



## 7th Annual Symposium | Wednesday, May 24th, 2023 Science Research Student Names and Project Titles

<i>Student Name</i>	<i>Project Title</i>
Noah Anderson	Development of a remotely operated underwater vehicle to aid in exploration and mapping of underwater cave systems
Aisha Abdulwali	Effect of UVB irradiation on <i>Lolium perenne</i>
Bryce Alexander	Radio frequencies as alternate data transmission technology for vehicle to vehicle communication
Jack Allenburg	Using machine learning to determine horse race outcomes
John Armstrong	Design of a long-range VTOL unmanned aerial delivery system
Alexander Bartholomew	The effects of visual conditioning on exercise performance and perception
Chris Belhouse	Creating and simulating a simple and reliable autonomous flight solution
Adam Bravo	Lipid nanoparticle PEGylation for optimized in vitro transfection in HEK293t cells
Nicholas Breitling	Improving sphere blending performance for fluid simulation applications using ray-marched rendering
Ethan Chen	Effects of natural remedies on <i>E. coli</i> growth as indicator of potential to treat allergic rhinitis
Tyler Clair	Analyzing <i>GDP-L-galactose phosphorylase</i> gene expression in <i>Lactuca sativa</i> undergoing abiotic wind stress
Mia Copeland	Flavonoid production in <i>Trifolium repens</i> L. in response to freezing temperature
Erik DuBoulay	The benefits in producing Maillard Reaction intermediates when cooking steaks with lipids
Kate Feist	The delivery of CCN5 and its influence on MMP-2 expression in MCF-7 cells
Lauren Fligge	Effect of NRG1 protein on EMT in MCF-7 breast cancer cells
Jack Frame	The effects of senescent cell clearance on age related cognitive inhibition in <i>Lymnaea stagnalis</i> (Great Pond Snail)
Jasmine Goldsmith	A comparison of bamboo and conifers species' efficiency at removing contamination from water similar to that of Southeast Asia
Jack Hickey	The effect of simultaneous aerobic exercise and working memory tasks on implicit language learning In adolescents
Parker Hitchcock	Analyzing decision-making algorithms in Splendor
Isaac Jasper	The effects polyethylene terephthalate exposure has on <i>Lactobacillus rhamnosus</i>
Aleen Jude	Patient experiences with mental healthcare and mental health stigma in the U.S
Lydia Kahsay	The effect of lipopolysaccharide (LPS) on inflammation markers within the MCF-7 breast cancer cell line
Ellie Keenan	Effects of fluoxetine on the enhanced slowing response in <i>Caenorhabditis elegans</i> wild-type strain and <i>ser-7</i> mutant strain
Noah Khemakhem	The effect of pH on the ability of <i>P. porifera</i> to filter nickel from seawater
Anika Lang	Reutilizing winery wastewater to grow <i>Chlorella vulgaris</i>
Sam Louwagie	The effect of barley extract on the growth of various algae species

Darren Ma	Effect of soccer cleat design on the forces a player receives during soccer
Jordi Malaret	Resistance to abiotic stress due to overexpression of the <i>SUPA</i> gene in <i>Arabidopsis thaliana</i>
Meiling Mathur	Machine learning for detecting warning signs of carpal tunnel syndrome in violinists
Chloe McLaren	Using GIS to map aquatic abiotic indicators for Lake Sturgeon fish in Minnesota
Noah Measells	Development of dual material glove protectors for skiers and snowboarders
Calais Michaelsson	Using DeepPurpose AI to repurpose existing drugs for treatment of Alzheimer's disease
Amadia Molina	The quantification and persistence of <i>Fusarium moniliforme</i> on maize kernels stored with the intent of producing ethanol and its potential relationship with increasing cancer rates in Minnesota
Lukas Murdych	Examination of the effects of various classical guitar supports on left-hand tension and posture
Valerie Nelson	Low-cost spectroscopy and machine learning for recycling plastics
Tony Pappas	Using machine learning to predict intergenerational social mobility
Carly Pfeffer	The impact of stimulation on the ability for peroneal muscles to resist stimulated ankle sprains
Deepti Pillai	Activated carbon filter for PFOA contaminated water
Sonia Pillai	Modeling Minnetonka High School traffic congestion
Krish Inba Rajashankar	A machine learning based identification and analysis of early call terminations in contact centers
Shreya Ramraj	How does divorce affect sleep patterns in young adults?
Prathul Rao	The interactions between freshwater rotifers and cyanobacteria and its repercussions on the evolution of Minnesota wildlife
Amanda Rolseth	Silencing the phloem unloading modulator gene in <i>Salvia hispánica</i> via lipofectamine RNAiMAX reagent
Luke Rowen	The hydrodynamic purposes of the <i>Chondrocaldia lyra</i> 's skeletal structure
Lily Salyards	Aerodynamic optimization of porpoising and ground-force in Formula 1 vehicles
Brady Schlapkohl	Correlation between cryptocurrency prices and social media
Isabela Snow	The effects of Atrazine on aquatic environments and the functionality of filters to reduce effects
Saloni Somia	The effect of calcium signalling on cell-cell fusion
Julia Srnec	How speaking gendered languages impacts comprehension, application, and acceptance of gender-fair language
Ana Stewart	The application of mushroom mycelium as a biomaterial and leather alternative
Samuel Thibodeau	Inhibitory effects of curcumin on cellular pathways and proliferation
Katriana Trinh	Utilizing various transcription factors to differentiate fibroblasts into neural cells for Alzheimer's
Gautam Venkatesh	Investigations into the allelopathic interactions of Garlic Mustard
Varun Viswanathan	Effect of rennet on the coagulation time of paneer
Julia Vladimirov	Testing the toxicity of a new bio-based food packaging film
Austin Wang	Behavioral determinants of COVID-19 vaccine hesitancy
April Wang	A paper-based colorimetric biosensor to detect Ciprofloxacin in water
Annie Zhao	The effects of unnatural light conditions on serotonin and octopamine levels in <i>Drosophila melanogaster</i>
William Zhong	Synthesis of bioplastic films for decomposition in natural conditions with optimized properties