

THE 62nd ANNUAL OZARKS SCIENCE & ENGINEERING FAIR

HAMMONS STUDENT CENTER
MISSOURI STATE UNIVERSITY

March 29 through March 31, 2022



2022 WINNERS

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MASTER OF CEREMONIES

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DR. TAMERA JAHNKE, DEAN
COLLEGE OF NATURAL AND APPLIED SCIENCES
MISSOURI STATE UNIVERSITY
PRESENTER OF AWARDS



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ELEMENTARY FAIR:	LACEY GEIGER
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VOLUNTEERS:	SUE MCCRORY
WEBMASTER:	SUE MCCRORY
SCIENCE DAY:	TOM TOMASI
SOCIAL NETWORKING:	SUE MCCRORY
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2022 AWARDS AND SPONSORS

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THE JAMES K. TICE MEMORIAL TEACHER
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UNITED STATES AIR FORCE
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USAID SCIENCE CHAMPION AWARD
U.S. METRIC ASSOCIATION
U.S. STOCKHOLM WATER PRIZE
WOMEN IN SCIENCE
YALE SCIENCE & ENGINEERING
ASSOCIATION

SENIOR DIVISION GRAND PRIZE WINNERS & ALTERNATES

(Grand Prize Awards Sponsored by: Cheryl and Rodney Wrinkle, Schneider Foundation & Associated Electric Cooperative, Inc. - includes plaques & trip to the Regeneron International Science & Engineering Fair for the Grand Prize Winners.)

GRAND PRIZE

Grace Johnson
The Biofortification of *Raphanus sativus*
With Calcium Through Irrigation With
Ca²⁺ Solutions
Lebanon High School
Ryne Emerick

GRAND PRIZE

Carter Smith
Implementing Biomimicry and
Geometrical Patterns on the Tips of
Laparoscopic Graspers
Camdenton High School
Chris Reeves

1st ALTERNATE

Kierstin Wright
The Development of a Cerium-Based Cellulose
Nanocomposite as a Mold Preventative for
Agriculture Feed Bags
Camdenton High School
Chris Reeves

2nd ALTERNATE

Owen Howser
Quieting the Rumble: Engineering a Noise
Reduction Rumble Strip Design Utilizing
Destructive Interference
Camdenton High School
Chris Reeves

JUNIOR DIVISION GRAND PRIZE WINNERS

(Plaque to each Junior Grand Prize Winner & Teacher)

GRAND PRIZE

Leah Martin

Olivine, Basalt, and Carbonic Acid

Summit Preparatory

Robert Powers

THE 2022 JUNIOR DIVISION



PLACEMENT AWARD WINNERS!

Behavioral and Social Sciences

Junior

Honorable Mention

Thinking to Fidget?

School:Immaculate Conception

Paige Mueller

Lily C Pattison

Third Place

The Motivation Situation

School:Camdenton Middle School

Alexander Hendon

Second Place

Spinning Colors

School:Scholars at Central

Yohann Oghlakian

First Place

Bilingual Brains: The Effect of Bilingualism on the
Association of Verbal Stimuli

School:Scholars at Central

Rishi Janakiraman

Emma Lewis

Biochemistry

Junior

Third Place

Droppin' The Hint on 99.9%

School:Marshfield R-1

Lilah Herman

Kaylee Hobbs

Second Place

The Effect of Bread on the Amount of Mold

School:Norwood R-1

Christian Williams

First Place

The Effect of Sugar Type on Yeast Growth

School:Norwood R-1

Kadence McIntosh

Botany

Junior

Honorable Mention

Nutrients in the Soil

School:Camdenton Middle School

Ellie Burns

Third Place

The Effect Of Different Pansy Species on Soil Erosion

School:Scholars at Central

Matthew Ellis

Second Place

The Effect of Cobalt 60 on Radishes

School:Norwood R-1

Lindsleigh Todd

First Place

The effect of recyclable substrate on lettuce plant.

