Spring 2012

Newsletter Spring 2012

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The College at Brockport

Environmental Science and Biology

A degree in Environmental Science is an ***Adventure***

Students who choose a major in Environmental Science are driven, focused, explorers and inquisitive. Here are some of the careers they have obtained with our major.

Josh Merkel BS 10 - Bureau of

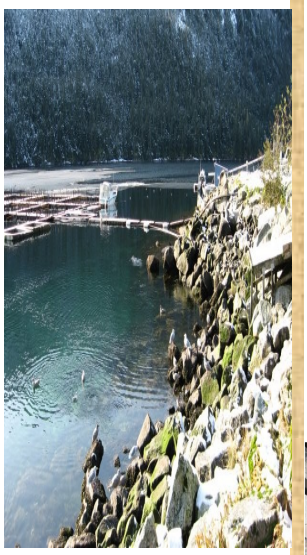
Land management, Range Technician, Vernal, Utah

Brian Zielinski BS 09 Pheasant Focus Technician, NYS DEC

Ron Gross BS 10 Fish and Wildlife Technician, NYS, DEC

Hollee McLean BS 07 Northwest Engineer, National Park Service

Renee Pszyak BS 07, Fish Culturalist, Prince William Sound Aquacutlure Corporation



Levi Atwater BS 07, MS in progress) District Manager, Colorado Division of Wildlife

Alex Czayka MS in progress United States Geological Survey

Peter D'Aiuto MS 03 - Algal Ecologist, USDA Ag. Research Service, Fort Pierce, Florida

Environmental Science and Biology Alumni News

Aubrey Galusha, BS 11—Aubrey received a full scholarship for the Ph.D. program at The School of Public Health at Albany. If you are interested in a future in public health, community based or lab based, please visit their website at: www.albany.edu/sph/admissions.php.

Audrey Payne BS 07—Audrey is studying at American University in DC for a MS in public communication. Audrey has a graduate assistantship performing research in climate change communication.

Scott Williams BS 09 - Scott is employed by the Department of Planning and Community Developing, Lycoming County, PA as a *Cartographer,* which means combining science, aesthetics, and technique to building maps. It is the ability to depict land masses, bodies of water, and terrain on a flat object.

Nicholas Parnell BS 98, MS 02, Nick recently completed his Ph.D. in Biology at Georgia Tech.

Michael Lyzwa BS 10 - Michael is employed by Smart Science Technology & Commercialization Center—College of Nanoscale Science & Engineering via the SUNY Research Foundation as an Environmental Health and Safety Specialist. Mike performs safety training, ensures site quality requirements, Federal compliance of chemical inventory, and liaison between government inspectors, agencies, and regulators.

Jason Somarelli MS 05 - Jason is a postdoc fellow for the American Cancer Society in the Department of Molecular Genetic and Microbiology, Duke University Medical Center, NC.

Tom Hughes MS 02—Tom is a Natural Resource Steward Biologist for the NYS Office of Parks, Recreation, and Historic Preservation, Central and Finger Lakes Region. Tom and alumni Scott Wells MS 09 et al. recently conducted an ice fishing clinic at Glimmerglass State Park on Otsego Lake.

Kaitlyn Wauhkonen BS 10 - Field Crew Leader, Montana Conservation Corporation. Kaitlyn creates and maintains trails, weed control and reduction, fuels reduction, wildlife conservation, removal and placement of fencing, and weatherization of low-income homes.

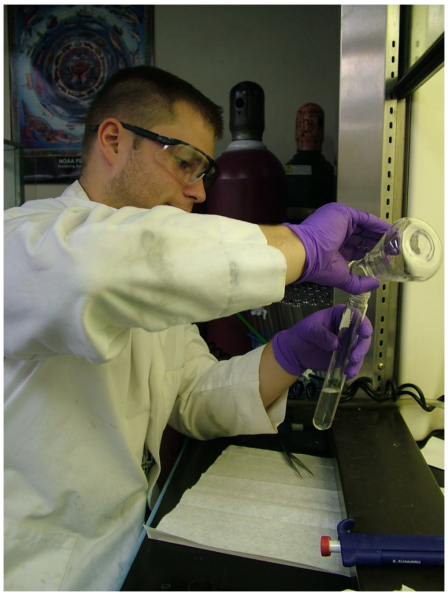
Marc Chalupnicki MS 03 - Marc is a Biological Science Technician for the USGS Great Lakes Center, Tunson Lab of Aquatic Science, Cortland, NY. Marc is currently raising Atlantic Salmon that will be stocked into the Salmon River and Lake Herring and Bloater to be stocked into Lake Ontario. Marc and crew will be evaluating Lake Sturgeon spawning habitat in the Genesee River, Cayuga/Seneca Canal, and Oneida River this spring. Ongoing studies include salmonid diet in the Salmon River, wild Atlantic Salmon production in the Salmon River, assessment of lake whitefish in Chaumont Bay, and lower trophic interactions in Lake Ontario and the Finger Lakes before and as a result of Dreissenid mussel invasions

