized sound and video-disc.

LANGUAGES

For PC users, *WATCOM*, Inc. offers programs for *COBOL*, *FORTRAN*, *Pascal* and *WATFOR-77* programming languages. *COBOL*, *FORTRAN*, and *Pascal* are interpreters that make runtime longer but debugging easier. *WATFOR-77* is a debugging compiler that enables a programmer to compile a program directly into the computer's memory and then execute it. It also contains a graphics package.

(continued on page 12)

SOFTWARE SITE LICENSES

SITE LICENSES AT OHIO STATE

In 1984, Academic Computing Services (ACS, formerly IRCC) began its site-licensed software program with one communications package developed in-house. The program has grown steadily over the years. ACS now distributes 23 packages and continues to investigate future acquisitions.

Site-license agreements cover a wide range of computing applications for minicomputers, local area networks, workstations, mainframes and microcomputers. ACS has arranged other agreements for Ohio State faculty, staff, and students to purchase computer products at discount prices.

The list of public domain and site-licensed software distributed for both IBM PCs and compatibles and Macintoshes includes data encryption, telecommunications, courseware development, statistical analysis, and virus detection. Additionally, for PCs there are programming languages and for Macintosh there are updates to several Claris products.

Most software is "free" on a diskette-exchange basis, but some agreements involve unique requirements. All software transactions require that a valid university ID be shown and that whoever is using the software sign a site license agreement form in person at the ACS Customer Services desk. ACS also distributes software on nine-track tapes, data cartridge tapes, and when possible, over the SONNET campus network.

Faculty members can recommend other software for consideration as site-licensed products. ACS will help determine demand for a software package on campus; coordinate license negotiations with the vendor, the buyer, and Contracts Administration; coordinate distribution; and determine continuing need at renewal time.

Rosa Gilman is the site license software coordinator and Sandra Li is the accounts coordinator in Academic Computing Services' Customer Services. For more information about site-licensed products, please call Rosa Gilman at 292-4843, or send electronic mail to gilman.1@osu.edu.

Academic Computing, Organizationally Speaking

*by the Office of Academic
Computing Staff*

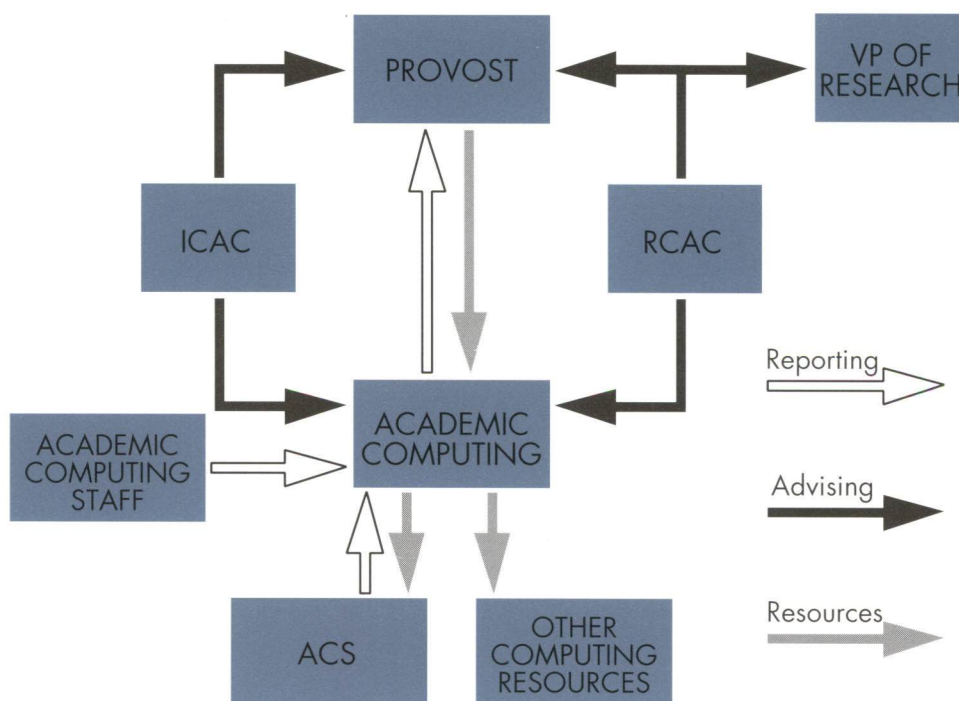
Academic computing is defined as all computing activities which the faculty and students require to satisfy their academic responsibilities. Primarily involving research and instructional computing, academic computing also will involve the growing need for access to administrative information. The following does not address the administrative computing needs for academic computing.

