

First Name	Last Name	Email	Topic	Summary	Mentor Name	Mentor Department
Brody	Andes	bdandes@wisc.edu	Understanding Neutrophilic Evasion in fungal pathogen <i>Candida auris</i>	Working in the field of medical microbiology, I am hoping to further our understanding of how a very virulent emerging pathogen infects and kills host cells. The specific focus of the experiments is to understand the pathogen's ability to go undetected by the human immune system, specifically its neutrophils.	Jeniel Nett	Medical Microbiology and Immunology
Tristan	Argall	trargall@wisc.edu	Drug Screening of Pathogenic Fungal SF3b1 Proteins in <i>Saccharomyces cerevisiae</i>	My topic is in the field of biochemistry and is focused on finding drugs which inhibit the pathogenic fungal SF3b1 protein only, and not the human SF3b1 gene. By finding drugs which do this, new medical treatments for pathogenic fungal infections may be unveiled.	Aaron Hoskins	Biochemistry
Aishwarya	Bangalore-Sunil	bangaloresun@wisc.edu	Activity of Pevonedistat in Patient-Derived Advanced Colorectal Cancer Organoids	Colorectal cancer (CRC) is a leading cause of cancer related mortality with limited treatment options. I am investigating the efficacy of the new FDA approved anticancer therapeutic drug, pevonedistat, as a single agent and in combination with standard of care, FOLFOX across multiple CRCs as a novel treatment strategy.	Dustin Deming	Hematology and Oncology
Cathy	Cao	ccao35@wisc.edu	Machine Learning Algorithms for Classifying Bioparticles from Soil Samples	By utilizing computer science and statistics, I will be working towards developing machine learning algorithms that will enable computers to classify biological particles after being provided appropriate image libraries. Models will be developed to classify particles such as silt, pollen, charcoal, or phytoliths and will be trained using stock images from free public databases as well as images from soil samples collected by a UW-Madison researcher.	Bret Larget	Botany/Statistics
Brandon	Dawning	bdawning@wisc.edu	High energy organic molecules and the Origin of Life	The goal is to better understand how ATP was integrated into biochemistry early in life's evolution and determine whether or not an energy currency other than ATP could have arisen. My approach is to use the literature to identify other higher energy molecules that could have played a role in life and design laboratory experiments to compare those molecules to ATP. These experiments will be modeled after chemical ecosystem selection experiments which I have been involved in for the last 2 years.	David Baum	Botany
Allison	Eierman	aeierman@wisc.edu	Lumbar Puncture Side Effect Rates in a Research Setting	I am working with lumbar puncture procedural data from the Alzheimer's Disease Research Center and studying side effect rates as well as intraprocedural complication rates. This analysis explores if these rates have any correlation to factors such as needle-size utilized in the procedure (24 or 25 gauge), race, age, education, sex, Body Mass Index (BMI), waist-to-hip ratio, etc.	Cynthia Carlsson	Geriatrics and Gerontology
Cassandra	Gauthier	clgauthier@wisc.edu	Evaluation of visitor attention to conservation messages at the Henry Vilas Zoo	This study will assess how many educational displays contain conservation education material at the Henry Vilas Zoo and quantify how much attention visitors give to the conservation messages displayed throughout the Zoo (or education material online).	Allyson Bennett	Psychology
Nicholas	Juntunen	njuntunen@wisc.edu	Exploring the kinetics and structure of cysteamine dioxygenase through a protein variant	In chemistry, cysteamine dioxygenase (ADO) is a protein that helps regulate cysteine levels in the body and produces hypotaurine. By designing protein variants, I am exploring how ADO behaves kinetically and attempting to learn about the structure of its active site.	Thomas Brunold	Chemistry
Michel	Justen	mjusten@wisc.edu	Stress-Coherence, Interoception, & Mindfulness (SCIM) Study	The study I am working for focuses on the relationship between subjective-stress and physiological arousal, and how this relationship might change following a month long mindfulness intervention. Within this study, I am building upon an independent analysis that I started last semester examining the role of dispositional mindfulness in one's stress response. This is a psychology orientated study taking place at the Center for Healthy Minds.	Sasha Sommerfeldt	Psychology
