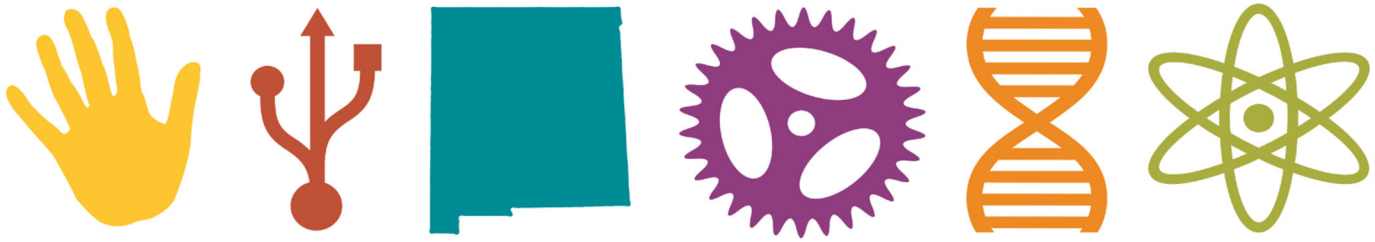
Booklet of Awards & Schedule of Events

2025 Central New Mexico STEM Research Challenge



March 19-23, 2025

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Laura & Will Chambers
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Walter & Randi Buck

The MANY judges who donate their time and expertise to interviewing students and evaluating projects.

The MANY other volunteers who do set-up, security, registration and countless other vital tasks. Research Challenge would not be possible without them!

HEALTH SCIENCES
OFFICE FOR DIVERSITY, EQUITY & INCLUSION

STEM-H Center

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STEM-H CENTER
PROMOTING SCIENCE, TECHNOLOGY, ENGINEERING, MATH & HEALTH EDUCATION

2025 Central New Mexico STEM Research Challenge

March 19 - 23, 2025

EXPO NM Manuel Lujan Building
& UNM Student Union Building

SCHEDULE OF EVENTS

Visit the RESEARCH CHALLENGE VIRTUAL LOBBY for instant access to virtual Research Challenge events!

March 17 – 23 ~ Virtual Lobby Open~ visit at your convenience!

PROJECT SHOWCASE – *browse all student research projects competing in Research Challenge*

STEM HALL – *visit profiles and interactive exhibits from our sponsors and community partners*

SPEAKERS & PANELS – *view engaging discussions with STEM professionals including:*

- The 2025 featured STEM Panel is **New Mexico Donor Services**

Monday, March 17

6:30 pm – 7:30 pm

Judging Workshop – ***Live on Zoom***
Students, prepare for judging day with long-time Research Challenge Master Judge Chairs Len Duda and Robert Deblassie as they provide tips to prepare for judging interviews and answer your questions.
https://hsc-unm.zoom.us/j/95410590866

Wednesday, March 19

3:00 pm – 7:00 pm

Project Set Up – ***EXPO NM, Manuel Lujan Building***
ALL student exhibitors must register and set up their project displays during this time. ***Doors will close promptly at 7:00 pm!***

Community Partner Showcase will also take place during set up. We are excited to host fun and informational booths from local STEM partners!
Students, complete a Community Partners Passport by visiting booths. Turn in completed passport before you leave and be entered into a raffle for prizes!

Thursday, March 20

9:45 am – 12:00 pm — **Junior Division Category Judge Interviews – *Manuel Lujan Bldg, Hall A***
STUDENTS AND JUDGES ONLY ON EXHIBIT FLOOR! Doors open at 9:30am. ***9:45 is the required start time for ALL students*.**

12:00 pm – 1:15 pm — **Lunch Break** —**NOT PROVIDED**—Food vendors will be available. EXHIBIT HALL CLEARED OF ALL STUDENTS.

1:30 pm – 3:15 pm — **Junior Division Special Award & Grand Award Interviews**
– Manuel Lujan Bldg, Hall A
STUDENTS AND JUDGES ONLY ON THE EXHIBIT FLOOR!

Exhibitors must take project board and all other materials with them when they leave at the end of the day!

Friday, March 21

9:30 am – 12:00 pm — **Hands on activities with Air Force Research Labs**
(for participating 4th & 5th grade students) – ***Manuel Lujan Bldg, Hall A***

9:45 am – 12:00 pm — **Senior Division Category Judge Interviews – *Manuel Lujan Bldg, Hall B***
STUDENTS AND JUDGES ONLY ON EXHIBIT FLOOR! Doors open at 9:30am. ***9:45 is the required start time for ALL HS students*.**

12:00 pm – 1:15 pm — **Lunch Break** —**NOT PROVIDED**— Food vendors will be available. EXHIBIT HALL CLEARED OF ALL STUDENTS.

1:30 pm – 3:15 pm — **Elementary Division Judging Interviews – *Manuel Lujan Bldg, Hall B***
STUDENTS AND JUDGES ONLY ON THE EXHIBIT FLOOR!
*Note: elementary students will be interviewed by **both** category and special award judges during this time.*

1:30 pm – 3:15 pm — **Senior Division Special Award & Grand Award Interviews**
– Manuel Lujan Bldg, Hall B
STUDENTS AND JUDGES ONLY ON THE EXHIBIT FLOOR!

Exhibitors must take project board and all other materials with them when they leave at the end of the day!

Sunday, March 23

4:30 pm — **Award Winners Reception** – ***UNM Student Union Building***
For award winners and guests only. Light refreshments and "selfie station"

5:15 pm — **Grand Awards Ceremony** – ***UNM Student Union Building***
Awards Ceremony is by invite only. Student winners, parents/guardians and teachers will be notified on Saturday if they have won an award and are invited to attend the ceremony.

*Note: **Senior Division** ~ high school; **Junior Division** ~ middle school; **Elementary Division** ~ 4th & 5th Grade*

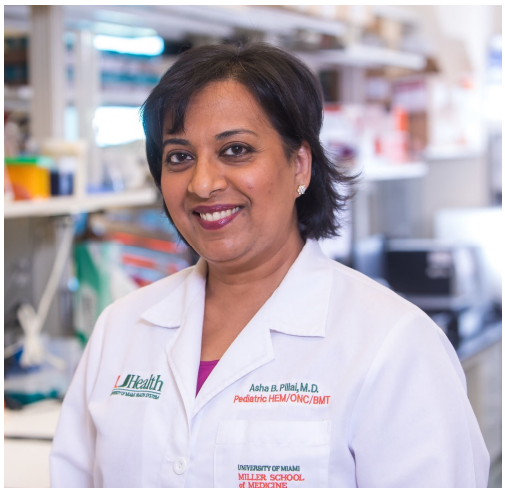
2025 Grand Awards Ceremony

Central New Mexico STEM Research Challenge

Sunday, March 23

Keynote Speaker

Asha Pillai, MD



Dr. Asha Pillai is Chair of Hematology, Hematologic Malignancies, and Transplantation in the Global Development Scientific Council at Regeneron.

She was a successful ISEF Finalist in 1985 and 1986 in the Biochemistry category, focused on role of vertical viral transmission in the immunology of autoimmune diseases. These studies set off her passion for immunology research which directly inspired all of her work to follow. Importantly, Dr. Pillai represented St. Pius X High School in Albuquerque NM throughout her ISEF years. She credits her ISEF experiences and in particular her time at St. Pius in developing her confidence and drive to become a future physician-scientist. In particular, she cites her mentor throughout her ISEF years, Mr. Robert Lah, for his support and guidance as she pursued complex research projects while navigating major family medical issues. The impact of his guidance had on her confidence at a critical juncture in her personal and professional life is her main inspiration to devote time to mentoring students and advanced trainees in basic and clinical research.

Dr. Pillai went on to complete her BS summa cum laude in Microbiology & Immunology at Stanford University, with a research honors thesis discovering interleukin-3 as a key growth factor for adult follicular B-cell lymphoma. She completed her MD and then residency training in Internal Medicine and Pediatrics at Baylor College of Medicine and then returned to Stanford to complete a combined fellowship in Pediatric and Adult Hematology and Stem Cell Transplantation. She continued her research at Stanford after graduating from her fellowship training under the NIH Ruth Kircshstein T32 Post-doctoral Scholar Award funding, through which she made important new discoveries on how different subsets of regulatory T cells (master cells which modulate immune responses) can work across histocompatibility barriers to facilitate acceptance of organ and bone marrow stem cell grafts. This work had broad relevance to mismatched donor transplantation and secured her a Career Development Grant Award (K08) from the NIH. She started her own laboratory in transplant immunology at St. Jude Children's Research Hospital and her group's work, continuously funded by the NIH, has elucidated important new immune pathways allowing mismatched donor bone marrow transplantation to cure conditions in patients not otherwise able to obtain transplant donors, as well as new key immunotherapies for cancer in children and adults. She has served as chair on several key international research committees and as an appointed federal grant reviewer for key research organizations including the NIH, the American Society for Hematology (ASH), the Medical Research Council of UK (MRC/UK). She believes in the value of team science and is excited to give back to the next generation of researchers and physician-scientists by serving as a mentor, ISEF judge, and speaker.

