

March 27, 2023

LAMC Biotechnology Advisory Board Meeting Notes

Attendees:

Dr. Arora - Biotechnology Faculty

Dr. Par - Vice Chair of Life Science and Faculty

Dr. Farisa Morales - Dean of Academic Affairs STEM

Dr. Brown Stephen Brown – Biotechnology Faculty & Life Science Department Chair

Wendy Johnston - Lab Director of Pasadena Bio Collaborative

Dhruv Sareen - Executive Director of the Bio Manufacturing Center at Cedar Sinai

Ira Clark - Assistant prof at UCLA & associate Director of Biomedical Research minor

Maxine Nanthavong - Senior research associate at T-Cure bio science

Willie Zuniga - Former president of Grifols Biological

Stacey Whitman - Lab Director at Mass Program, Cedar Sinai

Vicki Brannock - Director of Biocom Institute

Carla Yorke - Chief program officer at LA Promise Fund & Abe program

Diana Lopez - Former student & working at A2 Bio

Lauren Shipp - Biocom California Institute & Director of Biotech Amgen Experience San Diego

Denisse Nava - Former student & research lab assistant at T-Cure Bio Science

Crystal Tori - HR Director and Administration for T-Cure

Garrett Asanuma - Director of Programs at ThermoFisher Diagnostics business

Marla Uliana - Dean of Academic Affairs in Workforce Education

Richard

Announcements/Welcoming

Dr. Arora – Welcomes the advisory board

Dr. Brown - Brief introduction of the new “Cell and Gene Therapy”

Dr. Par - Presents the agenda

Discussion

Dr Arora - Overview on how the Certificate of Achievement “Cell and Gene Therapy” has develop

- CGT Industry Academic Collaborative Outcome:
 - Creating regional Ecosystem
 - Facility tours and CGT industry guest speakers
 - Aseptic Processing workforce training program discussed and outlined
 - Industry Partners:
- CBC - Cedar Biomanufacturing center
 - MAST - Medically Associated Science and Technology Lab
- T-Cure:
 - Developing new partnership
- Cell and Gene Therapy Certificate:
 - Collaboration between CBC (Cedar Sinai) and LAMC to training and recruitment students
 - CBC recruited and trained 6 students for Biomedical Assistant and Technician positions
- MAST:
 - One student recruited
- T-Cure:
 - One student recruited

Dr. Arora discusses the overview of curriculum of the Cell and Gene Therapy certificate and the Biotech programs.

- Adding the new certificate to the program (biotech III) 17 units
- Description of the courses
- Four tiers (three certificates & one associate degree)
- Skills to be acquired during the course

Motions:

Wendy Johnston - First

Willie Zuniga - Second

Closing remarks:

Dr, Arora

Dr. Par

Additional Information:

