



In attendance:

Nick Kapp, Professor, Skyline College
Kim Hansen, BABEC
Bob Del Vecchio, City College of San Francisco
Elaine Johnson, Biolink
Kristen Wolslegal, BABEC
Ray Hernandez, Dean, Skyline College
Josie Sette, Ohlone College, Deputy Sector Navigator

Jing Folsom, Professor, Skyline College
Susan Gold, Carlmont High School
Alina Verona, Career Advancement Academy, Skyline College
Alexandra Kaplan, Counselor, Skyline College
Lavinia Zanassi, Career Services Counselor, Skyline College

Overview of Skyline College Biotechnology Program:

Biotechnology Manufacturing Assistant Certificate:

BioBridge Program ready to be launched and “stackable” certificates available at Skyline. First available is the Biomanufacturing Assistant Certificate – basically, with Biobridge, we want to meet the needs of those students who might struggle with the math, chemistry, and biology aspects. Our goal is to develop a program where we could bring them in, and they could learn from passionate, caring instructors about biotechnology. We feel once they get interested in the Biotech field, they could have the English and Math integrated with Biotech, perhaps making some difficult subjects easier, when presented in context. Using the BTEC courses in a learning community/cohort style, the students would travel together through all of their courses, building community based on a common goal. Through contacts like our area high school partners, we could build a strong cohort of first-time students who could learn an overview of biotech industry while integrating business classes and counseling classes, etc.

Certificate shared with advisory committee (see attached). It was moved and seconded to support approval of the Biotechnology Manufacturing Assistant Certificate.

There is no assigned Skyline College counselor to the biotechnology program, but we're working with a number of counselors to contextualize the classes for biotechnology. One of the possible counselors is a life science major from Stanford who decided to go into counseling. She does understand biotechnology very well, as would any counselor that we end up identifying as a biotechnology-specific counselor. We are also working with instructors, like English 105 - intro to college-level reading and writing. We are working with the instructor right now to look at books that the students are going to read. Ideally Nick Kapp will work really closely with that individual to talk about what reading is being done in the lecture, and ideally their reading can help to contextualize biotechnology while in their English class. Those are the types of links that we are looking at making. Nick has been reading possible books which could satisfy the English requirements while injecting more scientific materials - sometimes that can help to contextualize for students.

It was brought up that some of the other schools, like City College, might already have professors who have made these types of links and perhaps they would be willing to share that information. Nick will look into that some more, particularly with Rob Yung at City College. That way, we might not have to invent from the ground up, but instead use some of the techniques that already exist.

One of the most important pieces in the Skyline College program is that we are integrating transfer-level coursework, helping to set our program a part somewhat from other dynamic Biotech programs we evaluated. Career Advancement Academy at Skyline stresses transfer-level coursework such as English and Math in the UC/State transfer sequencing. If the student decides to get the certificate and go to work, they will be prepared to do so, but if they decide they want to continue on in their academic pathway to transfer, then they do not have to go retake other English and math courses. This way, they are always making forward progress in their educational goals.

Our class schedule that just came out a couple of weeks ago shows you how Biotech is institutionalized; we already have the structure embedded into the learning community section, and within that, it fits very well in the Career Advancement Academy pathways. Nick and his team are going out to recruit, but our CAA has also been out recruiting - their goal is to look at the underprepared population and bring them in with the appropriate support. It's a good, synergistic team that will really get to a successful cohort program, in turn making the students successful when they are in the program.

When we talk about Career Advancement Academy, and best practices, they allow focused attention on the cohort aspect and how they connect the pieces are very beneficial. They assist in making sure that the pieces fit together in the contextualization of, in this case, Biotechnology. It offers students a real understanding of the Biotechnological aspects within that course, and why they have to take it for the career focus. Ideally, we will customize it even more once we see who our key demographic students are, and get a feel for what they really need. To do this, we are going to our "feeder" high schools like South San Francisco, Carlmont, Capuchino, and a number of other schools around the area, and we are specifically trying to recruit those students who may have a little bit of science and math-phobia.

That being said, we have current Skyline College students that see the Bridges program coming up, and they really want to do it! So, we do have students already on campus that are interested. In our focus on high school students, we weren't focusing as much on current students, or even perhaps post-baccalaureate students returning, but now we are seeing a lot of students who have already gone through biology majors transfer sequence and now they really want to go into a biotech program. For these students, they have already passed their math and English sequences, so we have to determine what is the next step in the certificates for continuing students?

