



# FINGER LAKES INSTITUTE

January 2009

## Education Outreach

### Science on Seneca Database Project

As part of Dr. Stina Bridgeman's (Math Department) Database Theory and Practice class, student Robert Hendry '11 undertook the challenge to develop a query-based database system for the Science on Seneca's website. Because of Rob's work, anyone interested in the SOS program will now be able to access and query SOS data that has been collected by students and their teachers over the past several years. Rob Hendry collaborated with Sheila Myers, FLI Education Outreach Coordinator, and Barb Halfman of the HWS Geosciences Department to develop the database system. The system should be on-line by 2009. Pictured right are Stina Bridgeman and Robert Hendry.



### SOS Lesson Plan: Invasive Mussels

Anyone interested in teaching about biodiversity issues, invasive species and local fauna? There is a new lesson plan on the Science on Seneca website about the invasion of the quagga and zebra mussels in Seneca Lake. Geared for high school students the lesson includes data on mussel densities collected just last summer by our research scientists and explains their methods in a power point, asks students to read an essay and interpret a chart. Visit Science on Seneca webpage for more details at [http://fli.hws.edu/sos/teachers\\_lessons.asp](http://fli.hws.edu/sos/teachers_lessons.asp)

## Community Outreach and Public Service

### HWS Alternative Spring Break- An Act of Conservation

In 1944, conservationist Aldo Leopold wrote: "Acts of conservation without the requisite desires and skill are futile. To create these desires and skills, and the community motive, is the task of education." Sixty-five years later, the Finger Lakes Institute at Hobart and William Smith Colleges is offering educational opportunities to college students to enhance their motivation, desires and skills and mold them into active stewards of the environment. In 2008, the Finger Lakes Institute partnered with Living Lands and Waters, Inc. and Hobart and William Smith Colleges Office of Community Engagement and Service Learning to promote an Alternative Spring Break (ASB) trip that promised to change attitudes, knowledge, and behaviors.

Seventeen students traveled to Louisville, Kentucky to participate in Living Lands and Waters Ohio River Cleanup in March 2008. The service experience, designed to be fun, adventurous, and educational, allowed students to acquire environmental knowledge that would enable them to protect natural resources in their daily lives. Katherine Hoering and Lauren Ellmers, enthusiastic 2008 ASB trip participants, reflected on their experience in a HWS Herald article:



*“Throughout the week, our group travelled to five different sites to pick up garbage. As a volunteer, we started the days early by boarding boats and traveling down the river to the pick-up sites. We spent our days walking through islands and flood plains searching for trash, and climbing among log jams picking up plastic bottles. We collected an array of items including oil barrels, TV’s, refrigerators, hundreds of plastic bottles, pieces of Styrofoam, and, not to mention, an occasional buried car. Overall, we accumulated an estimated 20 tons of garbage! Working with the crew from Living Lands and Waters was inspiring.”*

Because of last year’s success and positive feedback from students, the Finger Lakes Institute is coordinating another alternative spring break trip to Cedar Rapids, Iowa. June 2008 [floods](#) left nearly 1,300 Cedar Rapids city blocks inundated with ~4,000 homes evacuated and 24,000 people displaced. The flood took out many homes and businesses; washing an astonishing amount of debris into the Cedar River, that later settled along the shorelines. Hobart and William Smith Colleges ASB volunteers will spend time traversing the Cedar River both on foot and in boats while working to remove debris (tires, appliances, barrels, etc.) that is polluting the Cedar River and impairing the habitat of indigenous fish, birds, and wildlife.

This substance free trip includes an overnight stay at [Malabar Farm Hostel](#), a 900-acre organic farm, once the home and farm of Louis Bromfield, the Pulitzer Prize winning author, agriculturist and dedicated conservationist. Today it is part of Malabar State Park with hiking trails, a visitor center, and aviary. Students will learn about sustainable agriculture and have an opportunity care for the farm animals. The stay on the farm will be temporary because Cedar Rapids is the final destination for the cleanup. In Iowa, Living Lands and Waters representatives will take advantage of the students volunteerism and (wo-)manpower to beautify Cedar Rapids and remove as much debris from the shoreline as possible.