Erin Stockschlaeder BS 10 - Erin will be attending George Mason University this spring and is successfully entered into the Master Natural Resources program at Virginia Tech, Fall 2012.

Jennalee Holzschuh BS 11 will be working with Dr. Christopher Norment on a migratory songbird study at the Braddock Bay Bird Observatory, Spring 2012.

Environmental Science students get opportunity in our labs

My name is Josh LaFountain (BS in progress), and I am currently a sophomore in the Environmental Science & Biology program. My goal is to graduate from The College at Brockport with a degree in Environmental Science & Biology, concentrated in aquatic ecology, a degree in Water Resources, and a minor in chemistry. This past summer, I carried out an independent research experiment under the supervision of Dr. Jacques Rinchard titled "Spatiotemporal variation in fatty acid signatures of Lake Michigan spottail shiner *Notropis hudsonius*." The objectives were to identify variations in fatty acid signatures of spottail shiner based on their dispersion over substrate, season of capture, and location throughout Lake Michigan. In order to test this, we first extracted the fatty acids from whole body samples of spottail shiner and then analyzed them using a gas chromatograph/mass spectrometer. Overall, the results expressed that no variation in fatty acid signatures was present among spottail shiner from different substrates, seasons, and locations. Therefore, it seems that the diet of spottail shiner is consistent throughout Lake Michigan. These findings were presented during a poster presentation session at the 38th Annual Fall Scientific Paper Session of the Rochester Academy of Science.



Andes of Ecuador Wintersession Experience—Hilary Mosher

The winter session was a productive time for students at the College at Brockport. Led by Hilary R. Mosher from the Department of Environmental Science and Biology, seven students (six from Brockport, one from George Washington University)

traveled to the western Andes of Ecuador to work on a biological reserve in the center of the Rio Toachi-Chiriboga Important Bird Area. Considered one of the top five biodiversity hotspot areas of the world, students helped the station combat deforestation, protect existing forest, restore degraded areas by planting

native trees, and picking and propagating seeds in the nursery. Students also supported sustainable activities on the reserve, such as making coffee and chocolate from beans picked on the reserve and feeding the biodigestor, which captures methane from manure to power the reserve.

It wasn't all work and no play; students traveled to surrounding areas such as Banos, Oltavalo, Mitad del Mundo, and Quito to see Andian culture in action. Students developed a broader sense of sustainability through discussions of economics, environment, and social equity in a country where more than 35% of the population lives below the poverty line.

For more information on this wintersession course, please contact Hilary R. Mosher at hmosher@brockport.edu.

Faculty News

Dr. Chris Norment currently has seven graduate students pursuing work on a variety of research projects, including grassland bird ecology, habitat selection in Hoary bats, amphibian use of stormwater retention ponds, migratory bird physiology, and management policies on U.S. National Wildlife Refuges. He also is involved in a long-term project on the evolution and conservation of rare species in the Death Valley region. His third book of non-fiction, *In the Memory of the Map*, will be published this March (http://www.uiowapress.org/books/2012-spring/memory-map.htm).

Dr. Douglas Wilcox has been in demand for presentations regarding his Lake Ontario wetland research, including talks given last fall to the U.S. Army Corps of Engineers in Buffalo, the State of the Lakes Ecosystem Conference in Erie, PA and the Geological Society of America in Minneapolis, as well as seminars at Boston College, the University of Buffalo, and a meeting of International Joint Commission in Clayton, NY in February and March. He also authored a chapter titled "Great Lakes Coastal Marshes" that will appear in a new book from the University of California Press that due out this spring--Wetland Habitats of North America: Ecology and Conservation Concerns.

