



In attendance:

Nick Kapp, Professor, Skyline College
Ray Hernandez, Dean, Skyline College
Bob Del Vecchio, City College of San Francisco
Elaine Johnson, Biolink
Susan Gold, Carlmont High School

Alina Verona, Workforce Development, Skyline College
Andrea Vizenor, Workforce Development, Skyline College
Anne Gearhart, BABEC

Nick created a Google Drive for the Advisory Board:

https://drive.google.com/open?id=0B04vn3Dmn_AfVXYxNkFydE13Y00 and he has posted all of the documentation on that drive. Due to technical difficulty, there are no meeting minutes from the Fall 2016 meeting.

Carlmont High School Biotechnology Institute – Susan Gold

The Carlmont High School Biotechnology Institute is a cross-curriculum program, for students in their sophomore to senior years. It is bringing together science, English and Biotech classes. It has a mentor program, where a junior is matched with a professional for work mentoring and experience. Nick Kapp will be teaching a capstone class next semester; the curriculum, location, details need to be ironed out, but it is on track. He's hoping it can help to build a model for other HS interactions in Biotech.

Career Technical Education – Andrea Vizenor

Skyline College is starting larger conversations in Career Technical Education (CTE) through the CA state Strong Workforce Initiative. Skyline was awarded 1.2 million dollars to advance CTE programming throughout all areas, including an increase for our Biomanufacturing project, and more advanced partnership/internships with BTEC companies, leading to a more thoughtful process for our students. Skyline also rec'd a Genentech Foundation grant – which moves to support BTEC student pathways. This will allow for hiring of a separate individual to set up a structure for internships and job placement in our area – focused solely on Biotech.

In a more worldly view, we are advancing employer engagement and other initiatives, like the Skyline College Promise. We've created a new BTEC flyer to share with employers, specifically. We recently hosted a local luncheon for employers, and unfortunately had no attendance, using the time to brainstorm more opportunities and ideas to connect to a variety of different employers. We are actively looking for more innovative ways to engage employers, which is really about a partnership, building opportunities for our students.

It was suggested to engage recent graduates from our BTEC program to interest employers; currently, there are not a lot of recent grads. All industry is different, so obviously cold calling doesn't work in BTEC, instead we need to build more connections. Perhaps membership in national groups or conferences - perhaps a booth at a conference occasionally? Definitely connecting to events to figure out how to make relationships more substantial, creating a two way street with employers for things like job shadowing, internships, workplace tours, guest lecturer series – things that benefit our students. We're also working to expand partnerships with our feeder High Schools, like Jefferson Union HS District or SSFUSD – focusing on the student flow into Skyline.

Industry Networking Opportunities – Nick Kapp and Andrea Vizenor

Co-op internship, Skyline takes industry to lunch, industry meet-ups, community discussion – Biotech Networking in Mountain View group meets at the Tied House bar on occasion ; they are a member of Amer Society of Equality, Nick is

working on setting up a student club with perinatal drug association. ASQ certification looks good for teachers and educators – in any industry.

Degrees and Certificates – Nick Kapp and Ray Hernandez

A BTEC Manufacturing Assistant one year certification was recently written and accepted through our Curriculum Committee, as well as the AS and cert in BTEC Manufacturing Technician. The curriculum needs to be moved to the state for approval. The cert is designed to add on to a degree, if they already have a degree. This was developed in consortium with curriculum/degrees in Solano and Mira Costa Colleges and what they are looking for students to enter in with... our curriculum is built on those requirements, so students can go directly in to those programs like that.

We're hoping eventually we can give some credit for HS classes in BTEC so they can bypass some of the introductory courses, streamlining the entry point for our HS students. Skyline Allied Health AS students could also gain some credits for these courses, like BTEC 170/171 because they meet the same practices. They would gain hands-on skills or bump up their GPA, and international students can add US practices to their education.

The question was posed: What if there is someone who you do not want to send out to internship. Perhaps internal internships are a possibility? Perhaps something like working with BABEC on the Skyline Campus, but doing work for BABEC... this would work well for students who need more training and skills/motivation to stay on campus to gain all of the skills without going off-campus.

Career exploration will help students focus, understand, and invest in what kind of work they would be doing. Skyline has a Counseling course that does something like this, and we want it built-in to all CTE curriculum - workshops geared to these soft skills. Perhaps a boot camp for internship through Workplace Development, with skills representing the program and company, using serious models.

We've aligned a pattern which could lead directly into the Technician program for those students starting out fresh. Intro / foundations classes also introduce the careers that fall under that pathway, so the student can better understand the pathways available to them.

Nick Kapp moved to approve the cert and degree curriculum, Ray Hernandez seconded – Vote unanimous to move forward with starting the new classes in Fall 2017 semester.

Skyline College Meta Majors and Guided Pathways

Should Biotechnology be "housed" in STEM or Health Sciences? Nick thinks STEM, because they are making drugs, food, and other products. The goal with Meta-Majors is, that when students enter Skyline who may not know what path they want to take, they are guided by multiple choices within their chosen pathway or "meta-major." A student's ability to complete was less than 40% reaching their goals in 6 years – they need more direction. Most students just took more units than they actually needed. In an effort to curb those excess units, the idea of guided pathways/meta majors is to help focus students, culling down the number of courses they can choose from, and placing them in pathways with like-minded students with similar goals. Get through faster.

There are 4 Meta-Major "houses": STEM, Language Communications and Arts, Entrepreneurship and Business, and Social/Behavioral Science/Education

It's unclear which "house" to put Biotech into – where does it better fit?

