



Santiago Canyon College

8045 East Chapman Ave. • Orange, CA 92869-4512 • (714) 628-4900 • Fax: (714) 628-4723 • www.sccollege.edu

Orange Education Center

1465 N. Batavia St. • Orange, CA 92867-3504 • (714) 628-5900 • Fax: (714) 628-5909 • www.sccollege.edu

BIOTECH ADVISORY MEETING

November 8, 2013

Members in attendance: Bruce Aird, Michael Dixon, Dean Gilbert, Karilyn Gonzales, Nicole Johnson, Wendie Johnson, Kirk McMullin, Christopher Meyer, Dina Moser, Zakir Murtaza, Quynh Nguyen, Jesse Ouwens, Susan Polen, Katrina Roth, Diane Vu, Dean Williams, Dan Woods

Ex-officio: Corine Doughty, Denise Foley, Terry Giugni, Bart Hoffman, Kari Irwin, Anson Lui, Kim Mathews, Scott McKenzie, Martin Stringer, Kathy Takahashi, Jo Wu

HIGHLIGHTS

I. Welcome & Introductions

Meeting co-chaired by Kari Irwin, Director Business & Career Technical Education, and Denise Foley, full-time Biology professor

II. Curriculum Status

Denise gave the curriculum status update explaining the stackable certificates at all three colleges, Santa Ana, Santiago Canyon, and Fullerton. (*Attached to the end of these highlights.*)

Terry Giugni suggested that the Internship be required. Denise says they have considered that, but some students aren't really internship material. Several people (Karilyn Gonzales, Kirk McMullin) said it would be difficult for industry to find work for all those interns, if it were a requirement. Bart Hoffman mentioned legal ramifications if internships are required, and student is not placeable.

Kathy Takahashi proposed a Work Exposure class that would include industry tours and give students an awareness of what's out there. Susan Polen's company does that for Chapman students. Quynh Nguyen suggests a Career Development seminar with tours.

Scott McKenzie asked if the internship would be in the industry the student is pursuing? Yes, they place students according to their focus (i.e., Food Safety students placed in a food safety internship).

Bruce Aird asked if the internships are directed. Will they be doing useful work or just be a gofer? While you wouldn't want a newbie student with no experience placed in the lab, they would be working on related tasks and learn the flow of work. Jo Wu explained the Instructor site visits, and how she trains her students prior to their internships. They are prepared with the skills they need.

Wendie Johnson says that she has been able to help "difficult people" find their place using group rotations in her incubator environment.

III. Program Level Outcomes

Students will develop knowledge necessary to select and develop STEM careers.

PRESIDENT: Juan A. Vázquez

RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT BOARD OF TRUSTEES:

Arianna P. Barrios • R. David Chapel, Ed.D. • Brian E. Conley, M.A. • John R. Hanna • Lawrence R. "Larry" Labrado • Mark McLoughlin, CPSM • Phillip E. Yarbrough

CHANCELLOR: Raúl Rodríguez, Ph.D.

IV. Community/Industry Updates & Employment Needs:

Anson Lui presented the results of the industry survey. (*Attached to the end of these highlights.*)

There is not a lot of LMI data supporting this industry. To help us search for statistics, Kari asked:

What are the job titles of entry-level positions?

- Lab Assistant/Technician
- Quality/Clinical Associate
- Research Assistant
- Technologist
- Lab/Technical Representative
- Production Clerk

Edwards Life Sciences shared they have a technical path and a quality path. There is a career path in biotechnology.

What are the skills you are looking for in these entry-level positions?

- Ability to write concise analysis reports
- Leadership and communication skills
- Demonstrate competencies
- Ability to work on team projects

How is the job market?

- There are entry-level positions to be had. (Some are in Atlanta, but still).
- Most interns end up getting hired. You want to keep them after you invest all that time in them.
- Some hire “temps” first, and then bring them on as permanent employees.

Is a certificate enough for you to hire them? Or do you require a 2-year or 4-year degree?

- Many reluctantly admitted that a 2-year degree was listed on the job requirements.

V. Program Improvement Discussion:

The committee was divided into four smaller groups to discuss what should be **added, emphasized more, and emphasized less** in the following courses:

- A. BIO 191–Biotechnology A: Basic Laboratory Skills
BIO 194/125 Quality and Regulatory Compliance in Bioscience
- B. BIO 192/115–Biotechnology B: Proteins
BIO 194/125 Quality and Regulatory Compliance in Bioscience
- C. BIO 193/120–Biotechnology C: Nucleic Acids Upstream Processing
BIO 194/125 Quality and Regulatory Compliance in Bioscience
- D. BIO 196–Food Safety & Microbiology
BIO 195–QC Microbiology
BIO 194/125 Quality and Regulatory Compliance in Bioscience

Group A

BIO 191 Biotechnology A: Basic Laboratory Skills
No Changes

BIO 194/125 Quality and Regulatory Compliance in Bioscience

Add:

ISO 1435

OSHA & Industry safety

Emphasize Less:

General exposure (survey) of Sigma & lean

Group B

BIO 192/115–Biotechnology B: Proteins

Change from 48 lec/48 lab to 24 lec (1 unit)/64 lab (3 units)

Add:

Data collection, charting graphing

Statistical process control of manufacturing within parameter. Need to know the max & min limits and yield

Enzyme kinetics assay, steady/state, rate constant, equivalent

Protein purification/quantitation (Bradford, BCA)

w/protein production

Standard Operating Procedures (SOP)

Other:

Add to certificate program: Basic Statistics OR Survey of Biostatistics.

Group C

BIO 193/120–Biotechnology C: Nucleic Acids Upstream Processing

Add:

Data Analysis

Emphasize More:

Cloning – cover more on laboratory emphasis than lecture (troubleshooting)

PRC – emphasize more in lab

Emphasize Less:

Brief overview of Bioinformatics second round

BIO 194/125 Quality and Regulatory Compliance in Bioscience

A lot of validation Corrective Action Prevention Action (CAPA) Good!

PDCA – Knowledge Good/Great!

Add:

Regulatory (MSP, FDA, USDA, EPA, OSHA)

Group D

BIO 195 & 196 –Food Safety & QC Micro

Looked good. Glad to see an emphasis on aseptic technique.

Would like to see discussions of outside body regulatory audits and compliance issues discussed in all courses.

BIO 194 – RA/QC course

Add:

More of an International Regulations emphasis.

Would like to see courses add a finance/budget accountability piece.

Emphasize More:

Would like to see statistical Process Controls stressed heavily.

Make sure kappa analysis and the different regulatory agencies are discussed.

Other:

Possible elective classes - International Regulations, Six Sigma–Green Belt level.

VI. Summary of Recommendations:

A structured internship program is highly recommended. Those students for whom an internship is not likely, a work exposure opportunity should be provided. The advisory members enthusiastically support the stackable certificate program and look forward to continuing the relationship with the colleges.

VII. Closing

Thank you for attending. We look forward to continuing the dialogue through a survey and follow up meetings. –*Kari*