Two faculty advisory committees, appointed by and reporting to the provost, the Instructional Computing Advisory Committee (ICAC) and the Research Computing Advisory Committee (RCAC), advise the provost on computing policy and priorities. The priorities are used to develop the programs and budget for academic computing. A director for academic computing appointed by the provost and reporting directly to the provost is responsible for developing the technical plans consistent with input from each committee.

The committees' chairs are responsible for communicating the input of the committees to the director. In cases of conflicts between the committees, the director and chairs will work together in developing a consensus decision. The two committees shall review and approve the budget for academic computing. This process must be timely and consistent with development of the annual report and budget submission to the provost.

The director of academic computing is responsible for the overall management of academic computing and has administrative

**A
management
model
for
academic
computing.**



responsibility for Academic Computing Services (ACS, formerly IRCC). The director is responsible for the implementation of the technical plan using ACS resources or computing support services from other university units and elsewhere.

The chairs meet with the provost periodically to advise him on the status of academic computing and the performance of the director of academic computing. The RCAC also advises the vice president for research on research-related computer policies and priorities.

The Office of Academic Computing provides staff support to the director, the committees and their chairs. Two associate directors are appointed by the director with the concurrence of the respective committee: an associate director for research computing and an associate director for instructional computing. The associate directors are tenured OSU faculty with part-time term appointments. The associate directors are responsible for managing current programs in their respective areas and for developing new initiatives. New initiatives are in response to committee requests, faculty input, new funding opportunities, technological developments, etc. The associate directors are the principle interface with their respective committees and provide technical support and coordinate administrative support. The associate directors are not involved in the administration of ACS.

The committees' chairs, the director, and the associate directors meet regularly to discuss developments of the academic computing program. There is one additional function of the Office of Academic Computing. An assistant director is responsible for fiscal planning, expenditure control, personnel activities, and administrative oversight of programs.

Additionally, the director of academic computing will modify, as needed, the organizational structure and function of the ACS to address current and future needs of academic computing. Such changes are subject to the review and approval of the advisory committees and the provost. The director of academic computing and administration of other university computing units will consider consolidations that lead to cost savings yet not impair execution of the academic computing program. Such consolidations also are subject to the appropriate review and approvals.

Finally, the director and associate directors, the advisory committees, and the administration of other university computing activities are developing a long term plan (3-5 years) that addresses current and anticipated academic computing needs. A preliminary report was provided to the provost in January 1990.



The Office of Academic Computing

292-9220

Who's who in Academic Computing.

For information or discussion of general academic computing matters:

Charlie Bender, Director of the Office of Academic Computing (bender@osc.edu)

Charles Morrow-Jones, Assistant Director, Office of Academic Computing (mjones@osc.edu)

For matters pertaining to instructional computing:

Steven Gordon, Associate Director for Instructional Computing (sgordon+@osu.edu)

Andrea Lunsford, Chair, Instructional Computing Advisory Committee (lunsford.2@osu.edu)

For matters pertaining to research computing:

Randall Jackson, Associate Director for Research Computing (jackson+@osu.edu)

William McCurdy, Chair, Research Computing Advisory Committee
(mccurdy@hydrogen.mps.ohio-state.edu)

PERSPECTIVES

on campus microcomputer laboratories

by Art Krumsee

In colleges and universities across the country the story carries a common theme. In the early 1980s campus microcomputer laboratories were constructed with great excitement and often with dramatic discounts from manufacturers. The focus was on getting equipment into the hands of students as quickly and economically as possible. In the flurry of purchasing, little thought was given to the ongoing costs associated with these facilities.

