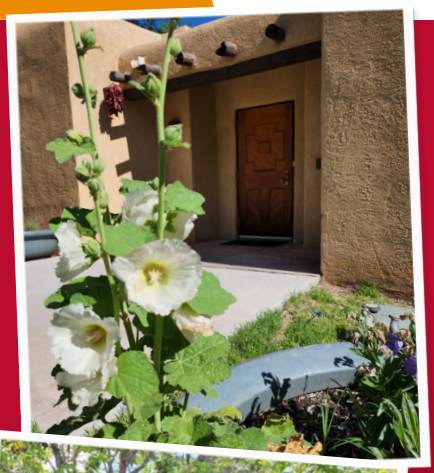
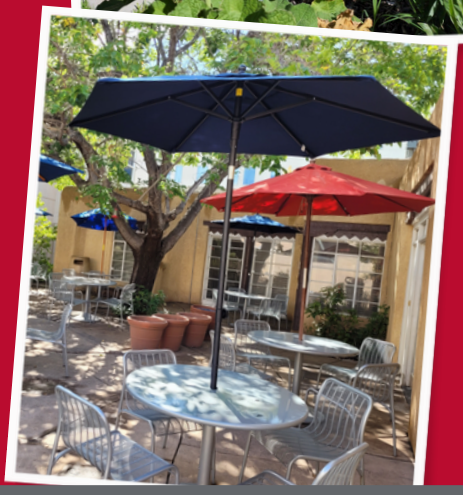
FIRST
Faculty Institutional Recruitment for Sustainable Transformation

UNM FIRST NEUROSCIENCE & DATA SCIENCE LIGHTNING LOUNGE

Wed., Oct. 23
from
3:30-5 pm
UNM FACULTY
CLUB

The UNM FIRST Program Leadership invites you to join us for our second Lightning Lounge! Come meet our newly appointed UNM FIRST faculty members and learn about their exciting research through engaging 5-minute presentations.





Where: UNM Faculty Club
When: Wednesday, Oct. 23 from 3:30-5 pm.

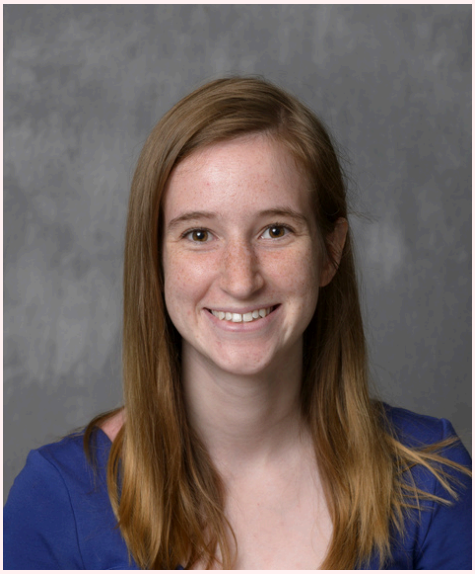
Appetizers and drinks will be provided!

SUBMIT YOUR REGISTRATION TO:
https://forms.gle/B3iQoazY7JT5fvmt6

SUBMIT YOUR RSVP BY THURSDAY, OCT. 17

MEET OUR UNM FIRST HIRES!

MATH & STATS DEPARTMENT



Dr. Sarah Percival - I am a mathematician working in the field of applied and computational topology. My research uses techniques from algebraic topology, the mathematical study of shape, to uncover and quantify the underlying "shape" of real-world datasets. In particular, I am interested in studying how well graph-like constructions such as the Mapper graph and Reeb graph (and its generalization, the Reeb space) capture the topology of the underlying spaces from which they arise. At UNM, I aim to begin new interdisciplinary collaborations with researchers across campus.

I graduated from Rice University with a bachelor's in mathematics and statistics in 2014 and received my Ph.D. in mathematics from Purdue University in 2021 under the supervision of Dr. Saugata Basu. My thesis studied efficient computation of Reeb spaces and first homology groups in a semi-algebraic setting. In my postdoctoral work at Michigan State University, I worked with advisors Dr. Daniel Chitwood, Dr. Aman Husbands, Dr. Arjun Krishnan, Dr. Beronda Mongomery, and Dr. Elizabeth Munch to use topological data analysis to investigate questions in plant science relating to leaf morphology.

