



Shoreline Community College
16101 Greenwood Avenue North
Shoreline, WA 98133

Biotech Advisory Meeting Minutes

Friday, February, 2018

3:00-4:45 pm

Board Room (1010M), Building 1000

Meeting Attendees

Shoreline Community College: Dina Kovarik, Guy Hamilton, Louise Petruzzella, Jan Chalupny, Reitha Weeks, Sandra Porter (also of Digital World Biology), Adhanom Legesse (also of Seattle Genetics), and Jim Schulz

Industry Representatives: Arthur Castleton, Jon Digel, Sherree Friend, Susan Julien, Richard Moran, Mark Parrish, Todd Smith, Dmitry Serbzhinskiy, Nadeem Sheikh, Don Sodora

Minutes from the November 17, 2017 Meeting were approved with a minor typo correction on page 4 ("Mycoplasma" not "Microplasma" testing).

1. Board Member Introductions and Introductions of New Members and Guests

- Leslie Alexander and Meg O'Connor, Life Science Washington
- Roshan Liyanage, Bristol-Myers Squibb
- Cindy Reichel, Adaptive Biotechnologies
- Evan Henrich, Fred Hutchinson Cancer Research Center

2. Workforce Development and Life Science Washington: Leslie Alexander and Meg O'Connor

After an overview about Life Science Washington along with Leslie and Meg's background, Leslie said a meeting will be scheduled with seven institutions from North King and Snohomish Counties. There will be a structured set of questions and speaking time on what certificate programs each institution offers. The date is yet to be determined and SCC will decide who will represent SCC at the meeting. She also handed out brochures for the speed internship event.

3. Quality Systems Subcommittee: Call for Members

- Development of a Quality Systems (QA/QC) course is funded as part of the new NSF grant
- Looking for subcommittee members to work from the list of topics developed at the May, 2017 Advisory Board meeting to develop potential lab activities, course outcomes, etc.
- See handout (text included as an Appendix at the end of the minutes).
- Goal: 4-6 experts to meet in April and/or May and report back to the full Board in June

4. Updates

a. 2016-2017 Cohort – employment opportunities (Dina)

- Some students are just wrapping up their internships (last program requirement)
- Needed: 2-3 internships and 3-4 entry level positions

b. Project Biotech Summer Camps: Three in 2018 (see flier) (Reitha)

- Three camps this summer:
 - “Biotechnology Essentials,” for those new to biotechnology
 - “Biotechnology & Infectious Disease: Tracking Pandemic Flu”
 - “Biotechnology & Cancer: Causes, Cures & Careers”
- Applications available online 2/26/18
- Sponsors needed to provide financial assistance to students in need
- Sponsors are invited to have company representatives on career panels
- Two of the camps include tours (Infectious Disease and Cancer)
- Dina – camp helps recruit students to Shoreline

c. National Science Foundation project update

- Curriculum development reminder for five new courses, one is independent research.
- Evaluator is focusing on advisory board and engagement.

5. Tours Update & Thanks to Board Hosts (Louise)

- Dendreon: 3/2/18, Board member Nadeem Sheikh
- Fred Hutch: 5/4/18, Board member Jon Digel
- One more tour needed – Jan has a contact at SystImmune, which Mark Parrish offered to pair with a tour of Convance
- Dina: One of her current students works at Bloodworks and offered to help arrange a tour

6. Faculty Updates (Dina)

- Tissue Culture (spring, 2018). Three candidates. Potential instructor identified.
- Molecular Diagnostics (winter, 2019). Funds for curriculum revision available.
- Dina – funds for curriculum development and board stipends for involvement.
- Quality Systems (date TBD). Potential instructor identified. Funds for curriculum development available.

7. Course Feedback Activity: Molecular Lab Techniques in Medical Diagnostics

- **Background:** The current Medical Diagnostics course at Shoreline has not been updated with new techniques since approximately 2008. Many of the topics currently covered in this course

are included in other courses as well. The NSF grant funds revision of this course based on Board feedback.

