SMoCS
Science and Management of Contaminated Sites at Huxley College of the Environment

The Planet - Achievements

The Planet won new levels of recognition this year. This winter, the magazine’s 2013 Policy Issue won national finalist in the American Society of Journalists’ Mark of Excellence awards for college magazines. Against all other student magazines across the nation—some of which are edited and designed by professionals rather than students—the environmental magazine came in second place. This award is a testament to the students’ in-depth reporting, photography and design.

At the same time, the editorial team launched an ambitious set of stories this spring. Twenty-five writers, photographers and videographers covered stories for the human issue—an issue that carefully explored our species’ interactions with natural environments. The stories covered new research using LiDAR and plant growth to discover hidden mass graves, climate change impacts on local subsistence communities, and a not-so-distant-future plan underway in the Pacific Northwest to commercially mine asteroids in space. Meanwhile, the editors took on a wildly ambitious effort to create a graphic-based story on recent research connecting overuse of environmental resources with social inequality and, ultimately, with societal collapse. While the issue was the cause of more sleepless nights and intense debates than any recent issue, the results are stunning and available at www.planet.wsu.edu.

As in past years, six Planet students participated in the SMoCS spring course. Planet students brought videography equipment and editing know-how to the documentary projects in SMoCS and learned valuable lessons about the sourcing and development of complex environmental stories. Several of these students will return as Planet editors in the fall, bringing their SMoCS skills with them.

SMoCS III 2014

-Ruth Sofield

SMoCS 2014 is now complete! Rebekah and I are continuing to refine the class based on what we’ve learned, what our students are capable of, and we are interested in. The 2014 spring version of SMoCS III included the same framework as previous classes, but included new guest speakers, Maureen Ryan, a research fellow with the Society for Conservation Biology, discussed the interactions between science and journalism. Betty Carteret (previously at Westinghouse and Batelle PNNL) and Daniel Diedrich (U.S. Department of Energy contractor) gave background presentations on the Hanford Site clean-up. Anna King of Northwest Public radio joined us by Skype to talk about her approach to being a journalist. Naomi Oreskes, author of Merchants of Doubt, was the honored guest at a lunch round table that many of our students attended. The discussion focused on scientific communication.

Several of the students attended the biennial Salish Sea conference in Seattle. The students learned about Salish Sea research and networked with presenters and other attendees. The next week, we took two vans of students on our annual trek to the TNCities to tour the Hanford Site. Oh the things you can learn with 20-somethings in a van for 8 hours each way! Jim Conca, a Senior Scientist at UFA Ventures, Inc. and regular Forbes contributor, gave a brilliant presentation on nuclear waste storage.

The focus of the class, though, was the student projects. We had three groups composed of journalism and environmental science students. These mixed groups focused their project on communication of technical information to the public. The result was the second installment of the MTCA comic book featuring The Remediators and two documentaries. We also had these students work on mini-projects that documented the progress of the science projects throughout the quarter. These mini-projects were interesting for everyone. The three groups composed of only environmental science students worked on laboratory projects or a computer modeling project. For more information on any of these projects see the SMoCS webpage or contact Ruth.

The Lab Projects

The laboratory projects were outstanding. One group investigated how pH and humic acids affected the sorption of PCBs to Activated Carbon (AC). The second group investigated methods to enhance biodegradation of PCBs using fungi. These projects were designed and implemented by the students with constant guidance from Ruth.

Both groups spent countless hours on their projects and experienced scientific research as it truly happens: back-ordered supplies, containers that mysteriously broke causing precious sample to be lost, results that showed an increase in response when they expected a decrease… Although the results left more questions or a desire for time to do just one more experiment, the projects were highly successful. Science as it truly happens… an amazing experience for the students.
Student Successes

First Place! In June, Shannon Daughtrey (a SmoCS graduate) participated in, and won, the Air and Waste Management’s (AWMA) Environmental Challenge International (ECI). Shelby Herber and Melody Keneker (Huxley Environmental Science graduates) were also part of the winning team. They competed against nine other teams from all over the U.S. including Michigan State University, Florida A&M – Florida State College of Engineering, and Cal Poly.