School:Scholars at Central

Zain Rehman

Chemistry

Junior

Honorable Mention

Comparing Different Water Clarification methods

School:Scholars at Central

Evan Henke

Third Place

How do Different Flours Affect Baking?

School:The Summit Preparatory School

Madeleine Jones

Second Place

Race to Relaxation

School:Marshfield R-1

Allison Mashburn

Darla Young

First Place

Olivine, Basalt, and Carbonic Acid

School:The Summit Preparatory School

Leah Martin

Computer Science

Junior

Second Place

Typing Trouble: The Effect of Grammar Check Apps on the Number of Spelling Errors Caught

School:Scholars at Central

Selena Oghlakian

First Place

The Best of the Best! (The Effect of a PS4 Controllers Brand on the Battery Life)

School:Scholars at Central

Owen Underwood

Earth and Planetary Science

Junior

Honorable Mention

Cool Crystals

School:Marshfield R-1

Veronica Lampley

Jordan Steen

Third Place

Old Wives Winter

School:Gloria Deo Academy

Kahlen Tillman

Engineering

Junior

Honorable Mention

The Effect of Stitch Type on Strength

School:Norwood R-1

Kielee Williams

Third Place

Boats & Blades

School:Camdenton Middle School

Fischer Richey

Second Place

The Power of Citrus

School:Camdenton Middle School

Larry Quade

First Place

Reducing Polystyrene Pollution

School:Scholars at Central

Brian Hayes

Environmental Sciences

Junior

Honorable Mention

Global Plastic Pollution Solution

School:Camdenton Middle School

Rylee Hale

Third Place

Power of Plants

School:Camdenton Middle School

Grace Law

Second Place

The Effect of Permanent and Washable Marker dyes on Planaria

School:Scholars at Central

Dhruti Bandaru

First Place

Is the Lake of the Ozarks Too Polluted?

School:Camdenton Middle School

Maddox Sublette

Mathematical Sciences

Junior

First Place

The Effect of Shuffling Method on The Randomness of a Deck of
Cards

School:Scholars at Central

Justin Lu

Medicine and Health Sciences

Junior

Honorable Mention

Heart Healthy

School:Marshfield R-1

Samantha Davis

Third Place

The Effect of Sugar on Heartrate

School:Norwood R-1

Kendall Drake

Second Place

Effect of Music on Heartrate

School:Norwood R-1

Kadence Hicks

First Place

Peppermint Predicament

School:Marshfield R-1

Lexie Evans

Addison Hoefler

Microbiology

Junior

Honorable Mention

Does The Type of Soap You Use Affect The Germs on Your Hands?

School: The Summit Preparatory School

Sophia Johnson

Third Place

Finding an Efficient Way to Lower Escherichia Coli Levels in the Lake of the Ozarks

School: Camdenton Middle School

Nicole Westhusing

Physics and Astronomy

Junior

Honorable Mention

The Effect of the Core of the Golf Ball on the Distance of Driver Shots

School:Scholars at Central

Julia Matson

Third Place

Lagfest 2021-2022

School:Camdenton Middle School

William Long

Second Place

Effect of Size on the Distance a Tennis Ball Travels

School:Scholars at Central

Sumedh Reddy

First Place

Serve's Up

School:Marshfield R-1

Chloe Offutt

Shelby Smith

Zoology

Junior

Honorable Mention

The Effect of Cow Manure on Diet

School:Norwood R-1

Kalie Chadwell

Third Place

The Relationship Between color Genetics of a Dog and its Offspring

School:Norwood R-1

MacieMae Pridemore

Second Place

The Effect of Color on Horse Preference

School:Norwood R-1

Taylor Greenfield

THE 2022 SENIOR DIVISION



PLACEMENT AWARD WINNERS!