From: "Pranke, MaryAnn" <MPranke@glendaleca.gov>

Date: March 13, 2023 at 11:24:53 AM PDT

To: "Arora, Chander P" <ARORACP@lamission.edu>

Subject: **Support from VWDB for Certificate**

Dear Dr. Arora,

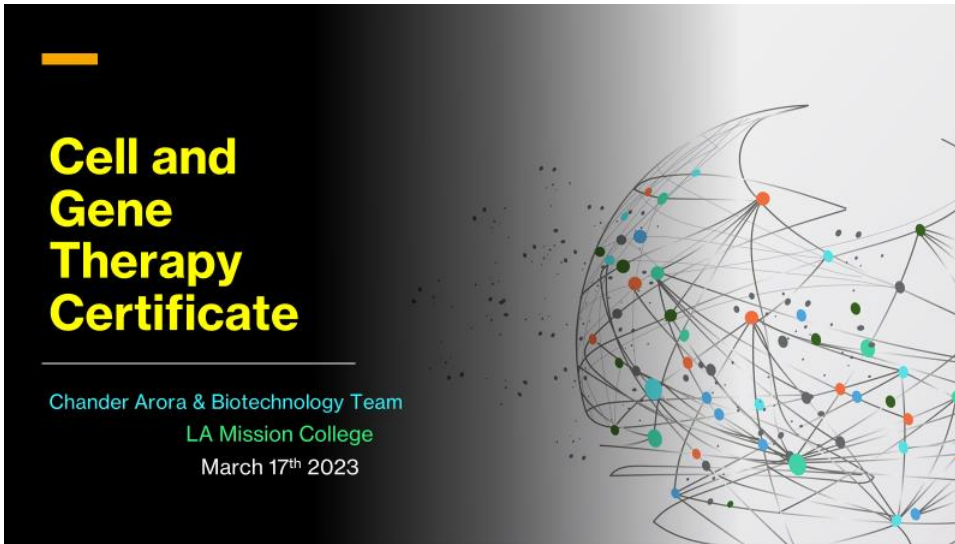
Please accept this email as confirmation that the Verdugo Workforce Development Board (VWDB) is in full support of introduction of Certificate of Achievement in “**Cell and Gene Therapy**” to Los Angeles Mission College’s (LAMC) Biotechnology stackable certificate and degree programs. In partnership with LAMC, the VWDB assist with the implementation of the workforce development program by allocating funding as allowable under the Workforce Innovation and Opportunity Act (WIOA) and accessing additional funding sources as may be needed.

Should you have any questions or need further information from me, please contact me at this email or cell number: (310) 714-7872.

Sincerely,

MaryAnn

Presentation Slides:



Agenda

- Introduction
- Review of “Cell and Gene Therapy” Certificate of Achievement
- Discussion & Verification of the courses/curriculum of the Certificate
- Adjourn

CGT Industry-Academic Collaborative

Industry partners: CBC, MAST and T-Cure described employment needs, roles, education level.

Regional network Established

Discussed workforce training program

Industry partners delineated core lab skills and aseptic processing skills

Aseptic Processing workforce training program discussed and outlined



CGT Industry-Academic Collaborative-Outcome



Creating Regional Ecosystem

a regional network of employers and our academic programs- Created a blueprint



Facility tours and CGT industry guest speakers



Aseptic Processing workforce training program discussed and outlined



Industry Partners

CBC

- World class Expertise in stem cell bioprocessing (iPSC), translational medicine and biomanufacturing.

MAST

- **Medically Associated Science and Technology:** Studying and Training in the field of gut microbiome using lab research and clinical studies.

T-Cure

- Developing a new generation of clinical-stage T cell receptor (TCR) therapies to target and destroy tumors.



Cell and Gene Therapy Certificate



The CBC and LAMC have been actively collaborating for the past few years towards training and recruitment of LAMC Biotech certificate students.

CBC Recruited and trained 6 students from this program into Biomedical Assistant and Technician positions

MAST has recruited one student.

T-Cure has recruited one student.

Overview

Cell & Gene Therapy technicians are expected to be familiar with **variety of aseptic cell culture techniques** and supporting activities in a **GMP biomanufacturing environment**.

Students will gain **in-class theory and specialized hands-on technical skills in handling mammalian cell culture** and adult or more challenging **iPSCs**.

The curriculum would prepare students to work in **entry level positions in the field of biomanufacturing**.

Emphasis will be on **practical laboratory skills combined with training in a working GMP laboratory setting**.

A Certificate of Achievement would be awarded upon completion of course with a grade of C or better.



Biotech Programs

BIOTECHNOLOGY STACKABLE CERTIFICATES*

BIOTECHNOLOGY LAB ASSISTANT CERTIFICATE

- BIOTECHNOLOGY I
- BIOTECHNOLOGY II
- FUNDAMENTALS OF CHEMISTRY I

BIOTECHNOLOGY RESEARCH LAB ASSISTANT CERTIFICATE

- GENERAL MICROBIOLOGY
- STATISTICS
- BIOLOGICAL RESEARCH INTERNSHIP

ASSOCIATE IN SCIENCE DEGREE - BIOTECHNOLOGY (60 UNITS)

- QUALITY CONTROL/ASSURANCE



*Included in I-TRAIN

Biotechnology-Cell & Gene Therapy Certificate

CELL & GENE THERAPY CERTIFICATE OF ACHIEVEMENT (17 Units)

