# THE 60th ANNUAL OZARKS SCIENCE & ENGINEERING FAIR

VIRTUAL FAIR MISSOURI STATE UNIVERSITY

March 23 through April 17, 2020



2020 WINNERS

Sponsored By:

Missouri State University – College of Natural & Applied Sciences Missouri State University Foundation Associated Electric Cooperative, Inc. Schneider Foundation Cheryl & Rodney Wrinkle



#### VIRTUAL FAIR FACILITATORS

MICHELLE NORGREN EXECUTIVE DIRECTOR OZARKS SCIENCE & ENGINEERING FAIR

> WILLIAM ALTER CASSANDRA CLARK SAMANTHA COOPER MICHELLE NORGREN TOM TOMASI DENISE VINTON

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### **MAJOR SPONSORS**

MISSOURI STATE UNIVERSITY – COLLEGE OF NATURAL & APPLIED SCIENCES

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### **2020 AWARDS AND SPONSORS**

AMERICAN CHEMICAL SOCIETY - OZARKS CHAPTER AMERICAN METEOROLOGICAL SOCIETY AMERICAN PSYCHOLOGICAL ASSOCIATION AMERICAN SOCIETY OF MAMMALOGISTS ASM MATERIALS EDUCATION FOUNDATION ASSOCIATION FOR WOMEN **GEOSCIENTISTS** THE CITY OF SPRINGFIELD DEPARTMENT OF SOLID WASTE MANAGEMENT THE LAWRENCE E. BANKS, JR. MEMORIAL AWARD MISSOURI DEPARTMENT OF CONSERVATION AWARD **BROADCOM MASTERS** THE STAN HOWELL MEMORIAL BOTANY AWARD THE LEMELSON EARLY INVENTOR PRIZE THE LISA REECE MEMORIAL AWARD MISSOURI STATE UNIVERSITY MISSOURI STATE UNIVERSITY COLLEGE OF NATURAL & APPLIED SCIENCES MISSOURI STATE UNIVERSITY DEPARTMENT OF BIOLOGY THE LOU & NADINE MOORE MEMORIAL AWARD

MU ALPHA THETA NATIONAL AERONAUTICS AND SPACE **ADMINISTRATION** NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION THE OZARKS SCIENCE & ENGINEERING FAIR THE MARY JEAN PLASTER MEMORIAL AWARD THE ROBERT W. PLASTER MEMORIAL AWARD **REGENERON ISEF AWARD** RICOH CORPORATION SCHNEIDER FOUNDATION SMITH GLYNN CALLAWAY FOUNDATION SOCIETY FOR IN VITRO BIOLOGY THE SYLVIA SPEAR MEMORIAL AWARD THE JAMES K. TICE MEMORIAL TEACHER AWARD UNITED STATES AIR FORCE UNITED STATES OFFICE OF NAVAL RESEARCH USAID SCIENCE CHAMPION AWARD U.S. METRIC ASSOCIATION U.S. STOCKHOLM JUNIOR 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 & entry in the Regeneron International Science & Engineering Fair for the Grand Prize Winners.)

<u>GRAND PRIZE</u>	Ryan Dodds Reduction of Plant Cd Concentration Using AVP1 Eldon High School Peggy Veatch
<u>GRAND PRIZE</u>	Nicholas Faiferlick Mutation of <i>Escherichia coli</i> for Plastic Recycling Camdenton High School Chris Reeves
<u>ist ALTERNATE</u>	Kenzi Bustamante A Simple Assay to Measure AChE in Blood Eldon High School Peggy Veatch
<u>2nd ALTERNATE</u>	Hannah Rogers Motile Sensors for Monitoring Nitrate Crop Stress Camdenton High School Chris Reeves

## JUNIOR DIVISION GRAND PRIZE WINNERS (Plaque to each Junior Grand Prize Winner & Teacher)

<u>GRAND PRIZE</u>	Noah Patton Peak Voltage Compared to Cold-Side Substrate Camdenton Middle School Tim Mulford
<u>ALTERNATE</u>	Isabell Owens Would You Like a Receipt? Camdenton Middle School Tim Mulford

