

Fall 2009

585-395-5975



The College at Brockport

Environmental Science and Biology

Greeting and Updates

Dr. James Haynes, Professor and Chairman Professor

Welcome back for what we hope will be an exciting and productive academic year for students, faculty, and staff. As you will read below, ESB students and faculty were busy during the summer.

The highlight of my summer was leading a class to Australia—the theme was sustainable development. I went diving on the Great Barrier Reef, studied a rainforest that has evolved independently for 60 million years, and learned how Aborigines lived in their landscape, without destroying it, for over 40,000 years—the oldest society on earth. The Australia course will run again in the summer of 2010.

The department will have two seminars in the fall semester.

Dr. Gregory Boyer, SUNY ESF, will give the Great Lakes Research Consortium seminar on Monday, October 26 at 4 p.m.:

“Algal bio-diesel: is it a solution to our current energy needs?”

Dr. Joseph Makarewicz will discuss ***“Agriculture management plans lead to improvement in nearshore water quality and reductions in algae, macrophytes and bacteria”***: Monday, November 16, 4 p.m.

Both to be held in 220 Seymour College Union.

Welcome back to a great academic program.

Going Green in the Haynes Household

“Think globally, act locally” is an iconic expression of the environmental movement. My Environmental Science course (ENV 201/202) has always emphasized the global thinking part and also encourages students to change their behaviors to have less impact on the environment. Similarly, my family has always focused on the 4 Rs: reduce, reuse, repair, recycle. But during the past two years we have gone big time!

We now have a super-insulated attic to reduce heat exchange between the house and atmosphere. *(continued at the end of p. 4)*

ENV Undergraduate—Natalie Pilakouta’s summer research at Notre Dame

Natalie Pilakouta (upper left in canoe) spent the summer at the University of Notre Dame’s Environmental Research Center (UNDERC) in the Upper Peninsula of Michigan. The property encompasses 7500 acres and includes 30 lakes and bogs. The course had six modules: mammalogy, ornithology, herpetology, entomology, forest ecology, and an independent field research project.

Natalie’s field study was on the **influence of direct and indirect cues of predation risk on resource consumption and selectivity of food types by nocturnal rodents.**

Olfactory predator cues and absence of microhabitat cover were used as direct and indirect

cues of predation risk, respectively. Foraging choices were evaluated based on giving-up densities while seeking prey (GUDs). A manuscript is currently being reviewed for publication.

Even though the course was very challenging and demanded hard work, Natalie found it especially rewarding. She gained knowledge on a variety of fascinating topics. Natalie encourages anyone interested to apply next year—there is a tuition waiver, a \$3,000 stipend, and housing and transportation are provided. The only bad part was that Natalie could not go outdoors without a head net and bug spray!



Southern Red-backed Vole with ear tag

Did you know?

The State University of New York charges \$12,870 for undergraduate out-of-state tuition, \$8,463 less per year than average (\$21,333) in-state tuition at 29 other public universities in 19 states. (Rochester Democrat & Chronicle, 9/30/09)

Environmental Science and Biology Undergraduate Volunteer Research— often a road that leads to full time employment

Kaitlyn Wauhkonen is pursuing a BS in Environmental Science and Biology with a dual concentration in aquatic/terrestrial ecology/biology. Last summer, she volunteered at the Niagara Falls Aquarium, where she fed and cared for marine and freshwater organisms.

Joshua Perry is a freshman ENV major with a concentration in aquatic ecology/biology. Last summer, he worked for Department of Environmental Protection in Brookhaven, NY (Long Island) as a tour guide/intern. Josh also took part in the Town of Brookhaven's Clam Survey, conducted on the Great South Bay, the purpose of which is to determine the status of local clam populations. After years of overfishing, clam populations in the bay have declined greatly, leaving them vulnerable to brown (toxic brown algae) tides. The most exciting part of Josh's job was growing clams in the town's shellfish hatchery. Keeping the environment healthy is crucial so that hatchery clams can be seeded in depleted waters.

Frank Pombert transferred to Brockport from Genesee CC but was already involved with invasive species research (non-native honeysuckle) at the Genesee County Park and Forest. Frank worked with the park's Conservation Educator and Dr. Zollweg of the Earth Sciences Department at Brockport on his research, which included GIS mapping. Frank's work is ongoing, and he will be presenting it to the Rochester Academy of Science on October 31, 2009.

