

METROPOLITAN SCIENCE & ENGINEERING FAIR 2025

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NJAS
Nebraska Junior
Academy of Sciences



WELCOME

TO THE METROPOLITAN SCIENCE AND ENGINEERING FAIR 2025

We thank you for your interest in this year's Fair.

Founded in 1980 as the Metropolitan Omaha Regional Science Fair, MSEF provides an annual opportunity for students in Grades 6-12 to present findings from their science, engineering and mathematical investigations. MSEF is open to all students who attend school (public, private or home school) in Washington, Douglas and Sarpy Counties. MSEF serves as a regional qualifier for the Nebraska Junior Academy of Sciences' (NJAS) Science Fair. The top performing senior division projects at the NJAS Science Fair are invited to present their research nationally at the National Association of Academies of Science (NAAS) Science Poster Session in conjunction with the American Association for the Advancement of Science (AAAS) annual meeting in February.

MSEF, Inc. is a 501(c)3 non-profit organization consisting of an entirely volunteer staff representing educators, scientists, businesses and institutions.

Junior Division

Scott Aquarium Conference Center

9:00 – 10:15 a.m.
Round 1

10:15 – 10:30 a.m.
Break

10:30 – 11:45 a.m.
Round 2

11:45 a.m. – 12:15 p.m.
Lunch

12:00 – 12:30 p.m.
Public Viewing and
Junior Final Judging

Senior Division

Mutual of Omaha's Wild Kingdom Pavilion

8:30 – 10:00 a.m.
Round 1

10:00 – 10:15 a.m.
Break

10:15 – 11:45 a.m.
Round 2

11:45 a.m. – 12:15 p.m.
Lunch

12:00 – 12:30 p.m.
Public Viewing and
Senior Final Judging



KEYNOTE SPEAKER

Dr. Sheritta A. Strong

MD, MBA, DFAPA

As the Assistant Vice-Chancellor of Campus Engagement for UNMC, Dr. Sheritta A. Strong is an Associate Professor, Clinician, and Director of Engagement in the Department of Psychiatry. As an Omaha Native, she completed her education in 1999 through a medical pathway program with a BS from University of Nebraska at Omaha. Her medical degree and residency training was obtained from UNMC and Creighton, respectively. She also finished an MBA with health executive focus from the University of Colorado in 2023. Dr. Strong had been the pre-clinical psychiatry education director for over 10 years and maintains her connection to students through advising, mentoring, and serving as the faculty advisor for an inclusive campus-wide student group.

Clinically, Dr. Strong established her career caring for patients with a variety of severe emotional health conditions and has a passion for community mental health. She has been caring for patients with varying levels of socioeconomic statuses as a consulting psychiatrist at the Charles Drew Health Center since 2009.



She attained the status of Distinguished Fellow of the American Psychiatric Association (APA) in 2020, and Dr. Strong has been honored with many national and local leadership and teaching awards from the APA, UNMC Alumni Association, Omaha North Vikings of Distinction, the Urban League, and the National Coalition of 100 Black Women.

In the community, Dr. Strong has been a member of Alpha Kappa Alpha Sorority, Incorporated for more than 28 years where the sentiment is “service to all mankind” and a member of the Omaha (NE) Chapter of the Links Incorporated. She is enjoying empty nesting with her husband as their sons play collegiate level basketball.