Now, in the 1990s, these PCs and Macintoshes are still in laboratories. While new labs have been sporadically added, the original equipment remains. Of course these computers have long since been bypassed by advances in computing technology. More importantly, they are simply worn out, costing more to maintain than they are worth.

This picture is no less true at The Ohio State University than it is at other campuses around the country. The Office of Academic Computing is working now to meet this challenge. The five-year plan for academic computing currently under development will speak directly to the issues of effective planning and funding for the future.

At the same time we are also working to extend the life of our existing equipment base. Since any plan for replacement will require many years for full implementation, it is critical that Ohio State find ways to maximize use of existing

resources. To be sure, we all prefer to have our students working on the newest and fastest equipment. At the same time, we must find ways to encourage students to use our older equipment when it is appropriate—for word processing and other simple tasks, for example.

A study of microcomputer laboratory utilization completed by Steven Gordon, associate director for instructional computing, produced a wide range of recommendations for maximizing the benefits of our current investment. The study clearly documented student avoidance of our oldest equipment. To be sure, any of us would prefer a new workstation to one more than seven years old. Gordon's study concluded with a wide range of recommendations, including more effective facility scheduling, expanded monitor training, and increased public hours.

The experience of Academic Computing Services (ACS, formerly the Instruction and Research Computer Center) in managing older laboratories has also brought several problems to light. Many of our older MS-DOS laboratories are diskette based. When we attempt to use current business application software such as WordPerfect or Lotus 123, we find the equipment is woefully inadequate, and Microsoft Windows-based applications are out of the question altogether. They demand too much disk space and fast equipment. In addition, the choice of products like WordPerfect in MS-DOS laboratories reflects current business trends but may ignore the real needs of students. Students use software intermittently, and products like WordPerfect and Lotus 123 may be too complex for occasional use. Finally, MS-DOS and Macintosh environments have grown too far apart, although software is available that provides similar working environments and simple document transfer on both platforms.

In response to these concerns, we at ACS are initiating a formal study of an alternative software environment for MS-DOS equipment. After a careful analysis of software options, we have chosen Microsoft Works for a pilot project in four laboratories because the software meets many of the concerns raised above. It runs well on diskette-only machines. It is simple to use and there are versions for both the MS-DOS and Macintosh platforms. (A new version has also been announced for Microsoft Windows.)

The pilot project includes a number of components. These include installation of the software with a mouse in the selected laboratories, development of student training materials and workshops, and special training for lab monitors. ACS is also planning a series of promotional materials to make students aware of the product and encourage experimentation. At the completion of the study period (two quarters beginning in January), we will survey students on their experience with Works and evaluate patterns in lab utilization.

During this period ACS also plans to work with faculty to encourage their support of this effort. A project of this type works to the benefit of all parties. If students can be encouraged to use older equipment for simple tasks such as writing, our newer facilities and more powerful equipment will be available for the applications that demand power and performance.

Art Krumsee is assistant director of Academic Computing Services responsible for public microcomputer sites, LAN services, and financial management.

SITE LICENSES, CONTINUED

Special Agreements:

DIGITAL EQUIPMENT CORPORATION

More than 160 software products from this company are site-licensed for use on university-owned DEC computers.

IBM HIGHER EDUCATION SOFTWARE CONSORTIUM (HESC)

About 100 programs for campus VM systems are covered under this agreement between IBM and the university. The HESC agreement includes licensing for several IBM UNIX products on AIX RT and AIX PS/2 models. Another recent license covers AIX software for the RISC/6000 model. Under terms of the agreement with IBM, campus departments can receive software at no cost or at a substantially reduced fee.

SUN MICROSYSTEMS

This agreement covers installation materials for Sun workstations and servers owned by The Ohio State University and the Ohio Supercomputer Center. Installation materials are available for Sun 3, Sun 4, Sun 3 (68030), Sun SPARCstation and Sun 386i.

