I am very pleased to report that the Geology Department at Wayne State University has had an excellent year! Our undergraduate enrollment is on the rise due in part to the addition of the Environmental Science degree program. The increase is putting a strain on our teaching laboratories but I can think of no “problem” that is more delightful to solve than accommodating an increase in the number of students! One of the keys to successful academic programs is excellent teaching. This year Dr. Larry Lemke received Wayne State University’s President’s Award for Excellence in Teaching. He is now the second Geology faculty member to receive a teaching award, Dr. Howard having received the College of Science’s Excellence in Teaching Award in 2000. We continue to have a significant number of students take part in our end-of-the-year field trips to geologically interesting places such as the Grand Canyon. Dr. Howard is also providing summer internships as he trains students to map the local glacial geology with funding from the U.S. Geological Survey’s EDMAP program. The Geology Club has been very active, with more social activities and educational events than ever. Our students have captured the vision that there is much more to obtaining an excellent education than course work alone. Spending time with faculty, and with other students outside class, benefits students in ways that are hard to measure but are nonetheless essential to their success. Research efforts by our faculty continue to flourish. This past summer Dr. Mark Baskaran spent a month in the Arctic Ocean on ODEN, a Swedish ice-breaker, gathering ice-rafted sediments from ice floes and water samples to improve our understanding of the sources, fate and transport of these important sediments. Dr. Jeff Howard has nearly completed geological mapping of eight 7.5 minute quadrangles near Detroit, and has continued his studies of the Los Angeles basin and San Andreas fault. Dr. Larry Lemke continues to focus his research on groundwater flow and contaminant transport problems. Understanding these processes is vitally important to environmental remediation efforts at chemically contaminated sites. Dr. Ed van Hees continues to work on Canadian ore deposits and on sediment pollution in southeastern Michigan. We would love to show you first-hand the healthy WSU Geology Department and the growing Environmental Sciences Program. If you can’t come in person, at least visit our website: http://www.clas.wayne.edu/Geology/.

With my warmest regards,

Jim Tucker
Interim Chair
Faculty Research at WSU

**Dr. Larry Lemke’s** research is focused primarily on groundwater flow/contaminant transport problems, and he has actively involved several undergraduate students in this work. Recently, he modeled the movement of benzene, cDCE, and MTBE in a groundwater aquifer system beneath Milford, Michigan. In another study, he and his students conducted Monte Carlo simulations integrating models for the groundwater transport of PCE with exposure pathways from ingestion, inhalation, and dermal contact with contaminated water. Dr. Lemke is planning future research to determine if concepts from sequence stratigraphy are applicable to subsurface glacial sediments.

**Dr. Ed van Hees’** research on Canadian gold and diamond deposits has involved two graduate students. In one project, a better understanding is sought of the source of the fluids and wallrock alteration in the largest vein-hosted gold deposit in North America. In the other study, he is trying to understand the origin of diamonds that occur in an unusual Archean conglomerate near Wawa, Ontario. Dr. van Hees is also working with Dr. Baskaran and one of his graduate students to better understand the nature of PCB pollution in the Clinton River near Mount Clemens.

**Dr. Mark Baskaran’s** research involves applications of naturally-occurring radioactive and stable isotope tracers to solve environmental problems. His current research activities include determinations of: i) the identities and quantities of arsenic in a groundwater system in Florida; ii) residence times of aerosols in the Metro-Detroit area; iii) radiation doses to Native Americans from food intake; iv) novel tracers of organic carbon cycling in polar region oceans; v) role of ice-rafted sediments in the long-range transport of particle-reactive species in the Arctic Ocean; vi) the source(s) of mud in Mud Volcanoes in Azerbaijan; and vii) submarine groundwater discharge in the Caspian Sea and coastal Florida.

**Dr. Jeff Howard** recently completed a study of the provenance of metavolcanic clasts in Eocene conglomerates of the Los Angeles basin. He is also involving undergraduate and graduate students in summer mapping projects and expects to complete a map of the Quaternary geology of eight USGS 7.5 minute quadrangles near Detroit by summer 2008. In another project, he has collaborated with researchers in Civil and Environmental Engineering to develop a new sequential extraction procedure for characterizing organometallic forms of lead in polluted urban soils of the Detroit area.