First Place

Social Media Technology Usage on Fluid Intelligence and Cognitive Speed

School: Lebanon High School

Christopher Wadley

Biochemistry

Senior

Honorable Mention

The Irradiation of Bread

School:Hollister R-V

McKenzie Hamilton

Gracie Jennings

Third Place

Effects of Ibuprofen on the Stomach When Taken with Magnesium, Calcium, or Aluminum.

School:Hartville High School

Brey Flachsmann

Second Place

Reproductive Toxicity Induced by Chronic Exposure Routes to Per- and Polyfluoroalkyl Substances in Health Specific Paper

School:Camdenton High School

Ayden Meckley

First Place

A Novel Approach to the Mitigation of Organophosphate Aerosols using an Electrospun Poly(Vinyl Alcohol)/Cellulose Nanofibrous Filter

School:Camdenton High School

Isabell Owens

Botany

Senior

Honorable Mention

Stimulating mitosis in onions using UV light

School:Hollister R-V

Sean Joe

Third Place

The Salinity Amount is a Stressor For Plant Survival Rate

School:Crocker R-II

Cayden Drayfahl

Second Place

The Comparison of the Germination Rate of Aquaponics Versus
Traditional Farming Methods

School:Crocker R-II

Kelsey Todd

First Place

The Biofortification of Raphanus sativus With Calcium Through
Irrigation With Ca^{2+} Solutions.

School:Lebanon High School

Grace Johnson

Chemistry

Senior

Honorable Mention

Sun Power

School:Hollister R-V

Eric Gregory

Second Place

Evaluating the functional and sensory properties of reduced-fat ice cream enriched with bacterial cellulose School:Lebanon

High School

Allison Drennan

Computer Science

Senior

Second Place

Discovering the potential of LiDAR field detection to improve space debris recognition and detection

School:Camdenton High School

Connor Starkey

First Place

The Effect of Bit Parallelization on Data Throughput of 4 kiB at Low Clock Frequencies

School:Camdenton High School

Noah Patton

Engineering

Senior

Honorable Mention

Development of an Extruder for Metal 3D Printing that Utilizes Induction Heating and Direct Extrusion to Produce Inexpensive High Quality Parts

School:Camdenton High School

Scott Muff

Third Place

Bonding SARS-CoV-2 to Stainless Steel

School:Hollister R-V

Trevor Brown

Second Place

Testing the Implementation of Morphing Winglet Designs with the Use of Computational Fluid Dynamics in Order to Determine Its Efficiency

School:Camdenton High School

Johnathon Westhusing

First Place

Quieting the Rumble: Engineering a Noise Reduction Rumble Strip Design Utilizing Destructive Interference

School:Camdenton High School

Owen Howser

Environmental Sciences

Senior

Honorable Mention

RegenDrive: Using Regenerative Technologies in Axial Flux Motors to Increase the Efficiency of Electric Vehicles

School:Springfield Central High School

Manu Eledath

Third Place

Potential phytoremediation of methylene blue using Ceratophyllum demersum and determined by the acute toxicity of Daphnia magna

School:Lebanon High School

Maya Elliott

Second Place

The Prevention of Inflammatory Responses in Drosophila melanogaster exposed to Pseudomonas putida

School:Lebanon High School

Easton Cromer

First Place

Novel Application of Ferrofluids in a River Filter for Microplastics

School:Lebanon High School

Rory Jenkins

Medicine and Health Sciences

Senior

Honorable Mention

The Effects of Implementing Various Genres of Music to Regulate Systolic and Diastolic Pressure

School: Crocker R-II

Abigail Helms

Third Place

Burn Injury Healing: An invertebrate model to determine antimicrobial properties of *Taraxacum officinale*.