Students will see the fruits of their labor as they depart from a shoreline that was once blanketed with litter. Their contributions to Living Lands and Waters and the community of Cedar Rapids, Iowa will convince them that their time and effort is critical to the success of the cleanup program. Recalling what Aldo Leopold once proclaimed, this service trip, an act of conservation, will develop the desire, skill and community motive which students need to be active, educated stewards of our natural environment –whether it is in Cedar Rapids, Geneva, their hometowns, or future communities.

### 2009 Recruitment

The Finger Lakes Institute is currently recruiting HWS students to participate in their 2009 ASB trip. Space is limited. If you like the outdoors, getting dirty, and love seeing the fruits of your labor, this trip is for you! Application, forms and recommendation letter are due January 19. HWS students interested in participating in the ASB trip in March 2009 should contact Sarah Meyer at [smeyer@hws.edu](mailto:smeyer@hws.edu).

## **Finger Lakes Institute supports HWS Community Based Research Projects**

Community Based Research (CBR) and service-learning may be used in the teaching of many different subject areas. The types of community engagement used in service-learning in HWS courses ranges from tutoring, child care, and preparing meals to developing and administering evaluation surveys for a local agency, designing the space for the local teen center or researching how gender affects the learning of students in Geneva.

This Fall, Sarah Meyer, FLI Community Outreach Coordinator, advised two student researchers, Sarah Holland WS’09 and Susan Kridler WS ’11, as they investigated two different projects that promote a more sustainable future for the city of Geneva.

### **Green Space In Geneva**

Green spaces are landscapes within urban communities that lack residential, commercial or industrial development. William Smith senior Sarah Holland’s used Geographic Information Systems (GIS) software to locate, map and inventory green space within the City of Geneva boundaries. Once the inventory was complete, Sarah analyzed the spatial correlation between income distribution, as recorded in the 2000 Census, and proximity to public green space to see if all income brackets have access to open space. Throughout her research, Sarah referenced model communities, such as Brookline Massachusetts, in which a town-wide non-profit organization dedicated to protecting green space. In her final recommendations for the City of Geneva, Sarah proposed ways in which new land areas may be converted into public green space without removing property from the tax base. Mayor Stu Einstein was the Community Partner for this project. [Learn more about Sarah’s project.](#)

### **Geneva Biking Initiative**

The purpose of this initiative was to determine ways in which bicycling might be encouraged in the city of Geneva. Susan Kridler WS '11 researched Geneva's bicycling suitability by personally interviewing avid cyclist, John Vaughn and Geneva Bicycle Center owner, Jim Hogan, in addition to supporting her recommendations with road use statistics from NYS Dept. of Transportation. Suggestions were grounded in models from bicycle-friendly cities elsewhere. One such suggestion was to create a bicycle route map, modeled after the [Tompkins County Bicycle Suitability map](#) created in 2008. City of Geneva Planner, Eric Ameigh, was the Community Partner for this project. [Learn more about Susan's project.](#)

### Become a Community Partner

CBR projects entail a semester long commitment devoted to the exploration of a vital community issue. Students with exceptional initiative work collaboratively with a community partner and faculty sponsor. Responsibilities vary based upon the specific details within the proposal and will likely include independent research, weekly check-ins with community partner and faculty sponsor, and a concluding presentation or project. Interested in becoming a community partner? Visit <http://www.hws.edu/academics/service/>

## **Studying and Maintaining the Quality of Syracuse's Drinking Water**

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Skaneateles Lake is the primary source of drinking water for the Syracuse metropolitan area. Continued maintenance of water quality is critical because the water is withdrawn from the lake and used without filtering. Avoiding the construction of a filtration plant saves the city millions of dollars, even after covering the costs associated with technical and financial assistance to control nutrient and pathogens under the SLWAP (Skaneateles Lake Watershed Agricultural Program). Ph.D. candidate Soni M. Pradhanang's research focuses on assessing the effectiveness of best management practices (BMPs) on water quality at the watershed level by use of a process that combines monitoring and modeling to estimate sediments, nutrients and pesticides loading in the Skaneateles Lake Watershed (SLW). BMP effectiveness can be determined by collecting and monitoring data under various hydrologic conditions. Monitoring of stream flows and pollutant loads across selected areas within sub-watersheds will be used to calibrate models that facilitate extrapolation across entire watersheds.