**Professor Dr. Jeff Howard** is currently involved in several research projects, including the study of the provenance of metavolcanic clasts in Eocene conglomerates of the Los Angeles basin. He is also collaborating with civil and environmental engineering researchers to develop a new sequential extraction procedure for characterizing organometallic forms of lead in polluted urban soils of the Detroit area.
Geology’s Academic Services Officer

Dave Lowrie on a recent field trip to Bancroft, ON
Geology Field Trips: A Real World Experience.

Mr. Dave Lowrie serves as the Academic Services Officer for the Department and is the Director of the Geology Teaching Laboratory. In addition to his teaching responsibilities, each year he represents Wayne State University at several regional and national Mineral Shows where he has won several awards in recent years. He keeps in close contact with many of our alumni, and helps the faculty to build and repair equipment for their research. His efforts greatly improve the educational experience for all our students.

President’s Award for Excellence in Teaching

Dr. Larry Lemke received from Wayne State University the 2006 President’s Award for Excellence in Teaching, one of only five such awards given this past year to University faculty. This annual prize provides recognition for faculty who have made outstanding contributions to teaching. An excerpt from his citation reads: “He makes complex subjects understandable, incorporates computer modeling programs into his courses to bring the subject matter to life, and has created challenging and educational games to help students study and learn. He engages his students deeply in the subject and he engages with them in the learning process.” Furthermore, “Professor Lemke also gives lavishly of himself, as evidenced by his being co-organizer of the annual 10-day Geology Department Field Trip that is very popular with students.” Dr. Lemke views the award as an honor for the department as well as himself, and he hopes it will contribute to the positive momentum that Geology and Environmental Sciences have recently experienced at WSU.

Congratulations to Dr. Lemke for a job well done!

Dr. Lemke explains details of a stratigraphy lab exercise to students.

WSU Provost Nancy Barrett presents the President’s Award for Excellence in Teaching to Dr. Lemke.
Geology Field Trips: A Real World Experience

The famous British geologist, H. H. Read, once said, “the best geologist is the one who has seen the most rocks.” The WSU Geology Department embraces this philosophy and continues to take great strides to enhance field opportunities for its students. Through our field trip activities, we help to deliver on Wayne State University’s promise of “A World Class Education in the Real World.”

Field trips and related field projects are an integral part of 11 undergraduate and graduate level courses offered to Geology and Environmental Science students at WSU. Regularly scheduled field trips to destinations such as the St. Francois Mountains in southeast Missouri (Petrology), the Appalachian Mountains in Tennessee and North Carolina (Structural Geology), the Cincinnati Arch in Northern Kentucky (Stratigraphy and Sedimentology), the Grenville Province in Bancroft, Ontario (Mineralogy) and the Porcupine Mining Camp in Timmins, Ontario (Economic Geology) bring our students to areas where geological features discussed in class can readily be seen in the field.

It will come as no surprise to alumni of our department that field trips are also a tremendous recruiting tool! Since 2001, we have been organizing an annual 10-day departmental field trip to stimulate interest in geology and environmental science among WSU students. These trips are held over spring break or in early May, just after final exams, and we usually head south or southwest to warmer climates (for obvious reasons). We have visited California, the Mississippi River Delta, and the Grand Canyon. The most recent trip to West Texas included hikes to see the Permian reef exposures and the spectacular Carlsbad Caverns in the Guadalupe Mountains, as well as a tour (guided by WSU alumnus John Troschinetz) of an active drilling rig and gas condensate production facilities operated by EOG Resources. Alumni support has helped us to keep the cost of these trips affordable to WSU students, allowing us to attract those that might otherwise never have the opportunity to experience the many spectacular geological features outside of metropolitan Detroit.
The incorporation of field trips into most geology courses has contributed to the revitalization of the Geology program and the building of the new Environmental Science program at Wayne State. The growth of both programs is most evident in the number of students enrolled in Mineralogy, the first core-course taken by both the Geology and Environmental Science majors. Enrollments of mineralogy students have increased to 19 students per year in 2005 and 2006.

Field trips also have helped us to attract African American students (dark grey part of bars = 15% of students), leading to increased diversity among our majors and enhanced participation of underrepresented minorities in the environmental and geosciences. The success of our strategy to recruit and retain students using field trips was highlighted in a recent paper given by Drs. Ed van Hees and Larry Lemke at the 2006 GSA National Meeting in Philadelphia: “Using field trips to attract and retain minority students in the Geosciences.”

