



Shoreline Community College
16101 Greenwood Avenue North
Shoreline, WA 98133

Biotech Advisory Meeting Minutes

Monday, November 21, 2016

3:00 – 4:30 pm

Central Conference Room (1000 Building, room 1020)

Meeting Attendees:

Shoreline Community College: Dina Kovarik, Guy Hamilton, Louise Petruzzella, Jan Chalupny, Reitha Weeks, Ad Legesse (also of Seattle Genetics); Sandra Porter (also of Digital World Biology) and Tiffany Lamoreaux.

Industry Representatives: Jason Frasier, Presage Biosciences; Jan Beck: Novo Nordisk; Roy Musil, Juno Therapeutics; April Lewis, Bio Scientific; Sean Maden, Fred Hutch; Dmitry Serbzhinskiy, Seattle Genetics; Roy Musil, Juno Manufacturing; Paul Tsang, CMC Biologics

Reitha Weeks opened the meeting.

Board Member Introductions: Joy Adiletta, Senior Associate Scientist at SystImmune and Roy Musil, Senior Director of Quality at Juno

Following Board Member introductions, Guy gave a warm welcome to Louise Petruzzella, as the Biotech Industry Liaison to work within the capacity of industry contacts and communications.

Minutes from 6/20/16 meeting approved with minor corrections.

Updates

- a. Thank you to the Board for “START Immuno-Biotech: Strategies for Accelerating Recruitment and Training in Immuno-Biotechnology”

Dina thanked Sandra for help with the title. A grant was submitted in October which includes information about funding the Outreach Manager, as well as course development and revisions for the Biotech Program and professional development for high school teachers. It was submitted in October and Dina hopes to hear back within six months.

- b. Amgen Biotech Experience (ABE) Grant & Outreach

Dina said that Jan Chalupny is at a conference. Funding for Jan’s position sunsets June 30, 2017 and funding alternatives are being sought out. Amgen is giving a period of transition and allowing SCC to keep equipment. Currently, the Amgen model includes professional development workshops for teachers, after which they are certified to check out the curriculum kits they were trained on to bring the experiments back to their classrooms.

Guy mentioned that there will eventually be replacement costs for equipment and asked the committee to forward any small opportunity ideas (\$10,000) to himself, Louise, or Dina. Dina mentioned the possibility of cost savings through some of the camp and kit loan activities by bringing biotech students in for learning experiences and integrating materials preparation into Biotech courses. The cost, approximately \$60,000, is mostly salary. A cost recovery model, similar to that used by the Institute for Systems Biology, as well as fundraising opportunities suggested by Education Development Center (EDC, which administers the Amgen grants) are also be explored.

Action: please forward any funding ideas to Louise Petruzzella (lpetruzzella2@shoreline.edu), Dina, or Guy.

c. Independent Laboratory Research Experience Pilot

Dina said that Jan Chalupny has been doing a pilot Independent Study course with high school students involving DNA barcoding. If successful, it could be an ongoing course offering, including being offered to Shoreline students. A decision will be made by the EVPASA and the President on Tuesday regarding pilot funding by the Shoreline Innovation Fund. The course for high school students was requested by Biotech Program partners in the nearby Edmonds School District and could serve as a recruitment tool to the Biotech Program and Shoreline CC more broadly.

d. PROJECT BIOTECH Summer Camps

Camps continue to grow. In 2016, a third camp was offered (“Biotechnology and the Environment”) and it was 75% full. Reitha organized environment-themed tours of UW; it was quite popular and will be repeated next year. Next year Biotechnology Essentials (i.e., Intro to Biotech) and Pandemic Flu will be offered. Watch for a flier to be included with the minutes. The online application will start in early- to mid-February. Sponsorships are needed and range from \$800-\$5000 levels. The opportunity allows for visibility of your company and sponsoring companies have the opportunity to send an employee. Sponsor recruitment start in December.

Action: Tell your company employees and students.

- i. Three camps in 2016
- ii. Three camps in 2017 (see flier)

e. 2015-2016 Cohort

The 2015-2016 Cohort was small, nine by the end of the quarter, mostly due to life circumstances; some of them will be coming back.

f. 2016-2017 Cohort

The Spring 2017 Cohort is over capacity. Seven are pursuing associates degrees, and ten are pursuing certificates. Dina asked the committee to give her feedback on internship opportunities and ideas.

Biomanufacturing & Bioprinting

- g. Information about the NBC2 Mini BIOMAN Conferences in Summer 2017 was shared.
- h. Potential Partnership with SE3D Education/Phase 2 SBIR (See Bioprinting Proposal, handout)

Dina asked the committee for feedback on SE3D Education (see handout). The system involves essentially bioprinting mini experiments inside beads, such as for optimizing algae growth for biofuels. Multiple replicates are possible in a very small space, systemizing how you test different variables. Initially, Maya of SE3D, suggested offering a certificate program. Dina said she would talk with the committee for feedback.