MSEF MAP

1

**Lied Jungle®
Conference Room**
Category Judges

2

**Mutual of Omaha's
Wild Kingdom Pavilion**
Senior Division Projects

3

**Durham Lodge
Birthday House**
Special Award Judges

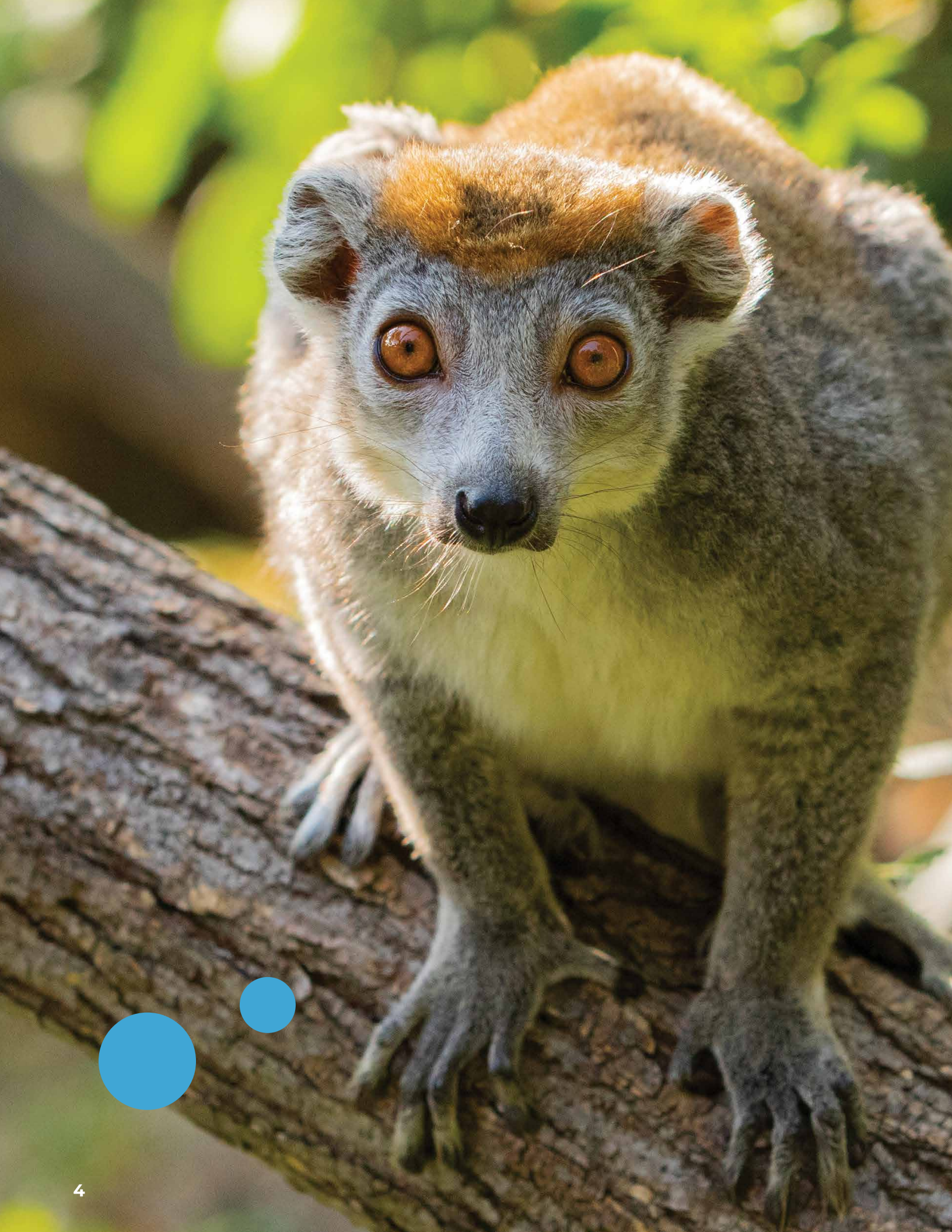
4

**Scott Aquarium
Conference Center**
Junior Division Projects

5

**Robert B. Daugherty
Education Center**
Teacher Sponsors







JUNIOR DIVISION PROJECTS

MSEF does not require a specific style for citations and report format. MSEF encourages students to utilize a citation and report style with which they are comfortable. To provide a consistent style for titles in today's program, titles have been edited to align with the style used by the American Junior Academy of Sciences.

ANIMAL SCIENCES

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1011	Kerrionna Curtis	7	King Science & Technology MS	Do Artificial Sugar or Non-Artificial Sugar Attract More Ants?
1012	Norah Houfek	8	Beveridge Middle School	Birds of a Feather Feed Together
1013	Sydney O'Connell	8	Beveridge Middle School	Hear Kitty!
1014	Isabelle Rude	8	Buffett Middle School	Pawsitively Colorful
1015	Isabelle Shields	7	Buffett Middle School	Bird Beak Adaptations
1016	Isabelle Stieren	8	Buffett Middle School	Superior Senses

BEHAVIORAL AND SOCIAL SCIENCES: BEHAVIORAL NEUROSCIENCE

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1021	Sage Bennett	7	McMillan Middle School	Music Makes You Move
1022	Lydia Burhoop	7	Buffett Middle School	How Does Color Affect Taste?
1023	Leah Burn	8	Beveridge Middle School	Face the Color
1024	Isaiah Hernandez	7	King Science & Technology MS	The Impact of Cancer Treatments on Cognitive Thinking
1025	Danielle Kousgaard	7	Buffett Middle School	Read the Rainbow
1026	Dharma Jewel Perez Garcia	8	King Science & Technology MS	Music and Focus
1027	Addison Loseke	8	Beveridge Middle School	Puzzles and Illusions
1028	Evie Swanson	8	Beveridge Middle School	Color-Coded Cadence

BEHAVIORAL AND SOCIAL SCIENCES: COGNITIVE PSYCHOLOGY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1031	Gavin Colliers	7	Buffett Middle School	How Sleep Affects Academic Performance
1032	Claudia Dauner	7	Beveridge Middle School	Memory Match-Up
1033	Caroline Doyle	8	McMillan Middle School	Hurry Up, Slow Pokes
1034	Maura Fay	8	King Science & Technology MS	Effect of PPRs on Serving Accuracy
1035	Elvira Johnson	8	King Science & Technology MS	The Effect of Detail on Memory Retention
1036	Jenna Murray	7	Bennington Middle School	How Emotions Light Up the Brain: Understanding the Connection Between Feelings, Actions, and Physical Responses
1037	Gabriella Wells	8	Beveridge Middle School	To Study or Not to Study?

