



**3<sup>rd</sup> Annual Symposium | Wednesday, May 29, 2019 |  
Science Research Student Names and Project Titles**

<b>Student Name</b>	<b>Project Title</b>
Isaac Alberts	Usage effects on battery functionality and their optimization.
Alexi Alfieri	Calculating the effect of commercializing milkweed floss loose-fill insulation on the environment.
Cameron Anundson	Low-cost vision system for follow-in-front (FIF) robot employing gaze detection.
Tommy Atwood	The effect of moving from an aerobic to anaerobic state of exercise on O <sub>2</sub> saturation of male adolescent nordic skiers, ages 15-18.
Treven Bolton	Analyzing the differences between the effects of Esports to traditional sports.
Christine Cannon	Examining the effect of growth under elevated carbon dioxide on the pollen protein concentration of <i>Brassica napus</i> and <i>Helianthus annuus</i> .
Justin Carter	Creating a predictive model for the NCAA men's basketball tournament using a common machine learning algorithm.
Jai Chadha	Low-cost concealed weapon detection for school environments using acoustic signatures.
Annabel Cho	Mesenchymal stem cells as theranostics.
Lauren Cooper	Assessing the differences between monolingual and bilingual brains and its impact on educational policies.
Samuel Dahl	Climate change effects on coastal marine ecosystems.
Matthew Derkacz	Designing a fully articulated exoskeletal gauntlet.
Cole Forsmark	Optimizing the pathway from mevalonate to anhydro mevalonolactone using siderophore homologs, to create sustainable plastics.
Oliver Forst	Effect of T4 phage therapy and spectinomycin treatment in <i>Escherichia coli</i> .
Grant Foslien	The effects of microplastics on the microbial bioremediation of polycyclic aromatic hydrocarbons, and modeling key genes in the catabolic pathway of PAHs in <i>E. Coli</i> .
Meili Gong	Engineering water stable bioplastics from chicken feathers.
Thomas Graupmann	Determining the methane reducing capabilities of <i>Methylococcus extorquens</i> .
Olivia Graupmann	The implications of the relationship of relaxin on injury in female athletes.
Connor Hansen	Synthesizing a cost-effective, semi-organic, composite catalyst for use in hydrogen fuel cells.
Zachary Hansen	Analyzing the importance of different personal and political factors in swaying electorates.
Andy Hayman-Wetterland	The effects of beta alanines on oxidative stress in Rosy Minnows.
Charlie Horn	Creating a program to teach improvisational techniques on a bass guitar using augmented reality systems.
Hana Ikramuddin	Eating disorder websites analytics.
Frank Isaacson	Simulating the spread of Influenza A through a Portland-based mock population.
Alex Johnson	Minor league baseball rankings and their correlation to future MLB value using multivariable regression.
Nicholas Kachkovsky	Synthesizing pH-sensitive hydrogels for localized drug delivery.
Parthiv Krishna	Robust autonomous micro aerial vehicle (MAV) navigation with onboard, environment-agnostic, multi-sensor SLAM.

Student Name	Project Title
Jarrett Krouss	Analyzing the importance of different personal and political factors in swaying electorates.
Thomas Lane	Captive breeding of <i>Sahyadria denisonii</i> without the use of hormonal treatments.
Thijs Larson	<i>Vibrio fischeri</i> growth in culture versus NaCl salinity levels indicating bioremediation of octane.
Ilana Levine	Enrichment cultures of environmental aquatic sediment samples to identify microbial metabolism of and resistance to perfluorooctanoic acid.
Josh Levy	Using machine learning to classify mutations in non-small cell lung cancer tumors based on CT scans.
Max Lindholm	Ad hoc algorithms: Improving academic search engine performance with user-directed document ranking.
Andrea Lund	The influence of light/dark cycles on ascorbic acid content of postharvest arugula microgreens.
Dean Matteson	Using machine learning to predict water quality conditions using eDNA sequencing data.
Quentin Mooney	Development of speed bump energy harvester technologies for Minnetonka High School.
Giselle Munoz-Semple	Examination of mental health misinformation in the Minnetonka, MN region.
Andrew Olds	Alternative material for brass instrument construction.
Annika Olson	Finding the spatial distribution of dark matter using an n-body simulation with negative mass.
Jacob Otolski	Experimentation on the optimization of miniaturized aquaponics systems.
Priscilla Prouty	Amphibian secretions of <i>Rana pipiens</i> and its application for inhibition of <i>Staphylococcus epidermidis</i> .
Gabriela Queiroz Miranda	Engineering weighted 3D printed vests for sea turtles with bubble butt syndrome.
Jack Rapini	Evaluating the effectiveness of the NFL Combine in relation to predicting order in draft selection.
Raymond Richter	Microcontrollers with photovoltaic energy sources.
Simon Roemig	Alternative material for brass instrument construction.
Will Roslansky	The use of artificial feathers and various biomechanical movements in robotic ornithopters to improve efficiency and maneuverability.
Maggie Ruoff	Decreasing concentrations of harmful algae blooms in freshwater lakes.
Max Schlotthauer	Quantification of gene expression using RT-qPCR in <i>Caenorhabditis elegans</i> .
Nathan Schneider	Exploring the option of a Tau-targeted immunotherapy as a treatment for Alzheimer's.
Mikayla Schultz	The effect of nitric oxide reductase on symbiont loss in <i>Aiptasia palladia</i> after heat stress.
Ayush Shah	Evaluating the impact of a community health fair on the underserved population of Ahmedabad, India.
Chloe Smith	Analyzing and examining micrometeorites.
Alison Sundem	Examination of the role of N-linked glycans on the ability of IgE to bind to Fcε-R1 receptor.
Ethan Taddy	Caffeine as a quorum sensing inhibitor in <i>Serratia marcescens</i> .
Chris Tadros	Analyzing the effect of brain derived neurotrophic factor on microglia.
Trisha Trinh	Observing the effects of DEHP exposure on thyroid gland production of thyroid hormones in <i>Oryzias Latipes</i> .
Grace Weisman	Psychological effects of cancer and considerations for more effective treatment.
Jordan Zais	Analysis and treatment of nickel immune response in <i>Drosophila melanogaster</i> .

**Thank you for supporting the Minnetonka Research Program!**