

# Ozark District Missouri Junior Academy of Science – March 22<sup>nd</sup>, 2022

<b>Highly Superior</b>		
<b>Ellie Burns</b>	<b>Junior</b>	Nutrients in the Soil
<b>Gage Smith</b>	<b>Junior</b>	The CNDM
<b>Gavyn Quade</b>	<b>Junior</b>	The Power of Citrus
<b>Grace Law</b>	<b>Junior</b>	The Power of Plants
<b>Nicole Westhusing</b>	<b>Junior</b>	Finding an Efficient Way to Lower Escherichia Coli Levels in the Lake of the Ozarks
<b>Ayden Meckley</b>	<b>Senior</b>	Reproductive Toxicity Induced by Chronic Exposure Routes to Per- and Polyfluoroalkyl Substance Containing Health Specific Paper Products
<b>Connor Starkey</b>	<b>Senior</b>	Discovering the potential of LiDAR field detection to improve space debris Recognition and evasion
<b>Jonathan Westhusing</b>	<b>Senior</b>	Testing the Implementation of Morphing Winglet Designs with the Use of Computational Fluid Dynamics in Order to Determine Its Efficiency
<b>Josie Kunkel</b>	<b>Senior</b>	Determining the Potential to Utilize Artificial Lighting as a Method of Control for the Agricultural Pest Spodoptera frugiperda: A Study of Insect Immunology with Potential for Integrated Pest Management
<b>Keegan Dowdney</b>	<b>Senior</b>	Otitis Externa (Swimmers Ear): The Development of a Bioactive Glass Based Laminated Ear Plug for Applications in Diving and Swimming
<b>Keith Bass</b>	<b>Senior</b>	The Utilization of AI in Agriculture to improve the quality of products
<b>Layla Strickland</b>	<b>Senior</b>	Study and Application of Polarization-Based Traps for use Against Blood-Sucking Tabanidae
<b>Owen Howser</b>	<b>Senior</b>	Quieting the Rumble: Engineering a Noise Reduction Rumble Strip Design Utilizing Destructive Interference

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<b>Superior</b>		
<b>Abaigail Hollingsworth</b>	<b>Junior</b>	What Mask is the most Effective?
<b>Abbie Campbell</b>	<b>Junior</b>	Sea Saving Spoons
<b>Alexander Hendon</b>	<b>Junior</b>	The Motivation Situation
<b>Cale Krenznel</b>	<b>Junior</b>	Is All Paper Created Equal?
<b>Fischer Richey</b>	<b>Junior</b>	Boats and Blades
<b>Maddox Sublette</b>	<b>Junior</b>	Is the Lake of the Ozarks Too Polluted?
<b>Mia Aufdenkamp</b>	<b>Junior</b>	Flooding Again!
<b>Rylee Hale</b>	<b>Junior</b>	Global Plastic Pollution Solution
<b>William Long</b>	<b>Junior</b>	Lagfest 2021-2022
<b>Brock McCord</b>	<b>Senior</b>	Testing of a Graphene Nanoplatelets Resin Coating on Electrical Wires for Prevention of Short Circuits
<b>Carter Smith</b>	<b>Senior</b>	Utilization of Biomimetic and Mechanical Designs to Engineer a More Efficient Surgical Laparoscopic Grasper
<b>Charlotte Patton</b>	<b>Senior</b>	The Effect of Bit Parallelization on Data Throughput of a 4KiB Sector
<b>Isabell Owens</b>	<b>Senior</b>	A Novel Approach to the Mitigation of Organophosphate Aerosols using an Electrospun Poly (Vinyl Alcohol)/Cellulose Nanofibrous Filter
<b>Kierstin Wright</b>	<b>Senior</b>	The Development of a Cerium-Based Cellulose Nanocomposite as a Mold Preventative for Agriculture Feed Bags
<b>Scott Muff</b>	<b>Senior</b>	Development of an Extruder for Metal 3D Printing that Utilized Induction Heating and Direct Extrusion to Produce Inexpensive High Quality Parts