

**110th Annual Meeting
The Ohio Academy of Science
Hosted by
Mount Union College
Alliance, Ohio
March 30-31; April 1, 2001**

About the Annual Meeting

THE OHIO ACADEMY OF SCIENCE'S ANNUAL MEETING is for academic, governmental, and industry scientists and engineers, university and pre-college educators and teachers, and pre-college, undergraduate, and graduate students, and interested lay citizens in the Ohio region. Annually the several hundred scientific presentations are complimented by workshops, symposia, an All-Academy Lecture, and field trips on local geology and plant sciences.

Welcome!

Mount Union College welcomes you to the 110th Annual Meeting of The Ohio Academy of Science. We invite you to explore our campus and to share in the excitement and opportunities provided in this program.

REGISTRATION: Registration is required for all meeting presenters and attendees. On-site registration will be available at a higher rate. To assure reservations for meals, forms must be received by The Ohio Academy of Science by **March 21, 2001**. Please use Registration Form on the last page. Mail completed form and fee to:

OAS Annual Meeting Registration
The Ohio Academy of Science
PO Box 12519
Columbus OH 43212-0519
FAX 614/488-2228 (for Credit Card or PO only)

Registration by credit card or purchase order only will be accepted by FAX at 614/488-2228. Your registration materials, receipt, and name tag will be ready at the meeting registration desk upon your arrival. For further information, please call 614/488-2228.

Friday, March 30: If you will be attending the Friday evening dinner, your registration materials will be available at the door. Friday evening dinner will be in the Hoover-Price Campus Center Alumni Room.

Saturday, March 31: Registration will be held in Kolenbrander-Harter Information Center Atrium from 8:00AM-3:00PM. On-site registration is possible by check, VISA, or Mastercard. Cash is discouraged.

Special Acknowledgments: The Ohio Academy of Science expresses its appreciation to **METCALF & EDDY** for financial support of the Saturday, March 31 Environmental Sciences Breakfast.

Local Arrangements: DR. CHARLES McCLAUGHERTY

PARKING: Free parking is available in lots located on the corners of Union Ave. & College St. on the east side of campus.

SMOKING POLICY: Smoking is not permitted in any building on campus.

MEALS: Friday, March 30. Preregistration required by March 21 for The Ohio Academy of Science Annual Meeting Banquet held jointly with The Ohio Biological Survey. **Saturday, March 31.** Lunch will be available in Hoover-Price Campus Center. See registration form. There is no Saturday evening meal.

HOUSING: Please contact hotels and motels directly. See list on page A-5.

GENERAL SCHEDULE

Friday, March 30, 2001

3:00 PM **The Ohio Academy of Science
Board of Trustees Meeting**
Hoover-Price Campus Center Alumni Room

3:00 PM **Ohio Biological Survey**
Executive Committee Meeting
Hoover-Price Campus Ctr Presidential Dinning Rm

6:00 PM **Joint OAS-Ohio Biological Survey
Reception and Dinner**
Hoover-Price Campus Center Alumni Room

Presidential Address

DR. WILLIAM D. HUMMON

WILLIAM D. HUMMON, Emeritus Professor of Biological Sciences at Ohio University, Athens, has belonged to OAS for over 30 years, is both Fellow (1981) and Life Member (1982), and has been vice-president of the Ecology section (1982-83) and member of the Executive Committee. He was both Program Officer and Secretary for the American Society of Zoologists and is a Fellow of AAAS (1985). With degrees from University of Montana, Missoula (BA Philosophy; BS, MS Biology) and University of Massachusetts, Amherst (PhD Zoology), he held a NATO Postdoctoral Fellowship at the DAFS Marine Laboratory, Aberdeen, Scotland, and has done coursework in Biblical Studies at the Oberlin Graduate School of Theology and the Earlham School of Religion (30 semester hours each). Author of many articles on the ecological biogeography and reproduction of the Gastrotricha, a phylum of microscopic invertebrates, he has described new genera and some fifty new species from the Atlantic and Pacific Oceans. Teacher of note, he has directed both MS and PhD students. His dialogue between Science and Religion received a Course Award from the John Templeton Foundation. He is presently interfacing science and religion through zooarchaeology.

