Shoreline
COMMUNITY COLLEGE

Biotechnology Advisory Committee Meeting
Thursday, June 16, 2022
4-5 p.m.
Shoreline Community College 16101 Greenwood Ave N, Shoreline, WA 98133
Classroom Adjacent to Room 2925

Minutes

Industry Attendees:
Joy Adiletta – ACG Biologics
Arthur Castleton – ACG Biologics
Roshan Liyanage – Vaxcyte Inc. **
Mark Parrish – Covance Genomics Lab
Julia Monreal – Partner Therapeutics
Sandra Porter – Digital World Biology
J. Todd Smith – Digital World Biology
Richard Moran – Seattle Genetics
Meg O'Conor – Bannecker Public Affairs
Don Sodora – Seattle Children's Research Institute

SCC Attendees:
Guy Hamilton – Executive Dean, Workforce & STEM
Dina Kovarik – Faculty Lead, Biotech ***
Reitha Weeks – Biotech Summer Camps, Coordinator
Rachel Rawle – Biology/Biotech Faculty
Lisa Smith – Note Taker
***Faculty Lead, **Chair, *Vice Chair

Roshan welcomed everybody and facilitated introductions and the approval of the 3/11/2022 minutes.

Rachel:
- Adding BIOL 111, 112, 113 to Biotech planning guide as (protein study) elective courses for Running Start Students over the course of the year.
- These prerequisites satisfy the Biotech Certificates. (Vote unanimous to Support these courses - (See **New Direction for Biopath** below).

Updates

Reitha:
Biotech Camps - volunteers to serve on camp panels
- Bringing back the Biotech Summer Camps after 2 years of hiatus due to Covid. There will be two camps instead of the usual three. They will be:
    1. Biotechnologies Centrals and Beyond
    2. Biotechnology & Cancer Camp
- Camps are hands-on with Labs & Career Panel activities.
- There will be no Industry tours but hoping to bring that back next year when we go back to 3 camps.
- Registration opens in April. There has been a fantastic response with both camps of 24 students maximum, and both camps are fully registered, with wait lists for both camps.

- The whole Registration Process and camp are now being handled through Continuing Education.
- The five School District partners (Edmonds, Everett, Northshore, Seattle & Shoreline) offer partial scholarships and committed to 82 scholarships combined.
- Industry members and their colleagues invited to 2 Friday *Showcase of Learning* events; July 15, and August 5, both at 2pm. This is an invitation for Parents, Sponsors and Educators. Students will have posters, and attendees will tour the labs.
- The camp has been run since 2014. Reitha, Dina, and Jan Chalupny run the program, and are seeking help to make the program more sustainable financially and from the Personnel perspective. The goal is to have faculty members volunteer and become more involved in teaching next year.

CCW intermediary grant – WABS (Washington Alliance for Better Schools) Shoreline School District, and Fred Hutch to develop new Internship training program (Guy)
- **CCW (Career Connect Washington)** which is a new intermediary grant in terms of developing pathways for K–12, High Schools, that align with Community College certifications, and they have workplace experience as part of those degree programs.
- Shoreline Community College is now part of a new intermediary grant which are designed by the state to help establish these programs. Shoreline Community College will be working with Fred Hutch, the Shoreline School District, the Seattle School District to put together an Internship Program.
- Fred Hutch would like to take Shoreline Community College's existing courses and building in a framework, bringing students along in their senior year of high school, and doing their running start courses, and then come in for a 1- year sequence at Shoreline Community College, and obtain a certificate. They would be hired for two internships at Fred Hutch, one between their Junior and Senior years of high school, and between their senior year and first year at Shoreline Community College, where they would be working at Fred Hutch in one of the 4 divisions of basic sciences. Their goal is that students would be generally trained as technicians to be placed in any of the four arms of Fred Hutch basic sciences.
- Funds are now available for Faculty to put together the sequence of courses, and what that will be. Fred Hutch, very familiar with the Shoreline Community College Program and WABS is the coordinator and connected everyone. Once they get the program going, they step out.
- As soon as the program is developed to recruit for it, Shoreline Community College will submit for a new grant.

