Science and Math Brown Bag lunch

Meeting Notes

March 9, 2017

Present: Rebecca Achtman, Sharon Crary, Hilary Eppley, Dan Gurnon, Jacob Hale, Mary Kertzman, Pascal Lafontant, Jim Mills, Selma Poturovic, Pam Propsom, Jackie Roberts, Michael Roberts, Maria Schwartzman, Fred Soster, Christina Wagner, Scott Wilkerson, Brian Wright

Reminders.

Summer science and math pedagogy workshop with Melanie Cooper on June 27-29

Brown Bags: April 10 and May 4 at 11:30

Data on number of majors in SM departments. Jackie shared data on patterns of SM majors from 2000 to now. There appears to be some decline, at least in some majors, but it’s difficult to determine if that’s because not all sophomores have declared yet and/or because we’ve had smaller incoming classes over the past few years. One person shared a comment from a really good science major that his perception was that DePauw doesn’t recruit science students: emphasis instead is on business and networking.

Additional data requested:

--total enrollment in our SM classes.

--how are students meeting their SM gen ed requirement?

“Research-rich environment.” Follow-up on our Divisional Lunch about student-faculty research: Creating a “research-rich environment” for all students.

--How do we better “sell” science and math via Admissions?

Was this how the university pitched itself under President Bottoms? Some external grant money during the Bottoms’ presidency helped us to update lab equipment.

At the divisional lunch, Anne Harris said she can fund-raise for embedded research experiences in the classroom, if that’s what we’re interested in. It depends on what we value and what we want.

Are we talking about original research or “canned” research? Research in the classroom or separate research projects?

If we have a lab requirement again, that might be a good way to get students to have a research experience. Depends on how we define lab and what we do in lab. One person questioned whether even all of our majors are able to do original research. Is it more saying to students: if you *want* to do research, it is available and it will happen here.

It doesn’t seem like we’re meeting student need/interest for research. A couple of examples were given of faculty emails sent to distribution lists in the major and getting huge responses from students who are interested in doing research.

Would it be more focused if we said “undergraduate research-rich environment?” Might sell better to donors and external funding agencies.

Example of SEA-PHAGES program in Biology nationally where students help sequence the human genome. But how does this fit with what an introductory course usually is, giving students a broad picture of the discipline? Might there be other ways to envision the introductory courses: Melanie Cooper this summer will talk about identifying threshold concepts, reducing content to the most essential topics and hitting them hard and with depth. Maybe rather than a lot of little intro labs, there might be early labs that focus on learning techniques and then students can progress to developing a hypothesis and conducting a longer project over multiple weeks.

Concerns about faculty fatigue of having to constantly make new creative labs.

Opportunity for upperclass students to serve as lab tutors or mentors. Computer Science employs this and it’s one thing that saves them from burnout.

Could the science and math liaisons look at different models of this? Each department find one good example of how this is being done in other places. Could look at other schools in the GLCA who do this (e.g., Wooster, Allegheny, Grinnell). Still tension at DePauw between addressing content versus scientific thinking.

Did the old Group 6 lab requirement have a definition of what we meant by lab: discovery-based, collecting data, developing hypotheses? Also used to be a more lengthy paperwork process for justifying why a course meets a “group” and getting approval for it.

Should students be getting credit for the lab (they are spending more time in class)?

Take question back to department: what are the things that the department is already doing to contribute to a “research-rich environment?” What is the sentiment in each department regarding whether we need to add a laboratory component to the science and math requirement? What are departments doing in lab?