BIOCHEMISTRY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1041	Julia Anderson	8	Buffett Middle School	Vegan vs. Real
1042	Phalana Bechaz	8	Buffett Middle School	Scent-sational Science
1043	Brooklyn Cooper	8	Buffett Middle School	Quality or Price?
1044	Evan Jetter	7	Buffett Middle School	Ripening Bananas

BIOMEDICAL AND HEALTH SCIENCES: EXERCISE

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1051	Esther Andrade-Ruiz	7	King Science & Technology MS	How Does Yoga Affect Blood Pressure and Heart Rate?
1052	Ywar Blut	7	King Science & Technology MS	How Do Soccer Drills Affect the Heart Rate?
1053	Nayeli Fuertes	8	King Science & Technology MS	Heart Rates in Males and Females
1054	Ella Norton	7	Buffett Middle School	Exercise Effects on the Heart
1055	Jordyn Schulze	8	King Science & Technology MS	Reflexes and Muscle Fatigue
1056	Aden Vlcan	8	Beveridge Middle School	It's Getting Hot in Here

BIOMEDICAL AND HEALTH SCIENCES: RESPIRATORY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1061	Ailise Field	7	King Science & Technology MS	How Does Length of Time Playing a Woodwind Instrument Affect Tidal Volume?
1062	Megumi Wong	8	Lifegate Christian School	Hold Your Breath
1063	Rachel Nguyen	8	Beveridge Middle School	La La Lungs
1064	Leo Walters	8	Beveridge Middle School	Age vs. Age: Lung Capacity

BIOMEDICAL AND HEALTH SCIENCES: NUTRITION AND NATURAL PRODUCTS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1071	Anna Dickerson	8	McMillan Middle School	O ₂ for Every Hue
1072	Thomas Dvorak & Thomas Herink	7	St. Margaret Mary School	Dry Skin's Worst Nightmare
1073	Spencer Hartig	7	Bennington Middle School	Nailed It! Collagen's Effect on Nail Growth
1074	Molly Herr	7	King Science & Technology MS	The Effect of the Nervous System
1075	Angela Lawson	8	Beveridge Middle School	Preserve or Reserve?
1076	Wren Matthews	7	St. Margaret Mary School	Burn Baby Burn
1077	Bostin McGraw	7	King Science & Technology MS	How Can a Chemical Relaxer Damage Skin?

CELLULAR AND MOLECULAR BIOLOGY: EXTRACTION

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1081	Addison Boyer	7	Buffett Middle School	Fruity DNA
1082	Bostin Jimmerson	8	King Science & Technology MS	DNA Extraction
1083	Maria G. Mozzoni	7	St. Stephen the Martyr	Watercolor Flowers
1084	Sophie Quintero Figueroa	7	Buffett Middle School	Extraction and Examination of DNA
1085	Kaitlyn Samples	7	Buffett Middle School	Extracting DNA from Strawberries

CELLULAR AND MOLECULAR BIOLOGY: MOLECULAR BIOLOGY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1091	Eli Mensah	7	Buffett Middle School	Are Fingerprints the Same?
1092	Skyliya Murph	7	King Science & Technology MS	How Strong Are Your Bones?
1093	Carson Thorberg	8	Bennington Middle School	Can We Outsmart Cancer? Investigating How Cancer Grows in Different Conditions
1094	Cassidy Worley	6	McMillan Middle School	Does Gender Affect Fingerprint Type?

CHEMISTRY: FOOD

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1101	Perla Diaz Estrada	7	McMillan Middle School	Which Juice Has the Most Vitamin C?
1102	La'Vehya Evans	8	King Science & Technology MS	How Blue Is Your Sports Drink?
1103	Jozlyn Gordon	7	King Science & Technology MS	Testing for Unsaturated Fats in Chips
1104	Graci Henderson	8	Buffett Middle School	Rot Race: Egg vs. Drink
1105	Stella Moon	7	Buffett Middle School	Chemistry of Making Ice Cream: How We Lower Water's Freezing Point
1106	Leah Toller	7	Buffett Middle School	The Science of Cookies

CHEMISTRY: LIQUIDS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1111	Naazik Bah-Traore	8	Buffett Middle School	Bubble Trouble
1112	Sienna Hovseth	7	Buffett Middle School	Soda Fountain
1113	Jordyn Leffall	7	Buffett Middle School	Bath Time Blitz
1114	Anna Needelman	7	Buffett Middle School	Does the Shape of an Ice Cube Affect How Long It Takes to Melt?
1115	Jayden Phan	7	Buffett Middle School	Going Up
1116	Aarohi Timalcina	8	Buffett Middle School	Kaboom Volcano, Kaboom

CHEMISTRY: PROPERTIES OF WATER

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1121	Wahida Hasan	8	Beveridge Middle School	Water You So Tense About?
1122	Hadley Herrington	7	Buffett Middle School	Floatation Voyage: Salt-astic
1123	Mandy Lao	7	Buffett Middle School	Gummy Bears Growing Up
1124	Matthew Loper	7	Buffett Middle School	How to Float an Egg
1125	Declan O'Brien	7	Buffett Middle School	Will It Float?

CHEMISTRY: REACTIONS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1131	Kaesia Brown	8	Beveridge Middle School	Will It Rust?
1132	Kristine Nguyen	8	Buffett Middle School	The Apple's Brownout: Unveiling the Oxidation Mystery
1133	Mathias Petersen	7	Buffett Middle School	Can Lime Save Time Slowing Down Apple Oxidation?
1134	Evelyn Walker	7	Buffett Middle School	Breaking Down Metals

EARTH AND ENVIRONMENTAL SCIENCE

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1141	Faith Agbosse	7	Buffett Middle School	Soil Water
1142	Jeremiah Aleksandrov	7	Buffett Middle School	Desalination Instigation
1143	Miriam Brown	8	McMillan Middle School	How Our Lawns Can Help Improve Water Quality
1144	Bartolo Grant & Justice Wedner	7	Wilson Middle School, Beveridge Middle School	Comparing Heavy Metal Amounts in Soils
1145	Yashasvi Jadi	6	Millard North Middle School	The Hydrologic Cycle
1146	Jayceon Lee	8	King Science & Technology MS	Water Filtration
1147	Emma Park	8	King Science & Technology MS	Can Biodegradable Hydrogels Prevent Water Runoff in Soil/Farming?

