

Biotechnology Advisory Meeting

4 college representation (SAC, SCC, FC, IVC)

October 9, 2015

Irvine Valley College

I. Welcome and Introduction- all attendees briefly introduced themselves. The Task Force and members of the Consortia were introduced.

II. Highlights of last advisory- Brief overview of curriculum vetting and commentary of last meeting.

III. Reviewed program level outcomes and sought comment.

1. The pathway of each program was discussed beginning with the Biotech Lab Assistant certificate, Biotechnology Technician, and AS degree in Biotechnology.

1.

Comment- by Wendie Johnston--- the program level outcomes are broadly written and the advisory members are providing with these comments measurable objectives

IV. Curriculum Revision Review

1. Is the program, certificate, degree description still applicable and up to date? Would it be helpful if they had a list of skills/integrity list that the student was 80% proficient at? Would that be of interest to you? Answer: It was mentioned that if the students were able to take the certification test before internship that would help in placing them. We have CQIA emphasis at IVC. Emalee noted that the entry-level certificate emphasizes what quality standards are. A whole course on proteins and chemistry are part of the certificate. There are some pre-requisites for these courses.
2. Regarding the Biotechnology Technician what techniques do you want the students to come in with in regards to cell culture? One answer was that stem cell lab research is an important technique and steps to learn stem techniques. Also important that they fully understand the aseptic technique to avoid contamination. Contamination can delay work by months and incur additional costs if the wrong cells are cultured. Ed Paz from the Dr. Zhao Lab at UCI referenced that the students would benefit from knowledge on how to culture cancer cells. This technique can apply to mammalian stem cell, white blood cells, T-cells, etc. Also how to manage and maintain stem cell techniques. Also, there are over 1,000 clinical trials for cells. In five years, cell therapy is the future. Stem cell – Crisper has changed everything. BioLinks would be a good resource. This also ties in with the ethics debate because you can edit cells.
 - a. Technicians get fundamentals at college level and then refine their skills.
 - b. Most campuses have internship programs that students are enrolled in so they are covered by insurance and liability.
 - c. Jo Wu asked if they need to teach specific tissue culture. They are very expensive
 - d. Another question was raised asking if mammalian cells specifically are important. The answer was yes. When it comes to skills, more employers prefer the mammalian cell knowledge vs. the insect at the technician level.

3. What kind of math skills are important?
 - a. Control charts, upper/lower level limits. Process control. A separate statistics class is not necessary.
 - b. The gentleman who was in manufacturing said that many techs will call and say their machine isn't working properly when in fact they aren't diluting properly. They aren't doing ratios and fractions correctly. Also a basic skill really should be proficient in creating and managing Excel spreadsheets as well as keyboarding, spell check, etc.
4. Internships vs. Volunteers? They are considering having one college coordinator to organize the internships. It was agreed that one main contact person is better than multiple.
5. What type of marketing is necessary and how do you advertise?
 - a. The ability to do marketing and communications in science terminology and understanding is crucial. Digital media and science are linked together. Important to train people to communicate science to the world. Scientists are calling to get training in Photoshop so they are able to communicate what they are doing. There was a discussion about science writing programs and that very few places offer it. UC Santa Cruz was mentioned as one that does offer a program. The manufacturing guy said that they need to have lab experience but also being able to communicate and get information out.
6. A question was brought up about interns and what they get out of the deal. They get CVE and there is an agreement about what the student will learn and what the employer is going to get out of it and what their responsibility is to the student. Jill Golden mentioned that the internships should be unpaid so that the student can be given different positions within the company and get school credit.

Breakout Groups

Fullerton/Research & Design

IVC – CQIA emphasis/Environmental Sciences

Santa Ana College – Microbiology

Santiago Canyon College – Food Biotechnology.

VI. Closing