## THE 2020 JUNIOR DIVISION



## PLACEMENT AWARD WINNERS!

#### **JNIOR DIVISION PLACEMENT AWARDS** J

Scholars at Central

**CHEMISTRY** (continued)

#### **BEHAVIORAL AND SOCIAL SCIENCES**

DENAVIORA	L AND SOCIAL SCIENCES		(continued)
1st Place:	Sylvie Hudson The Effect of pH on the Taste of Water Denise Vinton Scholars at Central	2 <sup>nd</sup> Place:	Sophy Wickham-Zhou Effect of Cooking Pans o Crispness of Cookies Denise Vinton Scholars at Central
2 <sup>nd</sup> Place:	Delaney Stanfield Misconceptions of Color Tim Mulford Camdenton Middle School	3rd Place:	Amore Pennella Effect of Aluminum Foil o Texture and Color of Coo Denise Vinton Scholars at Central
3rd Place:	Isaiah Hampton The Effect of Backboard Use on Shot Percentage Denise Vinton Scholars at Central	4 <sup>th</sup> Place:	Alex Trieu Effect of Juices on Dens Popping Boba Shells Denise Vinton Scholars at Central
4 <sup>th</sup> Place:	Haley Brown Memory		
	Aaron Tackett Immaculate Conception	EARTH AND S	SPACE SCIENCE
BOTANY		1 <sup>st</sup> Place:	Logan Canada Effect of Martian Sunligh Sprouting potatoes Denise Vinton
1st Place:	Aurora Overbey The Effect of Growth Method on Bean Plants Denise Vinton Scholars at Central	2 <sup>nd</sup> Place:	Scholars at Central William Brown Watch Out It's the Disast Lindsay Paulsell
2 <sup>nd</sup> Place:	Madison Gong The Effect of Leaf Litter on Grass Growth Denise Vinton Scholars at Central	ENGINEERIN 1 <sup>st</sup> Place:	St. Agnes <u>3</u> Clayton Eck
3 <sup>rd</sup> Place:	Grace Meyer The Effect of Grow Lights on Growth Rate of Sprouts Denise Vinton	2 <sup>nd</sup> Place:	Sink or Swim Lindsay Paulsell St. Agnes Leah Martin
4 <sup>th</sup> Place:	Scholars at Central Jayden Griffee The Effect of Banana Peels	2 11000.	Electricity Produced by Aglaonema Plants Rob Powers The Summit Prep
	on Snap Peas Denise Vinton Scholars at Central		Haley Cooper Parabolic Microphone Keaton Patterson Marshfield Junior High S
<u>CHEMISTRY</u>			Claire Szura
1 <sup>st</sup> Place:	Isabell Owens Would You Like a Receipt? Tim Mulford Camdenton Middle School		Making a Bag with Multip Uses Denise Vinton

Camdenton Middle School

#### **ENGINEERING** (continued)

Wickham-Zhou of Cooking Pans on ess of Cookies vinton rs at Central	3 <sup>rd</sup> Place:	Torsten Taylor Creating a Work Desk for Use on a School Bus Denise Vinton Scholars at Central
Pennella of Aluminum Foil on e and Color of Cookies e Vinton rrs at Central		Kael Hitchcock Designing a Musical Lawnmower Denise Vinton Scholars at Central
rieu of Juices on Density of og Boba Shells o Vinton rs at Central	4 <sup>th</sup> Place:	Manu Eledath Venture Car: The Regenerative Automobile Tara Bonebrake Greenwood Lab School
CIENCE Canada of Martian Sunlight on ing potatoes 9 Vinton		Tatumn Weaver Different Types of Materials for Crash Barriers Tim Mulford Camdenton Middle School
rs at Central	ENVIRONME	NTAL
n Brown Out It's the Disasters y Paulsell nes	1 <sup>st</sup> Place:	Trisha Tewari Effect of Waste Type on Amount of Biogas Produced Denise Vinton Scholars at Central
n Eck <sup>-</sup> Swim y Paulsell	2 <sup>nd</sup> Place:	Kierstin Wright The Effect if Contacts on Earthworms' Weight Tim Mulford Camdenton Middle School
nes /artin city Produced by nema Plants	3 <sup>rd</sup> Place:	Paige Schwantes Hair! Really? Tim Mulford Camdenton Middle School
owers ummit Prep Cooper blic Microphone n Patterson field Junior High School	4th Place:	Cassidy Hannigan Algae…a Cave's Nemesis Tim Mulford Camdenton Middle School
Szura g a Bag with Multiple		