INTERGRAPH CORPORATION

Intergraph Corporation is the owner of MicroStation software, which is a high-quality, standalone CAD/CAM/CAE package for three microcomputer systems. *MicroStation PC* runs under DOS on PC XT, AT, and true compatibles and on 386-based systems (e.g., PS/2 Model 80). *MicroStation 32* runs on Intergraph and UNIX-based workstations, while *MicroStation Mac* runs on Macintosh II, IIfx, and SE/30 systems.

NCAR GRAPHICS

NCAR Graphics is a UNIX-based software package with several applications: NCAR Graphics Libraries, NCAR GKS, ftrans, and NCAR View. All are covered under a campuswide site-license agreement.

FACULTY COURSEWARE, CONTINUED

The team said they found that most instructional modules using interactive video technology is created for IBM or compatible computers, but they chose to use a Macintosh microcomputer and Macintosh-based Authorware software. They felt the products were easier to learn and to use both by the designers and the students.

Even so, the instruction module for the analysis of performance in the long jump took more than two years to complete. But they are happy with the results and are now considering two similar packages: one to teach undergraduates the principles of skill analysis that can be applied to a variety of motor skills and one to help undergraduates develop their understanding of when and how to use instructional and managerial skills in teaching a physical education lesson. ♦

ICAC, CONTINUED

use of such facilities while continuing to serve the needs of the entire campus community.

Gordon notes that as part of the five-year plan, the ICAC will be reviewing incentives to induce more faculty to use computing technology in instruction. These incentives may include faculty release time, technical support for instructional development, and possible peer review and publication of any software and related instructional materials. One of ICAC's goals is to encourage actions to remove the shortage of teaching lab hardware and software as a disincentive to the development of instructional computing.

The next issue of *Computing Outlook* will profile the Research Computing Advisory Committee.

Sally Hritz is a staff writer and associate editor for Academic Computing Services.

Would you like to receive *Computing Outlook* every quarter?

Please complete this form (or a photocopy) and return it to:

*Lynda Mackey, Editor
Academic Computing Services
406 Baker Systems Engineering
1971 Neil Avenue
Columbus, OH 43210*

Help us keep costs down by specifying a campus mailing address if possible.

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A PUBLICATION OF THE OFFICE OF ACADEMIC COMPUTING

**COALITION OF
ACADEMIC
SUPERCOMPUTING CENTERS**

**Coalition of Academic
Supercomputing Centers**

Bylaws

May, 1990

Article I. Organization Name

1.0 The name of the organization is

Coalition of Academic Supercomputing Centers

or

The abbreviation, CASC may be used.

Article II. Purpose

2.0 The mission of CASC is to further the development of a national infrastructure of large-scale computing and appropriate network resources. CASC desires to cultivate funding of and support for U.S. supercomputing activities. Therefore the membership of the Coalition of Academic Supercomputing Centers has joined to:

- 2.0.1 Promote federal support for its Members' initiatives in numerically intensive computing.
- 2.0.2 Pursue funding from federal agencies to enhance the development of a nationwide supercomputing infrastructure and to support access by academic researchers to supercomputing facilities of Member Institutions.
- 2.0.3 Provide a forum for discussion on and representation in the U.S. High Performance Computing Initiative to ensure that Member's investments in high performance computing are properly leveraged and factored into national plans and funding.
- 2.0.4 Provide a forum for discussion and representation on national networking issues and concerns to ensure network access on an open and equal basis.

2.1 Achieving Purpose. To achieve these purposes the organization shall;

- 2.1.1 Organize and conduct meetings, discussion groups and other similar programs concerned with exchange of information and development and execution of decisions and policies.
- 2.1.2 Establish mechanisms to gather and provide information relevant to its purpose.

2.2 Conducting Business. To achieve these purposes the business of the

organization shall be conducted as appropriate at meetings of the Members as specified in Article VI of these Bylaws, and when permitted, by mail ballot as specified in Article VII of these Bylaws.

Article III. Membership

3.0 General: CASC shall be made up of Member Institutions, where membership is granted to those applying institutions in accordance with these bylaws.