Research keywords: topological data analysis, real algebraic geometry, Reeb spaces, Mapper, graph sparsification

MEET OUR UNM FIRST HIRES!
CHEMISTRY DEPARTMENT

Dr. Xiaorong Liu - I am a computational chemist interested in developing and applying computational methods to (1) understand how biomolecules perform their versatile functions, and (2) to effectively guide the design of small-molecule drugs, biologics, and functional proteins. My lab uses molecular modeling and simulation as our primary tools.

I grew up in Hubei, China, and obtained my B.Sc. degree in Applied Chemistry from Wuhan University. In 2019, I obtained a Ph.D. degree in Chemistry at the University of Massachusetts Amherst, and my Ph.D. study was focused on developing and applying advanced computational methods to study intrinsically disordered proteins, which play important roles in cellular signaling and regulation and are associated with many human diseases. I was a postdoctoral fellow at the University of Michigan before joining UNM, and my main effort was to develop highly accurate and high-throughput computational methods to design drug molecules.

As a new faculty at UNM, I will leverage my extensive experience in molecular modeling and simulation, in particular enhanced sampling methodology and free energy calculations, to develop novel, highly accurate, and high-throughput computational methods for small-molecule drug discovery, therapeutic peptide design, and engineering functional proteins.

Research keywords: theoretical and computational chemistry, biochemistry and biophysics, molecular dynamics simulation, drug design, peptide design, protein engineering

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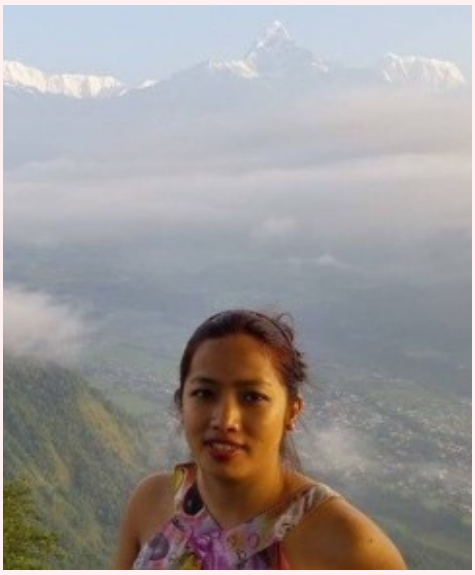
CHEMISTRY DEPARTMENT



Dr. Anisha Shakya - My research program seeks to understand how the multitude of biochemical processes occurring inside a cell are organized in absence of lipid membranes, and how the mis-regulation of such membraneless organization lead to diseases. To achieve this, my program employs a range of interdisciplinary skills such as thermodynamic analysis, database mining and computation, novel super-resolution and high-throughput imaging methods along with in-vitro reconstitution assays and cell biological techniques.

I was born and raised in Nepal, a small beautiful landlocked nation with some of the tallest mountains in the world. I have a B.Sc. in microbiology from Tribhuvan University, Nepal and a B.Sc. in chemistry from McNeese State University, Lake Charles, LA. I obtained my Ph.D. in chemistry from the University of Michigan, Ann Arbor, MI and did postdoctoral trainings at the Institute for Basic Science, South Korea and Northwestern University, Evanston, IL.

At UNM, I am assembling a team of passionate scientists from diverse backgrounds to help expand our knowledge of chemistry and solve some of the challenging problems in human health and diseases.

Currently, outside of science, I love to spend time with my 6-month-old and two Korean cats.

Research keywords: Membraneless organelles, biomolecular condensates, biological phase separation, neurodegenerative diseases, super-resolution microscopy

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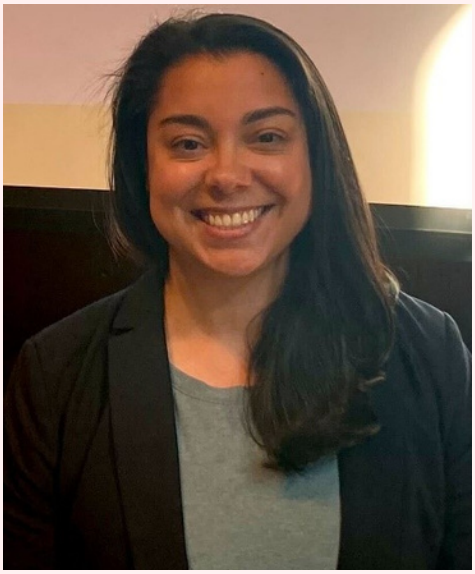
PSYCHOLOGY DEPARTMENT



Dr. Laura Ornelas - I am a neuroscientist interested in studying the neurobiology of Post-Traumatic Stress Disorder and Alcohol Use Disorders. I was born and raised in Austin, Texas and attended Southwestern University in Georgetown, Texas. I received my M.A. and Ph.D. from Baylor University in Waco, Texas, in the Department of Psychology and Neuroscience. I completed my postdoctoral training at the Bowles Center for Alcohol Studies in the lab of Dr. Joyce Besheer at the University of North Carolina School of Medicine.