School: Lebanon High School

Mikayla Scharnhorst

Second Place

The Development of a Bioactive Glass Based Laminated Ear Plug for Applications In Diving and Swimming

School: Camdenon High School

Keegan Dowdney

First Place

Implementing Biomimicry and Geometrical Patterns on the Tips of Laparoscopic Graspers

School: Camdenon High School

Carter Smith

Microbiology

Senior

First Place

Sequencing Cytokinin Signaling Pathways in Mycobacterium smegmatis as a Model for the Effects of Cytokinin Inhibition in Mycobacterium tuberculosis

School:Camdenton High School

Nicholas Faiferlick

Physics and Astronomy

Senior

Second Place

Testing of a Graphene Nanoplatelets Resin Coating on Electrical Wires for Prevention of Short Circuits

School:Camdenton High School

Brock McCord

Zoology

Senior

Honorable Mention

Free-range vs Cooped Chickens

School:Hartville High School

Courtney Sullivan

First Place

The Development of a Cerium-Based Cellulose Nanocomposite as a Mold Preventative for Agriculture Feed Bags

School:Camdenton High School

Kierstin Wright

**THE 2022
JUNIOR & SENIOR
DIVISION**



**SPECIAL AWARD
WINNERS!**

Ozarks Science and Engineering Fair

ASM Materials Education Foundation

Prize: Ribbon and Certificate

Brock McCord	Testing of a Graphene Nanoplatelets Resin Coating on Electrical Wires for Prevention of Short Circuits	Camdenton High School
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ACS Chemistry Award-Junior Division

Prize: Certificate and \$100 cash

Leah Martin	Olivine, Basalt, and Carbonic Acid	The Summit Preparatory School
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ACS Chemistry Award-Senior Division

Prize: Certificate and \$100 cash

Allison Drennan	Evaluating the functional and sensory properties of reduced-fat ice cream enriched with bacterial cellulose	Lebanon High School
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American Meteorological Society

Prize: Certificate

Sara Carter	Absorption of CO ₂ in Different Concretes	Hollister R-V
Rory Jenkins	Novel Application of Ferrofluids in a River Filter for Microplastics	Lebanon High School
Nikki Secrest	Absorption of CO ₂ in Different Concretes	Hollister R-V
Caleb Creger	Absorption of CO ₂ in Different Concretes	Hollister R-V

American Psychological Association

Prize: Certificate

Christopher Wadley	Social Media Technology Usage on Fluid Intelligence and Cognitive Speed	Lebanon High School
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American Society of Mammalogists-Junior Division

Prize: Certificate

Taylor Greenfield	The Effect of Color on Horse Preference	Norwood R-1
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Association for Women Geoscientists

Prize: Certificate

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
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Broadcom MASTERS nomination

Prize: nomination to national competition, nomination packet

Brian Hayes	Reducing Polystyrene Pollution	Scholars at Central
Rishi Janakiraman	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central
Emma Lewis	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central
Zain Rehman	The effect of recyclable substrate on lettuce plant.	Scholars at Central
Justin Lu	The Effect of Shuffling Method on The Randomness of a Deck of Cards	Scholars at Central
Kadence McIntosh	The Effect of Sugar Type on Yeast Growth	Norwood R-1
Maddox Sublette	Is the Lake of the Ozarks Too Polluted?	Camdenton Middle School
Addison Hoefler	Peppermint Predicament	Marshfield R-1
Chloe Offutt	Serve's Up	Marshfield R-1

Ozarks Science and Engineering Fair

Shelby Smith	Serve's Up	Marshfield R-1
Owen Underwood	The Best of the Best! (The Effect of a PS4 Controllers Brand on the Battery Life)	Scholars at Central
Lexie Evans	Peppermint Predicament	Marshfield R-1
Leah Martin	Olivine, Basalt, and Carbonic Acid	The Summit Preparatory School

DoD STEM Leadership Prize

Prize: Certificate packet and \$100

Kielee Williams	The Effect of Stitch Type on Strength	Norwood R-1
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Greater Ozark Audubon Society-Conservation Award

Prize: 1 yr membership in National Audubon Society and Bird Field Guide

Rylee Hale	Global Plastic Pollution Solution	Camdenton Middle School
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Lemelson Early Inventor Prize