Dr. Pillai hails from Kerala, South India. In addition to English, she is fluent in the native language of Kerala (Malayalam) and in the Indic classical language, Sanskrit.

Byron Morton

Master of Ceremonies

Emmy Award-Winning and Certified Broadcast Meteorologist Byron Morton has been forecasting New Mexico weather for more than two decades. His fascination with weather began while growing up in Tornado Alley. And…he did chase tornadoes while interning in Oklahoma City.

Byron graduated with a Bachelor of Science degree from the College of Geosciences at the University of Oklahoma in 1996 (Boomer, Sooner!)

Byron holds seals of approval for television from both the American Meteorological Society and the National Weather Association. He also served on boards for both organizations. Byron is also very active within his parent company, Hearst Television (HTV) – acting as a co-chair for HTVPride (An LGBTQ+ employee resource group) and he is involved in the HTV mentor program.

When he's not keeping an eye on the sky, Byron loves the outdoors, hitting the gym, is an avid foodie and enjoys traveling. Catch Byron at 11 am and 4 pm weekdays on KOAT 7!

Regional Research Challenge ~ Top-of-Category Awards

Un-sponsored category awards are sponsored by operational funds donated by various companies.

The following prizes are awarded in each of the competition categories:

First Place: $100, gold medallion and certificate
Second Place: $75, silver medallion and certificate
Third Place: $50, bronze medallion and certificate
Honorable Mention: Medallion and certificate

2025 Categories	Sponsor
Elementary Chemistry	**Intel Corporation**
Elementary Engineering & Energy	**Intel Corporation**
Elementary Life & Environmental Sciences	**Intel Corporation**
Elementary Physical Science	**Intel Corporation**
Junior Animal Science	
Junior Behavioral & Social Sciences	**Albuquerque Journal**
Junior Chemistry	**Sandia National Laboratories**
Junior Computer Science	**Intel Corporation**
Junior Earth & Environmental Sciences	**PNM**
Junior Energy & Transportation	
Junior Engineering	**UNM School of Engineering**
Junior Medicine & Health	**UNM School of Medicine/Health Sciences Center**
Junior Microbiology	
Junior Physics & Astronomy	**The Boeing Company**
Senior Behavioral & Social Sciences	**Albuquerque Journal**
Senior Biochemistry	
Senior Chemistry	**Sandia National Laboratories**
Senior Computer & Mathematical Sciences	**Intel Corporation**
Senior Earth & Environmental Sciences	**PNM**
Senior Energy & Transportation	
Senior Engineering	**UNM School of Engineering**
Senior Materials Science	
Senior Medicine & Health Sciences	**UNM School of Medicine/Health Sciences Center**
Senior Microbiology	
Senior Physics & Astronomy	**The Boeing Company**
Senior Plant Science	
Senior Robotics & Intelligent Machines	

Regional Research Challenge ~ Top Junior Division Winner Award

Recognition of the top Junior Division exhibitors.

Junior Division	**Physical Sciences:**	**First Place:** $250	**Second Place:** $200	**Third Place:** $150
	Life Sciences:	**First Place:** $250	**Second Place:** $200	**Third Place:** $150

Thermo Fisher Scientific Junior Innovators Challenge

Awarded to the 1st and 2nd place winners of **EACH** category in the Junior Division

Junior Division **First & Second Place**: Certificate and an invitation to submit project to national competition

Regional Representatives to the International Science and Engineering Fair (ISEF)

Top projects will be named ISEF Finalists and compete at ISEF in May, 2025

Senior Division **Excellence Award:** Expense paid trip to Columbus, OH to compete in ISEF *(awarded to top placing individual or team projects; up to four projects will advance)*

Junior Division **Excellence Award:** Expense paid trip to Columbus, OH to attend ISEF as a student observer *(awarded to the top placing 8th grade student)*

ISEF Finalist Awards sponsored by Nusenda Credit Union

Awarded to each regional ISEF qualifier and observer *(funds will be split evenly among team members for any team projects that qualify).*

Excellence Award: $250

ACNM - Construction Leadership Council Transportation Award

For outstanding projects related to transportation and/or highway construction.

Elementary Division	**First Place**: $100	**Second Place:** $50
Junior Division	**First Place**: $100	**Second Place:** $50
Senior Division	**First Place**: $100	**Second Place:** $50

AIC General Contractors Award for Best Sports Related Project

For an excellent project related to sports.

Any Division	**First Place:** S300

Albert M. Kudo Memorial Award

For an excellent project in any category in memory of Dr. Albert M. Kudo.

Junior or Senior Division	**First Place:** $100

Albuquerque African Violet Club Award

For projects which best convey information on culture, hybridizing, pest control, or other aspects relating to African Violets or other gesneriads.

Junior Division	**First Place**: $50 and invitation to display project at the African Violet Show in spring 2025
Senior Division	**First Place**: $50 and invitation to display project at the African Violet Show in spring 2025

Albuquerque Astronomical Society Award

For the best Astronomy related projects. Winners invited to exhibit projects at Astronomy Day. Prizes include 1-year membership in the Albuquerque Astronomical Society.

Junior Division	**First Place**: $175	**Second Place:** $100	**Third Place:** $75
Senior Division	**First Place**: $175	**Second Place:** $100	**Third Place:** $75

Albuquerque Rocket Society Award in Memory of Jerry Cross

For excellent projects related to rocketry or the field of aeronautics.

Junior or Senior Division	**First Place:** $100

American Association of University Women Young Scientist Award

For excellent projects by female exhibitors in the categories of Physics, Computer Science, or Engineering.

Elementary Division	**First Place (x4):** $25
Junior Division	**First Place (x6):** $30

American Chemical Society Awards, Central New Mexico Section

For the projects that best demonstrate a thorough and logical approach to the investigation and observation of a chemical phenomena or property using the principles of the scientific method.

Junior Division	**First Place:** $150
Senior Division	**First Place:** $150
Junior or Senior Division	**First Place:** $150

American Institute of Aeronautics and Astronautics Award

For projects relating to the fields of Aeronautics and Astronautics.

Junior Division	**First Place (x2):** $125 & certificate. Membership in AIAA
Senior Division	**First Place (x2):** $125 & certificate. Membership in AIAA

American Psychological Association Award

For an exhibit recognizing outstanding research in psychology in the category of behavioral and social sciences.

Junior or Senior Division	**First Place:** Certificate & 1 year student membership in APA

Anonymous Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division	**First Place (x2):** S250

Argus Investment Realty, Inc. Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division	**First Place (x2):** S250

Association for Women Geoscientists Award

For a female student whose project best exemplifies high standards of innovativeness and scientific excellence in the geosciences.

Junior or Senior Division	**First Place:** Certificate & honorary membership in AWG

Association of Old Crows Award

For a project in the Elementary Division related to electromagnetic spectrometry or information operations.

Elementary Division	**First Place:** $100	**Second Place:** $50

Austin Hudson LaPore Biochemistry Award

For projects that demonstrate research excellence in biochemistry, pharmaceutical sciences, or related field.

Senior Division **First Place (x2):** $100

Broadcom Coding with Commitment Award

For a project in any category that combines STEM Knowledge and Computation/Coding in the project's research, design, or development that expresses passion for helping or improving one's community.

Junior Division **First Place:** $250 & Raspberry Pi Pico Kit

CBRE Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division **First Place:** S250

Center for Water & the Environment Excellence Award (UNM School of Engineering)

For a project that shows excellence and interest in water science, water resources, or water engineering.

Senior Division **First Place:** A paid summer internship (2025) in CWE's environmental engineering and water resources laboratories working in-person with CWE faculty.

Century Sign Builders Award

For an excellent project related to information technologies ("IT").

Any Division **First Place:** S250

Chalmers Ford Award

For an excellent project related to the automotive industry.

