

Environmental Science and Biology

www.brockport.edu/envsci/

585-395-5975

Fall, 2003

Dr. Joseph Makarewicz, Chairman

On behalf of the faculty and staff of the Department of Environmental Science and Biology, I welcome you back to SUNY Brockport for the Fall 2003 semester. Much has happened during the summer months. The revision of the major in Environmental Science, which applies to incoming freshmen and transfer students, has been approved by the Faculty Senate. Working with Rob DiCarlo of Career Services and Dr. Borowiec of the Political Science Department, we have established paid internships with New York Department of Environmental Conservation (see article on internships). Also, Dr. Haynes and Mr. Roosa have developed laboratory sections for the required Environmental Science course. These laboratories are being offered for the first time this year. Regrettably, the Department's fish electro-shocker boat was destroyed in a fire this summer when a portion of Lake Ontario Boat Storage burned. Also, in early September, we have a seminar on the restoring the Everglades by Dr. William Logan of the National Research Council.

The incoming class of Environmental Science majors is about 30 students including transfers and freshmen. We have created an e-mail listing of all declared majors and minors through the Angel system on campus. This will allow us to contact you about registration, seminar speakers and other opportunities. Have an interesting and fulfilling semester.

Graduating Seniors

Congratulations to the 2003 graduates in Environmental Science and Biology: **Marc Chalupniki, Megan McCone, Jennifer Seiter, Chris Snyder, Mike Totodo and Matt Lochner.** As of today, four of these people have been accepted into graduate school.



Dr. Mark Noll, Ph.D.

Department of Earth Sciences and Member of the Environmental Science Board

What is Environmental Science?

It encompasses investigations of the environment in which we live, the environments that we depend on and the interrelationship between our various surroundings. If this sounds like it could be a broad array of topics, it is. To complete projects, professionals of various disciplines come together to form teams, each bringing their own set of skills and experience. As an environmental scientist, you must have the flexibility to continue to learn new skills, and work with a wide range of professionals during your career.

As we move into the future, new environmental problems will emerge and the questions facing environmental scientists in all disciplines will

continue to increase in complexity and difficulty. As few, if any, individuals will possess all the skills required, it is incumbent on students today to build an array of expertise in their chosen area and in related fields, whether it be Earth Science, Biology or Chemistry. Equally important is the experience gained by working on real problems outside the classroom. Showing the ability to solve problems and to work as part of a team is the key to courses in graduate school or on the job.

Looking back over my own career, I can see how both breadth and depth in my education has been useful to me. Formally trained as a geologist and soil scientist, I also have training in chemistry and other physical earth sciences. As a professional working for the USEPA, in industry and consulting, I realized that each new project brought on its own set of unique questions to be answered. This required that I educate myself in diverse fields such as health risk assessment, environmental engineering and environmental law. I was able to do this because of the strong background I had in the basic sciences and a willingness to seek out others with the skills I lacked.

When I arrived at Brockport six years ago, I was faced with new challenges inside and outside the classroom. My goal has been to develop a research program that address real problems and provided opportunities for undergraduate students to become involved in these projects. Currently, my research focuses on the cycling of chemicals through the environment. In particular, the role of human activity on these cycles has become a common thread. I often have opportunities for students to become involved in research projects both in the field and in the lab. Please stop by if you have an interest or just a question about what I do.

Seminar

Restoring the Everglades: Applying Environmental Science to a Real World Problem. Dr. William Logan, National Research Council, Washington, DC

5 September, 2003. 4pm

Tentative location: Room 140 Lennon Hall.

Internships

New York State Department of Environmental Conservation/ The Albany Semester Program

Interested in a full-time internship working with the Department of Conservation? Then look no further than the Albany Semester Program, a partnership

Environmental Science and Biology - 2 between the Office of Career Services and the Political Science Department. Currently, we are looking for Spring, 2004 and Summer, 2004 interns to work for the DEC in Albany, Schenectady and Avon, NY. All interns receive full-time credit and a stipend of either \$2,500 for the summer or \$3,000 for the Spring or Fall semesters. See descriptions below. For more information on these internships, contact Rob DiCarlo, Office of Career Services at 585-395-2392 or rdicarlo@brockport.edu

DEC Fishery Internship - Seeking an Environmental Science or Biology student with good computer skills (Access, Fox) and / or a GIS type background. Position would deal with data on fisheries assessments and tissue analysis. This position is based in Albany and is available in the Spring.