Some of the questions and comments:

- Is it an interest of students? (Reitha)
- If the first year has 8-10 students, with \$4000 for printer (and \$75 each kit), is one printer sufficient? (Reitha)
- Could it be part of camp? (Joy)
- How does it relate to industry? Are other colleges doing anything similar? (Reitha)
- Is it applicable to the field, helping students ask questions, and acquiring data? (Guy)
- Why would I buy this if I can't get quantifiable data out of it? (Jason)
- Others: Testing variables? What are you assaying? How do you get quantitative data as compared to other ways of doing it? What data are you getting out of this equipment/technology? Is there an advantage of using this technology over current methods? Does it provide a learning experience? How many companies in the area want employees with these skills? How is this different from a standard array? Could you use this for multiple different assays simultaneously for validation purposes?

Suggestions included contacting Dr. Eric Chudler, UW Dept. of Engineering and Neuroscience for experimental ideas if this is pursued further. It was also suggested that Shoreline receive a demonstration of the equipment and more details before considering such a larger purchase. Edmonds CC is an NSF Center for Materials Science (Shoreline CC has or has had these as well), for things like 3D scanners, laser printers, etc. This could be a funding source?

Opportunities for Guest Lecturers

- i. Last winter Dina started teaching Recombinant DNA Techniques (BIOL 275) and had guest lecturers such as Dmitry come in. Dina would like to continue to give students a broad overview of industry by having guest lecturers during winter quarter in January and early March.

Action: Please consider this opportunity for you or your coworkers and let Dina know. The lectures are 45 minutes in length and you can send student preparation information to Dina.

Action: Dina will send out a program guide.

- j. Feedback was requested for a New Seminar Series. Currently Biotech students are required to take “Seminary in Biotechnology” in the winter term, with a focus on resume and cover letter writing, mock interviews, and panel discussions with hiring managers and alumni.

The proposed seminars include an overview of the Biotech industry in fall term, and a “Special Topics” seminar or seminars in spring and summer.

Ideas and Questions from the Board included:

- Upstream vs. downstream processes, new topics, new technology and, guest lectures
- Paul – re: special topics; in the past, what students do thirst for? Last winter was technology
- Guy’s response: any connection to industry; when student sees relevance to real world and the connections. The program had a partnership with Bonnie Brewer’s group at UW, studying DNA replication in yeast. They also had an FDA center in Bothell – real time study looking for pathogens (qPCR of bacteria in spinach samples, identification). The more we can do to break out of the cocoon of lab, the better. That is one benefit of tours, seeing connections between what they’re learning in class and what is being done in industry
- Sean - not a one dimensional application but dialogue with employer [informational interview] path that is an alternative so panel discussions, etc.
- Dimitry education as well – connection to industry. Feedback from real industry.
- Paul – helping and seeing how biotech makes a difference in people’s lives; anchor “why biotech?”
- Dimitry – assay and new drug possibility in two years
- Guy – Jason and Presage tour with trials and real world treatments that depend on your specific profile of biomarkers, etc.
- Reitha – 1) comparison of academia vs industry and 2) business side/entrepreneurship
- Dimitry – what it means to work for start up
- Guy – students obtain informational interviews with a lab or company regarding funding structure, size, etc. can report out
- Joy – business info
- Sean – interviews; opportunities to go between industries; biotech has shifted with the economy etc.; dynamic relationship like Fred Hutch an incubator – then innovative technology, funding
- UW has a biotech incubator
- Joy – challenges of going from academia to industry.
- Roy – Fred Hutch and then Juno – transferrable skills. Roy’s company morphed. Movement between industry and academia [case study]
- Reitha – history of Seattle blog – Lyman Consulting website with lots of useful information

- Joy – Who is? Biospace logos etc., good visuals
- Making a difference helping patients, how you get a drug into patients, FDA, IND, IP applications – what are you signing when you sign these things?
- Examples of institutes with biotech incubators: ISB, Fred Hutch, UW
- ICOS -> CMC, roadmap

Additional Opportunities for Board Engagement

Action: Dina will send out a digest on various opportunities with specific dates every other month. Anticipated Opportunities are listed below.

- Internships beginning Spring term
- Mentors/Informational Interviews
- Tours: Dina mentioned the need for two tours in winter quarter and one in spring. Jason said both; Dimitry said winter; Paul said spring, and Roy was negotiable.
- Job Shadows

Equipment Needs and Feedback

Tissue Culture Hood(s). Current capacity = 14; need N = 16-18 [i.e., 1-2 more hoods]

Dina mentioned the tissue culture space limitations. If you have a used item that you are able to contribute or ideas on where to find one or two more hoods, let her know. The Board offered suggestions including Zymogenetics (Reitha), Lab Supple, Craigslist, eBay, and perhaps the Fred Hutch

Discussion regarding Accuri versus BD instrument: Flow cytometer – Brad expressed concern about data output. Dina and Brad will follow up with Julie Hill.

Next Meeting

Dina will send out a Doodle poll for the May/June meeting.

Dina also mentioned the possibility of a Quality Control course offering in the future. A subcommittee will need to be developed to do a tentative outline in the spring in hopes to offer the course in 2018.

Adjournment 4:30pm

Minutes submitted by Dina Kovarik