

State University of New York College at Brockport

Department of **Environmental Science and Biology**

www.brockport.edu/envsci/

585-395-5975

Fall, 2004

From the Department Chairman

Last spring, the Environmental Science and Biology Department achieved a benchmark of 100 majors, two years ahead of our most optimistic projections when the Environmental Science major at Brockport began in 2001. We welcome our new freshmen and transfer students and our returning majors to what we think will be an exciting and productive academic year for all of us in the ES&B Department. With this newsletter we also will catch our alumni and friends up on the Department's activities and plans after a summer that saw many changes.

Ms. Hilary Richardson (MS '04) joined the staff as the Instructional Support Assistant. She will teach ENV 202, Environmental Science, laboratories; assist laboratories in ENV 303, Ecology, and ENV 421, Limnology Laboratory; and maintain the Department's extensive inventory of laboratory and field equipment.

Dr. Joseph Makarewicz stepped down after a highly successful term as founding Department Chairman, and the department selected me (Dr. Haynes) to be his successor. Dr. Makarewicz is enjoying the early phases of a yearlong sabbatical leave during which he will travel to scientific conferences (most recently Sweden and Finland) and work on his many eternally funded projects.

Dr. David Zimmer has joined the Department for a year. This fall, he is teaching ENV 419 (Limnology), ENV 421 (Limnology Laboratory), and ENV 490 (Fishery Techniques & Fish Identification). In the spring, he will teach ENV 483 (Aquatic Invertebrates), ENV 484 (Fish Ecology), and ENV 495 (Plankton Ecology).

You are part of a dynamic department full of accomplishment and potential for growth, but only you can fully unlock that potential for your benefit. This means studying effectively, participating in Department activities, (e.g. student Brockport Environmental Awareness Network club, seminars, pizza parties, etc.), and finding faculty to work with on research projects. Welcome to a new academic year full of promise, and best wishes for all success in your studies.

ENV Student News

Congratulations to the following ENV students who are pursuing a graduate degree in Environmental Science or a career in the field.

Matt Kaproth ('04) received a full tuition waiver/stipend to West Virginia University. Matt is seeking a MS in Biology.

Sarah Wasson received a full tuition waiver/stipend to SUNY Brockport. Sarah is seeking a MS in Biology.

Bill Guenther is seeking a MS in Biology at SUNY Brockport.

Rosemary Fanelli is seeking a MS at the SUNY College of Environmental Science & Forestry.

Daina Beckstrand ('00) recently obtained a position with the USDA Natural Resources Conservation Service in Pennsylvania as a Wildlife Biologist. Daina will be performing field work in central PA for various federal programs.

Best wishes for success to all of these graduates!

Meet New ENV Staff

Dr. David Zimmer, Visiting Assistant Professor; Ph.D., Biology, 1987; State University of New York at Buffalo. Dr. Zimmer's area of expertise is physiological ecology, environmental physiology of aquatic organisms, and the effects of environmental acidity and heavy metals. Dr. Zimmer's office is in 115 Lennon

Ms. Hilary Richardson, Instructional Support Assistant. Hilary received her undergraduate degree ('00) from SUNY Plattsburgh and is currently completing her MS thesis at Brockport. Hilary coordinates activities of BEAN (Brockport Environmental Awareness Network club), teaches environmental science labs, and assists various ENV lab and field exercises. Hilary's office is in 108A Lennon.

Mr. Peter Debes, Staff Assistant. Mr. Debes is creating a new herbarium collection that will be housed in 135 Lennon.

Dr. Christopher Norment's Summer 2004 Activities

Sarah Lazazzero (MS candidate). Sarah began her thesis research on grassland bird habitat selections and management in Jefferson County, New York. **Leanna Bond** (BS '05) was Sarah's field assistant. The project is funded by the New York State Biodiversity Research Institute.

Saskia Windig (MS candidate). Saskia began her thesis research on predation of grassland bird nests at Iroquois National Wildlife Refuge. **Kristie Klees** (BS '05) was her field assistant. The project is funded by the US Fish and Wildlife Service.

Patrick Emblidge and **Adam Goodine**, both of whom are BS candidates at Brockport, worked as field assistants on a study of Blanding's turtle ecology in St. Lawrence County. The study is directed by **Tim Crockett** (MS candidate) who finished his second season of fieldwork, and Dr. Glenn Johnson of SUNY Potsdam.