3.1 Criterion for membership: an organization, or institution which 1) subscribes to the purposes stated in Article II, 2) has installed on its premises one or more supercomputer systems, where the definition of a supercomputer is as defined by the Department of Commerce export regulations, 3) provides supercomputer access to the academic community as part of its general on-going activity, 4) is affiliated with a state or university and receives state or university funding in support of its activity, 5) or indicates its commitment to fulfill criteria stated in 1-4.

3.2 Application for membership:

3.2.1 An Institution applying for membership must submit an application to the Secretary/Treasurer who shall process all applications in accordance with CASC policies and applicable bylaws. The application must adequately show the Institution's ability to meet all requirements stated in section 3.1 and 3.3.

3.2.2 Applications for membership are to be reviewed at duly convened meetings of the CASC. A deadline for discussion of and voting on approval of the application must be at least thirty (30) days and not exceed six months.

3.2.3 An applicant shall become a member upon receiving a two-thirds (2/3) majority approval from the voting Institutional Members. A minute containing the outcome of the vote and any pertinent discussion shall be generated by the Secretary/Treasurer and sent to the applying institution.

3.3 Requirements for membership:

3.3.1 Naming of a Representative: Applications must name an Institutional Representative. This person will be the point of contact for any distribution concerning CASC business. This person is responsible for communicating policy concerns to the Member Institution, and providing CASC with his or her Member Institution's position on issues of importance. This person is responsible for the Member Institution's vote when called for by the Chair to qualify as a representative, this person must be a bona fide employee of a Member, be directly active in Member's supercomputing activity, and be authorized to make decisions for the Member Institution.

3.3.2 Membership dues: CASC may impose a dues structure on its

Institutional Members to defray the costs of CASC business up to a limit of \$10,000/year/Member. CASC will determine the dues amount on an annual basis upon a 2/3 approval by Institutional Member vote.

3.4 Rights of Membership

3.4.1 CASC voting: As required by the Bylaws or requested by the Chair, when an Institutional Member vote is called, each Member Institution is allowed one (1) vote, for which the Institutional Representative is responsible.

3.4.2 Elected office: Institutional Representatives from Member Institutions shall have the right to hold elected office.

3.5 Membership responsibilities:

3.5.1 Each Member Institution must abide by all rules and Bylaws in force at that time.

3.5.2 Institutional Members agree to make a good faith effort to attend meetings of the Members. Members may submit written proxies or an alternative representative.

3.6 Termination of membership:

3.6.1 Voluntary: A Member Institutional may terminate membership at any time; however, they must fulfill all obligations incurred up to the point of termination.

3.6.2 Involuntary: If a Member Institution does not act in accordance with standing CASC rules or Bylaws, the Chair shall send a letter of warning to its Institutional Representative. If the abuses persist, the Chair shall then recommend disqualification of the Institution's membership. An Institutional vote will then be called to formally terminate the membership, with a two-thirds vote required to revoke membership.

3.6.3 In the event of either a voluntary or involuntary termination, the terminating member has no claim to any assets held by CASC.

Article IV. Structure

4.0 Elected Officers:

4.0.1 Three voting officers shall be elected from Member Institutions' Representatives. These officers will be elected as the chair, vice chair and, secretary/treasurer.

4.0.2 The term of office for an elected officer shall be one year, except for the first election. Officers may serve consecutive terms.

- 4.0.3 Each Term of Office shall begin January 1 unless otherwise designated.
- 4.1 Responsibilities of the chair:
 - 4.1.1 The chair shall be responsible for arranging and presiding over all general business meetings.
 - 4.1.2 The chair shall act as an official representative of CASC.
 - 4.1.3 The chair shall provide for the discharge of necessary duties of absent Members. The chair shall be responsible, jointly with the secretary/treasurer, for the treasury.
- 4.2 Responsibilities of the vice chair:
 - 4.2.1 The vice chair shall substitute for the chair in his or her absence.
 - 4.2.2 The vice chair shall be responsible for recruitment of member institutions.
- 4.3 Responsibilities of the secretary/treasurer:
 - 4.3.1 The secretary/treasurer shall take and report minutes of all general business meetings.
 - 4.3.2 The secretary/treasurer shall insure that all bylaws are being followed.
 - 4.3.3 The secretary/treasurer is responsible to oversee all elections.
 - 4.3.4 The secretary/treasurer shall maintain financial records, distribute funds properly authorized by CASC and assure compliance with terms and conditions of any outside funding.
 - 4.3.5 The secretary/treasurer shall cosign with the chair all financial and contractual obligations.
 - 4.3.6 Jointly with the chair, the secretary/treasurer is responsible for the treasury.

