# Biotechnology Advisory Committee Meeting Friday, April 26, 2024 9:30am – 11:00am Zoom

### In attendance:

Rachel Rawle – Shoreline faculty and advisory committee liaison Sandra Porter – Digital World Biology Reitha Weeks –Shoreline Project Biotech Camps Srikant Lyer – Life Science Washington Orlando de Lange – Shoreline faculty Marc Cummings – Life Science Washington Ryan Takeya – Pfizer Josh Lopes – BMS Joy Adiletta – AGC Biologics Arthur Castleton – AGC Biologics Dalila Paredes – Shoreline STEM Acting Executive Dean Diana Ensenat – Shoreline Lab Technician Gina Nichols – Cytiva Don Sodora – UW and Seattle Childrens Kelly Griffin – Shoreline (STEM Secretary Sr., note taker)

Rachel welcomed everybody and facilitated the meeting in Rashawn's absence. She had Dalila Paredes, Acting Executive Dean of STEM, introduce herself.

January 2024 meeting minutes were approved after discussion of an edit for the Project Biotech Camps section to read summer 2025 rather than 2024.

### **General Announcements from industry partners:**

Sandy mentioned the upcoming Hackathon for students, faculty, and industry will be held August 5-8. It is free.

### **Rachel's Shoreline Announcements**

**Cedar Grand Opening** May 5, from 4:00-6:00pm. Rachel will be teaching in the new lab space and Diana will head up lab tours.

### Volunteer opportunities for spring quarter:

- Guest speaker immunology or cell culture
- 5/21 Campus-wide Career Fair contact Megan Tucker mtucker@shoreline.edu
- Year volunteer calendar is in Google Drive
- Attend poster session Wednesday, 6/12, 4:00pm-6:00pm (Career Panelists to kick off event at the beginning.)

# Summer instructor needed:

Evening class Biology 279 Biotech Techniques 7/1 - 8/22, twice a week, 5:00pm-9:15pm Monday/Wednesday, or Tuesday/Thursday, teaching basic protein purification. Share out the job opportunity to colleagues and refer them to Rachel.

# Overview of current programs and initiatives - Shoreline faculty

There are two over-arching programs for adult learners: Biotech Lab Specialist (an associate's degree after two years) and a certificate (after one year). There's an Essentials of Biomanufacturing certificate (10-week program with an internship at BMS or Pfizer).

Additional programs to support high schoolers are through Running Start (one credit each quarter of the academic year for a total three credits); Career Launch (seniors in high school who fast track with internship and Lab Tech interview with Fred Hutch); Project Biotech Summer Camps (paused); and Biotech Kit loans to support high school teachers in their professional development (limited capacity mode).

# Initiative #1: Finding Internships

Rachel said Orlando is helping students find internships and that all the students have paid internship opportunities this year. Rachel expressed thanks to Fred Hutch and Pfizer. Orlando mentioned he'd love to have more internship opportunities for the Biotech Lab Specialist students. It doesn't have to be very formal or take up much time and can be very flexible on what it looks like. It is an opportunity for students to do lab work, ideally with some sort of financial compensation. (Even if it is only one student a year.) Most important is predictability and reliability of a position to apply to - then faculty can make sure students are building a plan and be directed at an early point in the program. Orlando would be happy to meet with anybody to chat. Rachel gave a thank you to Reitha who sent the Biotech Department to Washington Research Foundation. There is a new initiative by WRF for a grant that allows students to go into internships and bring their own funding. Plans are under way to apply for the grant that has historically only been for 4-year colleges.

### Initiative #2: Increase hands on learning in Essentials of Biomanufacturing Certificate (two quarters)

- Two labs have been added to the QA QC course (increasing to five in the fall).
- Orlando has done a lot to add more lab training in the Aseptic Techniques class.
- Two hires: Bobby (from Pfizer) and a BMS hire (in the fall) to teach bioreactors.

# Initiative #3: Pathways Project to support refugee and immigrant students in the Essentials of Biomanufacturing program.

This will be for students who want to get into STEM careers but maybe need extra support as they move through classes. Orlando is working on the design of the iBest model (includes two instructors in all classes) over the next year. The format should expand the number of students who could succeed; create some new recruitment opportunities to fill every cohort; and help long-term sustainable planning.

# **Curriculum review**

Rachel explained that classes need to be reviewed on a regular basis. And from a previous meeting, the college is looking for ways to incorporate Biomanufacturing into the Biotechnology program and seeks input from the committee.

**Orlando**: Biology 281 (lab course) Immunology. Orlando went through the course objectives as listed in the MCO a couple years ago. He also went through the lab outline for this course he is teaching mentioning it is more general and not immunology specific. It is a course over 10 weeks, with two, 3-hour labs a week. Half of the 60 hours of lab

time are for a common project. The second part is the student project where they pick one method used during the class - then design, execute, and analyze an experiment to optimize the method for a particular goal and present via a poster presentation (alone or in pairs) and produce data that can prove something one way or the other using protocols they've learned.

**Proposal to consider:** Build biomanufacturing into the MCO by replacing the student project with a workflow to purify monoclonal antibodies out of animal cell culture. This could be used as a vehicle to strengthen cell culture and protein purification/analysis skills but mainly teach students about jobs and workflows within biomanufacturing. Students would have to complete batch records as they work and follow detailed SOPs. Orlando asked the advisory committee for input.

There was positive feedback around protocols, SOPs, batch records, and entry level jobs. Be sure to have students highlight the key words in LinkedIn and resume and talk about what their roles were in the production to explain that they have experience. No vote was taken at this time.

Orlando concluded with a plug for the Poster Session to be held at Shoreline on Wednesday, June 12, from 4:00pm-6:00pm inviting the committee to come out and see four or five posters. It will be an opportunity to meet students and for them to meet the committee and give them a chance to talk about their work. Having a career panel could be part of the event with folks who are more directly connected to work in the lab at companies. Orlando will send out an email invitation with more details but if you already know you'd be interested, email him.

# **Recombinant DNA Techniques (BIOL 275)**

Proposal to consider: Change the curriculum regarding overexpression and have CRISPR be the main focus. A few comments were shared out, no vote was taken at this time.

Rachel thanked everybody for their input as preparations are being made for the next academic year.

### **Group Discussion**

Rachel said the final thing for the meeting was to begin a conversation that will continue to be extended on ways the committee could help to increase enrollment for both the Biotech and Biomanufacturing programs.

Ideas and questions included:

What does the college do in terms of recruiting within the college; career modules into the intro biology or intro to chemistry courses (like pre-nursing students); information session invites; asking questions around whether it is exposure, financial aid, time of course, students seeing a job at the end; determining which are the biggest barriers; clearer data on what the issues are; awareness to high school students that the careers exist; basic awareness of options; better marketing to show this is going to be rapid training to get student into a good career; consideration to barriers to the various populations; strengthening marketing campus-wide (recruitment/outreach/marketing); communicate placement ratings; and advantages of the new building regardless of whether they decide to transfer or not.

Rachel's final question: how can we leverage the circles of the committee members and committee involvements to help the college broaden the types of people that can be reached?

Meeting dismissed close to 11:00am.