FWI Project Results

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Faculty/Area: Science
Project title: Year One Chemistry Research Initiative

Please submit separately a maximum 2-page summary of the results of the project with particular attention to the following details:

1. How has the project fostered collaboration and interdisciplinarity?
   a. Have other projects been initiated as a result of this project?
   b. If it was recommended in your award letter that you connect with particular individuals/groups, have you done so and what was the result?
   c. Have you worked with others who have or have not been funded through the current RFP?
2. How has the project exposed students to new or emerging research?
3. How has the project offered students an experience beyond traditional borders?
4. How has the project challenged the confines of existing programming and advanced new paradigms of research or education?
5. How will the outcomes of the project be sustained or expanded?
6. Please outline any barriers or challenges that may have prevented you from achieving some of your project goals.

The goal of the Year One Chemistry Research Initiative was to provide 1st year chemistry students the opportunity to develop and execute their own self directed and novel research project. In doing so, the hope was to foster an environment that encourages creativity and problem solving in the sciences.

While this initiative has occurred on a smaller scale since 2010, the FWI funding allowed for a significant increase in equipment specific to this research group. In doing so students had facilities available to them that closer mimicked those found in an actual chemical research laboratory.

For the Winter 2014, given the extra equipment, the group expanded to 21 students from the historical number of ~12-14. Three groups of 7 students were able to develop their own project, requiring collaboration amongst themselves as well as seeking outside guidance from experts around the university. As example, one group worked with direction from Dr. Emily Cranston and her research group from the Department of Chemical Engineering. In the end, most projects, given the wide interests and lack of experience of year one students take a very interdisciplinary nature.
Overall all 21 students were exposed to front line research in the chemical sciences. The project goal required them develop an idea that extended beyond what was found in the scientific literature. More than anything, the students gained an appreciation of the hard work, dedication, ingenuity and technical expertise required to push the boundaries of science. Students were also exposed to techniques and lack of restriction on the order of what many senior thesis students experience.

As a result of this initiative, both students and educators are getting inline feedback of the capabilities of 1st year students as well realizing the limitations associated with providing 1st year students with such academic and scientific freedom. It is a hope that such opportunities will evolve and become more common place within the sciences and across the university. The project also allows senior undergraduate students to help as mentors, which has been an added bonus to and a significant added educational/research experience for them.

As of now, the initiative will continue again in the winter 2015 semester. Given the success of 2014, the number of students will again increase. There has been much interest from students and with increased equipment it becomes easier to have self sufficient TA/student groups working on projects. Progressing forward more communication will be initiated to potentially expand this program beyond simply being an extension to Chemistry 1AA3.