Prize: Certificate and \$100

Lanie Deng	Designing A Portable Pocket	Scholars at Central
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Lisa Reece Memorial Award-Junior Division

Prize: Book, Certificate, \$20

Brian Hayes	Reducing Polystyrene Pollution	Scholars at Central
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Lisa Reece Memorial Award-Senior Division

Prize: Book, Certificate, \$20

Josie Kunkel	Effects of Artificial Light at Night on <i>S. frugiperda</i> Immunology; Potential Implications in Agricultural Science	Camdenton High School
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Lou and Nadine Memorial Award

Prize: \$50 Cash Award

Rishi Janakiraman	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central
Emma Lewis	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central

Miles V. Barnhart Excellence in Science and Engineering Award

Prize: \$2,000 cash

Grace Johnson	The Biofortification of <i>Raphanus sativus</i> With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
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Missouri Department of Conservation-Junior Division

Prize: print and digital materials, certificate

Maddox Sublette	Is the Lake of the Ozarks Too Polluted?	Camdenton Middle School
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Missouri Department of Conservation-Senior Division

Prize: Print and digital materials, certificate

Rory Jenkins	Novel Application of Ferrofluids in a River Filter for Microplastics	Lebanon High School
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Ozarks Science and Engineering Fair

Missouri State University Scholarship

Prize: \$1,000 Scholarship

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
Rory Jenkins	Novel Application of Ferrofluids in a River Filter for Microplastics	Lebanon High School
Christopher Wadley	Social Media Technology Usage on Fluid Intelligence and Cognitive Speed	Lebanon High School
Carter Smith	Implementing Biomimicry and Geometrical Patterns on the Tips of Laparoscopic Graspers	Camdenton High School
Owen Howser	Quieting the Rumble: Engineering a Noise Reduction Rumble Strip Design Utilizing Destructive Interference	Camdenton High School
Isabell Owens	A Novel Approach to the Mitigation of Organophosphate Aerosols using an Electrospun Poly(Vinyl Alcohol)/Cellulose Nanofibrous Filter	Camdenton High School
Noah Patton	The Effect of Bit Parallelization on Data Throughput of 4 kiB at Low Clock Frequencies	Camdenton High School
Kierstin Wright	The Development of a Cerium-Based Cellulose Nanocomposite as a Mold Preventative for Agriculture Feed Bags	Camdenton High School
Nicholas Faiferlick	Sequencing Cytokinin Signaling Pathways in Mycobacterium smegmatis as a Model for the Effects of Cytokinin Inhibition in Mycobacterium tuberculosis	Camdenton High School

MSU CNAS Grand Prize Award-Senior Division

Prize: Certificate and Barnes and Noble \$50 gift card.

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
Carter Smith	Implementing Biomimicry and Geometrical Patterns on the Tips of Laparoscopic Graspers	Camdenton High School

MSU Dept of Biology Category Awards

Prize: Plaque for teacher with name tag and certificate for student

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
Carter Smith	Implementing Biomimicry and Geometrical Patterns on the Tips of Laparoscopic Graspers	Camdenton High School
Josie Kunkel	Effects of Artificial Light at Night on <i>S. frugiperda</i> Immunology; Potential Implications in Agricultural Science	Camdenton High School
Kierstin Wright	The Development of a Cerium-Based Cellulose Nanocomposite as a Mold Preventative for Agriculture Feed Bags	Camdenton High School
Nicholas Faiferlick	Sequencing Cytokinin Signaling Pathways in Mycobacterium smegmatis as a Model for the Effects of Cytokinin Inhibition in Mycobacterium tuberculosis	Camdenton High School

MSU Dept. of Biology Work Study Award

Prize: \$1,000 work study award

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
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Ozarks Science and Engineering Fair

Mu Alpha Theta

Prize: Certificate and letter

Noah Patton	The Effect of Bit Parallelization on Data Throughput of 4 kiB at Low Clock Frequencies	Camdenton High School
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NASA Earth System Science Award