Brendan McCabe (MS candidate) finished his fieldwork on lipid stores in migratory White-throated Sparrows, which he conducted at Braddock Bay Bird Observatory on the south shore of Lake Ontario. Brendan is now in the process of analyzing the blood samples that he collected during his fieldwork.

In addition to supervising student research, **Dr. Norment** volunteered on a waterfowl productivity study at the Yukon Delta National Wildlife Refuge in western Alaska, where he saw many new bird species, learned some new field techniques, and interacted with lots of mosquitoes. He spent time on his family's land in Washington State, where he also looked into research opportunities with the US Forest Service and National Park Service.

Dr. James Haynes's Summer 2004 Activities

Scott Wells (MS candidate) began his thesis research on the status of stream fish communities in the Johnson and Tonawanda Creek watersheds of western NY. **Ross Abbett** (BS '06) was Scott's field assistant. The project is funded by the NY Dept. of Environmental Conservation.

Sara Wellman, **Marc Chalupnicki**, and **Tim Lincoln** (MS candidates) continued projects on "Population Monitoring and Levels of Bioaccumulative Chemicals of Concern in Mink," "Assessing Industrial Contamination of Brockport Creek," and "Developing a Biomonitoring Tool with Widespread Applicability: Quantifying CYP1A Induction in Creek Chub by QC-RT-PCR."

Ryan Walter (BS '00, MS '02), **Ben DiSalvo** (BS '01, MS candidate) and **Bob Demay** (BS '02) worked with Dr. Haynes on a fishery survey of Waneta and Lamoka Lakes in relation an aquatic weed control program.

Dr. Haynes also traveled to Texas, Pennsylvania and California to deliver three NSF-funded workshops designed to show college faculty new concepts and techniques for stimulating undergraduates' interest in science.

New ENV Courses for Spring '05!

Plankton Ecology (ENV 495/595, 2 credits) will be offered on Thursdays from 3-5. Below is a brief description:

Investigates of the ecology of bacteria and phyto- and zooplankton at the individual, population and community levels. Discusses the importance of plankton to energy flow and nutrient cycling in lakes; resource uptake; life history and anti-predator strategies; and responses to environmental stress. Explores the importance of competition and predation in structuring plankton communities and the paradox of coexistence. Examines selected field and laboratory methods.

Aquatic Invertebrates (ENV 483/583, 4 credits) will be offered on MWF from 12 to 1, with a F lab from 2:30-5:30. Below is a brief description:

Investigates the taxonomy, life history and ecology of fresh water invertebrates of North America. Introduces proper procedures to collect, handle, preserve, label, identify, and maintain fresh water invertebrates.

Research and Scholarship Notes for ENV Faculty

Sarah Wasson ('04) and **Sarah Davidson** ('04), mentored by Dr. Haynes, gave a presentation to the National Council of Undergraduate Research, ***Testing Learning and Memory of Rock Bass by Association of Food with a Visual Cue.***

Dr. Norment received funding for his research project ***Influence of Nest Concealment and Distance to Habitat Edge on Depredation Rates of Simulated Grassland Bird Nests at Iroquois National Wildlife Refuge.***

Dr. Haynes received funding for ***Population Monitoring and Levels of Bioaccumulative Chemicals of Concern in Mink, a Sentinel Species***, and for ***Status of Longear Sunfish Populations in Western New York.*** His paper, ***Benthic Macroinvertebrate Communities in***

Southwestern Lake Ontario Following the Invasion of Dreissena and Echinogammarus, 1983-2000, will be published by the Journal of the North American Benthological Society.

Conference Reminders

Brockport Scholar's Day will be held April 13, 2005. Submit your abstract by February 7, 2005 to the Office of Grants Development on a disc. A site for submission of abstracts will be available at the College's homepage by November, 2004.

The Office of Academic Affairs will provide support for students and their faculty mentor to present at the **NCUR annual conference** in April 2005. Abstracts are due to NCUR in early November, 2004. Contact Dr. Mohammed Tahar, Campus NCUR Coordinator at mzt@galielo.physics.brockport.edu for more information.

Need More Money for College?