Elementary Division **First Place:** $150
Junior or Senior Division **First Place:** $150

CLA (CliftonLarsonAllen) Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division **First Place:** S250

Climate Change Award

Presented to the project that demonstrates the greatest insight into climate change using the scientific method.

Elementary Division **First Place:** $75
Junior Division **First Place:** $75
Senior Division **First Place:** $75

Consensus Planning Award

For a project that shows excellence in furthering sustainability through landscape architecture.

Any Division **First Place (x2):** S250

Dave and Rhonda Hill Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division **First Place:** S300

Dekker, Perich, Sabatini Engineering Excellence Award

For an excellent project related to structural engineering.

Any Division **First Place:** S300

Diane Vigerust Memorial Award

For a project by or benefiting a student with special needs.

Any Division **First Place:** S100 **Second Place:** $50

DoD STEM Leadership Prize

For a student who demonstrates excellence in STEM knowledge, technical and problem solving skills, communication skills, creative thinking and determination to overcome challenges throughout the research project.

Junior Division **First Place:** $100

Don't Stop Now Award

For projects in any category that show enthusiasm and promise for continued learning.

Junior or Senior Division **First Place (x6):** $50

Dr. John K. Prentice "Coolness" Award

For especially novel and ingenious projects in any category in memory of Dr. John K. Prentice.

Junior Division **First Place (x2):** $100
Senior Division **First Place (x2):** $100

Enchanted Lens Camera Club Award

For projects which either advance the state of the art of film/digital photography, or use photography as a key diagnostic in an engineering and/or science project.

Junior Division	**First Place:** $75
Senior Division	**First Place:** $75

Engineering Excellence – New Mexico Engineering Foundation

For excellence in Engineering and/or applied topic or research in Engineering, Physics, Astronomy, Computer Science or Energy & Transportation.

Senior Division	**First Place(x2):** $100

ENLACE Statewide Collaborative Excellence Award

For excellent projects in any category.

Elementary Division	**First Place (x4):** $25 UNM Bookstore Gift Card
Junior Division	**First Place (x4):** $25 UNM Bookstore Gift Card
Senior Division	**First Place (x4):** $25 UNM Bookstore Gift Card

Explora Science Center and Children's Museum Award

For excellent projects in Chemistry, Environmental Science, Math, Microbiology or Physics.

Junior Division	**First Place (x10):** $50 plus an invitation to exhibit project virtually at Explora.

Groundwater Partners Award

For an outstanding project that demonstrates innovation in promoting sustainability in environmental and geosciences.

Junior Division	**First Place:** $100
Senior Division	**First Place:** $100

International Test & Evaluation Association Awards, Roadrunner Chapter

For the best application of test and evaluation techniques in an experiment.

Junior Division	**First Place:** $100	**Second Place:** $50	**Third Place:** $25
Senior Division	**First Place:** $250	**Second Place:** $100	**Third Place:** $50

Jim Adams Memorial Award

For an excellent project by a student faced with physical or mental challenges.

Junior or Senior Division	**First Place:** $100

Kiwanis Club of Coronado Awards

For excellent projects in any category.

Elementary Division	**First Place (x2):** $50			
Junior Division	**First Place:** $100	**Second Place:** $50	**Third Place:** $50	**Fourth Place:** $50
Senior Division	**First Place:** $100	**Second Place:** $50	**Third Place:** $50	**Fourth Place:** $50

Lawrence M. Wells, Esq. Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division	**First Place (x2):** S250

Lemelson Early Inventor Prize

For an excellent invention project which demonstrates problem-solving, empathy, and entrepreneurial and environmental-friendly thinking.

Junior Division	**First Place:** $100 & certificate

Louis & Stacy Abruzzo Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division	**First Place (x2):** S250

Maxine Grossman Award

For an excellent project in the category of Plant Science.

Junior or Senior Division	**First Place:** $100

Mauro4micro Teacher Awards

For creative and insightful science teachers in memory of Dr. Mauro Martignoni.

Any Division	**Teacher Award (x4):** $250

NAI SunVista Commercial Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division	**First Place (x2):** S300

NASA Earth System Science Award

For the project that best demonstrates insight into Earth's interconnected systems. The project should incorporate studies of the different components of Earth systems, their interactions and their evolution over time.

Junior or Senior Division	**First Place:** Certificate & invitation to a webinar with a NASA scientist

National Oceanic and Atmospheric Administration Award

For the project whose research emphasizes NOAA's mission to understand and predict changes in Earth's environment and conserve and manage coastal and marine resources.

Junior or Senior Division **First Place:** Certificate

New Mexico Bank & Trust Awards

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division **First Place (x2):** $250

New Mexico Trout Award

For a project that supports the goals of New Mexico Trout: the study, conservation and restoration of riparian habitats.

Junior Division **First Place:** $100 and membership **Teacher Award:** $100
Senior Division **First Place:** $100 and membership **Teacher Award:** $100

Nusenda Credit Union Awards

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division **First Place (x2):** S250

Public Service Company of New Mexico (PNM) Awards

For an excellent project related to utility efficiency, energy or engineering.

ISEF finalists **Grand Award (x4):** S1000 to each ISEF finalist
Senior Division **First Place (x10):** S500
Junior Division **First Place (x10):** S500
Elementary Division **First Place (x4):** S250

Regeneron Biomedical Science Award

Awarded to an exceptional student scientist who not only demonstrates an impressive command of biomedical science and research but also embodies Regeneron's core values and behaviors, known as The Regeneron Way.

Senior Division **First Place:** $375

Regional Research Challenge Ingenious Research Award

For a project involving the testing and/or use of common materials.

Junior Division **First Place:** $100

Regional Research Challenge Junior Encouragement Awards

Sponsored by the Foreman Family. For outstanding middle school projects in **EACH** category.

Junior Division **First Place:** $35 **Second Place:** $30 **Third Place:** $25
Teacher Award: $25 to teacher of first place winners

Regional Research Challenge Scholarships to UNM

Senior Division **First Place:** A minimum $750 UNM scholarships to all 12th grade participants who enroll at UNM in the Fall of 2025 (one-time award for Fall 2025)

Richard Bild Memorial Research Challenge Award

For a student or team whose project demonstrates excellence in interdisciplinary research and who demonstrates an ongoing passion for STEM with excellent problem-solving, communication, and leadership skills.

Elementary Division **First Place(x2):** $25 **HM:** Certificate
Junior Division **First Place(x2):** $100 **HM:** Certificate
Senior Division **First Place(x2):** $200 **HM:** Certificate

Ricoh Regional Sustainable Development Award

For a project whose principles and technical innovations offer the greatest potential for increasing our ability to grow environmentally friendly and socially responsible businesses.

Junior or Senior Division **First Place:** Certificate

RKL Sales Award

For an excellent project related to real estate, including architecture, civil engineering or environmental issues.

Any Division **First Place(x2):** S250

Society for In Vitro Biology Award

For the most outstanding 11th grade students exhibiting in the areas of plant or animal in vitro biology or tissue culture.

Senior Division **First Place:** Certificate and membership in SIVB

Society of Women Engineers Award, Central New Mexico Section

For an exhibit in Engineering, Physics & Astronomy, Computer Science, Environmental Management or Energy & Transportation.

Junior Division **First Place (x2):** $100

Special Award in Memory of William Chambers

For projects in any category that demonstrate innovativeness, curiosity and passion for STEM in memory of long-time Research Challenge Judge and STEM supporter William Chambers.

Elementary Division **First Place:** $100
Junior Division **First Place:** $100
Senior Division **First Place:** $100

The Hartman + Majewski Design Group Award

For a project that displays excellence in the study or application of climate use in the built environment.

Any Division **First Place:** S250

United States Air Force Awards

For projects in Engineering, Space Sciences, Mathematics, Computers or Environmental Sciences or for projects that offer Air Force applicability.

Junior or Senior Division **First Place (x4):** Certificate & Tangible Award

United States Metric Association Award

For a project that involves a significant amount of quantitative measurement and which best uses the SI Metric System.

Junior or Senior Division **First Place:** Certificate & 1 year of membership in USMA

United States Navy and Marine Corps Awards

Naval Science Awards for excellent individual projects in science and engineering.

Junior Division **First Place (x3):** Certificate of achievement

Senior Division **First Place (x3):** Certificate of achievement and $50

University of New Mexico College of Pharmacy Awards

For a project related to the Pharmaceutical Sciences which best demonstrates an innovative problem, the scientific approach to the problem, the methodology for solving the problem, and the scientific interpretation of the results.