ENGINEERING MECHANICS: DISTANCE

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1151	Mariyah Broadway	7	Buffett Middle School	Looping the Loop
1152	Zelda Fischer	7	Buffett Middle School	Batter's Luck
1153	Filipe Lopez	8	Buffett Middle School	Rocket Power
1154	Max Raduechel	7	Buffett Middle School	Flying Paper
1155	Sam Peterson	7	Buffett Middle School	What Goes the Farthest?
1156	Elias Vogl	7	Buffett Middle School	Paper Airplane

ENGINEERING MECHANICS: STRUCTURE

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1161	Grant Anderson	8	Buffett Middle School	Bridge Breakers
1162	Rob English	7	Buffett Middle School	Best Bridge Design
1163	Daniel Hall	7	Buffett Middle School	3-D Infill Strength Project
1164	Jacob Worshek	7	King Science & Technology MS	How Bridge Architecture Affects Strength

ENERGY: SUSTAINABLE MATERIALS AND DESIGN: POWER GENERATION

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1171	Trey Brisbois & Jacob Bieksza	7	King Science & Technology MS	Potatoes Got Power!
1172	Dylan Doll	7	Buffett Middle School	What Vegetable Works Best as a Battery Out of a Potato, Cucumber, and a Tomato?
1173	Benjamin Elder	7	Buffett Middle School	Potato Battery
1174	Landon Johnston	7	Buffett Middle School	Potato Battery
1175	Reece Goodwin	8	Buffett Middle School	Mason Jar Battery
1176	Ryleigh Mann	7	Buffett Middle School	Static Electricity in Household Objects
1177	Jacob Needelman	7	Buffett Middle School	Potato Power
1178	Easton Vandervort	7	Buffett Middle School	Lemon Battery

ENERGY: SUSTAINABLE MATERIALS AND DESIGN: POWER MANIPULATION

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1181	Ethan Kershner	8	Beveridge Middle School	To Freeze a Battery
1182	Jennifer Khu	8	King Science & Technology MS	The Combination of Wind Turbines and Pumps
1183	Jericho Pierce	8	King Science & Technology MS	Larger Propellers vs. Smaller Propellers
1184	Damar Polite Flemming	8	King Science & Technology MS	Free Power from the Sun!
1185	Logan Ridder	8	Lifegate Christian School	Electro-Light

MATERIALS SCIENCE: MAGNETIC MATERIALS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1191	Emily Koch	7	Buffett Middle School	How Does Temperature Affect Magnet Strengths?
1192	Ryan Simeone	7	Buffett Middle School	Does More Magnets = More Speed?
1193	Jackson Stockdale	7	Buffett Middle School	Magnetic Energy Accelerator

MATERIALS SCIENCE: LIQUIDS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1201	Kaylee Dahlgren	7	Buffett Middle School	What Makes Ice Melt Faster?
1202	Embry Herfordt	7	King Science & Technology MS	Water Filtration
1203	Daniela Hernandez	7	Buffett Middle School	Triple Ice Meltdown
1204	Kinlee Huber	6	Buffett Middle School	Keep the Heat
1205	Penelope Johnson	7	King Science & Technology MS	The Appearance of Acetone and the Drying Time of Acetone
1206	James Ott	7	St. Margaret Mary School	Water TDS: Less Is Best
1207	Nina Rasmussen	8	King Science & Technology MS	The Effects of Color on Ice Melts

MATERIALS SCIENCE: PRODUCTS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1211	Alia Abdesalam	8	McMillan Middle School	TP or Not to Be
1212	Eileen Glasford	7	McMillan Middle School	Strength in Structure: Exploring the Impact of Wood Shapes on Durability
1213	Maggie Jones	7	Buffett Middle School	Can Your Heat Protectant Beat the Heat?
1214	Ezekiel Mayle	8	Beveridge Middle School	Run, Forest, Run
1215	Miri Peterson	8	King Science & Technology MS	Do Roof Colors Affect Temperatures in Homes?
1216	Tifferi Phillips	7	Buffett Middle School	Granular vs. Powder Activated Carbon

MICROBIOLOGY: ANTIMICROBIAL

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1221	Chase Buckley	8	Beveridge Middle School	Shining a Light on Bacteria Growth
1222	Arden Bulher	8	King Science & Technology MS	How Effectively Can Silver Nitrate Neutralize <i>E. coli</i> Bacteria?
1223	Khadija Gedo	8	King Science & Technology MS	How Efficient Are Different Percentages of Soap and Water at Killing Germs and Bacteria?
1224	Anita M Hancock	7	King Science & Technology MS	How Do Different Natural Cleaners Affect Bacteria?
1225	Victoria Sedjro	7	King Science & Technology MS	Antibiotic Ointment on Bacterial Growth
1226	Sophia Worden	8	McMillan Middle School	The Great Mouthwash Showdown

MICROBIOLOGY: APPLIED

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1231	Madeline Goergen	7	Buffett Middle School	Strawberry Thermotherapy
1232	Jamison Marshall	7	Buffett Middle School	How Fast Does Bread Mold?
1233	Paul McMahon	7	Buffett Middle School	Elemental Factors and How They Affect Decomposition
1234	Ny'Lah Morland	7	Buffett Middle School	Moldy Mansion: Where Does Mold Make Itself at Home?
1235	Shaye Walker	8	King Science & Technology MS	How Does Mold Affect Air?

