

District VIII Missouri Junior Academy of Science – March 26th, 2021

Highly Superior		
Anna Lucas	Junior	Under Pressure: Stress on Student Athletes
Keith Bass	Junior	A Plant Odyssey
Grace Law	Junior	Horsing Around with Hay
Nicole Westhusing	Junior	Time to Say Goodbye to E. coli
Maya Irvine	Senior	The Role of the Phytotoxic Flavone Apigenin in the Allelopathic Pathway of the Invasive Plant Species, <i>Lonicera maackii</i>
Nicholas Faiferlick	Senior	Transformation of Marine Bacteria with the <i>Ideonella sakaiensis</i> Plasmid for Enhanced Biodegradation of Polyethylene Terephthalate
Jillian Bernabe	Senior	The Synthesis of AU-Fe ₃ O ₄ Nanoparticles for the Purpose of Nanoenzymatic Dopamine Sensing
Emily Willis	Senior	The Sun is Rising on Biofuels: Determining the Potential use of Light Scattering to Enhance Vertically Cultured Algae Biofuel Synthesis Utilizing a Solar Collector and Side Glow Fiber Optics
Scott Muff	Senior	Development of a Wire Arc Additive Manufacturing Extruder for Inexpensive High Quality Metal 3D Printed Parts
Irelyn Meckley	Senior	The Engineering of a Biomimetic Airfoil to Improve the Acoustic Silencing and the Aerodynamic Capabilities of Micro Aerial Vehicles (MAVs) Through Ornithological Adaptations and Camber Manipulation for Military and Commercial Applications
Emma Price	Senior	Implementation of Human Urine and Cellulose Nanomaterials as a Visual Arsenic Assay and Accessible Arsenic Remediation Method
Grace Johnson	Senior	Application of arbuscular mycorrhizal fungi to inhibit Nitrogen uptake of weeds within crop fields

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Superior		
Keegan Dowdney	Junior	The Mischievous Mold
Kassandra (KC) Brown	Junior	Should We Throw or Grow?
Hunter Johnson	Junior	Is Bamboo Only for Pandas?
Delaney Stanfield	Junior	Smoking? You Must be Joking
Larry (Gavyn) Quade	Junior	Life Saving Doo Dad
Jazzalyn (Jazzie) Coffelt	Junior	Are Teenagers Ever Really Socially Distanced?
Kierstin Wright	Senior	The Development of a Zinc Oxide and Bismuth-Based Cellulose Nanocomposite as a Mold Preventative for Agriculture feed bags
Hayden Patrick	Senior	The Development of Copper, Bismuth, and Zinc Oxide-based Nanocomposite Paint Additives for Gypsum Boards Antifungal Applications
Carter Smith	Senior	Exploring the Therapeutic Potential of Jellyfish (<i>Aurelia aurita</i>) Venom for the treatment of Type I Diabetes
Raquel Potteiger	Senior	Foodborne and Water Illness Prevention: The Development of a Consumer-based Visual Colorimetric Bioindicator for the Detection of <i>Escherichia coli</i> in Packaged Meats and Water Sources
Jonathan Westhusing	Senior	The Implementation of Hovercrafts into the Trucking Industry to Increase the Efficiency of the Loading and Unloading Process of Semi-Truck Trailers
Allison Drennan	Senior	Evaluating Cinnamaldehyde as an Antibacterial Agent in a Produce Wash for Leafy Greens
Lisa Carpenter	Senior	Concentration Toxicity Impact of Microsynthetic Materials on Filtration Behavior of Invasive <i>Corbicula fluminea</i>
Kierstin Vaughan	Senior	The Effect of Pharmaceutical Disposal in Aquatic Environments on <i>Danio rerio</i> Embryological Survival and Development

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Excellent		
Collin Cones	Senior	Photosynthetic and Reproductive Effects OTC Ibuprofen has on Green Microalgae Chlorella
Aidan Dowdney	Senior	Antiviral Personal Fans: The Development of a Portable Disinfection/Air Purification Device using 254nm UVC Light