Elementary Division **First Place:** $100

Senior Division **First Place:** $200 **Teacher Award:** $200

University of New Mexico Health Sciences Center Awards

For excellent projects in each of the categories of Biochemistry, Medicine & Health and Microbiology.

Junior Division **First Place:** $150 **Second Place:** $100 **Third Place:** $50

Senior Division **First Place:** $150 **Second Place:** $100 **Third Place:** $50

UNM ARTSLab Award for Outstanding Design & Communication

Awarded to projects that use creative and engaging design to communicate a scientific idea effectively.

Senior Division **First Place (x2):** $250

UNM Center for Stable Isotopes (CSI) Research Award

Awarded for an exceptional project that involves molecules or isotopes.

Senior Division **First Place:** $250 **Second Place:** $150 **Third Place:** $100

UNM Museum of Southwestern Biology Award

For outstanding project focused on natural history and biology of New Mexico.

Senior Division **First Place:** $250 **Second Place:** $150 **Third Place:** $100

Water Environment Federation - Stockholm Junior Water Prize

For an outstanding project related to water quality, water resource management, water protection, water treatment.

Senior Division **First Place (x2):** Certificate and possible advancement to State Stockholm competition.

Yale Science and Engineering Association, Inc. Award

For an outstanding 11th grade student exhibiting in the area of Computer Science, Engineering, Physics or Chemistry.

Senior Division **First Place:** Certificate

Congratulations to all the student participants and winners!

27	7	31	88	22	16
Co	N	G (a)	Ra	T (i)	S
Cobalt 58.933	Nitrogen 14.007	Gallium 69.732	Radium 226.025	Titanium 47.88	Sulfur 32.066

MELANIE A. STANSBURY
MEMBER OF CONGRESS

COMMITTEE ON NATURAL RESOURCES
RANKING MEMBER, SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

COMMITTEE ON OVERSIGHT AND ACCOUNTABILITY
SUBCOMMITTEE ON ECONOMIC GROWTH, ENERGY POLICY, AND REGULATORY AFFAIRS
SUBCOMMITTEE ON GOVERNMENT OPERATIONS AND THE FEDERAL WORKFORCE

Congress of the United States
House of Representatives
Washington, DC 20515–3101

NEW MEXICO
FIRST CONGRESSIONAL DISTRICT

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To those who participated in the 2025 Central NM Research Challenge,

It is with pride that I extend my deepest congratulations on this year's inquiries. STEM affects our lives in profound ways—fueling new discoveries in medicine and designing innovative responses to the grand challenges facing New Mexico and the world at large. By coming up with inventive approaches to complex social challenges and solutions for sustainable lifestyles, you become the leaders of tomorrow.

I am always happy to see New Mexicans doing exceptional things around the country and the world. It is the honor of my lifetime to represent New Mexico in Congress and to showcase the talent our state possesses on a national level.

You are continuing the tradition of New Mexican excellence, innovation, and success.

The University of New Mexico is recognized as one of the top research universities in the country, and I am proud to have it in New Mexico's First Congressional District. It is clear through this achievement that students, faculty, administrators, and staff pride themselves on scientific discovery. As a scientist and a forever student both in and out of the classroom; I encourage you all to continue learning and exploring the diverse world of STEM and serving our beautiful state.

I can not wait to see what you all do in the future! Now go and change the world around you.

Sincerely,

Melanie A. Stansbury

Melanie Stansbury
Member of Congress

State of New Mexico

Michelle Lujan Grisham
Governor

March 23, 2025

Dear Participants and Winners of the 2025 Central NM STEM Challenge,

I am honored to congratulate you on your outstanding achievements in the 65th Annual Central NM STEM Research Challenge. Your hard work and dedication shine through, reflecting the limitless potential of New Mexico's youth in Science, Technology, Engineering, and Math (STEM).

As Governor, I am continually inspired by students like you—bright, driven, and eager to shape the future. You are the next generation of scientists, engineers, and innovators who will drive progress in our state and beyond. New Mexico is a hub for scientific discovery, home to two national laboratories, Spaceport America, four military bases, leading tech companies, and top research universities. I encourage you to explore the incredible STEM opportunities available here.

This prestigious competition has a long history of preparing students for academic and career success. Many past participants have gone on to win international awards, secure patents, and work at top institutions—including NASA and renowned research labs. Your participation places you among an elite group of thinkers and problem-solvers ready to make an impact.
I also extend my gratitude to the parents, teachers, mentors, and community partners who have supported your journey. Your guidance and encouragement are essential to developing the next generation of STEM leaders.

Your passion and curiosity will drive innovation and propel New Mexico forward. As you continue your STEM journey, remember that your potential is boundless, and the opportunities ahead are limitless. Congratulations once again—your success today is just the beginning!

Sincerely,

Michelle Lujan Grisham
Governor

State Capitol • Room 400 • Santa Fe, New Mexico 87501 • 505-476-2200

ONE ALBUQUERQUE
city of albuquerque

OFFICE OF MAYOR TIM KELLER
one civic plaza nw, 11th floor
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Dear Research Challenge Participants,

I want to take this moment to celebrate your incredible achievements and commend the dedication and hard work that have brought you to this milestone in your educational and professional journey. Your passion for expanding your knowledge in science, technology, engineering, and mathematics is truly inspiring and demonstrates the drive and perseverence you have for your respective field.

New Mexico is home to some of the world's best in engineering and science, from our national laboratories to innovative local companies. Your commitment to STEM strengthens our community and ensures that New Mexico remains a leader in cutting-edge research and discovery. I have no doubt that each of you will continue to innovate, create, and make a lasting impact on our families, our communities, and beyond.

Reaching this point is no small feat, and the City of Albuquerque applauds your hard work and dedication. We are cheering you on today and always as you embark on your next endeavors.

Best of luck in the 2025 Central NM STEM Research Challenge!

Sincerely,

Mayor Tim Keller

City of Albuquerque

OFFICE OF THE VICE PRESIDENT FOR RESEARCH

March 23, 2025

Dear Research Challenge Participants,

Congratulations on your remarkable achievement in participating in the 2025 Central NM STEM Research Challenge! This milestone is not just a testament to your hard work and perseverance, but it also lays a strong foundation for your future academic and professional endeavors. Embrace this experience as a steppingstone, as the dedication and creativity you have demonstrated will undoubtedly propel you toward greater successes. Thank you for taking on this challenge and know that I am truly impressed with your drive, creativity, and innovative spirit.

As a scientist and researcher, I know that completing a research or engineering project during the best of times is difficult and can present many obstacles that must be overcome. I applaud your interest in discovery and encourage the curiosity you possess to explore new territory and tackle new challenges. Our state is home to world-class scientists and engineers, many of whom started out just like you in local and regional competitions. I believe many of you will ultimately join their ranks and contribute to the advancement of the digital age, produce solutions to global climate change, develop innovative treatments for a range of health issues, and create new products that improve our daily lives. As vice president for research at The University of New Mexico, I also encourage you to explore the many quality programs in science and engineering that UNM has to offer.

It's imperative we acknowledge that the success of this event is a testament to the incredible teamwork that underpins every student's research journey. We thrive when parents, teachers, mentors, friends, volunteers, and sponsors unite their efforts. This collective spirit not only fuels creativity and innovation but also reinforces the idea that together, we can tackle even the most daunting challenges the world throws our way. So, let's celebrate this collaboration of enthusiasm and support – because when we join forces, the possibilities are truly limitless!

I hope you take a moment to genuinely enjoy every aspect of this unique event, while continuing to ask questions of yourself and the other participants to truly understand more about our amazing world and what we are capable of achieving. I look forward to learning more about your successes in the years to come.

Best of luck in the 2025 Central NM STEM Research Challenge!

Sincerely,

Ellen R. Fisher

Ellen R. Fisher, Ph.D.
UNM Vice President for Research
Professor of Chemistry

HEALTH SCIENCES
OFFICE FOR DIVERSITY, EQUITY & INCLUSION

Dear Central NM STEM Research Challenge Participants,

Congratulations on participating in the 65th Annual Central NM STEM Research Challenge! Your dedication and hard work in conducting and presenting your research are truly commendable. Thank you for sharing your discoveries with us during this competition—we are inspired by your curiosity, innovation, and commitment to scientific inquiry. The time, effort, and hard work you have invested in expanding your knowledge in science, technology, engineering, mathematics, and health sciences fields are a testament to your passion, knowledge, creativity, and ingenuity.