MICROBIOLOGY: ENVIRONMENT

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1241	Harper Booth	7	King Science & Technology MS	Food and Bacteria
1242	Adeline Grot & Meredith Self	7	St. Margaret Mary School	Bacteria Busters
1243	Lailah Holman	8	King Science & Technology MS	pH, Nutrients, Microorganisms
1244	Evie Kassmeier & Mara Brugman	7	St. Margaret Mary School	Tiny Titans
1245	Anderson McKenzie	7	Buffett Middle School	Does the Five-Second Rule Work?
1246	Sara Ripp	7	St. Margaret Mary School	From Playground to Petri Dish
1247	Cooper Sualy & Frankie Otepka	7	St. Margaret Mary School	There's More to Your Floor
1248	Collin Vontz	7	Buffett Middle School	What Spot Is the Dirtiest?

PHYSICS AND ASTRONOMY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1251	Calix Essien	7	King Science & Technology MS	How Does the Angle of the Sun Affect Facial Sun Exposure with a Cap?
1252	Eliza Skinner & Madeline Self	7	St. Margaret Mary School	Bright Ideas
1253	Prudence Martinez	7	Buffett Middle School	Cosmic Flames
1254	Cameron Mellon	8	Bennington Middle School	Shining Across the Cosmos: The Relationship Between Light Intensity and Distance
1255	Eliana Volshonok	7	Buffett Middle School	Glow Sticks vs. Water Temp
1256	Charles Walenz	8	Beveridge Middle School	Enlightening Vitamin C

PLANT SCIENCES: GROWTH AND DEVELOPMENT

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1261	River Bennett	8	McMillan Middle School	Lighten Up
1262	Franklin Castaneda	7	King Science & Technology MS	Can Direction Affect Plant Growth?
1263	Daphne Engelke	7	Buffett Middle School	Let It Grow!
1264	Cayden Hammon	8	Buffett Middle School	Rot Race
1265	Tate Lundin	7	Buffett Middle School	Pop for Your Crops
1266	Akshara Manchikalapudi	7	Buffett Middle School	Growing in Harmony: The Effect of Music on Plant Growth

PLANT SCIENCES: SUBSTRATES

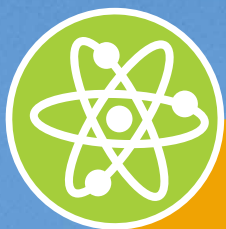
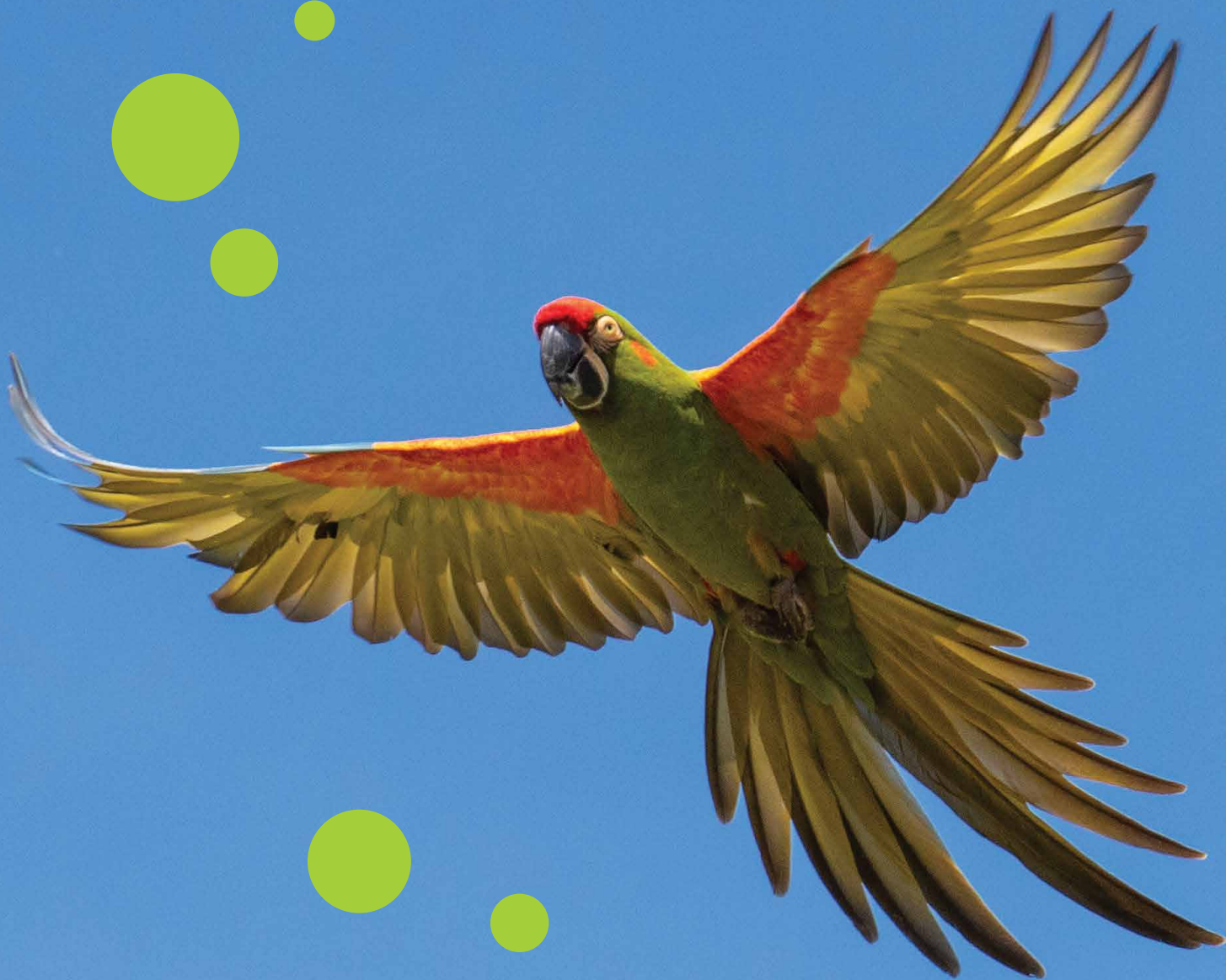
#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1271	Ian Leighter	8	King Science & Technology MS	Rooted in Success
1272	Alara Lytle	8	King Science & Technology MS	Does Ice Melt Inhibit Plant Growth?
1273	Finnegan O'Brien	7	Bennington Middle School	From Red Soil to Green Leaves: Testing Martian Soil for Plant Growth
1274	Niththil Palsamy	6	Elkhorn Valley View Middle School	Green Gold: How Organic Nutrition Fuels Corn Growth and Development
1275	Andrew Sorrows	8	Bennington Middle School	Green and Clean: Methods to Prevent Mold Growth and Damp-Off in Microgreens
1276	Landon Simpson	8	Buffett Middle School	Growing Green