BIOTECHNOLOGY LAB ASSISTANT CERTIFICATE + BIOTECHNOLOGY III

- BIOTECHNOLOGY I (4 Units)
- BIOTECHNOLOGY II (4 Units)
- FUNDAMENTALS OF CHEMISTRY I (5 Units)

+

➤ BIOTECHNOLOGY III (4 units) (New)

Lecture: 2 hours, Lab: 6 hours:

- An introduction to the genetics of human disorders and the use of gene therapy to treat and cure diseases.
- Application of aseptic techniques for growing and testing mammalian cells including pluripotent Stem Cells.
- Regulatory aspects, cGMP, documentation, safety, quality control, and bioethics pertaining to cell therapy.



CELL & GENE THERAPY CERTIFICATE OF ACHIEVEMENT (17 Units)

BIOTECH 002 | Biotechnology I (4 units)

Lecture: 2 hours, Lab: 6 hours: An introduction to the field of biotechnology. Students examine the fundamentals of cellular and molecular biology and are introduced to basic biotechnology laboratory skills, including documentation, safety, solution and buffer preparation, quality control and bioethics. Students develop proficiency in aseptic technique, spectrophotometry, microscopy and centrifugation.

BIOTECH 003 | Biotechnology II (4 units)

Lecture: 2 hours, Lab: 6 hours This course expands concepts and techniques introduced in Biotechnology I. Students are introduced to modern molecular biology techniques, including nucleic acid isolation, recombinant DNA techniques, cell transformation, recombinant DNA analysis, nucleic acid hybridization, and DNA sequence analysis. Students explore the production and purification of proteins using biochemical techniques such as immunochemistry and chromatography

CHEM 051 | Fundamentals of Chemistry I (5 units)

Lecture: 4 hours, Lab: 3 hours: Chemistry 51 is a descriptive course in general, organic and biological chemistry designed for nursing and Allied Health students. Topics include: the metric system of measurements, chemical symbols, formulas and nomenclature systems, chemical equations and physical and chemical characteristics for all states of matter. Other topics include acids, bases, buffers and pH. Organic topics focus on functional group identification including hydrocarbons, organic halide, alcohols, ethers, ketones, aldehydes, amines, carboxylic acids, esters and other acid derivatives, carbohydrates, lipids and proteins are also surveyed.

BIOTECH 102 | Biotechnology III (4 units) (New)

Lecture: 2 hours, Lab: 6 hours: An introduction to the genetics of human disorders and the use of gene therapy to treat and cure diseases. Students would be trained in the application of aseptic techniques while growing and testing mammalian cells, as well as the regulatory aspects, documentation, safety, quality control, and bioethics pertaining to cell therapy.



Biotech Programs Review

BIOTECHNOLOGY STACKABLE CERTIFICATES*

BIOTECHNOLOGY LAB ASSISTANT CERTIFICATE

- BIOTECHNOLOGY I
- BIOTECHNOLOGY II
- FUNDAMENTALS OF CHEMISTRY I

CELL & GENE THERAPY CERTIFICATE

- BIOTECHNOLOGY III

BIOTECHNOLOGY RESEARCH LAB ASSISTANT CERTIFICATE

- GENERAL MICROBIOLOGY
- STATISTICS
- BIOLOGICAL RESEARCH INTERNSHIP

ASSOCIATE IN SCIENCE DEGREE - BIOTECHNOLOGY (60 UNITS)

- QUALITY CONTROL/ASSURANCE



*Included in I-TRAIN

Skills to be Acquired:

Use and maintenance of standard cell culture laboratory equipment;

aseptic cell culture techniques;

methods for the growth, propagation, and maintenance of cultured mammalian cells including Stem cells;

cell quantitation;

cell imaging;

Introduction of DNA into cultured mammalian cells;

laboratory safety requirements;

and the production of GMP level documentation.

Familiarity with cGMPs and FDA guidelines.

Interpersonal and communication skills to allow teamwork.

Develop workplace competencies.

