Faculty Reflections
By Dr. Ruth Sofield

We finished SMoCS III with a whirlwind of activities. One part that stands out for me was a fun spirited interaction between two students with different expertise - a science student teamed with a policy/GIS student. At the end of their final presentation, they stood on opposite sides of the screen with a lively back and forth banter on how hard it had been to understand what each wanted during the project, despite thinking they were communicating their ideas clearly. Whether this was planned or not, it did reiterate an important real world lesson: Communication is key for TEAMS of experts to complete a task. More importantly, it felt like the students made real progress realizing how challenging this skill is and learned new ways to communicate to others when there are time-constraints and different knowledge-sets.

By Dr. Rebekah Green

Looking back on the last two quarters of SMoCS III and Planet, a few informal conversations stand out as particular highlights. A Planet students expressed how challenging she had felt reporting on pesticides. She realized how little she and the public knew about an issue directly impacting their daily lives. A SMoCS I student wondered why policy could not be strictly a function of scientific data, why public perception mattered. Completing SMoCS III, students realized how “real data” was so much less conclusive than they had originally assumed. In each conversation, I saw the students mature as emerging professionals as they struggled with decision making in a world of uncertainty, conflicting values and both short and long term consequences.

The 2012 SMoCS Courses

The 2012 Science and Management of Contaminated Sites (SMoCS) courses are now complete! These courses are part of a new approach to learning at Western Washington University’s, Huxley College of the Environment (Huxley). They were supported by an Interagency Agreement with the Washington State Department of Ecology Toxics Cleanup Program (Ecology TCP) and relied on collaborations with government, tribes, industry, and public entities. The series of three courses (SMoCS I, II, and III) were designed to build knowledge of the contaminated site cleanup process under MTCA with an emphasis on how scientific investigations are conducted, use of the technical documents associated with cleanups, the roles of different parties in cleanup decisions, and enhanced professional skills.

The SMoCS course was offered to both Environmental Science and Environmental Studies students. They were assigned to a specific role in a group and given assignments related to a mock cleanup decision for an actual site cleanup at the Everett Shipyard (ESY). Within this basic framework, students were responsible for holding meetings and producing the minutes and summaries (such as press releases). Guest lecturers from Ecology TCP, the Port of Everett, Landau Associates, Inc., and Stoel Rives, LLC discussed MTCA with an emphasis on the process and their roles in cleanup decisions.

The SMoCS II course was offered to Environmental Science students concurrently with SMoCS I. Students were responsible for determining cleanup levels for the uplands and sediment at the ESY site with Ecology’s Cleanup Levels and Risk Calculation (CLARC) tool in conjunction with the MTCA rule. They evaluated different cleanup remedies and completed a disproportionate cost analysis (DCA) to propose one of their cleanup options. In the process, students reviewed existing public record site documents, including the RI/FS and the Cleanup Action Plan. In addition to the lecturers from SMoCS I, Clay Patmont (Anchor QEA) talked about his experience as an environmental engineer with a specialty in sediment contamination. All of the SMoCS II guest lecturers focused on field sampling techniques and specific skills, such as the DCA. An additional highlight was a special presentation on cleanups in the Portland, OR area from Maul, Foster & Alongi, Inc.

Students who completed SMoCS I/II could continue with the final course, SMoCS III, which was a project based course. The emphasis of this was implementation and management of a self-proposed project that students worked on in teams throughout the quarter. Depending on the project, they learned and used tools and programs commonly used in the professional field including personal surveys, statistical analysis, myEIM database, Geographical Information Systems, Crystal Ball software, and STELLA software. They also relied on the Sediment Management Standards and other sediment quality guidelines in their analysis. Each group presented their work in an oral and written format. Four of the students are continuing the work in the fall and plan to present results at the Society of Environmental Toxicology and Chemistry annual meeting in November, 2012.

The SMoCS III project titles included:

- Modeling Bioaccumulation of Contaminants in Puget Sound: An Analysis of Site-Specific Parameters.
- An Analysis of Fish Consumption by Native American Tribes in the Pacific Northwest.
Field Trips allow students to see classroom based content applied in real world settings. Our first was the Everett Shipyard (ESY) site hosted by Les Reardanz and Erik Gerking of the Port of Everett and Larry Beard of Landan Associates. Students found this a great way to visualize what they had only read about in the ESY RIFS.

More locally, Brian Gouran from the Port of Bellingham led a tour of the Cornwall Landfill; he explained the history and current activities of the site. The Port recently completed an interim action with dredged materials used as an uplands cap. Hearing the thought process for how dredged materials can be reused gave the students new insight into possible solutions to consider when working on a cleanup.

The capstone field trip included a tour of some of the Pacific Northwest National Labs (PNNL) in Richland, WA. Bruce Bjornstad of Battelle hosted the tour that also included the expansive Hanford Nuclear site and cleanup projects. A common theme was the importance of scales. We saw benchtop scale research at PNNL followed by pilot and field scale applications of cleanup technologies at the Hanford Site. The time scale was also stressed as students saw lab experiments conducted for months with a need to predict those results into the millennial scale through modeling simulations.

Conferences and Workshops
Students attended the Pacific Northwest Society of Environmental Toxicology and Chemistry conference in Vancouver, BC. For many, this was their first professional conference. Six of them also attended the short course titled Application of Data & Models to Develop Ecologically Relevant Sediment Quality Criteria by Dr. Frank Gobas of Simon Fraser University.

A smaller group from SMoCS II attended the Environmental Cleanup Conference in Seattle, WA. The conference, organized by the Environmental Law Education Center, focused on Natural Resource Damages Assessments and the proposed changes to the WA Sediment Management Standards.

Next Steps
Graduation was next for some of the SMoCS students. One graduate, Don Cheyette, had the distinction of the Huxley College Presidential Scholar. http://news.wwu.edu/go/doc/153

Others will be completing internships with the EPA and local consulting firms this summer or conducting research.

Future
We thank all who helped make SMoCS 2012 a success. We’ll be improving the classes in 2013. If you are looking for gifted employees or interns, contact us. If you are a student who wants real world education and access to professionals in the field, we’ll see you in SMoCS 2013!

Photo Credit: Monica Ponce

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