Matt Popen (BS '09) wanted to earn money and gain experience. He approached his current employer, Envoy Environmental Consultants, and explained his situation. The owner sent Matt to asbestos management training classes and Matt excelled. Matt is now employed full time with Envoy, overseeing operations for a mall project.

Often, students like Matt obtain a permanent position as a result of their research or vol-

unteer work. In today's economy, it is valuable, often necessary, to volunteer to obtain your ultimate goal—a position in the field of environmental science.



Dr. Norris's ecology class and friend

ENV Students—a marketable degree

Daniel Thiell (BS '08) is employed as an Ornithology Technician with the Great Basin Institute in Spring Mounts, Nevada

Scott Williams (BS '09) works for the New York State Department of Environmental Conservation as an Invasive Species Control Technician with the Division of Lands and Forests. He is assigned to a team responsible for herbicidal control activities statewide and deals with invasive species such as the Giant Hogweed.

Jeff VerHulst (BS'08) works for Columbia Analytical Services as an Environmental Technician. He monitors pollutants in groundwater at locations ranging from Niagara Falls to Albany. ([Looking for employment? Go to: www.caslab.com](http://www.caslab.com))

Mike Koch (BS pending) is a technician with the NYS Department of Environmental Conservation working with endangered Peregrine Falcons in Buffalo, NY.

Heather Halbritter (BS '01) is a biologist with the Colorado Division of Wildlife working with mountain goats, bighorn sheep, elk, deer, pronghorn antelope, and moose.

Sabrina Isaacs Kahn (BS '08) works for the Warner School of Education in Rochester, NY and is pursuing certification in Biology, Chemistry, and possibly Earth Sciences for Grades 5-12.

Brian Zielinski (BS '09) works for the Davey Resource Group and travels throughout NY State performing environmental remediation. He plans to return to earn his MS degree in the near future.

Lindsay Laczak-Cesari (BS '05) is the Junior High librarian in Baldwinsville, NY and reports that her "ENV degree is still taking me places." She published her first article in August, "[*Focus on Going Green.*](#)" She says, "I'm finding that combining an ENV degree with another profession is a great way to create a unique niche for yourself!"

Brian Roosa (MS ~'97) was a graduate student under the advisement of Dr. Patricia Harris. He is employed by the U.S. Fish and Wildlife Information Service as an Aquatic Biologist in the Department of Game and Inland Fisheries in Richmond, Virginia. Brian manages biological databases and GIS applications, oversees the state's scientific permit and data quality systems, supports endangered species field work and species management, and consults on species/ecological/aquaculture/legal issues for the Wildlife Diversity Division throughout the Commonwealth of Virginia.

Amanda Alexander (BS '06, MS candidate) is doing thesis research is on the recent invasion of the Bahamas by the Indo-Pacific lionfish. Amanda works for the U.S. Department of Agriculture, Animal and Plant

Health Inspection Service where she studies the Plum Pox virus that infects flowering trees, especially those with pitted fruits such as peach, plum, apricot, and almond.

Ian Conboy (MS '08) is employed by the Study Fleet Program at the Northeast Fisheries Science Center of the National Marine Fisheries Service. He is part of a team that collects high resolution data from fisherman under "normal" fishing conditions. The combination of equipment deployed collects data on fishing effort, catch composition, vessel position, water temperature, and depth on the individual haul level. Ian splits his time between working at Woods Hole, MA and on the vessels.



Ian with a goosefish, called monkfish in your local supermarket

Graduate Students—enhancing their education through research

Rhonda Hudgins (MS candidate) completed her second season of field work studying habitat selection and dispersal of the cobblestone tiger beetle along the upper Genesee River, with the assistance of **Chris Bruet** (BS candidate). During the field season, Rhonda and Chris marked and released almost 300 of these uncommon beetles; the cobblestone tiger beetle is a species of special concern in New York State. Rhonda's research is supported through a contract with the NYS Natural Heritage Program.