New publications from **Dr. Jacques Rinchard**

Riley, C.S., **Rinchard, J.,** Honeyfield, D.C., Evans, A.N. and Begnoche, L., 2011. Increasing thiamine levels in lake trout eggs from lakes Huron and Michigan coincide with low alewife abundance. *North American Journal of Fisheries Management*, 31, 1052-1064.

Riley, C.S., **Rinchard, J.,** Ebener, M.P., Tillitt, D.E., Munkittrick, K.R. and Parrott, J.L., 2011. Thiamine concentrations in lake whitefish eggs from the upper Great Lakes are related to maternal diet. *Journal of Great Lakes Research*, 37, 732-737.

Czesny, S., **Rinchard, J.,** Hanson, S.D., Dettmers, J.M. and Dabrowski, K., 2011. Fatty acid signatures of Lake Michigan prey fish and invertebrates: among-species differences and spatiotemporal variability. *Canadian Journal of Fisheries and Aquatic Science*, 68, 1211-1230.

Hill, W.R., **Rinchard, J.** and Czesny, S. 2011. Light, nutrients and the fatty acid composition of stream periphyton. *Freshwater Biology*, 56, 125-1836.

Graduate News from the Department of ENV

Danielle Barbiero (MS in progress) - Danielle's thesis project investigates the effect of enrichment on learning performance of a captive species of shark (white – spotted bamboo shark, *Chiloscyllium plagiosum*) . The main objective is to examine the sharks' learning capacities by performing a discrimination task to see if they wil attenuate more toward a black target versus a white target. The hypothesis is that sharks will perform better on a learning task after receiving and interacting with some form of enrichment object (in this case, an object the sharks can swim through, i.e., hula hoops submerged in their exhibit),. Enrichment should facilitate learning.

Aaron Heminway (BS/MS in progress) - Aaron is working with Dr. Douglas Wilcox on the GLRI project sampling vegetation in Lake Ontario coastal wetlands. As part of this project, Aaron will be quantifying the riverine buffers in those wetland watersheds and measuring macronutrient concentrations. These data will be used to examine the relationship between macronutrient concentrations and cattails.

Josh Cronlund (MS in progress) Josh is studying the hoary bat's habitat preferences in New York State. Even though the hoary bat is the largest and widest-ranging bat found in the northeastern United States, very little is known about it. It migrates thousands of miles every year, visiting New York for only a few short months in the summer before flying back to the southwestern U.S. and then on to Mexico or sometimes South America! Josh will be listening for bat calls throughout New York State using ultrasonic detectors mounted to the top of his car. Using a GPS unit, Josh will mark locations hoary bats are drawn to in NYS. Although much field work will be done taking detailed habitat measurements, Geographic Information System (GIS) technology will be used to look at bigger scale, landscape-level attributes on the computer back at the lab. Bat research, in general, is very important. Most of the bats found in North America eat insects, many of which would otherwise be feeding on agricultural crops or us! Some are pollen or fruit eaters. These bats help pollinate flowers or spread seeds of the fruit they eat. Josh is working with the New York Department of Environmental Conservation (NYDEC) to determine an important aspect of the hoary bat's ecology. This research will help to broaden our understanding of an organism that is a part of our ecosystem and aid in future land-management decisions throughout its range.

John Bateman (BS 10, MS in progress) John's two-year research project is investigating how local stormwater -retention ponds and surroundings provide habitat for amphibian communities. By examining the ponds, their connectivity to adjacent woodlots, and the diversity of frogs and toads, he will determine whether ponds provide suitable habitat or function as ecological sinks. His findings can be used to construct ponds that can support amphibians as mitigation when their natural habitat has been destroyed, or discourage amphibians from occupying retention ponds when their local pools are intact. John is also working with Dr. Christopher Norment and Dr. Douglas Wilcox on the Great Lakes Restoration Initiative project and is responsible for bird and amphibian monitoring within Lake Ontario coastal wetlands.