There is one major difference in what we had been presenting before this meeting, and that is that Skyline College has been working on accelerating basic skills for math and English. One thing that you'll notice is that originally the English was going to be ENGL 846, which would not transfer. Since then, we have developed an accelerated English course, which takes components of ENGL 846 and combines it with ENGL 100, which is transferable; making ENGL 105. This supports the students who traditionally need help in their basic skills. The mathematics department is looking at doing something similar, by accelerating the elementary algebra and intermediate algebra - giving both courses in one semester. We also then need to integrate the biotechnology aspects into those basic skills classes, as we've already discussed. We feel this integration and acceleration could lead to higher success rates in their first year by using a shorter path to get there. Math Professor Evan Leach has worked with the Biotech program for over 10 years now, and he is pretty amenable at working to find the perfect solution.

Other full-time faculty are assigned to learning communities, specifically, and when a student decides to enroll in the in the Biobridge community class who is not actually already a part of the learning community, the hope is that a dedicated instructor can help them gain an interest in science – in the process, they see that it's part of the CAA Biotech program and may become interested in pursuing Biotech. Ideally, it helps basic skills students learn that they have an appreciation for science and get infected with the interest in science. In our ideal situation, a cohort has 25 to 30 students who tested at the same level of English, and the same level of math, and they move through the sequence just as we planned it in the course solely devoted to them, contextualized to Biotechnology. The reality is that you get a cohort of 25 students who test across-the-board in math and English, making it difficult to create a dedicated biotechnology section that will work for all levels.

Our work-around is growing CAA to present multiple entry points for English and math, so that at any given moment a student can, regardless of where they place, enter into a dedicated faction of CAA math or English courses. What's been most integral to that goal is having the right faculty - eliminating faculty turnover - because those who teach the CAA sections are full-time dedicated instructors who are deeply integrated into the learning communities, and contextualize as they're teaching, regardless of the numbers and pathways of study. For example, a CAA Math class could have 15 allied health students, 5 ECE students and the rest general CAA, but the instructor is still able to teach and custom-contextualize for each student. They have to be agile enough to teach a broader range of students.

Our recent partnership with Base11 also brought us highly sought internships around this state and across the nation, entrepreneurship curriculum, and our new Fabrication Lab. The Lab will benefit all of our STEM programs – one great example is when our Biotech students develop a product that they want to sell; now they can go into the Fab Lab and really work on developing the concept and creating the physical product or packaging from scratch.

Resources like that greatly lend to the first year certificate of Biomanufacturing Assistant, and we just want to make certain that correctly flows into the next certificate of Biomanufacturing Lab Technician, as we want them all to be linked, and lead to the associate degree goal. We do not want to set our students up to fail, so we're trying to think of a way to integrate the students who already have a little bit of biotech experience with those first-starting-out students. We are really trying to develop high school-to-transfer with these certificates, so our existing short courses that focus on the skills are an advantage - they help students be persistent - the more stopping points, the less likely they are to be successful. Student success is our main goal.

Partnerships and Activities:

To see this Skyline College program become successful, we would like to partner with many people, especially the city high schools, the local nonprofit, our sister community colleges, and the transfer schools. That way we have the education component covered. The business component is the one that we don't have as much representation from. Josie Sette and Vera Lundberg and a number of people will help work with us to find businesses to bring together in our effort. Councilman Gupta in South San Francisco has been very connected and a very good partner.

We are taking the time to look at the courses that are offered in the high schools so that we can see if we can articulate those courses into our biotechnology program. We have our high school summer camp, and while we do not have a tracking system to see if the students come back and attend skyline college, we consider it successful 1) if we get a student comes to the summer camp who decides to come back to skyline college, and 2) if we get a student who wasn't sure what they wanted to do, and we send them off successfully into a science or stem pathway. In the summer camp program, we take the students to different Biotech facilities or schools to teach them good business practices. They get all dressed up and pretend have a product to sell them - there to do official business.

BABEC works closely with the Depot, taking labs into the classroom - is there something the three of us (BABEC, Depot, Skyline) can do together that could be synergistic and beneficial to all 3 entities? Kim Hansen oversees in San Mateo a network with the high schools that we could bring in more closely.

We have been hosting numerous workshops related to biotechnology (or are trying to host) here at the college to get more people involved. Once our students are trained and they work with some of the teachers at the high school, our students can go into the classroom and learn the technique and help with the teaching. It's been a great for the students to work on their soft skills before they're sent off to industry.