Eliot	Kim	ejkim23@wisc.edu	Reconciling Differences Between Air Pollution in Computer Models and Satellite Data	Fine particles in the air pose a major threat to human health, thus accurate measurements and estimations of air pollution are critical. However, model-based estimations and satellite-based measurements of air pollution differ significantly, and this project aims to use data analysis techniques to determine the driving factors of this deviation.	Tracey Holloway	Environmental Studies
Jenna	Krakauer	jkrakauer@wisc.edu	The role of attention in compensation for altered auditory feedback	In the Speech Motor Action and Control Lab, which is part of the Department of Communication Sciences & Disorders, we alter a participant's speech to see how they compensate for those changes. This project will be researching the effects of divided attention on speech, specifically how a visual task affects a participant's compensation to alterations in their speech.	Ben Parrell	Communication Sciences and Disorders
Leta	Landucci	llanducci@wisc.edu	Interactions between Japanese beetles and their host plants - a dynamic between physical and chemical traits and herbivore behavior	In this project I will be exploring chemical ecology through the study of how particular plant traits such as silica content, leaf toughness, trichome density, and water content influence feeding preference and herbivore behavior toward a selection of host plants. Japanese beetles and their interactions with fruiting vegetation including apple trees, cherry trees, peach trees, grape vines, and raspberry bushes during Wisconsin's summer will constitute the study system.	Rick Lindroth	Entomology
Nachuan	Li	nli63@wisc.edu	Automated Vehicle Platoon and Extreme Weather Conditions	In this research I exam the effectiveness of using the technique of platoons (A group of automated vehicles that are controlled together) on the highway to alleviate traffic congestion. The comparison would be carried out as a matrix of platoon and no platoon, snowy and dry.	Bin Ran	Civil and Environmental Engineering

Yuxin	Liu	liu834@wisc.edu	Why Do Public Transit Jobs Get Automated?	This project seeks to explain why metro systems are automated from a sociological perspective by exploring the extent to which automation is a cultural symbol that signifies a futuristic image of the city and an aspiration for prosperity. The major objective of the project that I'm working on is to gather time-variant data on variables relevant to metro systems and automation around the world.	Gay Seidman	Sociology
Sarah	McLeod	smcleod2@wisc.edu	Language Production Under Uncertainty	I am working within the Language and Cognitive Neuroscience Lab in the Department of Psychology. My research topic focuses on the process of utterance planning and prediction in order to investigate if language planning is strong enough to influence the more complex aspects of language such as sentence structure.	Maryellen MacDonald	Psychology
Shannon	McManus	s1mcmamus@wisc.edu	Social Media Comparison and the Effects on Young Adult Mindset	I will be working in mass communications and journalism field with a focus on social media communications, and expanding on previous knowledge and studies. I am focusing on how social media and comparison to friends/celebrities/other affects body image dissatisfaction, drive for a certain body type (thin, curvy, muscular), and overall dissatisfaction of oneself in young adults.	Dhavan Shah	Journalism
Viktorie	Menna	menna@wisc.edu	Neuroanatomy of Tau in rhesus wildtype and carriers of a mutation linked to human frontotemporal dementia	A mutation in the gene encoding for the protein tau, MAPT R406W, has been identified in human patients with frontotemporal dementia. Using imaging (PET and MRI) analysis and postmortem morphological evaluation of rhesus brains, we will characterize how the tau protein is expressed in the brain by rhesus carriers of the mutated and non-mutated tau gene.	Marina Emborg	Medical Physics
Kate	O'Leary	koleary2@wisc.edu	Utilizing Anti Codon Engineered-transfer RNA to Read Through Nonsense Mutations that causes LCA16	Throughout this experiment I will be focusing on Leber Congenital Amaurosis 16 which is a cause for pediatric blindness today which my project will work towards curing through evaluating the function of a mutated amino acid in the gene causing this disease. I will be applying ACE-tRNA to detect the stop codon through a read through treatment to detect the nonsense mutation to produce a functional protein.	Bikash Pattnaik	Pediatrics
