



School of Math Science & Engineering

Biotechnology - Advisory Committee Minutes, Spring 2025

Date: 3/21/25

Number of Attendees: 14

Called to order: 9 am

Adjourned: 11 am

Chairperson:

Recorder: Nora Mendoza

Location: Build I -Room 201-Montoya Campus

Members present from industry:

**Rob Miller-UNM/Eric Prossnitz-UNM/Melodee Saiz-APS/Stephanie Tofighi-New Mexico Bioscience Authority/
Prisca Tiasse-The Community Lab & New Mexico Bioscience Authority/Rick VanNess-Wuscott, LLC**

Members present from CNM:

**Sierra Netz-MSE Faculty/Mike Faulhaber-MSE AD/Audrey Nihart-MSE Lab Supervisor/Nora Mendoza-MSE
Program Manager/Heather Simpson-MSE Faculty/Dorothy Duran-CNM Workforce & Community Success
Outreach Manager/Megan Hancock-MSE Faculty**

CNM students present:

Madison Smith

I. Welcome/Introductions:

MSE AD Mike Faulhaber

- CNM enrollment numbers have increased since last year.
- Current MSE summer headcount count has outpaced previous Summer's headcount,
- MSE has experience lots of growth with the Biotechnology, Engineering, Engineering Technician, and Explosives
- Technician Programs.
- Biotechnology Program has grown to now include 2 cohorts with the goal of 15/16 students per cohort.

II. Minutes:

Introduction of Biotechnology Team:

Megan Hancock, MS	Director/Instructor
Heather Simpson, PhD	Instructor
Sierra Netz, MS	Incoming Instructor
Andi Peterson	Lab Technician
Madison Smith	Student Ambassador



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Biotechnology Program Overview:

FALL SEMESTER	SPRING SEMESTER	SUMMER SEMESTER
• Lab safety and sterile technique • Solution and buffer preparation • Bacterial transformation and plasmid isolation (mini-prep) • Restriction digests, agarose gel electrophoresis and gel purification • Cell culture	• DNA isolation, purification and quantification • Cell culture continued • Mycoplasma detection • Polymerase Chain Reaction (PCR) • Multiplex PCR • Reverse transcriptase PCR • CRISPR (blue-white screening with X-gal) • DNA sequencing and fingerprinting	• RNA isolation, purification and quantification • Quantitative PCR (qPCR) • Protein purification, quantification, and electrophoresis • Western blots • ELISAs

- 2 cohorts are now running with a maximum of 16 students in each cohort
- The end of each term there is a Lab Practicum
- Students are required to keep Lab Notebooks

Biotechnology Cohort Graduates:

Biotechnology Cohort 2024 Graduates

- 16 graduates
- 1 student (with BS) began a PhD program in Boulder, CO after completion of biotech program
- 2 students found internships at BennuBio and Rob Miller Lab at UNM
- 1 student employed in clinical setting in hospital
- 1 student (with BS) employed as Associate Scientist at BennuBio
- 1 student employed at Divani Lab UNM HSC

Current Biotechnology Cohort

Current Biotechnology Cohort

- 13 total students
 - 2 dual credit high school students
 - 1 student with BS, 1 student will earn BS in May 2025
 - 3 students also UNM students
- 2 students are currently working as interns at Q Biotech
- 2 students are currently working as interns at Sandia Biotech
- 11 anticipated internship opportunities for current students in Summer 2025 funded by EPSCoR grant
- We also have two ASERT Fellows in our program this year: Dr. Andrea Corbet and Dr. Kimberly Morrissey (Academic Science Education and Research Training)

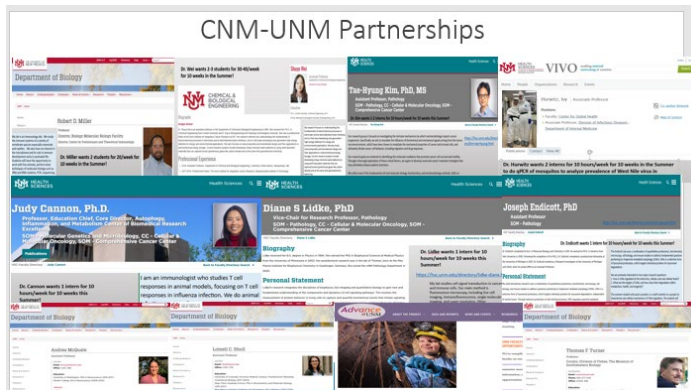
UNM-CNM Partnerships for Undergraduate Research

- [Establish Program to Stimulate Competitive Research \(EPSCoR\) grant awarded to UNM by the National Science Foundation \(NSF\)](#)
 - CNM Named as Sub-Awardee on Prestigious National Science Foundation Grant
- Pilot project to create connections and build relationships between UNM research labs and biotech students
- 11 interested labs between UNM Biology Department, Chemistry Department and UNM Health Sciences (17 internships possible)
- 11 current biotech students and 4 biotech graduates will be placed in labs in Summer 2025



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CNM-UNM Partnerships



Biotechnology Program Recruitment:

Biotechnology Program Recruitment

- Biotech team (Megan Hancock, Heather Simpson, Sierra Netz) visit classes to present and recruit
- Dr. Tina Vesbach (UNM Bio Chair) Sophomore Seminar Series
- Dr. Rob Miller Immunology
- Cell & Molecular Biology, Genetics (BIOL 2110 & 2410)
- Microbiology lectures (BIOL 2310)
- Biotechnology Program Open House
- Friday April 4th, 2025
- Biotechnology Program Commercial
- https://www.youtube.com/watch?v=biliMm_GnQ

Discussion on Biotinformatics.

- Industry recommendation made to include an “Intro to Bioinformatics” to the curriculum.
- Bioinformatics current assigned as homework and very general.
- ASERT Fellow could possibly focus on Bioinformatics this summer term.

2023-2024 Prospective Changes Update

2023-2024 Prospective Changes Update

- Addition of Mycoplasma detection PCR & gel to supplement cell culture experience and build skills
- Addition of OSHA blood-borne pathogen training
- Addition of transfection experiment with plasmid DNA and siRNAs
- Offering students and others throughout New Mexico BACE certification (<https://biotility.research.ufl.edu/bace/>)



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Changes to the Programs 2023-2024

Changes to the Program 2023-2024

Assessment improvements

- Modification of written exams to increase rigor
- Addition of 20+ prelab "Protocol quizzes" administered through Brightspace in each semester to ensure student preparedness for lab each day
- Addition of Accuracy in Pipetting practical component to exams

Other improvements

- Pre-requisite change from BIOL 2110/L to BIOL 2110/L OR BIOL 2310/L
- Addition of protocols using new Real-time PCR machine in Summer
- Addition of mycoplasma detection protocol for cell culture
- Expansion of cell culture experience from four to six weeks in Spring semester
- Update of DNA quantification protocols to utilize new equipment (Nanodrop & Fluorometer)
- Creation of Accuracy in Pipetting protocol where students calculate their own % Accuracy

III. Adjournment: 11 am