Looking ahead, I am inspired by the bright future that you represent and help shape. Your contributions are not only driving solutions to pressing challenges such as climate change, public health disparities, cancer, and more, but also ensuring the continued growth of STEM-H careers in New Mexico and beyond. We need innovative minds like yours to keep our communities and country at the forefront of scientific discovery.

I also want to take a moment to recognize Karen Kinsman, Director and Senior Program Manager of the UNM STEM-H Center, who is leading her final Central NM STEM Research Challenge this year. For **23** years, Karen has been a tireless advocate for expanding STEM-H opportunities for students like you. Her dedication serves as a powerful reminder of the importance of mentoring future generations, strengthening communities, and fostering a spirit of curiosity, education, knowledge, and leadership to inspire others to reach greater heights and advance the STEM-H community.

I join your family, friends, classmates, educators, and mentors in celebrating your achievements. Thank you for being part of this year's competition, and I look forward to the lasting impact you will make in the years to come!

Sincerely,

Valerie Romero-Leggott, MD
Vice President and Executive Diversity, Equity & Inclusion Officer
HSC Endowed Professorship for Equity in Health
Professor of Family & Community Medicine
Executive Director, Combined BA/MD Degree Program
PI, New Mexico Workforce Diversity Center of Excellence

2025 STUDENT EXHIBITORS

Projects and virtual materials (abstract, virtual display board) can be viewed in the online Project Showcase. Click on link or scan QR code and then enter **KEY: CNMSRC2025**

Elementary Chemistry

ECHEM-1 Natalie Roberts *What is the Best Detergent for Stains?*

ECHEM-2 Alharith Mansour *Casein Thrives in Low pH, and We Thrive on Natural Plastic*

ECHEM-3 Mirabella Bernal *Soapy Saponins*

ECHEM-4 Lelianna Trias *Slime and Liquid Mixtures*

ECHEM-5 Izabella Cherino *Unraveling the Rainbow of Sweets*

ECHEM-6 Allison Cain *Chilled vs. Fresh: Which Cookie is the Best?*

ECHEM-7 Addison Chapman *Which Sugar Makes My Cookie Bake Tallest?*

ECHEM-8 Amy Teal *Did You Brush? Saving Your Smile from Sugary Drinks*

ECHEM-9 Carl Diaz *Milk Rainbow*

ECHEM-10 Camila Lin *Salt Water Battery*

ECHEM-11 Andreas Gallis *Got Milk? Which Milk Is the Best?*

ECHEM-12 Austin Rivera *How Do Different Cooking Methods Affect Vitamin C in Vegetables?*

ECHEM-13 Hannah Booth *Floating Egg*

Elementary Engineering & Energy

EENG-15 Dunya Abdelhack *Polybag Streeetch*

EENG-16 Cedar Stout *RC Hot Wheels*

EENG-17 Annika Mitchell *Saving the Planet One Noodle at a Time*

EENG-18 Ava Hegner *How Do the Size and Shape of Solar Ovens Affect the Internal Temperature?*

EENG-19 Dexter Baguskis & Emma Leinen *What Wind Works?*

EENG-20 Micaiah Awuah-Gyasi *Balloon Powered Cars*

EENG-21 Azra Begit *Obstacle Detecting Glasses*

EENG-22 Chloe De La O *Which Lubricants Make Hot Wheels Fast?*

EENG-23 Amaanah Vahab *Seismograph*

EENG-24 Bryce Encinias *Battle Cats Bristle Bots*

EENG-25 Viivi-Amarie Baca *Operation: Keeping Humpty Dumpty Safe*

EENG-26 Grace Abernathy & Mason Archuletta *Circuit to Automatically Water Your Plants*

EENG-27 Isaac Beltran Diaz & Jaden Morales Galindo *Drone!*

EENG-28 Joshua Martinez *Miniature Solar Tracking System*

Elementary Life & Environmental Sciences

ELIFE-29 Madison Garcia *The Water Cycle?*

ELIFE-30 Ivanna Lobato & Mahalia Ramirez *Which Bubble Gum Flavor Lasts the Longest?*

ELIFE-31 Emmalyn Connors & Judah Floyd *Strawberry DNA Extractions*

ELIFE-32 Razan Sheeaa *Which Soda Affects Your Bones the Most?*

ELIFE-33 Josephine Falzone Anderson *Mold, Mold, Moldy Mold!*

ELIFE-34 Jayla Kirlin & Kayleigh Lallement *Pretty Little Liar*

ELIFE-35 Yousef Telfah *The Effect of Different Light Wavelengths on Plant Growth*

ELIFE-36 June Crawford *Beats and Blood Pressure*

ELIFE-37 Gavin Marriott *Backcountry Water Treatment*

ELIFE-38 Gabriella Ebell, Adaline Lucero & Shelby Telfer *Water Filtration for the Apocalypse*

ELIFE-39 Aspen Edwards *Taste the Rainbow: How Color Tricks Taste Buds*

ELIFE-40 Maggie Meyerson *Hydroponics: Growing Without Soil*

ELIFE-41 Anastasia Hays *Plants as Painkillers*

ELIFE-42 Ahtahlia Guzman & Brianna Pardo *Comparing Energy Drinks*

ELIFE-43 Abigail Sandidge *What Is a Goat's Favorite Color?*

Elementary Physical Sciences

EPHYS-44 Jack Fielder *Kick Distance Experiment*

EPHYS-45 Vince Curtis *Hot Air Balloon Physics*

EPHYS-46 Cindy Curtis *The Art of Science*

EPHYS-47 Elowen Dudley *The Science Behind Art*

EPHYS-48 Audrey Sedillo *Let it Burn!*

EPHYS-49 Sofia Beverido *Magnetic Space Travel*

EPHYS-50 Michael Robbins *Facts and Friction*

EPHYS-51 Ian With *Light: Wave, Particle or Both?*

EPHYS-52 Lev Daugherty *Battle of the Gauges*

EPHYS-53 Niko Barela, Lucas Sipes & Preston Vogt *The Maglev Express*

EPHYS-54 Abdel Rahman El-Emawy *Sound Absorption*

EPHYS-55 Jasper Cisneros *What Materials Can Block a Wi-Fi Signal?*

EPHYS-56 Dominic Romero & Elias Young *Kick that Ball!*

EPHYS-57 Ava Camp & Ella Hollis *How Does the Number of Parachutes Affect Terminal Velocity?*

EPHYS-58 Kevin Stock *Rocket Nozzle Tests*

Junior Animal Science

JANI-101 Joseph Switzer *Which Homemade Fly Trap Catches More Flies?*

JANI-102 Max Berger & Felix Gray *Chickens and Robots: How Will They Interact*

JANI-103 Iris Huang *A Study in New Mexican Endangered and Threatened Animal Species*

JANI-104 Chelsea Avila-Rodriguez & Jayson Nguyen *Are You on a Cloud? So Are These Crickets! Feeding Crickets Vitamins to Improve Their Life Span and Nutrition to Humans and Animals*

JANI-105 Caroline Aldrich *Voices in the Air: From Syrinx to Symphony*

JANI-106 Mariam Elafandy *What Powder Prevents Ants from Ruining Your Picnic?*

Junior Behavioral & Social Sciences

JBEH-1001 Haley Vincent *The Affect of Natural Vs. Artificial Lighting on Humans Preforming Skills.*

JBEH-1002 Bradyn Hinkle *Yogurt Survey*

JBEH-1003 Ella Duque *Out of the Box: Does Age Affect Creativity?*

JBEH-1004 Santiago Del Curto *Food for Thought*

Junior Chemistry

JCHEM-201 Rustin Morgan *Cold Chemistry*

JCHEM-202 Aubern Bassett *Will It Bubble or Is It Trouble?*

JCHEM-203 Yusra Alawawdah *The Vitamin C Challenge: Which Fruit Reigns Supreme?*

JCHEM-204 Dylan Martinez *The Effect of Luminol*

JCHEM-205 Lillian Wendt *Casein Plastic*

JCHEM-206 Manasse Allaissem *Spherification*

JCHEM-207 Ghalia Mansour *Unlock the Science Behind the Gluten Strength: The pH Factor*