Vivian	Phan	vnphan@wisc.edu	Exploring Relationships and Distinctions Between the Effects of Physiological Stress on the Performance Levels in East Asians and European Americans	Working within the field of cognitive psychology, this study seeks to examine the effect of physiological stress using cortisol levels on performance levels between Eastern and Western societies based on cultural beliefs surrounding positive and negative emotions/motivators. Compared to Western societies, some Eastern societies hold relatively more favorable views of negative emotions and perceive motivational utility of negative emotions. Given this, we can examine whether such cultural beliefs about stress are reflected in their actual performance.	Yuri Miyamoto	Psychology
Qiuwen	Quan	qquan2@wisc.edu	Characterization of modified intact RNA by NETD mass spectrometry	Mass spectrometry is an analytical technique in chemistry for identifying and quantifying molecules. I will be working on developing a pipeline to analyze modified intact RNA using mass spectrometry, which has shown the potential to characterize and localize modifications.	Joshua Coon	Chemistry/Biomolecular Chemistry
Yvette	Ren	ren57@wisc.edu	Interaction between Topology and Computability Theory	I am working with Professor Soskova to study the interaction between different enumeration degrees. We first build a database collecting the proved relations between classes of enumeration degrees. We then attempt to prove some of the unproven relations and try to find a more general characterization of topological properties in terms of algebraic properties of the enumeration degrees.	Mariya Soskova	Mathematics
David	Turicek	dpturicek@wisc.edu	Treating post-transplant B-cell acute lymphoblastic leukemia with blinatumomab as a radiation sparing immunotherapy	My research project will incorporate blinatumomab in vitro and in vivo in hopes to activate human gamma/delta T cells for treatment against CD19+ B-cell acute lymphoblastic leukemia. It will contribute not only to the limited understanding of gamma delta T cells, but also to the field of immunology and cancer research as a whole.	Christian Capitini	Pediatrics
Amanjot	Yadev	yadev@wisc.edu	Changes in Mitochondria Associated Membranes (MAMs) Related Factors in Pancreatic $\beta$ -cells During Conditions of $\beta$ -Cell Stress	MAMs is a biological area of research that explores endoplasmic reticulum (ER) and mitochondria crosstalk. Disruption in MAMs has been implicated in human pathologies such as cancer; we are evaluating the effect of changes in MAMs related factors in pancreatic $\beta$ -cells exposed to conditions of stress such as inflammation and obesity as this may provide insight into the underlying causes of type 2 diabetes.	Dawn Davis	Endocrinology
Diya	Yang	dyang245@wisc.edu	A New Optimal Control Approach for Complex Nonlinear Turbulent Dynamical Systems	We will develop an efficient control approach based on the conditional Gaussian framework, and the expectation-maximization (EM) algorithm. Since both the nonlinear smoothing process and EM can be solved via closed analytic formulae, the learning procedure is cheap and applicable to high-dimensional systems.	Nan Chen	Mathematics
Dasha	Yermol	yermol@wisc.edu	Validating the Situational Meaning of Functionally Distinct Smiles	Prior research has proposed three functionally distinct smiles: dominance smiles negotiate status, affiliation smiles signal safety, and reward smiles reinforce behavior. The present project aims to investigate the situations in which these three types of smiles occur in order to validate theoretical claims about their distinct functions.	Paula Niedenthal	Psychology
Shuyi	Zhang	szhang686@wisc.edu	Aging Study of Unique Polydicyclopentadiene Thermoset Material	Metal-free ring-opening metathesis polymerization (MF ROMP) is a newly discovered approach to synthesis polymers and Polydicyclopentadiene (pDCPD) is a representative polymer of MF ROMP. In this research we would study how to enhance different physical characters of pDCPD as well as explore how does the polymer age in various conditions.	AJ Boydston	Chemistry