The Ornelas lab investigates the neurobiology of traumatic stress and alcohol use disorders. Current research in the lab focuses on utilizing predator odor stress models to induce traumatic stress in rats and investigate the role of corticolimbic circuitry and the endocannabinoid system in regulating maladaptive stress coping behaviors and alcohol drinking. The lab utilizes a combination of behavioral and neuroscience techniques including chemogenetics, pharmacological manipulations and whole-cell patch clamp electrophysiology.
I am currently funded through a NIH NIAAA R00 Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) award.

Research keywords: stress, alcohol, neurobiology, endocannabinoids, corticolimbic circuitry

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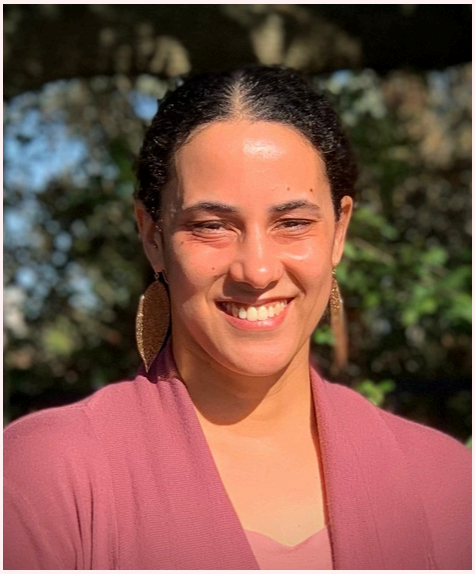
BIOLOGY DEPARTMENT



Dr. Andrea McQuate - I am a neuroscientist and author. I received a BA in Neuroscience with High Honors from Oberlin College (2010) and PhD in Neuroscience from the University of Washington, Seattle (2017). Between undergraduate and graduate school, I spent a year at the University of New Mexico as a PREP scholar. I have acquired an interdisciplinary research background in electrophysiology, microscopy, molecular biology, genetics, and computational modeling. My research goal is to elucidate the roles of intracellular organelles (such as mitochondria and endoplasmic reticulum) in electrically excitable cells. I am additionally interested in the physiology of regenerating electrically excitable cells, in the hope of renewing their function post damage. My goals as an author are to (1) advance new visions of synaptic plasticity, and (2) to demystify science culture for the next generation of scientists.

Outside of science, I am also a writer, musician, and adult figure skater.

Research keywords: The role of mitochondria in hearing and balance. Hair cells, mitochondria, hearing and balance, synaptic transmission

THE UNIVERSITY OF NEW MEXICO

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Dr. Lomeli Shull - I am a developmental biologist interested in understanding how gene regulatory networks are properly orchestrated across developmental processes, particularly neural crest cell development and formation of the craniofacial skeleton. I am a native NM, raised in Moriarty, NM. I graduated from New Mexico Tech with a bachelor's in Biology, where my interest in research was first ignited. I continued to graduate school and matriculated into Mayo Clinic Graduate School in Rochester, MN where I earned my PhD in Biochemistry and Molecular Biology in the lab of Dr. Jennifer Westendorf. My dissertation focused on the function of the histone deacetylase, Hdac3, in postnatal cartilage growth plate and long bone development using mouse models.

I decided to continue working on epigenetic factors in my postdoctoral work while also expanding my skillset to new animal models by joining the lab of Dr. Kristin Artinger at the University of Colorado Anschutz in Aurora, CO. Here I utilized both zebrafish and mouse models to start to disentangle the conserved and divergent functions of the two histone methyltransferases, PRDM3 and PRDM16 in neural crest development and formation of the craniofacial complex. My work focused on the differentiation and morphogenesis of cartilage and bones making up the facial structures and how they are integrated with sensory neurons. As new faculty here at UNM, I will continue to utilize both mouse and zebrafish models, in combination with a variety of cellular, molecular, and epigenetic techniques to understand how chromatin remodelers control the transcriptome, epigenome, large protein complexes and facilitate chromatin dynamics during neural crest and craniofacial development.

***Research keywords**: developmental biology, epigenetics, next-generation sequencing, chromatin, cell biology, craniofacial, cartilage, bone, neural crest, zebrafish, mice, molecular biology*