Networking Your "Net Worth" as a Young Professional—Tom Hughes

For many students and recent graduates, finding a job or a graduate school opportunity may seem intimidating, sometimes even overwhelming. Competition for graduate school and jobs in the environmental field is increasingly more intense, as highly trained and educated graduates flood the job market for seemingly fewer and fewer positions each year. However, I believe that many opportunities remain for those individuals that are qualified, passionate, and motivated to aggressively seek out their "next big thing," whether it be a professional or academic endeavor. I further believe that an individual's ability and interest to "network" may be the single most important factor that separates those that succeed from those that are left wondering— "why did I want to have an environmental career, and what was I thinking?"

I am not a business major, nor do I profess to have any formal training in the business world. However, I feel that I have been in the "business" of networking and marketing myself since receiving my undergraduate degree in Natural Resources from Cornell University over 15 years ago. Like many that may be reading this article right now, I did not perform to the fullest of my abilities as an undergrad, finishing my degree program at Cornell with a less than stellar 2.65 GPA. Despite my sub-3.0 GPA, I still had ambitions to go on to graduate school, pursue a career in fisheries, and ultimately become a College Professor. Thus, I began the business of selling myself (no, not that way…!).

I quickly realized that in order to out-compete my classmates and the tens of thousands of other aspiring young professionals, I had to separate myself from the pack somehow. Again, from a business perspective, I needed to be more valuable and present more "net worth" to a potential employer or college advisor. To me, net worth can be more clearly defined as the balance of my most valuable assets versus my most detrimental flaws (for example—that 2.65 GPA). So, I needed to make sure that my net worth was in the black (not the red), as I was applying to graduate school opportunities and jobs (a fundamental concept I still follow to this day). I soon realized that the most effective means to increasing my net worth was *networking*. I conceded that, on paper, I may not have looked like the most outstanding candidate right out of my undergraduate training. So, how else could I sell myself in a way that potential employers or professors could realize how valuable a contribution I would be to their workforce? Well, I made sure they knew who I was; what knowledge and experiences I had to offer; and why I was better candidate than the rest. I made the phone calls, sent the e-mails, attended the professional meetings and seminars, and even participated in those after-hour conversations at the bar (where coincidentally all of the real work actually gets done).

Through networking and all these extra efforts, I landed my first job as a research assistant at Cornell's Adirondack Fisheries Research Program. Filling out the application was a formality, as I was hired for the job based primarily upon the personal interactions I had with the professors I engaged (and shared refreshments) with at Cornell. My glaring academic struggles became irrelevant, as I presented a compelling case that my overall "net worth" was worth taking a chance on. I went on to succeed at this position and conducted research on brook trout, where I ultimately got first authorship on a peer-reviewed publication.

Now, a personal story with our beloved Dr. James Haynes— in winter of 1998, I set out to "network my net worth" at an annual meeting of the NY Chapter of the American Fisheries Society. I had done my homework and researched Dr. Haynes' accomplishments and interests (sneaking around on the Brockport website). I decided ahead of the meeting that if I saw Dr. Haynes, I would approach him and inquire about graduate school. Sure enough, he was there and I got him at his most vulnerable moment— evening social! I introduced myself and made my five minute sales pitch—telling him about my interests and experiences, specifically spending a summer on the Hudson River chasing Atlantic and shortnose sturgeon. I still remember his first statement to me— "well, I guess that's why we come to these meetings." Dr. Haynes immediately called over Chris Lowie (another Brockport alum and biologist with the US Fish and Wildlife Service). After another five minute conversation with them, I rejoined my friends that were sitting along the sidelines munching on pretzels and peanuts. I said— "I think I just got a graduate school opportunity and a job at the US Fish and Wildlife Service." I did!

I've since gone on to work for the NYS DEC, Cornell Cooperative Extension, SUNY College of Environmental Science and Forestry, and NYS Office of Parks Recreation and Historic Preservation—where I have been a Natural Resource Stewardship Biologist for the last four years. I've had the opportunity to work with and mentor a lot of undergraduate and graduate students over the years, and I consistently tell them they need to network to surpass the competition. It is often really about who you know and your ability to demonstrate that your "net worth" is too valuable for them to pass up.

If you want more information from me or want to hear more stories about Dr. Haynes, feel free to contact me at tom.hughes@parks.ny.gov or 315-492-1756. - Tom Hughes, MS Biological Sciences, Class of 2002