DEC Geology / Civil Engineering Internship - Work would be a combination of field sampling, data entry and assembling geomorphological data from maps and aerial photography. This position is based in Albany and is available, Spring and Fall.

DEC Water Internship - Seeking an Environmental Science student with a water background preferred. This position deals with compliance audits at facilities regulated by the DEC's Division of Water. This position is based in Avon, NY and is available Spring, Summer and Fall.

Lockheed-Martin Corporation

Internships are occasionally available at Lockheed Martin, Syracuse, NY in the Department of Quality and Environment, Safety and Health. They usually run from -May to mid-August. For more information, See **Graduates in the News** -Brian Kent.

Christopher Woods wins Rochester Academy of Science Award

The Rochester Academy of Sciences awarded a \$100 2002-03 student research grant to Christopher Woods. Chris is one of only four students to receive an award this year. He wrote his proposal "Surfactant Studies Using ESR Spectroscopy" under the guidance of Markus M. Hoffmann

Students in the News

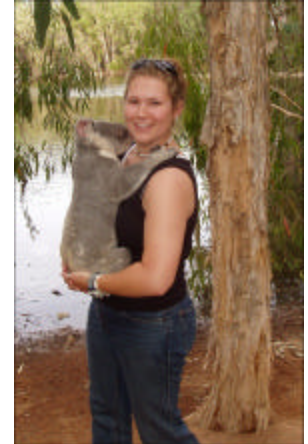
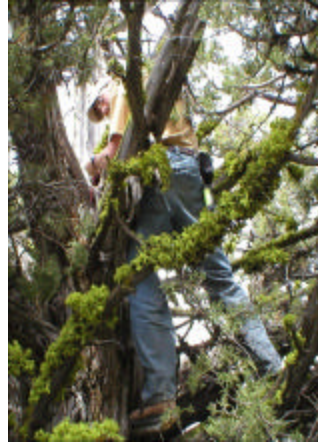


Kristie Klees (BS '04) setting up ISCO automated sampler at a Waste Water Treatment Facility as part of her summer 2003 internship with the Division of Water, New York State Department of Environmental Conservation. Besides assisting with sampling, she helped with initiating the new Stormwater Program, helped check for violations of the Stormwater Discharge Elimination System (SPEDES), and conducted Community Assistance Visits for the National Flood Insurance Program (NFIP).



Leanna Bond (left) (BS '04) with Dixon Rollins (Regional Water Engineer, NYSDEC, Division of Water). Leanna has a job as a paid full-time Intern as part of the new program administered by SUNY Brockport (See article on Internships). Like Kristie Klees, Leanna has worked with the Division of Water but also has spent time this summer working with Web Pearsall, Regional Fisheries Manger, assisting in the Division of Fish, Wildlife and Marine .

Marc Chalupnicki (03) is working this summer for the Cayuga County Soil and Water Conservation on the FEMA trail projects.



Conan Guard (BS '04), hiding in the tree, and **Sarah Davidson** (BS '04), with a friendly Koala, are in far off places this summer. Conan is in the Sierra Nevada, Mountains of California working on shrub steppe birds while Sarah is at James Cook University, Australia for the summer and fall semesters. Sarah is pursuing her interest in environmental policy and regulation.

Graduates In the News

Brian Kent (BS '81, MS '84) is employed with Lockheed Martin Corporation in Syracuse, NY. Lockheed Martin is the world's largest defense contractor. As Director of Quality and Environment, Safety and Health, Brian oversees these functions for a \$10 billion Division employing 31,000 employees. He is head quartered in Syracuse, NY. Internships are occasionally available at Lockheed Martin, Syracuse, NY and usually run from mid-May to mid-August. Brian suggests that junior and senior students with an interest in industry check the Lockheed Martin website: <http://lmpeople.external.lmco.com/careers/careers.asp>

IMPORTANT REQUEST of all students: Many of you are doing internships, working on grants and camps, etc., this summer. Please take pictures and write me notes about what you are doing and where. This information is important to us. It helps us convey to new students and employees the quality of our program and the capability of our students.

