



## **BIOLOGICAL SCIENCES ADVISORY BOARD MINUTES: FALL 2016**

Tuesday, October 25, 2016, 4:00 in Room 1687

### **A. Welcome and Introductions**

**Vicki Shipman** called the Fall, 2016 meeting of the Biological Science Advisory Board to order at 4:15.

Present:

**Dave Brekke**, Sandia National Laboratory

**Dianna Maar**, BioRad

**Michael Thelen**, Lawrence Livermore National Laboratory

**Nan Ho**; Dean of Math, Science, Engineering and Public Safety, Las Positas College

**Nicholas Heredia**, BioRad

**Gerry Gire**, Las Positas College

**Claudia Echeverria**, Las Positas College, student

**Vicki Shipman**, Las Positas College

**Jean O'Neil-Opipari**, Las Positas College

Regrets:

**Barbara Zingg**, Las Positas College

**Beth Vitalis**, Lawrence Livermore National Laboratory

**Camille Troup**, Nanostrings Technology

**Jason Maxwell**, Las Positas College

**Jill Carbone**, Las Positas College

**Josie Sette**, Ohlone College

**Victoria Vandermoot**, Sandia National Laboratory

**Monica Borucki**, Lawrence Livermore National Laboratory

### **B. Approval of Prior Advisory Meeting Minutes (December 9, 2015)**

Corrections: correct the spelling of Nick's last name; add Michael Thelen (correct spelling) to list of attendees; 2 students spoke, need names, correct the spelling of Regina Brinker's name. In section 3 – dedicate a day to pipetting. Table approval of minutes until the minutes are corrected.

- **Move to approve Advisory Meeting minutes of December 9, 2015 with corrections.**
  - **Motions: First, Dianna Maar/Second, Nan Ho**
  - **Motion passes with Claudia Echeverria, Gerry Gire and Jean O'Neil-Opipari abstaining**

### **C. Quick Facts for Advisory Board**

**Vicki Shipman** highlighted Work Based Learning, curriculum development and placement of students in the field

#### **D. Industry Updates:** Sandia Cares, New Technologies, Training Needs, Hiring Needs, Industry Outlook

- **David Brekke** reviewed the program Sandia Cares. He is the operations manager of the program that hosts student interns. They wish they could have more interns. The staff needs to be able to provide mentoring and last summer they were over extended. The student interns are able to job shadow, have lunch with scientists and attend talks. Sandia has a strong sense of the importance of education. Sandia has funding for out-reach and education. Would like to explore different options, perhaps a rotation between computation and the lab. There are many options to explore with in Bio-science. David's role with the Sandia Cares program includes safety. He asked students if they receive safety training at their institutions. Most students receive little safety training. Nan Ho remarked that LPC students have great training in safety. David provided a 2 ½ hour class on lab safety. Sandia has people who have years of lab safety experience who can share their knowledge with the interns. The lab included a PowerPoint presentation as well as practical lab experience with the biosafety cabinet and the fume hood. David is trying to sell management on this type of experience for future interns. They may incorporate lab safety into the job shadowing program. This summer there were 20 students in the program.

#### **Discussion:**

- **Nan Ho:** want to make sure students have the right level of knowledge; maybe having a 1 on 1 on a Friday for advanced students.
  - **Michael Thelen** is interested in partnering with Sandia. Carolyn Hull is the Biosafety person at LLNL. The summer interns at LLNL are there for 10 weeks. The safety class at LLNL is boring.
  - David mentioned that Sandia assigns mentors to interns; many of the safety courses are available online. He prefers people with real world experience teach safety than safety people.

#### **New Technology**

- **Nick Heredia:** There is a Center of Excellence at BioRad in the Tri Valley that draws from all around the Bay and not just the North Bay
- Technology, power of partitioning; Polymerase chain reaction (PCR)
  - Emulsion (droplets) in oil – is target presents neg./pos. answer
  - Clinical development – launch cancer application; allows precise measuring
  - Liquid handling robots pipet onto microchips
    - Next generation sequencing (NGS) applications coming out – single cell analysis
    - Small sample of blood ; cancer marker in blood; precision medicine
    - Enables monitoring patients over time; early detection; synergistic with next-gen sequencing
  - Bioinformatics - sequencing generates a lot of information that needs to be mined

#### **Training Needs**

- **Nan Ho:** Should LPC offer a stand-alone bio-informatics class? In conjunction with Computer Science? Include coding?
  - Add what set of skills to students to prepare them for internships in the lab? Sequencing; observation of single genes, microbes, DNA sequencing. Being able to handle excel, google docs, protocol sheet

- o There is no bio-informatics program locally, the programs are mostly on the East coast
- Computational Biology - looks at protein structure; looking at the whole genome structuring
  - o Pasadena City College has an AS program in Computational Biology
  - o An internship for Computational Biology is appropriate for undergrads ( first and second year)
  - o **Recommendation for Las Positas College to explore Computational Biology as new curriculum.**
    - **Motions: First, Michael Thelen /Second, Nick Heredia**
    - Motion passes unanimously**
- **Nan Ho:** Bio Science Bootcamp for high school students
  - o One week, 9-10 grade; one week, 11-12 grade
  - o Funding \$5000 from LLNL
  - o Dianna Maar mentioned that BioRad can provide equipment/reagents; Ambassador Program for instructors
  - o Bootcamp, have students pay?

### **Discussion**

- **Vicki Shipman** says there are funds to develop new programs
- There is a high demand for a background in Computational Biology, genomics, technology; setting controls to answer questions; lab training
  - o Many Computational people are self-taught; if they have coding background they can pick up skills; pays well and the industry outlook is excellent
- Added staff, added classes, growing program
- \$950M bond/prioritization on facilities (Third science building?)
  - o From work group to building opening is about four years
  - o Advisory need a sever and a sequencing lab in a modern lab building

### **Recommendations from Industry**

- Recommendations from Industry to develop/implement - **Nick Heredia:**
  - o Life Science Statistics Course
  - o Lab for Computational Biology
    - Cold Spring Harbor Labs may have online training
- **Recommendation from Industry to develop supplemental coursework**
  - o **Motions: First, Vicki Shipman; Second, Nick Neredia**
  - o **Motion passes unanimously**
- **Dianna Maar recommends the development of a bio-safety/ lab practices bootcamp for college students (two week pre-internship bootcamp)**
  - o **Motions: First, Dianna Maar; Second, Dave Brekke**
  - o **Motion passes unanimously**

### **E. Next Steps**

- Want someone from Thermo-Fisher for the advisory board
- Nick Heredia knows people from Roche he can suggest

Meeting adjourned at 5:24

Biological Sciences Advisory Board Minutes, October 25, 2016 submitted by Jean O'Neil-Opipari, Work Based Learning Specialist on December 30, 2016