Nate Grosse (BS '08, MS candidate) completed his first season of field work on habitat selection and breeding biology of grassland birds at John White Wildlife Management Area. He was assisted by **Tom Walker** (BS '09). Nate's project builds on three seasons of work on grassland bird ecology at JWWMA by **Renee Pszyk** (BS '06), **Sabrina Issacs-Kahn** (BS '08), Dr. Norris, and Dr. Norment. The research has been supported by contracts from the NYS Department of

Environmental Conservation. Nate also received student research grants from the Buffalo Ornithological Society and the Rochester Birding Association.

Brad Mudrzynski (BS '08, MS candidate) spent the summer working for the Natural Resources Conservation Service and preparing for his second field season which began at the end of August. Brad, assisted by **Pat Teora** (BS candidate), is studying use of shrubland habitats by fall migrant songbirds at Iroquois National Wildlife Refuge. Brad's research is supported by a contract from the U.S. Fish and Wildlife Service.

Levi Atwater (BS '08, MS candidate) completed his second season on grassland bird use of fields enrolled in the NY Department of Environmental Conservation's Landowner Incentive Program (LIP). Levi's project evaluates the success of the LIP at identifying and managing productive private grassland habitat in the state. It is a joint venture with the NYDEC.

Chris Titus (BS '08, MS candidate) continued his research on the distribution and habitat selection of the Coal Skink, a species of concern in New York State. Chris has identified a number of new localities for this lizard. **John Bateman** (BS candidate) assisted Chris in some of his work. Chris's research is supported through a contract with the New York Natural Heritage Program.

Dr. Norment traveled to Alaska in June to work on two research projects run by the U.S. Fish and Wildlife Service. The first involved plot surveys (mostly for nesting geese and ducks) in the Yukon-Kuskokwim Delta region of western Alaska. He then participated in a nine-day survey of Common Eider nesting along the coast of Nunivak Island in the Bering Sea. In July, he participated in surveys for terrestrial mollusk species of special concern with a biologist from the Montana Natural Heritage Program. He also advised Rhonda, Nate, Brad, Levi, and Chris!!

Faculty Research—what we do and the benefits to students

Teaching and learning are much more than giving and listening to lectures and doing cookbook laboratories. In the ESB Department, laboratory and field courses are devoted to giving students hands-on practice with skills and methods that will prepare them well for employment or post-graduate study. However, students and faculty working together on real environmental research and management problems is the ultimate preparation for an environmental career or post-graduate study. The ESB faculty has a 30+ year record of involving students in real

projects. For example, dozens of Dr. Makarewicz's undergraduate and graduate students have worked on Great Lakes limnological studies and on watershed studies throughout central and western New York. Dr. Norment's and Dr. Norris' students study grassland birds, amphibians, forest ecology, and soil ecology. Dr. Haynes's students have researched fish and aquatic invertebrate ecology in Lake Ontario and regional streams and the ecological health and contaminant levels of vertebrate popu-

lations near Lake Ontario. Dr. Rinchard's students are doing aquaculture and animal physiology projects, and Dr. Wilcox has four new students working on wetlands projects.

[If doing real science and solving environmental problems appeals to you, please apply to the BS or MS programs in Environmental Science and Biology.](#)

Undergraduate contact: Ms. Deborah Dilker
Graduate contact: Dr. Christopher Norment

Scholarship—ENV faculty ahead of the curve

Last summer, **Drs. Makarewicz and Rinchard** were awarded a grant from the National Science Foundation Major Research Instrumentation program to purchase gas chromatograph-mass spectrometer (GC-MS) and high performance liquid chromatography (HPLC) systems (\$172,429). These equipment items will assist in developing long-term research and teaching capacity in the environmental sciences. They will provide important insights on a number of environmental questions, such as the transfer of fatty acids in freshwater food webs, the analysis of vitamins, and research on persistent organic pollutants in water supplies and tissues.

Dr. Wilcox and his students are focusing on restoration of sedge/grass meadows in Lake Ontario wetlands, as well as the role that muskrats play in the management of wetlands at Montezuma National Wildlife Refuge. (Sunset photo at right)

Dr. Haynes and Sara Wellman (BS '02, MS '06) published three papers on mink ecology and toxicology in Archives of Environmental Contamination and Toxicology in the summer of 2009.



