

## Application Package for CIRM Internship

*Applications accepted starting April 1<sup>st</sup> 2022 for start in September*

Berkeley City College has received a \$2.8 M award over 5 years from the California Institute of Regenerative Medicine (CIRM) to support student internships in laboratories conducting research important to the development of gene therapies, translational medicine, stem cell biology and regenerative medicine. The internships are 10-months in duration, paid, and are considered full time. The research institutions presently aligned with BCC include:

- UCSF Benioff Children's Hospital Oakland (formerly CHORI)
- University of California, Berkeley (UCB)
- University of California, San Francisco (UCSF)
- Lawrence Berkeley National Laboratory (LBNL)
- Lawrence Livermore National Laboratory (LLNL).

Other laboratories in the San Francisco Bay Area, both academic and industry, are also available. Internships start late Aug/early Sept of each year. Students are expected to attend a weeklong special training in human embryonic stem cells offered at UCSF, complete a short online course in the drug discovery and regulation, participate in activities involving patient advocacy, engage in community outreach, and attend the CIRM Bridges Training Scientific Meetings in July 2023 (date TBD) to present a poster of their research results.

### A. Academic Requirements

Students applying for an internship should have completed or be within one year of completing the A.S. degree in Biotechnology or the Certificate of Achievement in Biotechnology. As part of the degree and certificates, students would have taken many of the classes listed below. You will be given credit if you have completed some of the courses at other institutions; however, it is critical that the faculty at BCC see how you work in a laboratory before considering your application.

I. Completion of the following courses:

Bio 32<sup>1</sup>: Scientific Literature and Writing

Bio 50D: Mammalian cell culture *or* Bio 50C: Stem Cell Biology and Advanced Techniques

Bio 50A<sup>1</sup>: Introduction to the Biotechnology Laboratory

Completion of two of the following courses:

Bio 50B: Protein Chemistry and Fermentation

Bio 33: Immunology

Bio 34: Genetics

Bio 34L: Genetics Laboratory

Completion of Biology and Chemistry courses

Bio 1A: General Biology

Chem 1A: General Chemistry

<sup>1</sup>There have been exceptions offered to students who have taken similar classes elsewhere.

II. Commitment to the following activities following selection as an intern:

1. Meetings with the program director and program coordinators to review and work through the process of selecting a host laboratory.
2. Interviews with scientists at various laboratories to determine placements.
3. Five day laboratory training session in human embryonic stem cells, and other cell lines used in research laboratories at UCSF in late August.

**B. Application Materials**

1. Resume and Biosketch (see details below and note page limits)
2. Transcripts: college level only and can be copies
3. Two Recommendations: one from a workplace supervisor and one from a science instructor who does not teach in the Biotechnology Program at BCC.

*Resume should include the following and be limited to one or one and a half pages:*

- Educational experience to date (high school and college)
- Work experience: include dates, location, brief summary of responsibilities
- A list of science courses completed and a list of laboratory techniques mastered

*Biosketch should include the following and be limited to one page:*

- A brief introduction to yourself and your background. Usually 1-2 paragraphs that can highlight college experience to date, any challenges you have faced (e.g. first in family to go to college), the types of jobs you have had, particularly if they involve working in the health field, interest in a particular problem, e.g. diabetes.
- Why you want to participate in the internship, i.e. what you hope to get from it (e.g. want to pursue work in either the biotech industry or a research lab, want to gain skills and knowledge in a particular area of interest)
- What you think you can bring to a research laboratory (e.g. team player, organizational skills, general lab skills)
- Your goals after the internship program (e.g. technician position in industry or research lab, progression to a 4-year or higher degree, progression to professional school such as pharmacy, nursing, medicine)

**C. Details of the Award**

- Paid internship for 10 months at \$3000/month
- \$3,300 paid to host laboratory to cover the intern's research expenses and travel to selected workshops or seminars offered through the host lab
- Tuition and fees paid during the time of the internship
- Cost of UCSF Stem Cell techniques course
- Cost of Regulatory course in pharmaceuticals
- Travel and housing expenses to CIRM Bridges Training Scientific Meetings

#### **D. Responsibilities of the Intern during internship**

1. Enroll in Bio 49/Chem 49 (independent research) and Bio 484A (credit for work) each semester – paid for by CIRM. Enrolling in these classes ensures that you are a student at the time of your internship and gives you college credit for the research work you are conducting.
2. Attend bimonthly Zoom meetings with the director, program coordinator and the other interns. Meetings are arranged through confer zoom and reached via Bio 484A course site on Canvas.
3. Submit summary report of work involving health care and engagement activities – to be outlined and discussed during the fall semester.
4. Complete 1-2 online short courses (1-2 hours each) in drug regulation and pharmaceuticals through RAPS
5. Present an oral presentation of research results to BCC biotechnology students in May (date TBD)
6. Present final results in poster format at the annual CIRM Bridges Scientific Meeting that meets in late July of the following year.
7. Complete requirements for graduation for either the A.S. or Certificate in Biotechnology *and* participate in the graduation ceremonies.

#### **E. Selection of Interns**

Interns are selected on the basis of (a) genuine interest in scientific research, (b) ability to work quickly and efficiently at the bench, (c) ability to understand and follow complex protocols accurately, (d) ability to read, understand and present results gleaned from scientific literature, (e) ability to work both independently and as part of a team, (f) ability to maintain neat and detailed notebooks, (g) good laboratory math skills. Many of the attributes listed above will be documented by faculty who teach the classes and who will be asked to serve on the selection committee.

In practice, many of you have been asked to consider applying for an internship based on input from faculty observations, i.e. faculty have been observing you in the lab classes and commented on your suitability for an internship. In this case, you have already met the criteria. However, your selection is not complete until your transcripts and references are checked.

#### **F. Following Selection as an Intern**

BCC Biotechnology Program maintains a list of laboratories interested in hosting student interns. Once you have been selected to receive a CIRM internship, your next step will be to look over the list of laboratories and determine which ones interest you. We will help you to narrow down your list to about 3 labs. We will contact the labs and send them your resume – if they are interested they will let us know and you can arrange for an interview. Selecting a laboratory is not an easy process and for some it may take some time, but we will assist you in this effort.

Prior to starting your internship you must complete an Intern Appointment Form that includes an outline of a research project that has the approval of the Principle Investigator (PI) of the laboratory. You will be assigned a mentor during your time in the laboratory. The mentor can be a graduate student, postdoc, Laboratory Head, or the PI. The Intern Appointment Form is submitted to CIRM for their approval.