Prize: Certificate

Isabell Owens	A Novel Approach to the Mitigation of Organophosphate Aerosols using an Electrospun Poly(Vinyl Alcohol)/Cellulose Nanofibrous Filter	Camdenton High School
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National Geographic Society That's Geography! Award

Prize: Certificate and \$100 cash

Kahlen Tillman	Old Wives Winter	Gloria Deo Academy
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NOAA Taking the Pulse of the Planet Award

Prize: Certificate and letter

Rylee Hale	Global Plastic Pollution Solution	Camdenton Middle School
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Office of Naval Research-Junior Division

Prize: certificate, letter, medallion

Jathin Bande	Scaled-Up CVD Nanobot Model	Scholars at Central
Zoey Sigman	The Effect of Light Source on Radiation Emitted	Norwood R-1
William Long	Lagfest 2021-2022	Camdenton Middle School

Office of Naval Research-Senior Division

Prize: certificate, letter, medallion, \$50

Brock McCord	Testing of a Graphene Nanoplatelets Resin Coating on Electrical Wires for Prevention of Short Circuits	Camdenton High School
Johnathon Westhusing	Testing the Implementation of Morphing Winglet Designs with the Use of Computational Fluid Dynamics in Order to Determine Its Efficiency	Camdenton High School

Regeneron Biomedical Science Award

Prize: \$500 cash and certificate

Nicholas Faiferlick	Sequencing Cytokinin Signaling Pathways in Mycobacterium smegmatis as a Model for the Effects of Cytokinin Inhibition in Mycobacterium tuberculosis	Camdenton High School
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Ricoh Sustainable Development Award

Prize: Certificate

Layla Strickland	Study and Application of Polarization-Based Traps for use Against Blood-Sucking Tabanidae	Camdenton High School
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Schneider Award - Junior Division

Prize: \$200 Cash and Certificate

Brian Hayes	Reducing Polystyrene Pollution	Scholars at Central
Rishi Janakiraman	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central

Ozarks Science and Engineering Fair

Emma Lewis	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central
Zain Rehman	The effect of recyclable substrate on lettuce plant.	Scholars at Central
Maddox Sublette	Is the Lake of the Ozarks Too Polluted?	Camdenton Middle School
Leah Martin	Olivine, Basalt, and Carbonic Acid	The Summit Preparatory School

Schneider Award - Senior Division

Prize: \$500 cash and certificate

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
Rory Jenkins	Novel Application of Ferrofluids in a River Filter for Microplastics	Lebanon High School
Carter Smith	Implementing Biomimicry and Geometrical Patterns on the Tips of Laparoscopic Graspers	Camdenton High School
Owen Howser	Quieting the Rumble: Engineering a Noise Reduction Rumble Strip Design Utilizing Destructive Interference	Camdenton High School
Isabell Owens	A Novel Approach to the Mitigation of Organophosphate Aerosols using an Electrospun Poly(Vinyl Alcohol)/Cellulose Nanofibrous Filter	Camdenton High School

Smith Glynn Callaway Foundation-Junior Division

Prize: Certificate and \$100 cash

Rishi Janakiraman	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central
Emma Lewis	Bilingual Brains: The Effect of Bilingualism on the Association of Verbal Stimuli	Scholars at Central
Nicole Westhusing	Finding an Efficient Way to Lower Escherichia Coli Levels in the Lake of the Ozarks	Camdenton Middle School
Addison Hoefler	Peppermint Predicament	Marshfield R-1
Lexie Evans	Peppermint Predicament	Marshfield R-1
Leah Martin	Olivine, Basalt, and Carbonic Acid	The Summit Preparatory School

