Northern Students Learn Crime Lab Techniques

Over the last few years, many prospective and current students have expressed interest in DNA technology and a forensic biochemistry program. In response, this fall we have introduced a new forensic biochemistry major. This major incorporates chemistry, biology and criminal justice courses. The four-year program prepares students for a career in the field of forensic science. It provides the science background required for working as a forensic investigator in a crime lab, especially for DNA analysis. In addition, it prepares students for entry into a graduate program in the field.

Creation of the major required two new 400-level courses: Forensic Chemistry and a forensic lab internship. Forensic Chemistry is a required course that is team taught. During its inaugural offering two years ago (as a special topics course), we enlisted the help of a former forensic laboratory analyst as an adjunct instructor. We hope to continue using such experts as part of our teaching team to provide examples of relevant work experience during the course. We have added Dr. John Ejnik to our department faculty, who brings a wealth of forensic laboratory experience to the classroom from his years of laboratory management with the U.S. Navy. The forensic laboratory internships will be an optional elective in the major and we hope through such training students will be better prepared for entry-level jobs in government or private forensic laboratories.
NMU chemistry student wins Barry M. Goldwater Scholarship

Tony Schindler, double majoring in chemistry and physics, was selected as one of the winners of the 2006 Barry M. Goldwater Scholarship. This award is given annually to sophomore or junior college students majoring in natural science, mathematics or engineering who have excellent academic records and outstanding potential. Tony was selected out of 1,081 applicants and he is the first NMU student to achieve this honor. Tony is from Chippewa Falls, Wisc., and recently completed his third summer as a Research Experience for Undergraduates program participant. This past summer he was at Stanford University investigating a project involving tethering DNA to gold electrodes, which have potential use as a way to construct the wires for future single molecule electronics experiments. Past summers he was at San Diego State University investigating the physics of DNA sequencing technology and at Cornell University studying X-ray diffraction of proteins. Tony will graduate in May 2007 and plans to enter a biomedical or bioengineering Ph.D. program.

Department News

Chromatography Advances with New GC-MS Machine

In 2004, through the leadership of Dr. Eugene Wickenheiser, the department acquired the funds to purchase a new Thermo Electron Corporation Finnegan Trace GC ultra gas chromatograph-mass spectrometer. With the service and maintenance expertise of Dr. John Ejnik, this instrument is up and running and allows us to detect, identify and quantify chemicals in the ppb range. It is quickly becoming an integral part of student and faculty research as well as being used in the CH 435 Chromatography course.
Faculty-Student Research

Sampling the Yellow Dog Plains

Dr. John Ejnik and graduate student Heather Martin are monitoring water quality parameters and analyzing trace metals within the surface waters of the Yellow Dog Plains watershed located in northern Marquette County. This research is being done under the guidance of the Michigan Department of Environmental Quality to establish the naturally occurring baselines for many heavy metals such as cadmium, mercury, lead and chromium for a pristine wilderness area.

The region being tested is of current concern because a proposed sulfide mine may be located there. The mining permit would require that Kennecott Mineral Company ensure that the wetlands remain undamaged from the mining and are left in a relatively natural state. Ejnik’s research will provide a foundation on which to measure any developmental impact on this wetland. To find out more about the proposed mining project see www.kennecottminerals.com and www.savethewildup.org.

Alumni Honored

Dr. Pak-Wing Steve Chum ’74 M.S. was inducted into the Plastics Hall of Fame in June 2006. He joins the ranks of industry leaders and Nobel Prize laureates who have contributed significantly to the field of plastics. Chum earned his Ph.D. in physical organic chemistry at Oregon State University in 1978 and joined his employer, Midland Dow, in 1980. He has received numerous awards during his career, including the Herbert H. Dow medal, the ACS Outstanding Achievement Award, the U.S. National Inventor of the Year Award, and an NMU Distinguished Alumnus Award in 1996. He is an internationally recognized expert in semicrystalline polymer science and holds 55 U.S. patents. One of Dr. Chum’s latest inventions is a chlorine-resistant fabric that is currently being used in swimsuits and wrinkle-free shirts. Chum lives in Freeport, Texas.

Continued on next page
Dr. David Hart ‘64 B.S. gave an excellent commencement address and received an honorary doctorate in biochemistry from NMU at this year’s May commencement. Hart earned his Ph.D. in biochemistry from Michigan State University with Dr. Paul Kindel and then conducted post-doctoral research at the University of Illinois Medical Center, Chicago, with Dr. Alfred Nisonoff. Hart has spent the majority of his career at the University of Calgary studying the repair and healing of connective tissue and the treatment of osteoarthritis and autoimmune disorders. His novel approach has been to view the joints of the body as an integrated system and to use an interdisciplinary approach to joint repair. Learn more about his accomplishments at http://chemistry.nmu.edu.

Alumni Notes

Tell us about your latest accomplishments! Update us by e-mailing pgould@nmu.edu or request to receive the newsletter via e-mail. We would love to hear from you.

Ben Van Handel ’05 B.S. spent a year conducting research under the direction of Dr. Frankie McCormick, and has entered the Ph.D. program in biochemistry at UCLA.

Jeffrey Szymanski ’05 B.S. has finished his first year of medical school at Wayne State University and was one of only four freshmen in his class to be accepted into the M.D./Ph.D. program at Wayne.

Judy (Pumper) Mufti ’06 B.S. has entered the Ph.D. program in biochemistry at the University of Colorado at Fort Collins.

Lindsay (Meister) Lawless ’06 B.S. is in a Certified Nursing Assistant program and lives near Washington, D.C.

Keriann Oertell ’06 B.S. has entered into the Ph.D. program in chemistry at the University of California-San Diego.

Rachelle Rudden ’05 B.S. has completed a year in the Ph.D. chemistry program at Wayne State University.

Matthew Nielsen ’03 B.S. has entered the M.D. program at Michigan State University. He expects to complete his NMU master’s thesis in December 2006.

Michelle Collins ’02 B.S. has entered the M.S. program at NMU after working on hepatitis C cell entry mechanisms at the Lahey Clinic in Massachusetts.

Steven Vervacke ’75 B.S., ’79 M.A. has recently moved from Appleton Papers to Neenah Paper MI in Munising. He is now the technical leader of research.

Mike New ’06 B.S. is a scientist I in drug delivery at SurModics, Inc., in Eden Prairie, Minn.

Jennifer (Gustafson) Grimsby ’99 M.S. teaches chemistry at Bay College in Escanaba.

Dr. Anita Mattson ’02 B.S. received her Ph.D. in organic chemistry from Northwestern University in ’06 and is a post-doctoral fellow at University of North Carolina-Chapel Hill.

Gretchen Froehner ’05 M.S. is a process II scientist at Kiasorin, Inc. in Stillwater, Minn.

Dr. Cyndi (Earles) Ochsner ’91 B.S. is an assistant professor at St. Norbert’s College in De Pere, Wisc.

Roger Zanon ’96 B.S., ’97 M.S. is a senior staff scientist at Amgen, Inc. in Thousand Oaks, Calif.

Nagib Ward ’00 B.S. is a senior staff scientist at Appleton, Inc., in Appleton, Wisc.

2006 Student Award Winners

Lucian F. Hunt Award: Keriann Oertell
Outstanding Senior: Danielle Pellow
Alchemist (outstanding organic chemistry student): Amanda Moraska, Kyle Van Damme
Outstanding Analytical Student: Jessica DePew
Outstanding Graduating Graduate Student: Jennifer Jo Mueller
Outstanding First Year Student: Kelsey Keskitalo