The ECI is a realistic environmental problem written by AWMA professionals. Students form consulting teams and develop a written proposal for how to solve the problem. At the annual conference, they present a poster and top teams go on to an oral presentation round. Along the way there are professionals who role play different characters associated with the problem; these professionals are also the judges.

The problem this year seemed to be written for SmoCS students. The fictional “Happy Cruise Lines” wanted to build a new cruise ship terminal in Harborsound, CA. They were surprise to find that the sediments they needed to dredge contained PCBs and DDT. Landfilling and incineration were the strategies proposed by Happy Cruise Lines, but the Huxley team proposed a treatment option using Activated Carbon for the sediments. The team had to dig into CA State regulations, investigate alternative remedial technologies, and ultimately supported their proposed (continued)

Twitter in the Classroom Equals Fun

~ Ruth Sofield

Some of the Environmental Science students had a special assignment this quarter – they had to Tweet about their scientific SmoCS research at least twice a week. It was an experiment on my part, designed to find new ways to improve the science students’ communication skills. We all opened Twitter accounts for the assignment; as one student tweeted “Finally accepted my fate and submitted to the Twitter world”.

I found the assignment more enjoyable when I gave them weekly Twitter challenges.

Challenge #1: Yeats or Sues, their words divine, your next tweet should be a rhyme.
- Distribution output agrees. Setting Ruth at ease. (Jenna Rheuben, bioaccumulation modeling group)
- I’m talking ‘bout PAHs that contaminate, contaminate. Models to calibrate, calibrate. Subsets to validate, validate. (Chris San, bioaccumulation modeling group).
- Our study’s left port, we’re starting to sail-- but I’m hoping our AC isn’t lost in the mail. (Bodie Cabiyo, Activated Carbon group)
- Factors added and pH adjusted; to the mixing table, our sand’s entrusted. (Thomas Craig, Activated Carbon group)

Challenge #2: (First Message) In expeditious concatenation, render two mass revelations with the initiatory inducing MEGO.

Challenge #2 (Second Message) In rapid succession send two tweets that tell the same story, with the second not causing my eyes to glaze over.
- The temporal misalignment of our negative controls are proving to be progressively problematic.
- The difference in time between our controls and our experiment are becoming more of a problem. (Thomas Craig, Activated Carbon group).

Challenge #3: Once upon a time there were 3 people, 6 tweets, and 1 story. Tell a story of your work.
(The story that follows is by Bodie Cabiyo, Shannon Daughtrey, and Thomas Craig. One of their experimental goals was to see how acidity affected sorption of PCBs to Activated Carbon).

- One day, Little AC got sent out to the riverbed to find PCB-135 for Grandma AC’s PCB collection, but danger lurked around the bend.
- Nearby, Hugh McAcid laughed maniacally, plotting ways to stop Little AC and keep all of the PCBs for himself. He had an idea…
- Hugh McAcid soaked up the surrounding divalent metallic ions. Instantly, his fluid body was consolidated and ready for battle.
- Little AC went to grab his first PCB when McAcid jumped out of the sediment and stole it from him. McAcid’s shadow engulfed him…
- He reached for the PCB, but could not free it from McAcid’s grip. Just then, Little AC remembered Grandma’s gift for emergencies…
- Grandma’s special bag of hydroxide ions just might soften MCacid’s tough grip. But will it work? Find out next week!

Student Successes

First Place! (continued) solution with a Disproportionate Cost Analysis. Eh - writing a proposal, communicating technical ideas, investigating technical and regulatory issues, proposing solutions - it is easy to say that Shannon was well prepared for this Challenge because of SmoCS. Congratulations to the Huxley team! More information on the ECI at http://ace2014.awma.org/students-young-professionals/eci-competition/

Award Winners – Three of our graduating seniors were recognized for their accomplishments. Bodie Cayibo was the Presidential Scholar for Huxley College, Courtney Fung was the Ming Ho Yu Environmental Toxicology Award winner, and Chris San was the Environmental Science Best Applications winner for his Senior Thesis on Nanoparticle Chemistry.


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