More photos from our field trips are available at: http://www.clas.wayne.edu/unit-inner.asp?WebPageID=323

Drill rig tour of an unconventional Permian Basin gas well operated by EOG Resources
Thanks to Our Friends!

The Geology Department would like to express our deepest appreciation to the following organizations and people for their contributions this past year. Your generosity has allowed the department to make progress toward reaching goals of modernizing our teaching and research facilities, sending students on field trips and to conferences, and giving scholarships and awards to our undergraduate and graduate students. Thank you very much!

Organizations
American Federation of Mineralogical Societies
EOG Resources
Michigan Mineralogical Society

People
Dr. Mark Baskaran
Ms. Frances K. Beever
Mr. Robert Berry, Jr.
Mr. Kenneth R. Chaivre
Dr. and Mrs. Robert B. Furlong
Mr. Brian Goss
Mr. Pat Hourican
Dr. Larry Lemke
Mr. Dave Lowrie
Mr. Gregory M. Karageozian
Ms. Maryjo McElwee
Mr. Robert Nowakowski
Ms. Rea Pallanguri
Ms. Brandon J. Parks
Dr. Norbert P. Psuty
Mr. Dennis R. Schmude
Ms. Andrea Temple
Mr. George J. Toth
Mrs. Mary Jane Toth
Mr. John S. Troschinetz
Dr. Edmond van Hees
Mr. John Vitkay, Jr.
Ms. Deobaleene Watley

Student Awards and Honors

Lauren Beavon
• 2005 Geology Department Undergraduate Student Merit Award

Stephen Chumney
• 2005 Geology Department Undergraduate Student Merit Award

Rebecca Jackson
• WSU Howard and Mary Kehrl Scholarship
• 2005-2006 Department of Chemistry Chair’s Honors List

Jason Jweda
• 2005 Geology Department Graduate Student Merit Award
• American Federation of Mineralogical Societies Graduate Student Scholarship
• 2006 American Chemical Society Division of Analytical Chemistry Award

Carmen Hill
• McNair Scholars Program Summer Research Scholarship

Courtney Kohloff
• Midwest Mineralogical and Lapidary Society Scholarship
• University of Missouri Garvin Field Camp Scholarship

Shannon Molaroni
• 2005 SUNY Plattsburg Research Experience for Undergraduates (REU) Fellowship

Dawn Niedermiller
• American Federation of Mineralogical Societies Graduate Student Scholarship

Gibran Washington
• National Association of Black Geologists and Geophysicists (NABGG) Mack Gibson Award.
Giving Categories
• Field Trips
• Scholarship Fund
• Research and Development
• Alumni Support Fund
• Wherever the need is greatest

Does your Employer Match your Gift?
More than 1,000 companies in the United States have matching gift programs that will, in effect, double or triple your gift to Wayne State University. Check with your employer to see if it has such a program. Tell the appropriate person, usually someone in the human resources or community relations office, that you would like to have your gift matched. Arrangements will then be made to send your gift to us along with, or followed by, a second gift, courtesy of your firm’s matching gift program. Sound easy? It is! Please take advantage of this and help us double or triple your gift.

A Little Help From Our Friends
We hope the articles in this newsletter, highlighting our students’ and faculty accomplishments and endeavors, have shown you that our department is dedicated to providing an education that reaches for higher and higher standards. We want our graduates to receive the recognition that comes with a degree from a highly reputable department and university. These are worthy goals, but they are expensive. Your past contributions have helped us—your future contributions will ensure our success.

External circumstances such as state or federal budget cuts can delay attaining these goals. Ambitious goals can be stalled in the dream stage.

Please help us reach these goals. Your generosity allows us to modernize our teaching and research facilities, promote collaborative research and teaching efforts, send graduate students to national and international conferences to present their papers, acquire equipment to maintain our ability to perform cutting-edge research, and provide scholarships and awards to our undergraduate and graduate students. Even this newsletter is made possible by the resources you give us. If you agree that these are worthwhile projects, please help us by giving to one or more of the funds listed on the Donor Form later in this newsletter. And THANKS in advance.
Gift to the Scholarship Fund of the Department of Geology

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