PLANT SCIENCES: WATER EFFECT

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1281	Nurto Abdullahi	8	King Science & Technology MS	What Is the Least Amount of Water Grass Seeds Can Receive and Still Grow?
1282	Nathan Efuetskeng	8	King Science & Technology MS	Growing Peas in Different Temperatures of Water
1283	Hailey Orbin	7	Buffett Middle School	Flower Power Unleashed by Water
1284	Jordyn Rogers	7	Buffett Middle School	What Effects Water Plant Growth?

ROBOTICS, SYSTEMS, AND INTELLIGENT MACHINES

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
1291	Emery Dacus	8	Beveridge Middle School	Can You Tell the Difference?
1292	Leon Hart	6	McMillan Middle School	How Much Mass Can a VEX Clawbot Pull Without It Slowing Down?
1293	Austin Ordway	8	King Science & Technology MS	Need a Hand?
1294	Ace Steinke	8	Beveridge Middle School	Remote Reactions



SENIOR DIVISION PROJECTS

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ANIMAL SCIENCES

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2011	Brock Ballard	11	Zoo Academy	The Effect of Nebraska's Winters on Red Pandas' Behavior
2012	Melissa Bateman	12	Westview High School	Buzzing Beehives
2013	Avery Cooper	11	Zoo Academy	Cultural Study on <i>Pongo pygmaeus</i>
2014	Alexandria Denniston	11	Zoo Academy	To What Extent Does the Temperature of a Room Effect the Development of <i>Vanessa cardui</i>
2015	Leah Melancon	11	Zoo Academy	The Effect of Different Light Colors and Intensities on Belostomatidae
2016	Bella Moran	11	Zoo Academy	The Effect of Music Genres on <i>Melopsittacus undulatus</i> Behavior
2017	Evan Rawson	11	Zoo Academy	The Effect of Weather on <i>Panthera uncia</i>

ANIMAL SCIENCES: ANIMAL BEHAVIOR

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2021	Eva Bruner	11	Zoo Academy	Effect of Color on <i>Canis lupus familiaris</i> Behavior
2022	Brianna Burgess	11	Zoo Academy	The Activity Level of <i>Stegostoma tigrinum</i> and <i>Ginglymostoma cirratum</i> in an Indoor Enclosure
2023	Jemma Hart	11	Zoo Academy	Size Matters: Exploring Stress Responses in Small vs. Large <i>Canis familiaris</i>
2024	Elysia Jones & Dezeraya Wright	12	Zoo Academy	The Effect of Time of Day and Season on the Behavior and Enclosure Usage of Alligators
2025	Kenzie Metzler	11	Zoo Academy	Western Lowland Gorilla Social Behavior in Relation to Sex
2026	Brenna Petersen	12	Zoo Academy	The Effect of Wave Actions on Three Species of Clownfish Behavior and Position in a Tank
2027	Lydia Peterson	11	Zoo Academy	The Effects of Different Enrichment Forms on Gorilla Behavior
2028	Harlie Ratigan	11	Zoo Academy	The Behavioral Similarities and Differences Between Harbor Seals and California Sea Lions