Scholarship Opportunities for Freshmen and Transfer Students at The College at Brockport

The College at Brockport awards more than \$3 million in scholarships and awards each year to outstanding students entering the College, thanks to generous support from individuals, corporations, and foundations. Scholarships and awards vary in monetary value. Some are renewable for up to four years of undergraduate study. Some require the submission of additional information, such as an essay, a portfolio, high school or college transcript, or letters of recommendation. Scholarships and awards are open to both entering freshmen and transfers; some are limited to students who plan to major in specific fields of study at the College. A scholarship or award is a direct grant given by the College to a student. It is not related to aid programs, such as TAP, Pell grants, loans, or work-study (which are applied for through the [Free Application for Federal Student Aid — FAFSA](#)). Financial need is not a requirement in most cases. However, financial aid received may need to be adjusted due to the receipt of a scholarship or award. Financial need is determined by an analysis of the FAFSA.

Entering Freshmen

Entering freshmen may apply for scholarships and awards based on high school average and standardized test scores. Usually, those freshmen with high school averages of 88 or higher and with SAT scores (math and verbal) of at least 1100 or an ACT composite score of at least 24 qualify to be considered for awards.

Entering Transfers

Entering transfer students with a grade point average of 3.25 or higher will be considered for entering student scholarships and awards.

Scholarships in the Department of Environmental Science and Biology

THE O'REILLY SCHOLARSHIP IN ENVIRONMENTAL SCIENCE was established by Mrs. Ann M. O'Reilly Donavin '42 to support students studying science issues related to the environment. Available for entering freshman or transfer students.

THE KENNETH E. DAMANN RESEARCH AWARD recognizes an undergraduate who has demonstrated an interest in, and dedication to, the study of aquatic ecology. The award was founded by Dr. and Mrs. Damann to stimulate and encourage undergraduate independent study and research in aquatic ecology. Dr. Damann, professor emeritus of biological sciences, taught at the College from 1966 to 1978.

"By awarding me this scholarship, you have given me the financial ability and the great opportunity to study at your university, which was my first choice."

Environmental Science and Biology Faculty and Staff

We invite visitors to tour our state-of-the-art facilities in Lennon Hall to see our teaching and research labs, to speak with our professors, and to view our bulletin boards, which feature undergraduates, graduate students, and alumni of the Department.

If you would like additional information about our programs (major in Environmental Science; minors in Environmental Science and Environmental Studies), please send an email to Deborah Dilker at ddilker@brockport.edu.

Dr. James Haynes, Professor and Chairman
Aquatic Ecology/Fisheries
jhaynes@brockport.edu

Mr. David Kosowski, Adjunct Professor
Fisheries Techniques & Fish Identification

Dr. Joseph Makarewicz, Distinguished Service Professor
Limnology/Water Quality
jmakarew@brockport.edu

Dr. Christopher Norment, Professor
Terrestrial Ecology/Vertebrate Biology
cnorment@brockport.edu

Mr. Gary Neuderfer, Adjunct Professor
Aquatic Invertebrates/Aquatic Toxicology

Dr. Mark Norris, Assistant Professor
Ecosystem and Plant Ecology
mnorris@brockport.edu

Ms. Norma Polizzi, Adjunct Professor
Environmental Law

Dr. Jacques Rinchar, Assistant Professor
Aquaculture/Animal Ecophysiology
jrinchar@brockport.edu

Dr. Douglas Wilcox, Empire Innovation Professor of Wetland Science, Wetland Ecology
dwilcox@brockport.edu

Ms. Hilary Mosher, Instructional Support Technician
hmosher@brockport.edu

Mr. Theodore Lewis, Research Associate

Ms. Deborah Dilker, Administrative Aide
ddilker@brockport.edu

"Going green"... (from p. 1)

sphere, a geothermal heating/cooling system that eliminated our need for natural gas (the CO₂ waste is a greenhouse gas) and reduced our electricity bill by one-third, and a solar photovoltaic system that reduced our electricity bill by a further one-quarter. Last year we bought a Toyota Prius (48 mpg). The upfront costs for "greening" our lifestyle were not trivial, but payback times range from 4-10 years depending on the improvement and the future cost of energy. The federal and state governments have tax deductions for solar systems and hybrid cars that totaled nearly \$12,000 in our case. As a society, we are beginning to encourage movement toward green technologies and lifestyles. Many exciting opportunities await the next generation of environmental scientists and others who choose to live an environmentally sustainable, green lifestyle.