Smith Glynn Callaway Foundation-Senior Division

Prize: \$150 Cash and Certificate

Christopher Wadley	Social Media Technology Usage on Fluid Intelligence and Cognitive Speed	Lebanon High School
Carter Smith	Implementing Biomimicry and Geometrical Patterns on the Tips of Laparoscopic Graspers	Camdenton High School
Isabell Owens	A Novel Approach to the Mitigation of Organophosphate Aerosols using an Electrospun Poly(Vinyl Alcohol)/Cellulose Nanofibrous Filter	Camdenton High School
Nicholas Faiferlick	Sequencing Cytokinin Signaling Pathways in Mycobacterium smegmatis as a Model for the Effects of Cytokinin Inhibition in Mycobacterium tuberculosis	Camdenton High School

Society for In Vitro Biology

Prize: Certificate and letter of congratulations

Nicholas Faiferlick	Sequencing Cytokinin Signaling Pathways in Mycobacterium smegmatis as a Model for the Effects of Cytokinin Inhibition in Mycobacterium tuberculosis	Camdenton High School
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Stan Howell Memorial Award

Prize: Botany Book and Certificate

Ozarks Science and Engineering Fair

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
Zain Rehman	The effect of recyclable substrate on lettuce plant.	Scholars at Central

U.S. Agency for International Development (USAID)

Prize: 1 Certificate, Letter & Social Media Toolkit

Layla Strickland	Study and Application of Polarization-Based Traps for use Against Blood-Sucking Tabanidae	Camdenton High School
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U.S. Metric Association

Prize: Certificate

William Long	Lagfest 2021-2022	Camdenton Middle School
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U.S. Stockholm Junior Water Prize

Prize: Certificate and invitation to SJWP State competition

Melissa Lyell	Can Floating Aquatic Plants Purify Water?	Hartville High School
Rory Jenkins	Novel Application of Ferrofluids in a River Filter for Microplastics	Lebanon High School
Maya Elliott	Potential phytoremediation of methylene blue using Ceratophyllum demersum and determined by the acute toxicity of Daphnia magna	Lebanon High School

United States Air Force

Prize: Certificate of Achievement

Leona Haning	Testing 3 PCV Rockets	Scholars at Central
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Women in Science-Junior Division

Prize: Certificate and Barnes and Noble \$25 gift card.

Leah Martin	Olivine, Basalt, and Carbonic Acid	The Summit Preparatory School
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Women in Science-Senior Division

Prize: Certificate and Barnes and Noble \$25 gift card.

Grace Johnson	The Biofortification of Raphanus sativus With Calcium Through Irrigation With Ca ²⁺ Solutions.	Lebanon High School
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Yale Science and Engineering Association

Prize: Certificate and medallion

Owen Howser	Quieting the Rumble: Engineering a Noise Reduction Rumble Strip Design Utilizing Destructive Interference	Camdenton High School
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TEACHER AWARDS

THE ROBERT W. PLASTER MEMORIAL EXCELLENCE IN TEACHING AWARD

\$1,000 Cash Award and a certificate to the Teacher with the most Placement Awards in the Senior Division

Chris Reeves
Camdenton High

THE MARY JEAN PLASTER MEMORIAL EXCELLENCE IN TEACHING AWARD

\$1,000 Cash Award and a certificate to the Teacher with the Most Placement Awards in the Junior Division

Denise Vinton
Central Scholars

THE REGIONAL FAIR DIRECTOR EMERITUS SYLVIA SPEAR MEMORIAL AWARD

\$25 Cash and a certificate to a First Time Teacher

Richard White
Hollister R-V

THE JAMES K. TICE MEMORIAL TEACHER AWARD

This award of \$250 cash and a certificate has been established in memory of James K. Tice, whose constant support and encouragement of Missouri's teachers and students changed so many lives.

Mr. Tice served for many years as a teacher, principal and superintendent of K-12 schools. Even after he retired from public education, Mr. Tice continued his tireless dedication to improving educational opportunities for everyone. He was devoted to creating learning communities, by integrating current and emerging technologies into the classroom.

Mr. Tice was our coach, teacher, mentor, surrogate parent, and friend. He never failed to say "I appreciate you". It is our hope that the recipient of this award also hears "We appreciate you".