ANIMAL SCIENCES: NUTRITION AND GROWTH

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2031	Ollie Cochran	11	Zoo Academy	Does a Dietary Supplement Affect the Odor Produced by <i>Rattus norvegicus domestica</i> ?
2032	Sam Dolphens	11	Zoo Academy	The Effects of Diet on Beaver Activity Level
2033	Lilia Keener	11	Zoo Academy	Alternative to <i>Rubus fruticosus</i> for <i>Heteropteryx dilatata</i> , <i>Phyllium giganteum</i> , and <i>Extatosoma tiaratum</i>
2034	Nora Tran	11	Zoo Academy	Habits of Stingrays in Captivity
2035	Logan Wilber	11	Zoo Academy	The Types of Seed Winter Birds Prefer

BEHAVIORAL AND SOCIAL SCIENCES: COGNITIVE PSYCHOLOGY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2041	Aarju Acharya	12	Papillion La Vista High School	Effects of Meditation (Dhyana) on Cognitive Function Across Age Groups
2042	Acalia Cruz-Hernandez	11	Zoo Academy	Stress Factors Between Female and Male Teens
2043	Evan Donnelly	9	Burke High School	Memory Mastery
2044	Allison Rutherford	11	Zoo Academy	Is the Effect of Handedness on Gorillas the Same as Handedness in Humans?
2045	Katie Shafer	11	Zoo Academy	The Effects of Mental Training on Athletes

BEHAVIORAL AND SOCIAL SCIENCES: SOCIAL PSYCHOLOGY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2051	Henry Carstens	12	Omaha Central HS	Systemic Solutions to Combat Grade Inflation in High School Education
2052	Emma Hindman	12	Zoo Academy	The Effect of Observation Learning on Behavior of Individual Herd Members and a Juvenile Giraffe
2053	Rachael Jaixen	12	UNMC High School Alliance	From Classroom to Clinic: The Role of the UNMC High School Alliance in Shaping Future Healthcare Professionals
2054	Jennifer Ramos	12	Zoo Academy	Observation on Student Engagement
2055	Reese Rothe	11	Zoo Academy	Goldfish Color Preference: Exploring What Colors Goldfish Are Attracted To
2056	Ella Schmitz	12	UNMC High School Alliance	Evaluating Early Level Play Using Modeling
2057	Macy White	12	Zoo Academy	The Effects of Hands-On STEM Education on Core Subjects

BIOMECHANICS AND EXERCISE SCIENCE

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2061	Emilie Burki	12	Zoo Academy	The Effect of Body Length Proportions on Hamstring Flexibility Test Accuracy
2062	Charlotte Gregor	12	Omaha South HS	Normative Benchmark for Strength and Hop Test Measures in Collegiate Athletes
2063	Rachel Ma	12	UNMC High School Alliance	UHMWPE Advanced Aging Friction Trials
2064	Kierstin Waldow	12	UNMC High School Alliance	Increased Joint Torque and Injury Risk in the Shoulder and Elbow in Softball Pitchers Relating to Altered Pitching Mechanics
2065	Molly Wratchford	12	Zoo Academy	How Different Types of Shoes Affect How Well You Run

BIOMEDICAL AND HEALTH SCIENCES

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2071	Emily Alison	10	Millard North High School	Ketogenic Diet Enhances Synaptic Plasticity and Reduces Epileptic Seizures in Mutant <i>Drosophila melanogaster</i>
2072	McKenna Carroll	12	UNMC High School Alliance	Optimization of a Fluorescent Probe for Fluorescence-Guided Surgery in PDAC
2073	Sienna Maskin	11	Omaha Central HS	Comparative Analysis of Efficiency of Different Sunscreen Types
2074	Kyra Norris	12	Zoo Academy	Which Hand Sanitizer Keeps Our Hands the Cleanest?
2075	Bella Olson	12	Zoo Academy	Mold Growth on Different Fast Food Chain Cheeseburgers
2076	Esha Pandharpurkar	11	Elkhorn South High School	Analyzing the Effects of Antibiotic Exposure on Gastrointestinal Nutrient Digestion
2077	Daniela Sanchez-Romo	12	UNMC High School Alliance	Associations Between Polypharmacy and Quality of Life Measures in Older Adults

CELLULAR AND MOLECULAR BIOLOGY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2081	Nyachar Jock	12	UNMC High School Alliance	Chemical Synthesis of a Long-Acting Atovaquone Prodrug for Malaria Prevention
2082	Shradha Mamilla	11	Marian High School	Chitin Synthesis Is Essential for the Process of Molting in Insects
2083	Pranavi Prakash	11	Millard North High School	Liver-Derived Megakaryocyte Display Innate Immune Cell Behaviors During Neonatal Anemia
2084	Amudha Ramalingam	9	Millard North High School	A High-Fat Diet Worsens the Liver-Damaging Effects of Alcohol in Mice
2085	Anushka Sajja	11	Millard North High School	Dolutegravir Inhibition of Cholinergic Enzymes in the Maternal Brain: Implications for Neuropsychiatric Symptoms
2086	Addyson Schmidt	12	UNMC High School Alliance	Synthesis of CLDN-1 Inhibitors for the Treatment of Metastatic Colorectal Cancer