JCHEM-208 Noah Garrity *Salty Bread*

JCHEM-209 Aayah Momani *Which Type of Water Is the Hardest?*

JCHEM-210 Tashley Robinson *Soda and Mentos Explosion*

JCHEM-211 Angelina Anaya *Baking Soda Blast*

JCHEM-212 Ailyn Hernandez *Different Substances Melting Ice*

JCHEM-213 Andrew Auyang *What Is that Smell Bro?*

JCHEM-214 Bonnie Zhang *Water Drinkability: Is the Water You're Drinking Safe?*

JCHEM-215 Jonathan Shockley *Clean Carbon*

JCHEM-216 Mariel Grijalva *The Cool Blue Light of Luminol*

JCHEM-217 Omar Terrazas *Electrolyte Challenge*

Junior Computer Science & Robotics

JCOMP-301 Ruthvik Quadros *Do Major Tech Companies Steal/Sell Your Data?*

JCOMP-302 Aiden Benavidez *Building an Arduino Arm and Controller*

JCOMP-303 Erin Duselis *Is This Project AI Written?*

JCOMP-304 Sahana Paruchuri & Elena Schwarz *Can AI Predict Diabetes?*

JCOMP-305 Sai Alavala & Shahwar Imam *Can Rovers Terraform Mars?*

Junior Earth & Environmental Sciences

JENVR-501 Dixon Mortimer *How to Prevent Flash Flooding as a Result of Burn Scarring*

JENVR-502 Akshaya Potu *The Effects of Biodegradable Hydrogels on Plant Growth*

JENVR-503 Saideetya Chinala *Biodegradable Hydrogels for Conserving Water*

JENVR-504 Giovanni Cordova *Solar Purification*

JENVR-505 Marc Lucero *Landslides*

JENVR-506 Anaya Faruk *Beat the Heat*

JENVR-507 Avianna Bernal *Salty Soil*

JENVR-508 Zoheb Barrantes & Nash Robinson *How Does Climate Change Impact the Growth of the Lion's Mane Fungi?*

JENVR-509 Camylle Hubbard *Infrared Radiation and Thermal Absorption of Greenhouse Gases*

JENVR-510 Kayvan Tofighi *How Does Global Warming Affect Sea Plants Like Algae?*

JENVR-511 Brooke Otero *Plant Growth*

JENVR-512 Morgan Ross *Can the Same Plant Grow in Different Environments?*

JENVR-513 Cruz Martinez *Save the Earth Today, Survive Tomorrow*

JENVR-514 Gabriella Tapia *Water Purification*

Junior Energy & Transportation

JTRAN-901 Sydney Kerr *Burning Question: Which Heating Method Saves More, Propane, Furnace or Pellet Stove?*

JTRAN-902 Charles Read *Hydroelectric Power*

JTRAN-903 Ben Gates *May the Solar Power Be With You*

JTRAN-904 Maryam Adawee *Marble Roller Coaster*

JTRAN-905 Dylan Cash Gianoulakis *A Feasibility Analysis of Charging an EV Using Home Solar*

JTRAN-906 Bella Simpson *Renewable Energy*

JTRAN-907 Robert Ortiz *What Makes Horsepower?*

Junior Engineering

JENGR-401 Jacob Kaiser *Seeing as Far as Possible*

JENGR-402 Atticus Harris-Martinez *What is the Best Insulation?*

JENGR-403 Nathaniel Landis *Comparing the Abrasive Endurance of Polyurethane and Rubber*

JENGR-404 Eric Raymond *Protecting Planes*

JENGR-405 Zaynab Ali *Eco Fabric*

JENGR-406 Cosana Vlad *Most Effective House Insulation*

JENGR-407 Layla Abdelhack *Tensegrity Structures that Are More Stable*

JENGR-408 Ahmed Yusuf Gayipov *Does Weight Affect a Drone's Battery Life?*

JENGR-409 Augustin Cutrufello *Which Line to Hook Knot Has the Highest Breaking Strength?*

JENGR-410 Gareth Jones *Reducing Friction in a Bearing Using Magnetic Levitation*

JENGR-411 Heath Linam *Engineering and Designing a Solar Plane*

JENGR-412 Asher Montoya *Making a Cloud Chamber*

JENGR-413 Ashvita Prasankumar *Innovative Fire Safety: Utilizing Common Household Items as Fire Retardants*

Junior Medicine & Health Sciences

JMED-H-601 Gunner Moore *Which is Better? Red Bull or Monster*

JMED-H-602 Elijah Girroir *How Does PPI Affect Drug Absorption?*

JMED-H-603 Ruby Hennie *Sipping Smart*

JMED-H-604 Trenton Pitz *Get Your Heart Racing*

JMED-H-605 Omar Hamadi *Teeth Stains*

JMED-H-606 Autumn Nguyen *Unveiling Ichthyosis: A Comparative Study on Moisturizer Efficacy in Ichthyosis Vulgaris*

JMED-H-607 Miliani Romero *Why Eye Sight and Eye Color Matter*

Junior Microbiology

JMICRO-701 Harshin Jagirapu *The Efficiency of Nano Silver in Water Filtration Systems*

JMICRO-702 Natalya Almager *Kiss of Death: Investigating Bacteria on Makeup Products and Tools*

JMICRO-703 Dima Allaham *Antifungal Properties of Garlic*

JMICRO-704 Rubi Nodal *Microorganisms on Lip Glosses*

JMICRO-705 Gaganasree Munaga *Natural and Artificial Preservatives*

JMICRO-706 Oscar Groves *The Use of Heat as a Sanitizing Agent in Food Preparation*

JMICRO-707 Habbas Awawda *Fruit DNA*

JMICRO-708 Annah Sarmiento Hernandez *Battling the Brown: Which Liquid Can Prevent the Browning of an Apple?*

JMICRO-709 Nneka Anozie *E.Coli vs. Antibiotics*

Junior Physics & Astronomy

JPHY-801 Aanya Gandhi *Speed of a Windmill*

JPHY-802 Ethan Flores *Time Traveled*

JPHY-803 Claire Power *Throwing Shade: A Study of Sunshade Effectiveness*

JPHY-804 Ayden Wroten *Planes in a Tunnel*

JPHY-805 Kateri Toya *Pump It!*

JPHY-806 Sadie Grace Benally *How Does Speed Affect the Orbiting Altitude of Satellites?*

JPHY-807 Mila Kurth *Electricity From a Lemon: Do Different Size Wires Conduct Electricity at Different Rates?*

JPHY-808 Gabriel Trujillo *The Electric Grab*

JPHY-809 Samantha Keicher *Bouncing Basketball: How Energy Is Lost to Absorption when a Basketball Is Dribbled and How Different Surfaces Affect the Amount of Energy Absorbed*

JPHY-810 Afid Damian Reyes *Magnetic Fields and Where to Find Them*

JPHY-811 Tanya Wyatt *Project Shaolin Jester (determining radioactivity)*

Senior Behavioral & Social Sciences

SBEH-1201 Maleah Baca, Rylee Lohr & Annalisa Sanchez *Meow! Right or Left Pawed?*

SBEH-1202 Sarah Allman & Clara George *The Impact of Instrumental Music on Artistic Expression in Different Age Groups*

SBEH-1203 Ana Choe *The Impact of Visuals on Short-Term Memory Recall*

SBEH-1204 Nicole Mangu *Expectations vs. Reality: With Respect to Emotional Quotient (EQ), Do Perceived Lie Detection Abilities Measure Up to Actual Lie Detection Abilities When Tested?*

SBEH-1205 Daveany Lohr *Investigating Age Related Differences in the Recognition of Real vs Fake News*

SBEH-1206 Olivia Pacheco & Sarah Romero *The Great Photo Challenge: Distinguishing AI from Reality*

SBEH-1207 Carley Carmen Chavez-Williamson *Fighting Words: An Investigation of the Narrative Abilities in Professional Boxers*

Senior Biochemistry

SBIOCH-1901 Rachel Taylor *How Varied Amounts of a Serine Proteases Hemotoxin Affects Mammalian Red Blood Cells and Coagulation*

SBIOCH-1902 Rachel Rede & Salinda Stallings *Simulating the Effects of Beverages on Plasma through Osmosis*

SBIOCH-1903 Peyton Kerr *What is the Effect of the Peptide BPC-157 on the Growth of Planarian?*

Senior Chemistry

SCHEM-1301 Eric Gilbert & Britnie Robertson *Thermal Conductivity of Nanofluids*

SCHEM-1302 Elias Stanton *How Different Ingredients Affect the Taste and Texture of a Chocolate Chip Cookie*