Rachel & Guy:
New Direction for BioPath - Call for sponsors
- This was previously an internship for AGC
- This fall the structure will remain the same but will expand to involve other industry sponsors besides AGC.
- Asking for industry partners to provide panel discussions, to be mentors, and to set up tours at the different companies for students.
- Envisioning sponsors to provide internships for 2 to 3 students, to provide three mentors and a couple people to serve on campus every quarter.
- Students out of high school get really excited about SWAG, backpacks, etc.
- Guy highlighted a new change. AGC used to take all the applicants and decided who would get into the internship programs. These are the changes:
  - Guy collaborated with the Shoreline School District, and moving toward bigger classes, and providing for more opportunities, and much room for expansion.
  - With Rachel's ability to teach the class, the students feel empowered, are engaged, and are writing their SLPs, and are excited to be a part of this program.
  - Companies can donate to the Foundation, and funding could be provided as scholarships for students.
  - Guy inviting companies to come aboard to build a fund that can be distributed and support the students. This reduces barriers that keep the students from moving forward in this economic climate.

- o Guy explained: Why we tied this together (the 3 new classes - BIOL 111, 112, 113) is because this is the new BioPath. We need approval from the industry members to add the three classes as actual electives.
- o Meg and Guy explained that it's exciting to have high school students who are earning college credits applied toward specific degrees and certificates. This is also a big priority for the state to provide on ramp opportunities that don't require a four - year science degree.
- o Add also to Agenda for next year: a Planning Guide to integrate the to do list to include AAA Associates Degree that needs to be transferable for Biotech students moving on, and their Program Outcomes.

The vote was unanimous (by Industry Attendees) to support/allow adding these three courses (BIOL 111, 112, 113) as electives. *See course descriptions below.

Current Biotech student updates discussion- internships (Rachel, Julia and Guy)
- Rachel and Julia teaching in the Internship Training Program
- There are three classes, and just finishing the 3rd cohort.
- The classes are a mixture of 2 companies: C-GEN and BMS, they are working with the students and hiring them as interns after completing the 10 - week courses.
- There have been glitches of converting them after they finish the classes at SCC and getting them to the internship at the site.
- Scenario: Students coming from varying backgrounds, before and after the Pandemic, and are very focused, invested, nervous, but excited and interested in working. Some have or try to quit their current jobs, start their internships, but need health insurance. There is much at stake if it doesn't convert.
- Guy sees a lack of communications between the scientists and HR. Guy attended the national conference and experienced frustration when he hears that they can't hire enough people and sees students waiting to be hired.
- Julia noted (within HR) there is also a bias for having a master's or a PhD for positions. Julia is fighting back, arguing that many Biotech positions do not require a PhD (e.g., Manufacturing).
- Rachel conveyed to industry members that there are 3 cohorts, and students who are waiting to be hired.
- Guy said there's a recruiter lined up to start a new class starting in Fall. Technical Writing (Recording Deviations and SLPs) is another class – Rachel working with BMS on this.

NSF BioHub update (Guy and Jan)
- Had first National Ministry Advisory Committee Meeting last Thursday. Roshan was there. The group looked at the National Labor Market Analysis for the Immunotherapy and Self-Base Therapy Sector and looked closely at that analysis and the skills that go with it.
- MC Burning Glass is a new tool that breaks down how jobs are posted and based on skills. There is much good feedback on that report that Jan and group will use to finalize and present by fall.
- Jan is also developing a new bio-manufacturing kit for High School Teachers and will train her first group of High School teachers this August. The goal is to expose more students to the educational pathways toward Bio-Manufacturing.

Overview Student Poster session rubric - (Dina)

- Dina Informing the Industry Attendees: Last year and this year's students: One is still looking for a position, and two or 3 more are looking for both jobs and internships for this year.
- Dina providing hand-outs and clip boards to meeting members, and explained that it's essentially looking at their Introductions, methods, and discussions.
- Many of the students worked together as a team on the posters, so there are only six posters all together.

Session Adjourned at 5:02 p.m. LS

Principles of Biomanufacturing I-III

BIOL 111

Intro to biotech/bioman, Upstream Process

- Lab notebooks, safety
- Central dogma
- Protein production in cells (prokaryotic & eukaryotic)
- Recombinant DNA tech
- Gene cloning
- Gene expression
- Cell culture
- GMP
- SOPs
- FDA regulations

BIOL 112

Protein purification (Downstream Process)

- Protein synthesis
- PTMs, protein folding
- Centrifugation
- Filtration
- Viral clearance
- Chromatography
- Aseptic Fill
- Scaling of protein production

BIOL 113

Analytics, Scaling Up

- Methods of protein analysis
  - Purity
  - Activity
  - Concentration
- Scale up production of GFP
- Gowning
- Batch records
- Case studies in biomanufacturing