### JUNIOR DIVISION PLACEMENT AWARDS

#### MEDICINE & HEALTH

#### ZOOLOGY

1st Place:	Tatum Corbett Emma Buckthorpe Some are Silver and the Other Mold Aaron Tackett	1 <sup>st</sup> Place:	Isabell Hamner Deer vs. Lavender Tim Mulford Camdenton Middle School
	Immaculate Conception	2 <sup>nd</sup> Place:	Lily Bartlett The Effect of Horse Gender
2 <sup>nd</sup> Place:	Carter Smith Nicotine Salts Toxicity to Drosophila melanogaster Tim Mulford		on Attention Span Denise Vinton Scholars at Central
3 <sup>rd</sup> Place:	Camdenton Middle School Azia May Matthews	3 <sup>rd</sup> Place:	Verity Summers Spell Aleyse Goodfriend The Effect of Tea on
	The Comparison of Active Ingredients in Lotion Denise Vinton Scholars at Central		Crickets' Stridulations Denise Vinton Scholars at Central
4 <sup>th</sup> Place:	Alexis Welch Pearly White Lindsay Paulsell St. Agnes	4 <sup>th</sup> Place:	Susanna Espinosa The Effect of Music on Guinea Pigs' Moods Denise Vinton Scholars at Central
PHYSICS			
1 <sup>st</sup> Place:	Noah Patton Peak Voltage Compared to Cold-Side Substrate Tim Mulford Camdenton Middle School		
2 <sup>nd</sup> Place:	Ugurcan Buyurgan Oobleck for Helmet Padding Denise Vinton Scholars at Central		
3 <sup>rd</sup> Place:	Xuan Huang Effect of Knot Type on Shoelace Duration Denise Vinton Scholars at Central		
4 <sup>th</sup> Place:	Avinash Pille The Effects of Temperature on Magnetic Strength Miriam Jump St. Joseph Catholic Academy		

## THE 2020 SENIOR DIVISION



## PLACEMENT AWARD WINNERS!

## SENIOR DIVISION PLACEMENT AWARDS

BEHAVIORA	AL AND SOCIAL SCIENCES	CHEMISTRY	<u> (continued)</u>		IG (continued)
1 <sup>st</sup> Place:	Kierstin Vaughan Effect of Oxytocin on Opiate Withdrawal Symptoms Peggy Veatch Eldon High School	2 <sup>nd</sup> Place:	Elizabeth Cardoza Oligodynamic Nanoparticle Enhancement of Polymers Denise Vinton Central High School	3 <sup>rd</sup> Place:	Arya Eledath Buddy: A Multipurpose Robotic Smart Dog Kristy Gilmore Greenwood Lab School
2 <sup>nd</sup> Place:	Holton Simmons The Effects of Moon Phases on Deer Activity Tabitha Shaver Hartville High School	3 <sup>rd</sup> Place:	Katie Rumfelt The Effect of Chromium on <i>Lumbricus terrestris</i> Tabitha Shaver Hartville High School	4 <sup>th</sup> Place:	Scott Muff Improvement of WAAM by Addition of a Cooling Plate Chris Reeves Camdenton High School
3 <sup>rd</sup> Place:	Jackson Trahant ADHWait, What Were We	COMPUTER	<u>/ MATH</u>	ENVIRONME	NTAL
4 <sup>th</sup> Place:	Talking About? Tabitha Shaver Hartville High School Keegan Kirkpatrick Secret Memory Serum:	1 <sup>st</sup> Place:	Hannah Rogers Motile Sensors for Monitoring Nitrate Crop Stress Chris Reeves Camdenton High School	1 <sup>st</sup> Place:	Emma Price Aquatic Arsenic Assay Synthesized from Human Urine Chris Reeves
	Caffeine vs. Concentration Tabitha Shaver Hartville High School	2 <sup>nd</sup> Place:	Fiona Wu Designing a Deep-Sea Robot Prototype	2 <sup>nd</sup> Place:	Camdenton High School Jake Theonen Coupled Toroidal Rings
<b>BOTANY</b>			Kristy Gilmore Greenwood Lab School		Chris Reeves Camdenton High School
1st Place:	Ryan Dodds Reduction of Plant Cd Concentration Using AVP1 Peggy Veatch Eldon High School	3 <sup>rd</sup> Place:	Caleb Martonfi Smartwatch Application to Report HRV Peggy Veatch Eldon High School	3 <sup>rd</sup> Place:	Lisa Carpenter Environmental Impact of Microfibers on <i>C. fluminea</i> Tara Bonebrake Greenwood Lab School
2 <sup>nd</sup> Place:	Mercedez Hanlon Application of the Endophytic Trichoderma Chris Reeves Camdenton High School	4 <sup>th</sup> Place:	Matthew Denton Comparing Training Algorithms in Neural Networks Adrick Miller Thayer High School	4 <sup>th</sup> Place:	Lindsey Graves The Development of a Bioattractant-Biopesticide Chris Reeves Camdenton High School
3 <sup>rd</sup> Place:	Jaylynn Nichols Fallen Flowers: Preservative	ENGINEERIN	IG	MEDICINE &	HEALTH
CHEMISTRY	Effects on Cut Roses Tabitha Shaver Hartville High School	1 <sup>st</sup> Place:	Conner Starkey The Application of a Tactile Sense of Hearing Chris Reeves Camdenton High School	1 <sup>st</sup> Place:	Jillian Bernabe The Effect of a Nonenzymatic CuSe Glucose Sensor Chris Reeves Camdenton High School
1st Place:	Kenzi Bustamante A Simple Assay to Measure AChE in Blood Peggy Veatch Eldon High School	2 <sup>nd</sup> Place:	Michael Radlund Retrofit Building Blast Mitigation Chris Reeves Camdenton High School	2 <sup>nd</sup> Place:	Drew Patton The Effects of HDPE and PS Microplastics Chris Reeves Camdenton High School