Saturday, March 31, 2001

7:30 AM **Special Environmental
Sciences Breakfast**
(by invitation only; must be pre-registered)
Hosted by METCALF & EDDY

Hoover-Price Campus Center Alumni Room
Special Report: How to Apply to the Academy for Ohio Environmental Science and Environmental Engineering Undergraduate Scholarships. **Special Guests:** 2000-2001 Academic year Scholarship Recipients

8:00AM-3:00PM **General Meeting Registration**
 Kolenbrander-Harter Information Center

9:00-11:00AM **Morning poster and podium presentations**

9:00-11:00AM **Workshop: Addressing the Issue of Animal Research in the Undergraduate Classroom**
 Tolerton & Hood Hall Room 100

Organized by DR. HENRY E. HEFFNER,
 Professor, Dept. of Psychology,
 The University of Toledo

THE ISSUE OF ANIMAL RESEARCH should be addressed in any college course that uses information derived from animals. The purpose of this workshop is to present an approach that describes the mutualistic nature of animal research—i.e., that research animals, like other domestic animals, rely on humans for their survival. This approach has been used in a sophomore-level course in psychology involving the assignment of a book on the use of animals by humans (*Covenant of the Wild*, by Stephan Budiansky) and a lecture on the practical and ethical issues of animal research. The workshop will describe this approach and the response of the students to it. Handouts will include an outline of a sample lecture, an annotated reading list, and a copy of the article, "The Symbiotic Nature of Animal Research."

11:15AM **All Academy Lecture**
The Future of Undergraduate Science Education
 Hoover-Price Campus-Campus Grounds

JEANNE L. NARUM
 Director, Independent Colleges Office
 Director, Project Kaleidoscope
 Washington, DC

JEANNE L. NARUM is Director of the Independent Colleges (ICO) Office and of Project Kaleidoscope (PKAL). ICO Director since 1988, Jeanne assists a group of select liberal arts colleges in their relations with federal agencies and programs. In 1989, she became the founding Director of PKAL, an informal national alliance of educators, administrators, and other interested parties working to strengthen undergraduate programs in mathematics, engineering, and the various fields of science. As PKAL Director, Narum has a variety of responsibilities, all focused on building institutional interest in and capacity for building and sustaining strong undergraduate programs in these fields. One responsibility is to coordinate the volunteer efforts of a cadre of change agents, persons in colleges and universities across the country taking the lead in

transforming the learning environment for students. The experience of these change agents shapes PKAL institutes, workshops and publications, illustrating best practices in the work of reform. One significant dimension of PKAL is the Faculty for the 21st Century network, a group of faculty who, at an early stage of their career, are demonstrating capacity for local and national leadership in the coming decades. Another is PKAL's focus on facilities planning, on ensuring that the physical infrastructure effectively accommodates strong undergraduate SME&T programs. She is the project director for each of the externally-funded programs within PKAL.

Narum's responsibilities also include preparing materials emerging from PKAL activities for wider dissemination, in both print and virtual form. Both PKAL Volume I (What Works in Building Natural Science Communities) and PKAL Volume III (Structures for Science: A Handbook for Planning Undergraduate Facilities) are in wide use on campuses across the country. The most recent major PKAL publication (January 2000) is *Then, Now, and in the Next Decade: A Commentary on Strengthening Undergraduate Science, Mathematics, Engineering and Technology (SME&T)*. This publication illustrates the urgency of the work of the PKAL network, and is a means to encourage wider support for the efforts to reform undergraduate SME&T.

Both ICO and PKAL responsibilities connect to Narum's commitment to higher education, which is also evidenced in her involvement as a Member of the Board of Governors of the National Council on Undergraduate Research (NCUR) and an At-large Councilor for the Council on Undergraduate Research (CUR). She is a member of the National Research Council's Committee on Recognizing, Evaluating, and Rewarding Excellence in Undergraduate Teaching, and served on the NRC Strategic Planning Group for their Center on Education. Narum speaks widely on issues relating to institutional reform and national science policy.