Article V. Officer Elections

5.0 Nominations

- 5.0.1. All CASC Institutional Representatives shall be eligible to make nominations or be nominated for officer election.
- 5.0.2 Nominations shall be opened on or prior to October 1, at which time the vice chair shall present to the membership a slate of at least one nominee for each vacant office and shall at that time call for

additional nominations.

5.0.3 Nominations must be submitted in writing to the secretary/treasurer.

5.0.4 Nominations shall close November 1.

5.1 Elections:

5.1.1 General elections shall be held annually for all elected positions on December 1. The secretary/treasurer shall distribute ballots to all institutional Representatives no later than November 7. Ballots must be returned to the secretary/treasurer before December 2.

5.1.2 The ballots of all elections will be counted within one week following the close of voting. No ballots will be counted if received after December 1. All candidates for office will be informed immediately of the results of the election by the secretary/treasurer.

5.1.3 The First Election: To allow for officer elections as soon as possible after the ratification of these bylaws, the term of office for the first election shall be adjusted so it will conclude on December 31, and shall be no shorter than 6 months.

Article VI. Meetings

6.0 General Meetings:

6.0.1 CASC shall hold at least two meetings a year.

6.0.2 Quorum: At all meetings at least two-thirds (2/3) of the Institutional Members must be present to act on CASC business.

6.0.3 Voting: Resolutions and other actions taken at regular meetings shall receive a two-thirds (2/3) affirmative vote for passage.

6.0.4 Location: Location of meetings shall rotate among member sites. Representatives shall be notified one month in advance of all meeting dates and locations.

6.0.5 The chair may call emergency meetings.

Article VII. Procedures for voting by mail.

7.0 General:

7.0.1 Voting by mail shall be permitted for any item of business. All proposals to be acted upon by mail shall be recommended by at least two-third (2/3) of the Members. Proposals shall be addressed to the secretary/treasurer. The secretary/treasurer shall thereupon cause proposals to be sent to all Members. All Members may, within sixty (60) days, submit comments with respect to said proposals to the secretary/treasurer, who shall group or categorize such comments as

shall be deemed appropriate, and cause representative commentary to be sent to all Members of CASC. The proposal shall be put to a vote by a mail ballot which shall be enclosed with the said commentary (if any). All mail ballots shall be cast and signed by the Representatives and submitted to the Institutional secretary/treasurer within thirty (30) days of mailing. The proposal shall be approved if it receives a two-third (2/3) affirmative vote.

- 7.0.2 The sole exception to this procedure is the election of officers as stated in 5.1.

Article VIII. Amendments

8.0 General:

- 8.0.1 A ballot on an amendment to CASC Bylaws may be initiated by petition of one-third (1/3) of the Institutional Members.
- 8.0.2 All Institutions must have the opportunity to vote on amendments. The secretary/treasurer shall prepare and send to each Institutional Representative a statement of the proposed amendments and a ballot, along with a specified due date. The due date shall be at least thirty (30) days from the time of delivery, but not more than six months.

8.1 Ratification:

- 8.1.1 Amendments to these bylaws must be approved by an affirmative vote of two-thirds of the votes cast.
- 8.1.2 All ballots must be returned to the secretary/treasurer. Any ballot not received within the specified date shall be considered a negative vote on all proposed amendments.

Article XI. Implementation of these bylaws

- 9.0 These proposed bylaws shall be submitted to interested Member Institutions who shall vote on the adoption of them by a date established for that purpose by the acting chair.
- 9.1 These bylaws shall be approved if they receive a two-thirds (2/3) affirmative vote. Abstentions shall be considered a "no" vote.
- 9.2 Upon approval of these bylaws, all Member Institutions who submitted affirmative votes shall be considered Charter Institutional Members, with all rights and responsibilities documented herein.
- 9.3 Upon approval of these bylaws, the acting chair shall request nominations from the floor for the officers. A date for the officer elections shall be set and ballots distributed.