### SENIOR DIVISION PLACEMENT AWARDS

#### **MEDICINE & HEALTH (continued)**

- 2<sup>nd</sup> Place: Eli Cook Pollen Levels vs. School Attendance Tabitha Shaver Hartville High School
- 4th Place: Katie Still The Effects of Essential Oils on Blood Pressure Tabitha Shaver Hartville High School

#### MICROBIOLOGY

1<sup>st</sup> Place: Nicholas Faiferlick Mutation of Escherichia coli for Plastic Recycling Chris Reeves Camdenton High School 2<sup>nd</sup> Place: Destinie Tunis The Effects of Histatins and Nitrates in Saliva Peggy Veatch Eldon High School 3<sup>rd</sup> Place: Raquel Potteiger Litmus Paper Test for Detection of Absence/ Presence of Campylobacter jejuni Chris Reeves Camdenton High School

#### PHYSICS

1st Place: Ryce Piper Weights and Basketball Tabitha Shaver Eldon High School

## THE 2020 JUNIOR & SENIOR DIVISION



## SPECIAL AWARD WINNERS!

#### AMERICAN CHEMICAL SOCIETY – OZARKS CHAPTER

\$25 Cash and Certificate

Junior Division: Sophy Wickham-Zhou Scholars at Central

> Isabell Owens Camdenton Middle School

\$75 Cash and Certificate

Senior Division: Liz Cardoza Central High School

> Katie Rumfelt Hartville High School

#### AMERICAN METEOROLOGICAL SOCIETY

Certificate

Senior Division:

Holton Simmons Hartville High School

> Fiona Wu Greenwood Lab School

#### AMERICAN PSYCHOLOGICAL ASSOCIATION

Certificate

Senior Division: Kierstin Vaughan Eldon High School

#### THE AMERICAN SOCIETY OF MAMMALOGISTS

Certificate

Junior Division:	Isabell Hamner Camdenton Middle School
Senior Division:	Holton Simmons Hartville High School

ASM MATERIALS EDUCATION FOUNDATION

Ribbon and Certificate

Senior Division: Scott Muff Camdenton High School

ASSOCIATION FOR	
Certificate	
Senior Division:	Fiona Wu Greenwood Lab School
BROADCOM MAS	STERS
	d and Advancement to npetition with awards up to
Junior Division:	Logan Canada Scholars at Central
	Tatum Corbett Emma Buckthorpe Immaculate Conception
	Clayton Eck St. Agnes
	Sylvie Hudson Scholars at Central
	Aurora Overbey Scholars at Central
	Isabell Owens Camdenton Middle School
	Noah Patton Camdenton Middle School
	Isabella Hamner Camdenton Middle School
	Trisha Tewari Scholars at Central
CITY OF SPRING	FIELD SOLID WASTE