Thanks! Dr. Makarewicz

Address Changes

If you have changed your address please notify Mrs. Deborah Aratari in Room 115 Lennon or at 395-5975.

Wedding Bells and more!

Congratulations to Mrs. Deborah Aratari, formerly Ms. Deborah Dilker, on her recent marriage. As Department Secretary, Mrs. Aratari has information on class schedules, independent study, work study, makes appointments for the Chairperson, etc. Office, Room 115, Lennon Hall
7:30 am to 11:30 am
Office Phone (395-5975)

Dr. Geoffrey Gardner, resident plant ecologist, was recently married this summer. His wife, Dr. Laura Gardner, is a professor at St John Fisher College.

Sue Schultz (MS '04) was blessed with a baby this summer. Mother and baby are doing well!

BEAN (Student Club) Brockport Environmental Awareness Network

BEAN is a small group of Brockport students who are concerned about the environment and feel it necessary to raise awareness to such issues. In keeping with the club's goals, we have offered several field trips and programs this past spring semester. BEAN went to Mendon Ponds Park in March to enjoy the wildlife, hiking trails and glacial formations within the park. In April, the group went to Braddock Bay in Greece to participate in Bird of Prey week. Also on Earth Day, April 22nd, BEAN held an evening program that included speakers from the Environmental Science and Biology and Earth Science departments. These faculty members spoke on environmental topics and issues. The turn out for this event was excellent and everyone enjoyed the free food and beverages following the event. BEAN has many ambitious plans for the coming school year. The plans focus on campus-based environmental issues such as energy efficiency, waste management, and recycling. BEAN is also working on hiring consultants to come to SUNY Brockport and hold workshops that may give the school some direction and incentive in implementing practices that may create a "greener", more environmentally friendly campus. BEAN is a small group that currently has a few dedicated people that are drawn to help where they can. We welcome any and all newcomers. You need not be an Environmental Science and Biology major to participate; you just simply need to be concerned about the environment in which you live and want to be part of institutional change. The fish tank in the main foyer of Lennon has contact information about BEAN and also has recycling bins for paper and

other recyclables. Please use them. We look forward to the next school year to make our plans a reality. BEAN also looks forward to seeing you as a active member next year. Get involved. If you don't, then who will?

Research Success: Three Brockport undergraduate students and one Brockport high school student co-author two scientific journal articles

Two scientific journal articles with Brockport student authors presenting results of summer 2002 research under the guidance of Markus M. Hoffmann (Environmental Science Board member) have just been published. Christopher Woods and Brockport high school student Nichole Bushie synthesized several ionic liquid compounds and, as part of their work, have developed a novel synthesis method employing a household microwave oven. Nicole Bushie was supported by the local section of the American Chemical Society through the SEED program, a program promoting science to enthused high school students from low-income families. Their results are described in the article.

"Microwave-Assisted Synthesis of 1-Ethyl-3-Methylimidazolium Bromide". Woods, C., Bushie, N.T.; Hoffmann, M.M., Journal of Undergraduate Chemistry Research, Vol. 2, 2nd issue, pages 1-4.

Jason Carr subsequently used one of their ionic liquids to study the phase behavior with supercritical carbon dioxide and added surfactants. Jason Tubbs helped out the research effort by analyzing experimental samples using Nuclear Magnetic Resonance Spectroscopy. The preliminary results of this work indicated the partial dissolution of ionic liquid into the carbon dioxide phase, something that has not been accomplished before. The findings found entry into the review article.

"Surfactants in Green Solvent Systems – Current and Possible Future Research Directions", Hoffmann, M.M.; Heitz, M.P.; Carr, J.B.; Tubbs, J.D., Journal of Dispersion Science and Technology, Vol. 24, 2nd issue, pages, 155-171.

For More Information on the major in Environmental Science, contact

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