Article X. Financial Structure

10.0 General:

- 10.0.1 CASC shall operate as a not-for-profit organization.
- 10.0.2 Sources for funding may include membership dues, grants, and "payment-in-kind" services.
- 10.0.3 Any CASC expenditure above \$10,000 requires two-thirds (2/3) approval of the Member Institutions.

10.1 Depository:

- 10.1.1 The secretary/treasurer shall make arrangements to cause a depository for funds to be maintained in the name of CASC.
- 10.1.2 All checks and other drafts directing withdrawals from the depository shall be signed by the chair and secretary/treasurer.
- 10.1.3 The secretary/treasurer shall provide to the Members at least once per year an accounting of the receipts and payments made to the CASC accounts.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9120791

SPEECH: YES NO

FROM: OSMER-McQUADE, Margaret: COUNCIL ON FOREIGN
RELATIONS

DATE OF EVENT:

LOCATION OF EVENT: HAROLD PRATT HOUSE, 58 EAST 68TH STREET, NEW YORK

TIME OF EVENT:

SUBJECT: INVITATION TO ADDRESS THE MEMBERS OF THE COUNCIL AT
A MEETING IN NEW YORK.

RSVP: 04/01/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO: Thomas Ratchford

REMARKS:

DATE OF LETTER: 03/13/91

DATE RECEIVED: 03/18/91

FILE: P- INVITATION-SPEECH

9120791

COUNCIL ON FOREIGN RELATIONS

MARGARET OSMER-McQUADE
Vice President
Director of Programs

March 13, 1991

RECEIVED

91 MAR 18 P 5:07

OFFICE OF THE
DIRECTOR

Dr. D. Allan Bromley
Assistant to the President for Science and Technology
Director, Office of Science and Technology Policy
Executive Office of the President
1600 Pennsylvania Avenue
Washington, DC 20506

Dear Dr. Bromley:

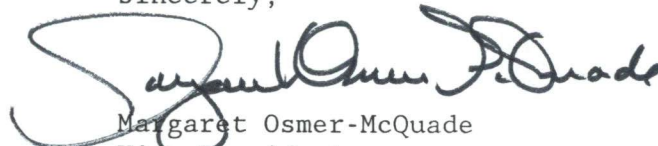
On behalf of the Council on Foreign Relations, I would like to invite you to address your fellow members at a meeting here at the Harold Pratt House, 58 East 68th Street. We recall with pleasure your visit to the Council in Washington D.C. in February 1990 and know that members in New York would appreciate hearing your current views on any number of issues.

Leaders who have addressed our membership in the recent past include Francois Mitterrand of France, Helmut Kohl of Germany, Javier Perez de Cuellar of the United Nations, Vaclav Havel of the Czech and Slovak Federated Republic, Dan Quayle, Dick Cheney, Carla Hills, George Mitchell, Colin Powell, Brent Scowcroft, Edward Markey, William Reilly, W. Michael Blumenthal of Unisys Corporation, William Schreiber of the Massachusetts Institute of Technology, Richard Wiley of the Federal Communications Commission and Robert Allen of AT&T.

Given the current public policy debates concerning science and technology, we believe that you, as Assistant to the President for Science and Technology, are in an ideal position to address these central issues. Of particular interest to members are the questions of whether the government should intervene to help technological sectors remain competitive with the rest of the international market, and if so, in what way should the government intervene and which sectors should receive assistance. Of course, the specific topic of your remarks would be your choice.

I look forward to an early and favorable reply and to the pleasure of welcoming you to the Council.

Sincerely,



Margaret Osmer-McQuade
Vice President
Director of Programs

MOMcQ/ljs

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9120771

SPEECH: YES NO

FROM: KRUPP, Fred: ENVIRONMENTAL DEFENSE FUND

DATE OF EVENT: 05/17/91

LOCATION OF EVENT: DIRKSEN SENATE BUILDING, ROOM SDG50

TIME OF EVENT: 09:00AM

SUBJECT: INVITATION TO BE A GUEST SPEAKER AT THE 1991
SYMPOSIUM ON THE ENVIRONMENT: "ENVIRONMENTAL
ISSUES--PUBLIC POLICY", THE SESSION ON CLIMATE
CHANGE.