Certificate and Gift Items

Trisha Tewari

Scholars at Central

Junior Division:

#### MISSOURI DEPARTMENT OF CONSERVATION AWARD

Plaque, DVD, Field Guides, Print Materials

- Junior Division: Luke Hammock Scholars at Central
  - Senior Division: Holton Simmons Hartville High School

#### DoD STEM LEADERSHIP PRIZE

\$100 Cash and Certificate

Junior Division Noah Patton Camdenton Middle School

#### THE STAN HOWELL MEMORIAL BOTANY AWARD

Book and Certificate

Junior Division:

Aurora Overbey Scholars at Central

Senior Division:

Ryan Dodds Eldon High School

#### THE 2020 LEMELSON EARLY INVENTOR PRIZE BY SOCIETY FOR SCIENCE

\$100 Cash Award and Certificate

Junior Division:

Kael Hitchcock Scholars at Central

#### MISSOURI STATE UNIVERSITY

\$1,000 Scholarship

Senior Division:

: Kierstin Vaughan Eldon High School

> Ryan Dodds Eldon High School

> Kenzi Bustamante Eldon High School

Hannah Rogers Camdenton High School

Conner Starkey Camdenton High School

#### **MISSOURI STATE UNIVERSITY** (continued)

Emma Price Camdenton High School

Jillian Bernabe Camdenton High School

Nicholas Faiferlick Camdenton High School

Ryce Piper Hartville High School

#### MISSOURI STATE UNIVERSITY COLLEGE OF NATURAL AND APPLIED SCIENCES JUNIOR GRAND PRIZE AWARD

\$50 Barnes & Noble Gift Card and Certificate

Junior Division:	Noah Patton
	Camdenton Middle School

#### MISSOURI STATE UNIVERSITY CNAS JUNIOR GRAND PRIZE ALTERNATE AWARD

Certificate

Junior Division:	Isabell Owens
	Camdenton Middle School

#### MISSOURI STATE UNIVERSITY CNAS SENIOR GRAND PRIZE ALTERNATE AWARD

Certificate

Senior Division:	Kenzi Bustamante
	Eldon High School

Hannah Rogers Camdenton High School

#### MISSOURI STATE UNIVERSITY DEPARTMENT OF BIOLOGY WORK STUDY AWARD

\$1,000 Work Study Offer; Certificate to student and Plague to Teacher

Senior Division:

Destinie Tunis Eldon High School

#### LOU & NADINE MOORE MEMORIAL AWARD

\$50 Cash and Certificate to the Junior Division projects covering Education or Special Needs

Junior Division:

August Kleiboeker Scholars at Central

Kaden Creed Scholars at Central

#### MU ALPHA THETA MATH AWARD

#### Certificate

Senior Division:

Matthew Denton Thaver High School

#### NASA EARTH SYSTEM SCIENCE AWARD

#### Certificate

Junior Division:

Logan Canada Scholars at Central

#### NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION "TAKING THE PULSE OF THE PLANET" AWARD

Letter and Certificate of Award

Junior Division:	William Brown
	St. Agnes

#### LISA REECE MEMORIAL AWARD

- \$20 Cash, Book, and Certificate Junior Division:
- Senior Division: Jaylynn Nichols

#### **REGENERON INTERNATIONAL SCIENCE** AND ENGINEERING FAIR AWARD

Certificate and Advancement to Regeneron International Science and Engineering Fair

Senior Division:

Ryan Dodds Eldon High School

#### **REGENERON INTERNATIONAL SCIENCE** AND ENGINEERING FAIR AWARD (continued)

Nicholas Faiferlick Camdenton High School

#### **RICOH CORPORATION SUSTAINABLE** DEVELOPMENT AWARD

Certificate

Senior Division:

Emma Price Camdenton High School

#### SOCIETY FOR IN VITRO BIOLOGY

Certificate

Emma Price Senior Division: **Camdenton High School** 

#### SCHNEIDER FOUNDATION

\$250 Cash & Certificate

Junior Division: Isabell Owens Camdenton Middle School

> Trisha Tewari Scholars at Central

Tatum Corbett Emma Buckthorpe Immaculate Conception

Aurora Overbey Scholars at Central

Noah Patton Camdenton Middle School

#### \$500 Cash & Certificate

Senior Division:

Kierstin Vaughan Eldon High School

Ryan Dodds Eldon High School

Kenzi Bustamante Eldon High School

Hannah Rogers Camdenton High School

Isaiah Hampton Scholars at Central Hartville High School

#### SCHNEIDER FOUNDATION (continued)

Emma Price Camdenton High School

#### SMITH GLYNN CALLAWAY FOUNDATION

\$200 Cash Award and Certificate

Junior Division: Tatum Corbett Emma Buckthorpe Immaculate Conception

> Carter Smith Camdenton Middle School

300 Cash Award and Certificate

Senior Division: Jillian Bernabe Camdenton High School

> Drew Patton Camdenton High School

#### UNITED STATES AIR FORCE

Backpacks and Bound Certificates

Junior Division: Noah Patton Camdenton Middle School

> Isabell Owens Camdenton Middle School

Senior Division: Ryan Dodds Eldon High School

> Nicholas Faiferlick Camdenton High School

#### UNITED STATES METRIC ASSOCIATION

Certificate

Alex Trieu Scholars at Central

#### UNITED STATES OFFICE OF NAVAL RESEARCH

Certificate and Medallion

Junior Division:	Isabell Owens
	Camdenton Middle School

#### UNITED STATES OFFICE OF NAVAL RESEARCH (continued)

Trisha Tewari Scholars at Central

Sylvie Hudson Scholars at Central

Aurora Overbey Scholars at Central

Noah Patton Camdenton Middle School

Certificate, Medallion, and \$50 gift card

Senior Division: Arya Eledath Greenwood Lab School

> Johnathon Westhusing Camdenton High School

#### UNITED STATES STOCKHOLM JUNIOR WATER PRIZE

Certificate of Award, Advancement to National Competition

Senior Division: Fiona Wu Greenwood Lab School

> Jake Theonen Camdenton High School

Nicholas Faiferlick Camdenton High School

#### USAID SCIENCE CHAMPION AWARD

Certificate and Social Media Toolkit

Senior Division: Drew Patton Camdenton High School

#### WOMEN IN SCIENCE

\$25 Gift Certificate

Junior Division: Sophy Wickham-Zhou Scholars at Central

Senior Division: Mercedez Hanlon Camdenton High School

#### YALE SCIENCE & ENGINEERING ASSOCIATION AWARD

Certificate & Pewter Medallion

Senior Division: Fiona Wu Greenwood Lab School

#### THE ROBERT W. PLASTER MEMORIAL EXCELLENCE IN TEACHING AWARD

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

Chris Reeves Camdenton High School

#### THE MARY JEAN PLASTER MEMORIAL EXCELLENCE IN TEACHING AWARD

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

> Denise Vinton Scholars at Central

#### THE REGIONAL FAIR DIRECTOR EMERITUS SYLVIA SPEAR MEMORIAL AWARD

\$25 Cash to a First Time Teacher

Jackie McCarthy Phelps Center

#### 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:

Aaron Tillman Marshfield Junior High

#### 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:

Peggy Veatch Eldon High School

#### 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 2021 are:

> Tim Mulford Camdenton Middle School

Lindsay Paulsell St. Agnes Cathedral School

Aaron Tackett Immaculate Conception

> Denise Vinton Scholars at Central

#### 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 2021 are: Peggy Veatch Eldon High School

Chris Reeves Camdenton High School

> Tabitha Shaver Hartville 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 2021 is:

> Tim Mulford Camdenton Middle School

#### 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 recipient(s) of the OSEF Foundation Senior Division Grand Prize Alternates Teacher Award for 2021 is:

> Peggy Veatch Eldon High School

Chris Reeves Camdenton High School

#### 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 2021 are:

Peggy Veatch Eldon High School

Chris Reeves Camdenton High School



The Ozarks Science & Engineering Fair Foundation and Steering Committee would like to recognize the volunteers, both individuals and organizations, without whom this event would not be possible. The success of this year's Virtual Fair was only possible with the many of hours of volunteer time behind the scenes and on screen. Our deepest thanks and appreciation to all our volunteers!

In addition, judges from across North America donated their time and expertise to provide a quality experience to every participant. We cannot recognize them all by name, but their efforts are greatly appreciated.

We especially want to acknowledge the generous contributions by Associated Electric Cooperative, Cheryl and Rodney Wrinkle, Missouri State University, and The Schneider Foundation. Their contributions, and the contributions of all of our award donors, recognize student researchers and foster their continued participation in research.

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