COMPUTATIONAL BIOLOGY AND BIOINFORMATICS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2091	Thanvi Bhat	9	Millard North High School	Combating Methicillin-Resistant <i>Staphylococcus aureus</i> : Development of a Novel and Non-Toxic Flavonoid Treatment In-Silico to Synergistically Enhance β -Lactam Antibiotic Efficacy
2092	Moo Law La Soe	12	Omaha North HS	Investigating Prion Protein Interactions: The Role of the N-Terminus in Fibril Binding Dynamics
2093	Meghna Moorthy	9	Millard North High School	Finding MicroRNAs That Orchestrate Inflammasome Activation in Methamphetamine-Mediated Neuroinflammation
2094	Athreya Reddy	10	Elkhorn South High School	AI Innovations in Cancer Therapy: Unlocking New Possibilities

EARTH AND ENVIRONMENTAL SCIENCES

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2101	Charles Cotton	12	Westview High School	Background Radiation All Around Us
2102	Millie Jackson	11	Zoo Academy	Optimal Conditions for Effective Composting
2103	Mariah Sanchez	11	Zoo Academy	The Effect of Nitrogen Trioxide in Nebraska's Water
2104	Tristan Shiffermiller	10	Gretna East High School	Solar Panel Car

ENGINEERING MECHANICS

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2111	Brenden Cunningham	10	Gretna East High School	Electro-Magnet Highways
2112	Elly Dow	12	UNMC High School Alliance	ATV Injuries and Fatalities in a 7-State Region: Determination of Gender and Task Differences
2113	Colton Sillman & Jude Witt	10	Gretna East High School	Magnetic Train

MICROBIOLOGY

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2121	Aruneem Bhowmick & Lucas Askew	12 & 11	Millard North High School	LavAbarElk: A Novel Bacteriophage and Solutions to Antibiotic-Resistance Bacteria
2122	Austin Jackson	12	Zoo Academy	How Temperature and Humidity Affect Mold Growth on Different Breads
2123	Rhana Kang & Shreeya Etigi	11 & 9	Elkhorn South & Millard North	Discovering Bacteriophages of <i>G. rubripertincta</i> in the Environment
2124	Naomi Long	12	Zoo Academy	Function of Yeast in the <i>Apis mellifera</i> Gut Microbiome
2125	Evalina Sain	12	Omaha Central HS	Bees Just Wanna Have Fungi: Exploration of Yeast Dynamics During the Ontogenesis of <i>Apis mellifera</i>
2126	Emma Swoboda	12	UNMC High School Alliance	Developing the SpyCatcher-SpyTag System for Observing Protein Localization in <i>Chlamydia trachomatis</i>

PLANT SCIENCES

#	STUDENT	GRADE	SCHOOL	PROJECT TITLE
2131	Ree Bar	11	Zoo Academy	Climate Change and Its Effect on Plant Communities
2132	Emma Franks	12	Zoo Academy	The Effects of Coffee as a Natural Fertilizer on <i>Helianthus annuus</i> Growth
2133	Sophia Haggard	11	Zoo Academy	How Nutrients in Certain Liquids Affect <i>Lactuca sativa</i> in a Hydroponic System
2134	Keagan Hempel	12	Zoo Academy	The Effects of Hydroponics on the Growth of <i>Lactuca sativa</i>
2135	Sadie Larkin	11	Zoo Academy	The Effects of Fertilizer Runoff on Algae in Aquatic Environments
2136	Julia O'Day	11	Zoo Academy	Effects of Different Soils on Plant Growth
2137	Olivia Polsley	11	Zoo Academy	A Greener Environment: The Effects of Plantable Paper
2138	Aliyah Popp	11	Zoo Academy	The Effect of Different Substrates on Different King Trumpet Growth

AWARDS

GRAND PRIZE

JUNIOR TOP 6 PROJECTS

NJAS MEDAL, \$110

SENIOR TOP 6 PROJECTS

NJAS MEDAL, \$110

CATEGORY AWARDS

JUNIOR DIVISION

FIRST PLACE Plaque, \$60

Second Place
(> 3 entry) Plaque, \$45

Third Place
(> 5 entry) Plaque, \$35

Fourth Place
(> 9 entry) Plaque, \$25

SENIOR DIVISION

FIRST PLACE Plaque, \$60

Second Place
(> 3 entry) Plaque, \$45

Third Place
(> 5 entry) Plaque, \$35

Fourth Place
(> 9 entry) Plaque, \$25

MSEF officials assign similar projects to the same category. The number of awardees in each category is determined by the number of entries. For categories with fewer than 3 entries, each project is compared to a standard. As a result, a project may receive 2nd place, 3rd place, or no place at all.

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Judges confirmed as of February 10, 2025. For an updated list of judges, visit msefomaha.com.

SPOTLIGHT

MSEF: ENCOURAGING STUDENT RESEARCH IN SCIENCE AND ENGINEERING CONCEPTS

MICHELE RICARD TEACHER/SPONSOR AWARD

Michele Ricard, an Omaha high school teacher who annually sponsored around 20 projects for over a decade, passed away suddenly in November 2017. Each year during the MSEF Awards Ceremony, MSEF recognizes a teacher/sponsor who, like Michele, has demonstrated ongoing enthusiasm, encouragement, and dedication to student science research and MSEF participation.

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