Narum was educated as a musician; her prior experience includes administrative positions at Augsburg College (Vice President for Advancement), Dickinson College (Director of Development), and St. Olaf College (Director of Government and Foundation Relations). From these positions she learned about the role of careful planning and creative thinking, both in shaping institutional futures and in securing the resources needed to realize that future, and developed a clear understanding of how strong undergraduate programs serve the interests of students and society.

12:00 NOON **Special Recognition Ceremony**
 of newly elected FELLOWS of
 The Ohio Academy of Science

12:15PM **Lunch available in**
Hoover-Price Campus Center

1:30-5:00PM **Afternoon poster and podium presentations**

5:30 PM **OFFICIAL NOTICE**
 of Annual Business Meeting
 for Academy Members Only
 Kolenbrander-Harter Information Ctr Rm 011

Sunday, April 1, 2001

9:00 AM Earth Science Field Trip

Geological Hazards, Urbanization and Glacial Deposits
Organized by Jim Bauder, Ph.D., Bauder Certified Earth Sciences, Inc.

The purpose of this field trip is to see the effects of various geological hazards, their effects on urbanization and what provisions have been made to minimize the effects of these hazards.

Participants can meet in the parking lot of the Comfort Inn, southeast side of Carnation Mall at 2500 West State St. (US 62) in Alliance. Arrangements can be made to join the group at the first site.

The group will depart from the Comfort Inn at 9:00 am in private cars and proceed to Applegrove Street, North Canton, Ohio. We will see depression caused by collapse of underground coal mine rooms, areas where houses are and are not built over known abandoned underground coal mines, and a site mitigation project that is designed to produce a stable building site over former abandoned coal mine rooms. Participants will also see: steeply sloping gravels and sands that are destabilized by the extension of a commercial building; selective building placements from stable sites; difficulty of enlarging buildings for increased uses; and intermediate level streets built across deep deposits of water-saturated, very weak organic materials. Also, a large commercial center successfully constructed on kame-kettle topography.

For those interested, an extension of the field trip to include various glacial features: apparent end moraine of the Hayesville advance into Stark County, interior drainage basin flowing into an ice block depression then exiting as a series of high volume springs, a paleo-Indian village site, ice block depressions that are dry, eskers and a fen (Jackson Bog). A bonus: mill ponds, races and a water powered mill.

9:30 AM Plant Science Field Trip Fens of Northeastern Ohio

Organized by staff of the Ohio Department of Natural Resources, Division of Natural Areas and Preserves.

The purpose of this field trip is to visit two fens located in northeastern Ohio.

The group will meet at 9:30 am at the Jackson Bog parking lot, on SR 687 (Fulton Road), 1 mile west of the intersection of SR 687 and SR 241 (Wales Avenue). The parking area is west of Jackson High School on the south side of SR 687. After visiting Jackson Bog, the group will continue in private cars to Myersville Fen, another state preserve located in Summit County. This preserve was added to the list of State Preserves in 1998.

Jackson Bog, which is actually a fen, or alkaline bog, lies at the foot of a dry, sandy kame (a glacially deposited hill or ridge). The belts of kames in this area of Stark county provide an extensive aquifer. These highly permeable gravel deposits readily absorb surface water and then hold it in staggering quantities as groundwater. Whenever this groundwater reaches the surface, as it does here in Jackson Bog, artesian springs and seeps result. Springs emerge from beneath the elongated kame that borders the northern edge of the preserve. It is these gravel

deposits with their corresponding springs that hold the key to the very existence of Jackson Bog, as well as to its future.

9:00 AM Environmental Science Field Trip Huff Run Watershed Reclamation projects

Organized by Chuck McClaugherty, Brumbaugh Center for Environmental Science, Mount Union College.

The purpose of this trip is to observe problems and solutions associated with abandoned mined lands and acid mine drainage in the Huff Run Watershed of northern Carroll and Tuscarawas Counties.

The group will meet at 9 am in the parking lot adjacent to Mount Union Theater on the MUC campus (intersection of Union Ave (SR 183) and College Street). Participants will caravan (45 minutes) to Mineral City and view successful restoration and pending problems in this watershed. Since 1996, the Huff Run Watershed Restoration Partnership, composed of citizens, industry leaders and water quality professionals, has worked to further the restoration of this watershed. Participants will see a recently restored area, impacted water quality, seepage and damage from both underground and surface mines, and, for comparison, stream quality upstream from the impacted area. The field trip will conclude at noon. An optional side trip will continue to Zoar Village.