The recipient of this year's award is:

Aleth Rogers
Norwood R-1

THE LAWRENCE E. BANKS, JR., MEMORIAL TECHNOLOGY FOR TEACHERS AWARD

This award of \$250 cash and a certificate has been established in memory of Lawrence E. Banks, Jr., the former Dean of the Missouri State University College of Natural and Applied Sciences and a long-time friend and supporter of the Fair.

Dr. Banks was dedicated to education in the state of Missouri and was a strong proponent of innovative educational projects at the K-12 level as well as higher education. In 2000, he received the Science Teachers of Missouri Distinguished Service Award in recognition of his tireless support and commitment to science education.

In memory of Dr. Banks' enthusiasm and interest in technology, the recipient of this award is encouraged to integrate technology in their classroom.

The recipient of this year's award is:

Ryne Emerick
Lebanon High

OZARKS SCIENCE & ENGINEERING FAIR JUNIOR DIVISION TEACHER AWARDS

This Certificate is awarded to the teachers of the Junior Division First Place Category winners. The recipients of the Junior Division Teacher Awards for 2022 are:

Denise Vinton
Central Scholars

Aaron Tillman
Marshfield R-1

Robert Powers
Summit Preparatory

Aleth Rogers
Norwood R-1

Tim Mulford
Camdenton Middle

OZARKS SCIENCE & ENGINEERING FAIR SENIOR DIVISION TEACHER AWARDS

This Certificate is awarded to the teachers of the Senior Division First Place Category winners. The recipients of the Senior Division Teacher Awards for 2022 are:

Ryne Emerick
Lebanon High

Chris Reeves
Camdenton High

OZARKS SCIENCE & ENGINEERING FAIR JUNIOR DIVISION GRAND PRIZE TEACHER AWARD

This award of a plaque is awarded to the teacher of the Junior Division Grand Prize student project. The recipient of the OSEF Foundation Junior Division Grand Prize Teacher Award for 2022 is:

Robert Powers
Summit Preparatory

OZARKS SCIENCE & ENGINEERING FAIR SENIOR DIVISION GRAND PRIZE ALTERNATES TEACHER AWARD

This award of a certificate is awarded to the teacher(s) of the Senior Division Grand Prize Alternates student projects. The recipients of the OSEF Foundation Senior Division Grand Prize Alternates Teacher Award for 2022 is:

Chris Reeves
Camdenton High

TEACHER AWARDS

OZARKS SCIENCE & ENGINEERING FAIR
SENIOR DIVISION GRAND PRIZE
TEACHER AWARD

This award of a plaque is awarded to the teacher(s) of the Senior Division Grand Prize student projects. The recipients of the OSEF Foundation Senior Division Grand Prize Teacher Award for 2022 is:

Ryne Emerick
Lebanon High

Chris Reeves
Camdenton High



The Ozarks Science & Engineering Fair Foundation and Steering Committee would like to recognize those volunteers, both individuals and organizations, without whom this event would not be possible.

In addition, approximately 50 judges from local colleges, companies and organizations donated their time and expertise Tuesday evening to judge the nearly 160 projects at this year's Fair. We cannot recognize them all by name, but their efforts are greatly appreciated.

We would also like to extend a very special Thank You to Rick Hale and the crew at Copy Products for their generous loan of a copier for the duration of the Fair, and Mike Murphy and Craig Baird of the College of Natural and Applied Sciences' Electronic Support Services for the loan of computers and printers for the duration of the Fair.

Finally, we especially want to acknowledge the generous donation contributed by Associated Electric Cooperative, Schneider Foundation, and Cheryl and Rodney Wrinkle toward the substantial travel expenses incurred by the Senior Division Grand Prize Winners for travel to the 2022 International Science & Engineering Fair on May 7 – 13, 2022, in Atlanta, GA.

Volunteers are the lifeblood of an event of this magnitude. Without you, we could not continue the Fair's tradition of excellence. Thank you!