Soni operates six field sites within Skaneateles Lake Watershed. Two of these sites on the north side of the lake are agriculture-dominated sub-watersheds whereas two sub-watersheds located on the southern end of the lake consist of mixed land use with a higher percentage of forests. The later two watersheds are nested into upstream and downstream sites to encompass cumulative impacts of land use, as well as the impact upstream versus the impact downstream given different land uses. Soni is specifically interested in estimating sediments, pesticides and nutrient loads at watershed levels for low and high flow conditions. Her data will then be used to calibrate and validate Annualized Agricultural Non Point Source Pollutant Loading (AnnANPS) models. Soni also intends to conduct a model inter-comparison study on water quality data obtained from her study sites. She hopes to continue research in watershed and hydrologic processes in the United States and in her home country of Nepal. In addition to water quality research, Soni is also looking at temporal and spatial variation in surface and groundwater temperature in forested and agricultural watersheds. She plans to pursue a career in water resource science in order to contribute to a more comprehensive understanding of hydrologic processes, their role in surface and groundwater, and how to minimize human impact on these systems.

The Finger Lakes Institute will host a public presentation by Soni Pradhanang on January 8 at the Skaneateles Library in Skaneateles, NY.

### **FLI Events**

**January 8, 5:30 pm, Skaneateles Library Association (49 E. Genesee St., Skaneateles)**

***Monitoring and Modeling: Assessing Best Management Practices in the Skaneateles Lake Watershed***

*Soni M. Pradhanang, SUNY College of Environmental Science and Forestry Ph. D. candidate*

What are the cumulative impacts of land use in the Skaneateles Lake watershed? How does stream flow correlate with sediment, nutrient, and pesticide inputs to the lake? In this presentation, Soni Pradhanang will speak about her current studies in assessing the effectiveness of agricultural best management practices in nutrients and sediments of Skaneateles Lake watershed. In addition to her water quality research, Soni will present her preliminary analysis of the variations in surface and groundwater temperature in forested and

agricultural watersheds. Program participants will learn from Soni's expertise in monitoring pollutant loading and become more aware of how stream monitoring can be used to create nutrient loading models for an entire watershed. Soni hopes that her work in the Skaneateles Lake watershed can help her attain her personal goal to apply her hydrologic research in places like Nepal, her home country. This event is free and open to the public.

**January 29, 6:30 pm, Albright Auditorium on the HWS Campus**

***FLOW: How Did a Handful of Corporations Steal Our Water –Movie Showing and Discussion***

*With a panel discussion led by Attorney Beth Kinne, J.D. – HWS Assistant Professor of Environmental Studies*

About **FLOW**: Irena Salina's award-winning documentary investigates what experts label the most important political and environmental issue of the 21st Century - The World Water Crisis. Salina builds a case against the growing privatization of the world's dwindling fresh water supply with an unflinching focus on politics, pollution, human rights, and the emergence of a domineering world water cartel. Interviews with scientists and activists intelligently reveal the rapidly building crisis, at both the global and human scale, and the film introduces many of the governmental and corporate culprits behind the water grab, while begging the question "Can anyone really own water?" Beyond identifying the problem, FLOW also gives viewers a look at the people and institutions providing practical solutions to the water crisis and those developing new technologies, which are fast becoming blueprints for a successful global and economic turnaround. How does the World Water Crisis affect the Finger Lakes region of New York, a region containing over 4.2 trillion gallons of freshwater? What can we learn from local and global experiences? Panelists will include representatives from different parts of the world, including the Finger Lakes region, to speak about their first hand experience coping with water conflicts, resolutions, and rights locally and globally. This event is free and open to the public. Space is limited to 50 attendees due to public performance rights of the film. Please register to attend by calling (315) 781-4382 or email [fli@hws.edu](mailto:fli@hws.edu).



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