Come prepared to walk for some distance on muddy and uneven substrates.

Our Host

MOUNT UNION COLLEGE IS A PRIVATE, LIBERAL ARTS institution, located in Alliance, Ohio offering a liberal arts education grounded in the Judeo-Christian tradition. The College affirms the importance of reason, open inquiry, living faith, and individual worth. Mount Union's mission is to prepare students for meaningful work, fulfilling lives, and responsible citizenship.

Mount Union College is the outgrowth of a town meeting held on October 4, 1846. At that time the people gathered to hear Orville Nelson Hartshorn outline the need for a new institution in the area, *where men and women could be educated with equal opportunity, where science would parallel the humanities, where laboratory and experimental subjects would receive proper emphasis, and where there would be no distinction due to race, color, sex or position.*

Although Mount Union College had not been established by church efforts, its founder and early faculty members were dedicated Methodist laymen. The Pittsburgh Annual Conference of the Methodist Church "heartily endorsed" the new college in 1858, and in 1864 Mount Union was granted full patronage by the conference.

For many years Mount Union College has claimed the distinction of being one of the first colleges to have a summer school. Recently Mount Union was named as one of the America's "most wired" campuses.

From 1846 to present, the College has been under the leadership of ten presidents including the current president Dr. John L. Ewing, Jr.

DR. CHARLES McCLAUGHERTY, Associate Professor of Biology, is the chair of local arrangements.

HOUSING

ALLIANCE AREA

Comfort Inn
2500 West State St.
Alliance OH 44601
(330) 821-5555

Holiday Inn Express & Suites
2341 West State St.
Alliance OH 44601
(330) 821-6700

Super 8 Motel
2330 West State St.
Alliance OH 44601
(330) 821-5688

CANTON AREA

Best Suites of America
4914 Everhard Rd NW
Canton OH 44718
(330) 499-1011

Canton Hilton
320 Market Ave. S.
Canton OH 44702
(330) 454-5000

Canton Inn
1031 Tuscarawas St. W.
Canton OH 44702
(330) 452-9703

Comfort Inn Canton
5345 Broadmoor Cir. NW
Canton OH 44709
(330) 492-1331

Days Inn
3970 Convenience Cir. NW
Canton OH 44718
(330) 493-8883

Fairfield Inn
5285 Broadmoor Cir. NW
Canton OH 44709
(330) 493-7373

Four Points Sheraton Canton
4375 Metro Cir. NW
Canton OH 44720
(330) 494-6494

Hampton Inn
5335 Broadmoor Cir. NW
Canton OH 44709
(330) 492-0151

Holiday Inn
4520 Everhard Rd. NW
Canton OH 44718
(330) 494-2770

Parke Suites Hotel
4285 Everhard Rd. NW
Canton OH 44718
(330) 494-2233

Residence Inn
5280 Broadmoor Cir. NW
Canton OH 44709
(330) 493-0004

Super 8 Motel
3950 Convenience Cir. NW
Canton OH 44718
(330) 492-5030

SCHEDULE NOTES

Saturday, March 31, 2001

- 7:30 AM - Annual Metcalf & Eddy Hosted Environmental Science Breakfast (invitation only)**
- 8:00 AM - Registration in Kolenbrander-Harder Information Center**
- Refreshments in Tolerton & Hood Science Hall
- 9:00 AM - Morning Podium Sessions in Kolenbrander-Harder**
- Morning Poster Sessions in Tolerton & Hood Science Hall

11:15 AM - All-Academy Lecture in Campus Center

12:15 PM - Lunch in Campus Center (pre-registration requested)

1:30 PM - Pre-College Poster Session, Tolerton & Hood Science Hall

2:00 PM - After Sessions (Podium & Poster)

5:30 PM - Annual Business Meeting (Academy Members only) in Kolenbrander-Harder Information Center Rm. 011.