RSVP:

CONTACT PERSON: DIANA WILLIAMS

CONTACT NUMBER: 212/505-2100

INVITATION ACCEPTED?

YES

NO

COPIES TO: Nancy Maynard

REMARKS:

DATE OF LETTER: 03/11/91

DATE RECEIVED: 03/16/91

FILE: p- INVITATION-SPEECH

THE WHITE HOUSE

WASHINGTON

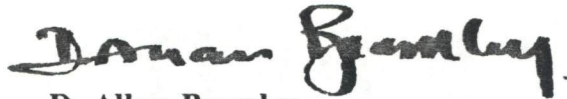
March 29, 1991

Dear Mr. Krupp:

Thank you for your letter of March 11, 1991, inviting me to be a guest speaker at your Symposium scheduled for May 17.

I would very much like to join you but I will be out of the country on travel at that time. I appreciate your thinking of me and would offer my best wishes for a successful symposium.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley". The signature is fluid and cursive, with the first name "D. Allan" and last name "Bromley" clearly distinguishable.

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

Mr. Fred Krupp
Executive Director
Environmental Defense Fund
257 Park Avenue South
New York, New York 10010

Environmental Defense Fund
257 Park Avenue South, New York, NY 10010
212-505-2100



WASHINGTON, D.C.
MAY 16 - 18

1991 SYMPOSIUM
ON THE ENVIRONMENT
Environmental Issues - Public Policy



Environmental Defense Fund
257 Park Avenue South
New York, NY 10010

PLEASE SAVE THESE DATES:

THURSDAY, MAY 16 - SATURDAY, MAY 18



1991 SYMPOSIUM ON THE ENVIRONMENT Environmental Issues - Public Policy

The program begins with dinner on Thursday

and concludes after lunch on Saturday.

Meeting locations include

the Library of Congress

and Senate and House Hearing Rooms.

Learn how we can deal effectively with the many
environmental problems facing us.

- How can we reduce the amount of energy we consume — and thereby reduce the threat of global warming and air pollution, yet continue to expand economically?
- How do we preserve the biological diversity of our planet with the world's population expanding and each person using up more and more natural resources?
- How can we meet national and urban transportation needs in ways that protect the environment?
- What are the prospects for the environment in a recession?

Invitations will be sent in March.

For questions, please contact Diana Williams at 212/505-2100.

These are some of the fascinating questions that will be discussed by a group of well-known environmental experts and key government officials.

ENVIRONMENTAL DEFENSE FUND

257 Park Avenue South
New York, NY 10010
(212) 505-2100

Fred Krupp
Executive Director

March 11, 1991

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The Honorable D. Allan Bromley
Assistant to the President for Science and Technology
Old Executive Office Building, Room 358
17th Street and Pennsylvania Avenue, NW
Washington, DC 20506

Dear Dr. Bromley,

I am delighted to invite you to be a guest speaker at the Environmental Defense Fund's 1991 Symposium on the Environment: "Environmental Issues -- Public Policy". We would be honored if you would join us for the session on Climate Change, Friday, May 17th, 9:00 - 10:30am, in the Dirksen Senate Room SDG50. Your unique experience and insight would be of great interest to our audience.

The two-day symposium was created by EDF to provide informative sessions on critical environmental issues by leading experts in science, law, economics, and public policy. Invitations will be extended to EDF's major supporters, Trustees, and members of our National Council. We expect 125 people to attend. For your information, I have enclosed a save-the-date announcement.

We would very much appreciate your consideration of this invitation, and we would be happy to work with your staff in any way to confirm and facilitate your appearance.

Kindly have your office contact Diana Williams (212 505-2100) in our New York office to let us know if you will be able to join me for what promises to be a unique and dynamic event. I look forward to hearing from you soon.

Yours truly,



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