Shoreline Community College
16101 Greenwood Avenue North
Shoreline, WA 98133

Biotech Advisory Meeting Minutes

Monday, November 9, 2015, 4:30pm
Board Room, 1000 bldg.

Meeting Attendees:
Dina Kovarik: Shoreline Community College, Chair and note-taker
Guy Hamilton: Shoreline Community College
Dan Fey: Shoreline Community College
James Trager: Dendreon
Jan Beck: Novo Nordisk

Approve Minutes from June 15, 2015 meeting

Minutes approved.

Updates

Amgen Grant

Shoreline will be hiring a new Biotechnology Outreach Manager, as Adrienne Houck, the former manager, has left Shoreline. Funding from the Amgen Foundation for the Amgen Biotech Experience (ABE) program will sunset June 30, 2017. James asked about the major budget impacts from the sunsetting. Guy explained that the impact is mostly on the salary of the Outreach Manager. During the next 18 months, the new Manager, Dina and Guy will strategize new and creative funding options, including Project Biotech summer camp and teaching on-campus. We'll also refine and reframe the program to focus more on the needs of our local high schools and strengthen efforts to recruit more high school students to Shoreline (i.e., Shoreline catchment schools: Ballard High School (HS), Mountlake Terrace HS, Meadowdale HS, Lynnwood HS, Shorewood HS and Shorecrest HS). Surveys of teachers during the past three professional development workshops have indicated that Shoreline staff support and the opportunity to network with other teachers are the two things they value most about the ABE program.

Project Biotech camps

Two summer camps were held in June and July, "Introduction to Biotech" [18 participants] and "Biotechnology and Human Health" [24 participants]. In 2016, both camps will be held in addition to a third new camp, "Biotechnology and the Environment." The themes of each camp were voted on by 2014 camp participants. Registration will begin in late January.

Partner Participation

i. Institute for Systems Biology requested a Letter of Commitment for their NSF ITEST grant, "Systems Education Experiences." The educational topic is systems biology and the environment, including ocean acidification. They will test their materials during the Project Biotech camp "Biotechnology and the Environment."

ii. Northwest Association for Biomedical Research (NWABR) hosts the Student Bio Expo on the Shoreline campus each May. They have requested time in the biotech lab for students to work on their science projects. This is particularly important for students under age 18, who cannot work with a mentor in an academic or industry biotech lab. The intention is to create a 2 credit winter course "Introduction to Lab Research." Participants would register as Shoreline students. Tuition would be paid by Running Start. A similar 1 credit course could be offered spring term, as students prepare their lab reports and posters for the Bio Expo. The new Outreach Manager would mentor the students.

iii. Kids In Medicine (KIM) Seattle has relocated from the Seattle Science Foundation to the Shoreline campus. They host a variety of science education events for K-12 students, including half- and one-day activities focused on heart dissections, forensic science, childbirth, and forensic anthropology. This will bring more K-12 students to campus and will hopefully help recruit more students to Shoreline directly from high school.

iv. Edmonds School District (ESD) has deepened their partnership with the Shoreline biotech program. Dina has been invited to attend their regular biotechnology teacher meetings and has arranged biotech lab site visits and campus tours for almost 100 ESD students in November and December.

v. North Seattle College has asked us to partner with them on an NSF Advanced Technology Education (ATE) grant fusing nanotechnology and biotechnology. This is a unique model to have two community colleges co-branding. North Seattle has a number of expensive, specialized pieces of equipment, including a confocal microscope, an atomic force microscope (AFM) and a Scanning Electron Microscope (SEM). They would benefit from their students learning about the nanotech applications in the field of biology/biotechnology and our students would benefit from access to such advanced equipment. For example, students might take a course in tissue culture at Shoreline and bring the fixed and stained samples to North Seattle for microscopy. If funded, the goal would be to develop three such 'pair' course offerings or "modules." James noted that nanotech is similar to systems biology or translational research – the term can mean different things to different people. There was also discussion about the difference between the skills involved in setting up and running equipment versus understanding and applying the biological applications. Biotech applications of nanotech include making particles to bind to cells for drug delivery. Jan discussed "decoupling science profiles,' hiring one person to be an operator of equipment and another person who is the expert in the field. Novo Nordisk is building new microscopy and flow cytometry labs. Their previous employment model was to have scientists operate their own equipment, but this led to problems when comparing results from different scientists. Now they hire a former Zeiss employee to run the Zeiss microscope or someone from a company that makes flow machines to run the flow.

2014-2015 Cohort Update

Of the 16 biotech students in this cohort:

- 5 are still taking courses (4 in the biotech program)
- 3 are completing their internships
- **4 are working in full-time positions**.
    - **1 at SNBL**
    - **2 at CMC Biologics**
    - **2 at Fred Hutch.** One of these alumni is working as a Data Analyst Assistant, a new "job family" established at Fred Hutch and inspired by this student "that will better encompass a bioinformatics skillset and lab role." [Quote from alumnus].

- 2 are working in part-time positions while looking for full-time positions
- 2 are looking for full-time positions

2015-2016 Cohort

The program has 12 full-time students currently of which 3 are seeking the AAAS degree. 4 are part-time students, and we're expecting 2 more students to start the program winter term. 4 students registered for classes but never attended. 2 registered and attempted the full AAAS course load (all biotech courses plus inorganic chemistry lecture and lab) but withdrew mid-quarter.

Illumina Next Gen Sequencing

The biotech program was approached about purchasing an Illumina machine for Next Gen DNA sequencing. The cost would be approximately $80,000 plus the cost of reagents. Dina suggested to the Illumina rep that it would be preferable to pilot the concept with students by starting with data analysis, and perhaps then late buying the machine. Illumina insisted that the data analysis is easier than running the machine, thus a more important skill for students' resumes. The Board agreed that this was too large of a purchase for the program, especially since few facilities do their own Next Gen sequencing. Most local companies send their samples to Covance.

Curriculum Changes for 2015-16 & Winter Retreat / Focus Group to Analyze Course Outcomes and Competencies

The program is due for a curriculum review to ensure that course outcomes and competencies align with industry needs. It was suggested that this review take the form of a Board retreat off-site (closer to downtown Seattle) and at a different time / day than the regular Board meeting to attempt to accommodate Board members whose schedules do not permit late-afternoon Monday meetings. The review would include Board members, biotech faculty, and students and/or recent alumni.

Site: Dendreon (thanks to James Trager for hosting)
Time: 9:00 AM – 12: 00 PM
Potential Dates: Friday, January 15 or Friday, January 29, 2016

Strategy to Recruit New Advisory Board Members & Chair for 2015-16

The Board discussed strategies to recruit new Board members, as well as areas of expertise or industries that are not currently well represented. The Board Retreat is an opportunity to invite new members to participate.

- Process engineering, form and function
- Regulatory affairs?
- Manufacturing
- Newer companies in the area: Seattle Genetics, Juno, CMC Biologics – the need to help tailor our program to meet their needs.
- SNBL
- University of Washington (Bonnie Brewer or someone from her group?)

Next Meeting

The next Board meeting will be the retreat in January. The next regular Board meeting will take place in May or June, 2016.

Adjourned at 6:00 PM

Minutes taken by Dina Kovarik