

District VIII Missouri Junior Academy of Science – March 9th, 2020

Highly Superior		
Isabella Hamner	Junior	Deer vs. Lavender
Tatumn Weaver	Junior	Safest Barrier?
Jillian Bernabe	Senior	The Effect of a Nonenzymatic Cu-based Glucose Biosensor Utilizing Hydrothermally Synthesized Nanocatalysts
Zane Foulk	Senior	The Integration of Image-Based Deep Learning into Water Body Turbidity Measurement Utilizing Rapid Aerial Visible Spectrum Photography with a Commercially Available Camera Drone
Lindsey Graves	Senior	The Development of a Bioattractant-Biopesticide Alginate Bead Delivery Approach to Control Spodoptera frugiperda for Postemergence Corn Crops
Mercedez Hanlon	Senior	Application of the Endophytic trichoderma harzianum as a Climate-Induced Stress Biocontrol for Glycine max: Applications in Bioengineering
Irene Meckley	Senior	The Engineering of a Biomimetic Airfoil to Reduce Cavitation and Reynold's number in Micro Aerial Vehicles (MAVs) for Commercial and Military Applications
Emma Price	Senior	Synthesis of Human Urine into Carbon Dots for Implementation as a Visual Arsenic Assay in Water
Hannah Rogers	Senior	Application-Based Integration of Motile Near-Infrared and Electrochemical Sensors with Realtime, In-Situ Indication of Nitrate-Induced Crop Stress
Jake Thoenen	Senior	Engineering an Angles Ducted Propeller Shroud Using Biomimicry of the Heterocercal Shark Tail to Reduce Cavitation

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Superior		
Cassidy Hannigan	Junior	Algae... A Cave's Nemesis
Shawn McKinnon	Junior	Sound into Electricity
Annaliese Mead	Junior	Hay Over There
Isabell Owens	Junior	Here's Your Tip!
Noah Patton	Junior	Hot Solar Improvements
Paige Schwantes	Junior	Hair! Really?
Carter Smith	Junior	Escape the Vape
Larson Ashcroft	Senior	Application of an Artificial Intelligence to Interpolate Motion Data for the Purposes of Software-based Full Body Tracking in Virtual Reality
Drew Patton	Senior	The Effects of HDPE and PS Microplastics on Morphology and Survivability of Human Intestinal Epithelial Cells In-Vivo
Raquel Potteiger	Senior	Preventing Food Illnesses: The Development of a Packaging Visual Colorimetric Bioindicator for the Detection of <i>Campylobacter jejuni</i>
Michael Radund	Senior	Retrofit Building Blast Mitigation: An Approach to Effectively Divert Blast Energy for Existing Structures Using Engineered Plastic Laminated Honeycomb Panels
Grant Weaver	Senior	Ecotoxicological Assessment of Tocopheryl Acetate as a Respiration Inhibitor on <i>Tenebrio molitor</i>
Johnathon Westhusing	Senior	The Application of Gyroscopic Stabilization on Boat Docks

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Excellent		
Caden Butterfield	Junior	Healthy Grass, a Thing of the Past?
Ireland Franklin	Junior	Power in the Dark
Delaney Stanfield	Junior	Misconceptions of Color
Kierstin Wright	Junior	Worms Vs. Contacts
Thomas Cleveland	Senior	Investigation on Universal Gravitation Constant Variation with respect to Cosmic Microwave Background
Nicholas Faiferlick	Senior	Enhancing Biodegradation Capabilities of the Ideonella sakaiensis Plasmid Using mutD Escherichia coli: A Case Study in the Use of Directed Microbial Ecolution and Bioengineering
Scott Muff	Senior	Improvements to Wire Arc Additive Manufacturing by Implementation of Cooling Plate
Mansi Patel	Senior	Evaluation of Soil Toxicity From Bennett Spring Vernal Pond Using Aquatic Bioassays Research Proposal
Alisa Rosen	Senior	The Effectiveness of Enterobacteria Phage 4 at Killing Ampicillin and Penicillin Resistant Escherichia coli
Bailey Shockley & Zora Rowe	Senior	The implementation of inspiration messages to decrease perceived stress levels in teens 15 through 18
Brandi Sloan	Senior	Drosophila Strains Immune Responses Relating to the Accuracy of Results when using Model Organisms
Carolyn Sterner	Senior	Cellulase Efficiency at Biodegradability of Cellulose Based Wipes