SCHEM-1303 Charles Musick-Long *Synthesizing Multiple Gallium-indium Based Eutectic Alloys (allowing for the lowest freezing point for use as a coolant in advanced heat sinking technology)*

SCHEM-1304 Abbygale Gonzales & Brooklynn Ridenour *What Drinks Stain Your Teeth?*

SCHEM-1305 Vanessa Archuleta *The Properties of Antifreeze and their Benefits for Living Organisms*

SCHEM-1306 Asa Hoover *How Does the Presence of the Photocatalyst and Light Affect the Degradation of Pollutants in Water?*

SCHEM-1307 Rania Awawda *Electrolyte Energy*

SCHEM-1308 Elias Braun *A System for Scrubbing Carbon Dioxide from Exhaust Using Acid-Base Neutralization*

SCHEM-1309 Charley Torres *Combating Enamel Erosion*

SCHEM-1310 Julian Guerra *Drinks and Their Electrolytes*

Senior Computer & Mathematical Sciences

SCOMP-1401 Anirudh Nanda *Discovering Ground States of Molecules with Quantum Machine Learning Algorithms*

SCOMP-1402 Tanner Donaldson & Jacob Rice *Paradox Theory and Its Applications*

SCOMP-1403 Alfred Jones *Analyzing the SIR Model, Using Different Iterations of Epidemiological Simulations*

SCOMP-1404 Sowmya Sankaran *MED-X: An Explainable Multi-Agent System for Efficient Diagnostic Decision-Making Utilizing Multimodal Gastrointestinal Datasets*

SCOMP-1405 Journey Allison *Creating an Electronic Pencil that Converts Writing to Digital Text Using Neural Networks*

SCOMP-1406 Pramit Poudel *Gas Monitoring and Alert System using Raspberry Pi and Flask*

Senior Earth & Environmental Sciences

SENVR-1501 Emily Griego & Reese Revelles *Mealworm Munchies*

SENVR-1502 Gael Zeller *Using Various Types of Algae to Sequester CO2 from the Atmosphere*

SENVR-1503 Declan Padget *Which Method of Naturally Degrading Microplastics in the Soil Will Produce Closest to the Desired Result of No Plastic?*

SENVR-1504 Sebastian Stoker *Analysis of Microplastic Pollution in Albuquerque Water Sources Utilizing FTIR Spectroscopy*

SENVR-1505 Gabrielle Montoya *Exploring the Ability to Forecast Harmful Algal Blooms in the Chesapeake Bay*

SENVR-1506 Josiah Smith *Build a Pizza Box Solar Oven*

SENVR-1507 Alex Ballard & Joshua Ziegler *Algae Growth: The Effects of Algaecide*

SENVR-1508 Eric Valerio *Breaking It Down: How Environmental Factors Influence Material Degradation and Microplastic Formation*

SENVR-1509 Gene Huntley *Calibrating a Smoke Plume Simulations with Photogrammetry*

SENVR-1510 Alex Friedt *Salty Situations: Salinity Level's Effect on Marine Life Health*

SENVR-1511 Daniel Chavez-Williamson *To Seed or Not to Seed: The Critical Role of Harvester Ants in Native Plant Restoration in Desert Ecosystems, Taking into Account Seed Preferences and Nest Distance*

SENVR-1512 Naomi Boat *Study on the Effects of Temperature on Bird Populations of New Mexico*

Senior Energy & Transportation

STRAN-1701 Matthew Brooke *Improving Airliner Fuel Efficiency Through Aeroelastic Energy Reclamation*

STRAN-1702 Lily Romero *Optimal Amount of Nitrogen for Algae Growth as a Sustainable Fuel Source*

STRAN-1703 Kenan Star *Power of the Pulse: Exploring EMP Effects*

STRAN-1705 Gabriel Valdivia *Analysis of Various Insulation Materials and Their Efficiency*

Senior Engineering

SENGR-1601 Annika LeBaron *Blade Number and Pitch Effects on Propeller Efficiency*

SENGR-1602 Christina Agrusa & Marissa Montano *Spider Silk Sound Sensing*

SENGR-1603 Len Janert *EmotionAid: Facial Emotion Recognition with Auditory Aid for Apperceptive Prosopagnosia*

SENGR-1604 Anastasia Wells *Carbon Capturing Concrete Using Biochar*

SENGR-1605 Philip Marquardt *Creating Simulations of EFPs for Commercial Explosive Drilling Applications*

SENGR-1606 Tristan Dons & Dhruv Mody *Creating a Cost-Effective 3-Dimensional Water Filter*

SENGR-1607 Julia Montoya & Taylon Ortiz *Locked With a Ring*

SENGR-1608 David Brooke *Developing a Desalination Solar Still Utilizing Solar Concentrators to Increase Efficiency*

SENGR-1609 Maxim Stout *Engineering a Carbon Dioxide Hydrogenation Reactor for Methane Production*

SENGR-1610 Aiden Martinez *The Whipple Shield*

SENGR-1611 Aidan Panturad & Matthais Trujillo *Comparing the Amount of Lift Generated at 80mph by a Boeing 747 Flap to our Newly Designed Flap*

SENGR-1612 James Hung *Using Ansys to Analyze the Thermal Conductivity of EV Cooling Systems*

SENGR-1613 Oen Maritinez *Maximizing Power in Piezoelectric Generators*

SENGR-1614 Adan Corral & Jordan Mitchell *Helmet Cooling*

SENGR-1615 Joel Gibeson *Humane Cattle Shelter with Methane Absorbing Air Filtration Systems*

Senior Materials Science

SMATS-1101 Edward Bielejec *Analysis of Elastic Modulus in Superconductors, Using LAMMPS Molecular Dynamics Simulations*

SMATS-1102 Kylee Baker & Taliana Vargas *Comparative Analysis of Absorbency and Biodegradability: Organic vs. Synthetic Menstrual Products*

SMATS-1103 Stephen Mangu *Developing Sustainable Mycelium Biopolymer Insulators for Advanced Thermal Efficiency Applications*

SMATS-1104 Aarush Tutiki *ICEFAB-Nano: An Integrated Computational-Experimental Framework to Accelerate the Development of Highly Biofunctional Nanotherapeutics for Healthy and Cancerous Applications*

SMATS-1105 Keira Gray *RoadWays*

Senior Medicine & Health Sciences

SMED-H-1801 Alexandria Landavazo *Advances in Artificial Pancreas*

SMED-H-1802 Kiarys Abigail Asencio Javier *Acne's Correlation to School*

SMED-H-1803 Aditi Ganti *Gut Instinct: An AI-Driven Approach to Inflammatory Bowel Disease Diagnosis Using Microbial and Metabolite Data*

SMED-H-1804 Connor Cooper & Rebeca Cuadras *Nail Polish Remover and Your Nail Health!*

SMED-H-1805 Shahad Akasha & Jaislinn Chessman *How Does Energy Drink Consumption Affect Stomach Acid Acidity?*

SMED-H-1806 Jerry Stansfield *Beeting the Odds*

SMED-H-1807 Ahana Koushik *Epigenetic Analyses for Diabetes Risk and Resiliency*

SMED-H-1808 Natavianna Dodge *Engineering an Advanced Hybrid Closed-Loop Artificial Pancreas: Integrating Amylin, Glucagon, and GLP-1 Substitutes with an Arduino for Type 1 Diabetes Treatment*

SMED-H-1809 Damian Sanchez *How the Form of Helmets Affects their Function*

Senior Microbiology

SMICRO-2001 Matilda Lopez & Ray Samuel *Is It Really Clean?*

SMICRO-2002 Kevin-Khanh Do-Nguyen & Alexander Sitarz *Food Safety and Air Fresheners: Cause for Concern?*

SMICRO-2003 Nellie Zamora *Preserving Fruits and Vegetables with Essential Oils*

SMICRO-2004 Cameron Duncanson *How Does the Color of Light Affect the Type and Way Mold Grows on Certain Foods?*

SMICRO-2005 Charlie Groves *Health Hazards of Microorganisms that Survive in Wildfire Smoke*

SMICRO-2006 Hamsini Murali *How Does the Concentration of Kombucha Affect the Fermentation Process in Plant-based Oat Milk Compared to Cow's Milk?*

SMICRO-2007 Irina Gruzdeva *Oxidized Metal Surfaces: A Disinfection Quest*

SMICRO-2008 Stacey Asonganyi *The Algae Glow-Show: Understanding Nature's Detectives*