What does it mean in your program? Discussion:

Big picture - in reality it probably has components of all of the houses, but where does it better fit? If we look at the traditional letters vs. science, when we count the courses, course by course, it appears to have more letters and social science. But, of course, looking at BTEC in general has more STEM courses.

We are trying to provide clarity for the student coming in - if you are looking for something, you may not know biotechnology, but you are looking for something “science” in terms of passion. What would be the most intuitive for you, as you are looking for that? Would it be to find biotechnology under healthcare, or social science, or STEM?

The second layer is once I am taking these courses, if I decide to change majors, do I then start over with the whole slew of co-requisites or prerequisites in a different house? We want to make a lateral move rather than a vertical move, or worse, start right over. So the initial sorting is what’s important, and should be intuitive. What path would provide best for them if they decide to either move, or switch majors?

The most natural fit for BTEC seems to be STEM. The next level of courses required would be STEM major courses, so at least in terms of our conversation with the activity, first it initially fits in some of the health care courses with overlap, but just in terms of the most common courses attended, it’s STEM.

Hiring Needs in Biotech at Skyline College

BTEC Faculty:

Number 1 need: Demonstrated successful work experience in the biotechnology industries. Requirements are basically set from the state of California - they need a master’s degree (ideally) in bio-chemistry or bio-physics or something like that. They will be responsible for teaching lab sections about technology, bio-manufacturing, and biology/chemistry or related curriculum.

The challenge is divisibility of the programs - that person may not have a full load in BTEC so we want them to be able to have experience in biology or chemistry as well, and should something change in industry, it could be a natural move to those other expertise areas.

Knowledge, skills, and ability is the main thing. They need to demonstrate that they are part of the community, that you know they will be willing to meet up on their own time, and stuff like that. Subject matter preparation to demonstrate successful work experience in the biotech industries, familiarity with tech industries, good manufacture practices GMP, good laboratory practices GLP, FDA ocean requirements that is related to bio-tech industries have recent successful experience in teaching preparation to teach biology and bio-technology at the community college level. Is there any other allice skills and ability

Bioscience Program Services Coordinator:

Someone with abilities to connect and cultivate industry connections, preferably with BTEC working experience, but especially looking for somebody who will get out there and connect with the BTEC industry community. To develop high quality partnerships with the industry and the community, to create internship opportunities for Skyline students.

Both need enthusiasm and understanding the commitment and role/purpose of the community college.

Funding/Grants

Applied for NSF Grant and other opportunities. Through CTE funding we got a certain amount of money that it is specifically invested on us in biotechnology, and we would like to try to meet some of the supply chain goals that we have with that.

Concurrent Enrollment

Nick Kapp: Ideally what we want to do with Carlmont high school, in sophomore/junior year, they go through Ellen Daugherty’s book, and gain some experience that way. Maybe they’ve done gels a couple of times and they just need a lot more experience. I find that some of our students need a lot more experience as well, and so what I want to do is to craft a course where my students could take it and the high school students could take it.

We are calling it field experience (unpaid.) It came out to roughly 1.5 units for the semester (16 weeks) – 9 lecture hours, 64 field hours and 16 homework hours = roughly 90 hours or 3.5 hours per week.

The idea would be Carlmont/Skyline labs would be used as “incubator” labs. Students would be part of the lab, and need to be able to run the lab - they are not just going without any background, they’ve taken a class so they know how to run gels, they know how to look at the equipment, etc. The idea is that they would write up a memorandum of understanding to be part of the lab, including things like being good citizens of the laboratory, make sure the equipment is clean, meeting standards, and things like that. They would develop a product and have an activity - ideally something that they want to manufacture, we would set-up, and they would plan and execute.

In the process, they would learn program management, and quality control. The second semester would be spent on bay area biotechnology programs/event that are set for high schoolers. Skyline College science symposium and so on.... they would still continue to work in the lab, but the second semester they would also work on presentations/posters in biotech.

Who is running this at the High School? We have a teacher in the BTEC program – ideally they would be able to put in the vast majority of their hours under supervision from somebody at the high school and then I would come in, or skype in once a week. Nick Kapp would be the instructor of record.

The same idea could be used on the Skyline campus, for the college students, So it allows for versatility. First and foremost, this has to be developed with a high school connection.

Recruiting Tools

We have a very good response with our summer Biotech Camp. What are the other recruiting tools? Career Advancement Academy making connections, Greater connections with our feeder High Schools

Gene Connection, Bio Depot Update

Anne, from Gene Connection - San Mateo County outreach for BABEC. We just hired starting today, another assistant for Gene Connection lab. I am really happy to have him up and running, and he does great. We are also hoping to hire another person between him and me to add connection.

They are in 80% of public high schools in the county and we have all 6 portable laboratories in the field right now, and we are just getting ready for transition for March, April for the last class sets moving from one school to another.

She would like to be more of a liaison for high schools if we get the supply chain really running. They are also working on the same model in the East Bay. They will be looking for permanent home in the next year and half.

Bio-depot: it is my understanding they are going lose their spot at the end of this month, and they are looking for a place to go. We would love them over here at Skyline, but we do realize that our campus is going through construction at the moment. It has been taken to the District level.

Biotechnology Summer Camp

The Biotechnology summer camp is June 12 to July 7, there are 2 sections that are going on. The deputy sector navigator typically gives us money for a bus for each section, so we have 4 field trips. We typically go to San Francisco State, Genentech, and the wastewater sewage plant. They basically produce a “drug” and packaging, etc. to go along with it. They actually package it as an injectable.

Science in Action Series

Monday evenings during each semester, at 4:30 pm. No cost and open to the public at Skyline College.