- **Handouts:** Master Course Outline (includes overview of course, outline and outcomes) and the current Schedule of Experiments for the course.
- **Activity:** Think / Pair / Share. Board members were provided copies of the course Master Course Outline (MCO), which includes a list of Course Outcomes, Assessment Methods, and a topical Outline for the course, as well as the most recent Schedule of Experiments. Each member was asked to review these documents for 3-5 minutes (Think), Pair with a colleague or colleagues at the meeting (groups of 2-4 members), and, after 10-15 minutes of discussion, Share out with the group those elements of the course that they believe should be retained, and those elements of the course that should be removed and/or moved to other courses. The course is five weeks long.

Reporting Out By Group:

Group #1 (Mark, Reitha and Jan):

- High level – Is the intent of course medical or molecular diagnostics? Those are two very different things
- Title includes molecular techniques in medical diagnostics
- qPCR – it is quantitative
- Foundation of PCR
- How to calculate quantities, cutoff values, etc
- Introduce sequencing such as Sanger, then launching into other things
- Molecular applications
- Dina responds: foundation of PCR

Group #2 (Arthur and Jon):

- Agarose gels good
- Discussion of journal article activity (students work in pairs and present a paper on a molecular diagnostic technique)
- Dina corrected a typo on the schedule – there are actually three peer notebook checks are one instructor check currently
- Take out plates pre-coated

Group #3 (Dmitry and Sherree):

- PCR
- Take out protein-based assays and focus only on DNA / nucleic acid-based techniques
- Add forensic element or example
- Remove bloodsmears
- Dina: continuity from class to class; students perform bloodsmears in immunology
- Focus on sequencing technologies

Mark: this could be like a rabbit trail – with so many new diagnostic technologies, they could be their own course (such as sequencing technologies)

Evan: There is a Flu database so you don't have to do computer programming.

Group #4 (Nadeem, Roshan and Richard):

- Blood doesn't fit into this course
- What are the sample types? plasma etc.
- Nucleic acid, etc.
- Jumps into handling DNA
- Expression analysis module (doesn't require equipment)
- Bring in bioinformatics (we do)
- ELISA is important, but it's already covered in immunology
- Dina question
- More PCR, qPCR, RT-PCR

Group #5 (Sandra):

- Who are the students taking this course? Biotech or MLT. (Dina notes almost exclusively Biotech with one or two MLT each year)
- Certificate students have to take this course, but it is optional for the Associate's degree students
- CONTROLS need to be explicitly stated

Mark: these experiments are chock full of controls – Sandra said have it written down.

Importance of positive and negative controls (Dina)

Hybridization or probes question from Dina "theory of hybridization"

Concept of normalization

Adaptors in multiplexing etc.

Group #6 (Evan):

- Voltage to transfer membranes
- Radioactivity and Northern blots
- Chemiluminescence assays, also fluorescence
- Color change on filter (done at Seattle Central too)
- Should blotting be removed or moved?

Specific skills vs. what needed for a career.

Not just this assay but designing an assay.

Troubleshooting assay design. TRANSFERABLE SKILLS

If you didn't have that control? How to interpret the results that you obtained.

Matrix – assays by quality control etc.

Informatics is applying everywhere.

Action Steps & Networking

- Biotechnology Student Poster Symposium: 5:00-7:00 PM, Monday, June 18, 2018.
- Next Meeting: 3:30-4:30 PM, Monday, June 18, 2018

Adjournment

Submitted by

Dina Kovarik, MS, PhD
Program Chair, Biotechnology Lab Specialist Program

Attachments / Meeting Handouts

1. Quality Systems Subcommittee Handout



Request for Members:

Biotechnology Advisory Board – Quality Systems Subcommittee

Background: In response to industry requests, our National Science Foundation (NSF) Advanced Technology Education (ATE) grant includes funding for the development of a **Quality Systems** course, with a focus on Quality Control / Quality Assurance (QA/QC). The Advisory Board generated a list of topics to include in the course. Our aim over the next few months is to build from this list a series of topics and laboratory activities for a 5-week Quality System Course.

Goal: Our goal is to convene a subcommittee of 4-6 experts in QA/QC to facilitate course development.

How: We are asking for participation in two 1.5-hour planning meetings at Shoreline Community College (or another local venue or company), as well as approximately 3 hours of communications and materials review. We plan to hold one meeting in April and one meeting in May with the intention of reporting back to the Advisory Board as a whole with our proposed course content at the June 18 2018 meeting.

If you or someone you know would like to participate in this process, please contact Biotechnology Program Chair, Dr. Dina Kovarik, at dkovarik@shoreline.edu.