Senior Physics & Astronomy

SPHY-2101 Anderson Stoker *Preventing Shock Induced Brain Injury Using Various Shock Absorbing Materials And Structures*

SPHY-2102 Stephen Heard *Can Computer Simulations Accurately Predict the Behaviors of the Dzhanibekov Effect for Objects with Complex Shapes and Mass Distributions?*

SPHY-2103 Nathan Snow *Brace for Impact: How Different Knee Braces Affect Ground Reaction Forces*

SPHY-2104 Jacob Cummings *It's Not Rocket Science: Are Radioisotope Thermal Engines Efficient?*

SPHY-2105 Elizabeth Cousins *Cosmic Correlations*

Senior Plant Science

SPLANT-2301 Nataly Hernandez *Water Crystals vs. Biodegradable Hydrogels*

SPLANT-2302 LilyRose Larrabee & Daniel Long *Here's the Tea on Ephedra*

SPLANT-2303 Hyder Mandilawi & Sean Rey-Vaughn *Effect of Variable Electric Stimulation on Early Plant Development in Hydroponics*

SPLANT-2304 Lauren Buford *How Does the Ratio of Composted Coffee Grounds to Soil Affect the Growth Rate and Mass of Radishes?*

SPLANT-2305 Briana Calderon *How Different Amounts of Auxins and Cytokinins Affect the Root-to-Shoot Ratio in Radish Seeds*

SPLANT-2306 Madeline Leymon *Rooted in Earth: How Soil Types Affect Plant LIfe*

SPLANT-2307 Cordelia Wimmer *Shining a Light on Mushroom Growth*

SPLANT-2308 Aria Chandler & Byron Fails *The Effect that Seeds Have on Strawberry Preservation*

SPLANT-2309 Emma Bachtel *Determining the Best Aromatic Plants for Wet Humidity Conditions*

SPLANT-2310 Reuben Huntley *Study the Effects of Sound Frequencies on the Plants*

SPLANT-2311 Holly Steen *Optimizing Hydroponic Growth: Comparing System Performance and the Impact of Salinity Stress on Basil Plants*

Senior Robotics & Intelligent Machines

SROBO-2201 Emma Raymond *Training Artificial Intelligence to Detect Cancerous Moles*

SROBO-2202 Dylan Trinh *EduPredict: A Machine Learning Approach to Forecast Student Academic Performance*

SROBO-2203 Maddeaux Sanchez *Assessing the Accuracy of ChatGPT Versus Traditional Statistics in Sports Outcome Predictions*

SROBO-2204 Euiryeon Kim *Machine Learning-Enhanced Path Guide: Integrating Object Detection and Depth Estimation for Navigation Assistance to the Visually Impaired*

SROBO-2205 Bridget Braun *Testing AI: The Answers without Questions*

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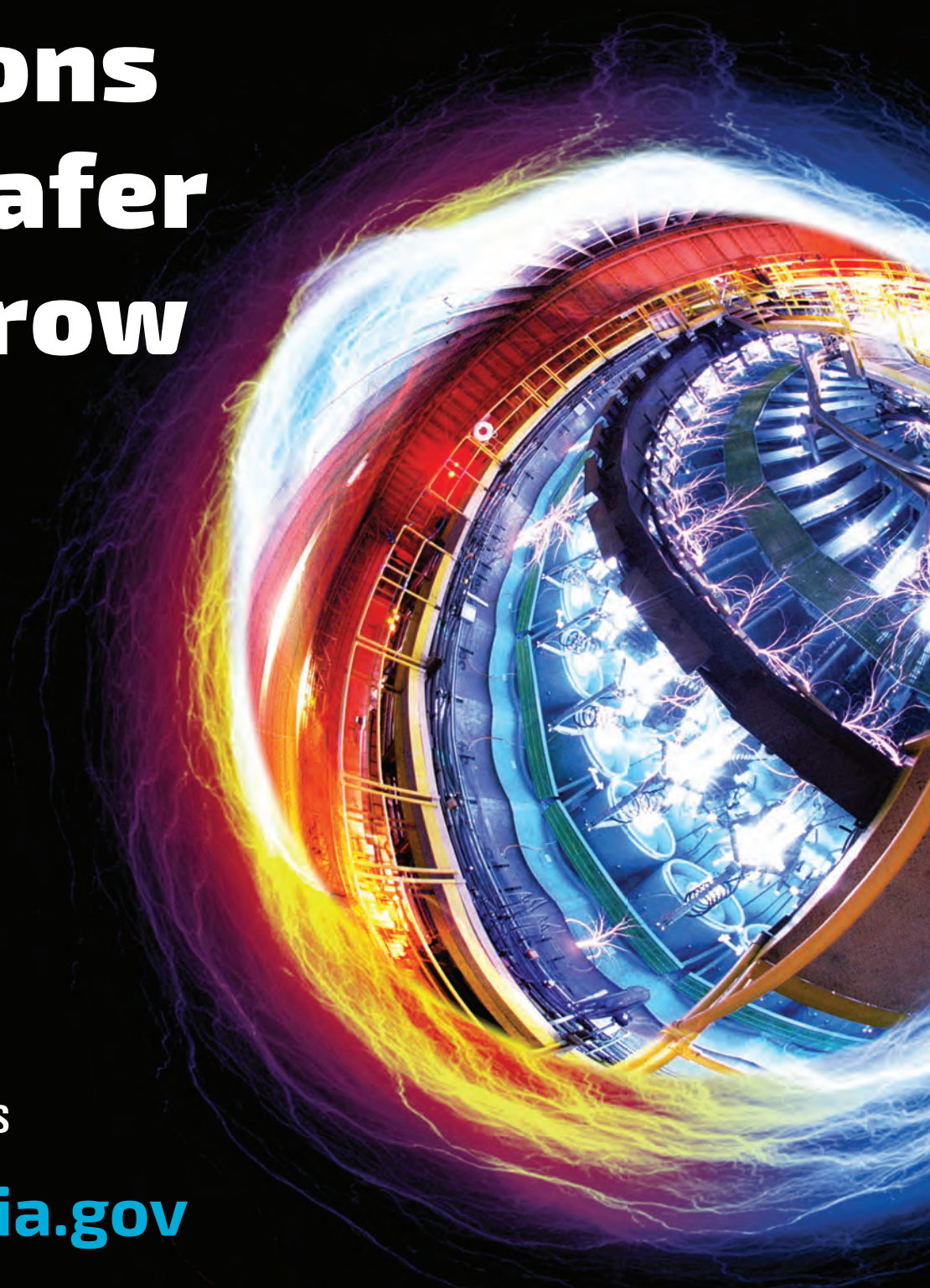

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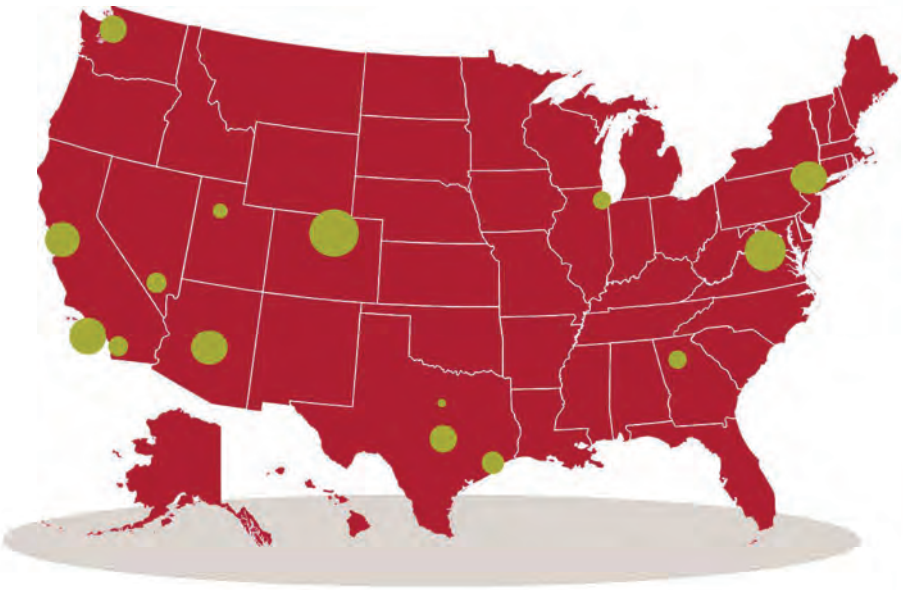

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02.

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