IACPES Science Policy Project Proposal

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Workshops and Meetings

I attended the Canadian Science Policy Conference (CSPC) in both 2011 and 2012. Topics discussed at each conference directly related to my research: science policy of agriculture, innovative energy supply, education of scientists, and Arctic and northern science policy. These conferences were very insightful and allowed me to network with policy experts.

In 2013 I met with two policy experts (Dr. Stephanie Gower and Dr. Alex Bielak) with the goal of creating a science policy career panel for interested undergraduate and graduate chemistry students. Dr. Gower is a research consultant at Toronto Public Health who addresses health impacts related to air quality, climate change and active transport by interpreting science to inform smart policy decisions. Dr. Bielak was the Science & Technology Liaison Director at Environment Canada (2007-2013) and now runs his own consulting company to provide knowledge translation and brokering services to various science policy stakeholders. After meeting with each expert individually, both agreed to take part in a 1-hour science policy panel.

Research Synthesis Topic

After attending CSPC 2011 and 2012 it was clear there is a distinct lack of science policy education to undergraduate science students. Science policy directly influences: 1) how science is funded, 2) which science is prioritized, and 3) how scientific results are distilled and implemented in society. These are crucial concepts currently lacking from undergraduate chemistry curriculums. My topic for the IACPES science policy component was to explore effective ways to implement an environmental science policy component into undergraduate chemistry courses.

In fall 2013 I worked with Dr. Jessica D'eon to develop and deliver a science policy component for CHM210 (Chemistry of Environmental Change) – a 2nd year introductory course to environmental chemistry. The component involved three unique modules:

1. *Science Policy Tutorial* – I created and delivered a 50-minute, interactive tutorial on the basics of science policy. Examples of questions and concepts addressed were: What is science policy? Why do we do science? How is science policy communicated in Canada? What jobs are in science policy?
2. *Model United Nations (Mercury Game)* – I organized and supervised a science policy exercise where students represent different stakeholders at a mock United Nations Environmental Programme (UNEP) meeting about global mercury contamination. Students are given individual information packages and a loose script to follow. The students negotiated for 2.5 hours followed by voting on four separate motions. The final 30 minutes was an open roundtable discussion (out of character) on the exercise. Students also handed in a two-page policy brief one week after the negotiations.
3. *Career Panel* – I organized and chaired a 1-hour career panel. Dr. Gower and Dr. Bielak gave brief 10 minute presentations on their education and career, followed by 30 minutes of questions.

The science policy component was very well received by the students. Fourteen students (out of ~50) responded to a short survey and all fourteen recommended keeping a science policy component in CHM210. The majority of students recommended keeping all three components (tutorial, mercury game, and career panel) with little or no change. The students particularly enjoyed the interactive style of each component, as well as the chance to discuss science in a broader societal context. These comments underscore the validity and importance of exposing science students to the world of science policy.

On a personal note, this endeavour was an excellent learning and networking experience for myself. I learned a lot at the intersection of three topics I find very interesting: science policy, education and environmental chemistry.

Policy Presentation

The following is pertinent information for my tentative policy presentation:

When: June 13-17, 2016

Where: IACPES Workshop

Topic: “Educating chemistry students on environmental science policy”