Visit the newly established Scholarship Resource Center located in the Financial Aid Office (Rakov) for information on scholarships and related information. The website for the Scholarship Office is: www.brockport.edu/scholarships. Please note the deadline for receipt of completed scholarship applications is December 10, 2004.

Dr. Joseph Makarewicz Continues Research on the Great Lakes

Dr. Makarewicz continues his efforts to improve the quality of the Great Lakes through efforts such as the creation of a Great Lakes research center. A Center will allow students and faculty to study the lakes' fragile habitats and the impact of alien species like the zebra mussel. Dr. Makarewicz recommends a regional approach to restore and maintain all 37 coastal watersheds that include 100 towns and villages in seven counties. He continues to work with the Rochester-based Center for Environmental Information on a "North Coast Initiative" that would divide the Lake Ontario shore into three areas from the Niagara River in the west to Otter Creek, Jefferson County in the

east. Some of the environmental concerns are shoreline pathogens; excessive algae growth and oxygen depletion; toxic contaminants in sediments and the water column (PCBs, dioxins, mercury, pesticides); and exotic species such as alewife, sea lamprey, zebra mussels, and purple loosestrife.

BEAN ACTIVITIES Hamlin Beach Cleanup

Brockport Environmental Awareness Network members helped organize and participated in the International Coastal Cleanup day on Saturday, September 18 at Hamlin Beach State Park. Besides collecting garbage and cleaning shoreline, the purpose of the International Coastal Cleanup is also to collect data. Volunteers were given cards on which to record each piece of debris as it was picked up. After the cleanup, the data was tabulated by site, county, state, country, and world-wide. The formal tallies are used to determine the sources and activities generating the debris. This information is then used to educate the public, businesses and industries, and government agencies as to how best to reduce generation of wastes. The ultimate goal is to prevent pollution by changing behaviors through education, persuasion, and legislation, as appropriate.

At Hamlin Beach State Park, 48 volunteers, including BEAN members, collected over 360 pounds of garbage from the park's three miles of shoreline. The most common items were cigarette butts (1051), beverage caps and lids (540), and food wrappers/containers (432). Volunteers also collected 307 beverage bottles and cans, 321 unidentifiable pieces of plastic, 186 eating utensils (cups, plates, forks, knives, spoons), 170 straws or stirrers, and 128 pieces of Styrofoam. From these data, it is apparent that shoreline and recreational activities and smoking are the sources of a large portion of the garbage collected at this site. This demonstrates the need for public education and awareness of the impact of each individual's actions on the environment, as these activities cannot be legislated against further than existing littering laws.

Many smokers don't think twice about throwing a cigarette butt out the car window. It's so small; how can a cigarette butt be a problem? You probably didn't realize that a significant number of butts thrown on the streets are washed into creeks or storm drains and end up in the lake. You probably also didn't know that it can take up to five years for that butt to decompose in the environment. In the meantime, it washes up at Hamlin Beach or Charlotte Beach and we hear complaints that the beach is a mess.

Other items with long degradation times in the environment are plastic bags (10-20 years), tin cans and styrofoam cups (50 years), aluminum cans (80-200 years), plastic beverage bottles (460 years), and glass bottles (1 million years). Notice the correspondence between these items and those most commonly collected at Hamlin Beach. So, if you enjoy the outdoors, at beaches or elsewhere, please be aware of your environmental impact wherever you go. Please dispose properly of any garbage you generate, and even better, try to reduce your use of disposable items. And, if you're interested in helping BEAN raise environmental awareness on campus, come join us Fridays at 2:30 p.m. in Lennon 106, or contact BEAN President Pat Kendall at pken0917@brockport.edu.

Spring Schedule of Classes

ENV 111	MWF	8:15-9:15
ENV 201/202	MWF	1:15-2:15
Lab.01	W	9:30-11:45
Lab.02	W	6:00-8:15
ENV 303	TR	9:45-11:15
Lab.01	W	2:30-5:30
ENV 423/523	MW	3:45-5:15
ENV 437/BIO 614	TR	5:30-7:00
ENV 439/539	MWF	9:30-10:30
ENV 440/540	MWF	1:15-2:15
Lab.01	F	2:30-5:30
ENV 483/583	MWF	12:00-1:00
Lab.01	F	2:30-5:30
ENV 484/584	M	6:00-9:15
ENV 495/595	R	3:00-5:00

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