

# How Did DMRSEF Students Perform at the 2019 Colorado Science and Engineering Fair?

- **INTERNATIONAL SCIENCE AND ENGINEERING FAIR**
  - **Colorado State Science and Engineering Fair's First Place Best in Fair went to the DMRSEF student:**
    - Krithik Ramesh from Cherry Creek High School for the project Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions
  - DMRSEF will be sending four students in total to ISEF
    - Krithik Ramesh
    - Siddarth Ijju
    - Evelyn Bodoni
    - Skylar Gale
- **CATEGORY AWARDS**
  - **Junior Animal Sciences**
    - **Honorable Mention:**  
Deeksha Elango  
8th grade, SkyView Academy, Highlands Ranch  
"Effects of Surface Geometry on L. vannamei Habitats and Substrate Preference"
    - **Honorable Mention:**  
Trisha Balani  
"Hotter, Hungrier... Hornworms?!"  
8th grade, Challenge School, Denver
  - **Senior Behavioral Sciences**
    - **First Place**  
Shreya Naik, Callandra Peters, and Kezia Dick  
"Effect of TBI on Learning and Memory in D. melanogaster and the Efficacy of Piracetam as a Treatment"  
11<sup>th</sup>, 12<sup>th</sup>, 12<sup>th</sup> grade, Rock Canyon High School Highlands Ranch
  - **Senior Chemistry and Biochemistry**
    - **Second Place**  
Calvin Ewing 12th grade Olivia Cesarone 12th grade Sarah Mellett 12th grade "Efficacy of Triton X-100 as a Candidate for Whole Organ Decellularization" Rock Canyon High School
    - **Third Place**  
Nikhila Narayana  
"Does Adding Coconut Oil to Rice Reduce Its Calorific"  
9th grade, Rock Canyon High School

- **Honorable Mention**  
Akber Shaikh  
“Degradation, Stabilization, and Delivery of Immune System Targeted Drugs”  
9th grade, Cherry Creek High School
- **Junior Division Energy**
  - **Honorable Mention**  
Maxwell Benedict  
“The Effect of Air Pollution on Solar Panel Yield” 7th grade, Grant Beacon Middle School
- **Junior Division Engineering**
  - **First Place**  
Amanda Castillo-Lopez  
“Grey Water Recycling System Using Arduinos” 7<sup>th</sup> Grade, Challenge School Denver
- **Senior Division Engineering**
  - **First Place**  
Krithik Ramesh  
“Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions”  
11th grade, Cherry Creek High School
- **Senior Division Mathematics & Computer Sciences**
  - **Third Place**  
Austen Mazenko  
“Cop Strategy and Cop Number Analysis of k-Regular, Fully Active Cops and Robber Games”  
11th grade, Cherry Creek High School
- **Senior Division Medicine & Health**
  - **First Place**  
Shreya Shubhangi  
Effect of Maternal Weight on Insulin Sensitivity in Infant Umbilical Cord Mesenchymal Stem Cells  
12th grade Rock Canyon High School
  - **Second Place**  
Edwin Bodoni  
Bruxism: A Novel Diagnostic Approach - Part II 12th grade, Cherry Creek High School
  - **Third Place**  
Evelyn Bodoni  
“The Role of NGAL as a Biomarker for Acute Kidney Injury” 11th grade, Cherry Creek High School

- **Junior Division Microbiology & Molecular Biology**
  - **Honorable Mention**  
Nishita Kotlapati and Brenna Toll  
Diabolical Detergent  
7<sup>th</sup> Grade, Challenge School
  
- **Senior Division Microbiology & Molecular Biology**
  - **Honorable Mention**  
Fathima Thathey  
“Effectiveness of Turmeric as an Antibiotic against E. coli” 11<sup>th</sup> grade, Cherry Creek High School
- **Senior Division Plant Sciences**
  - **First Place**  
Gabriel Lorenz  
“Optimizing Mangrove Root Structure by Using 3D Printed Mangrove Models to Prevent Hurricane Waves”  
10<sup>th</sup> grade, SkyView Academy
- **SPECIAL AWARDS**
  - United States Department of Commerce Award for Excellence in Science and Engineering
    - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
  - United States Air Force Air Force ROTC Award
    - Akshunna Vaishnav from Cherry Creek High School  
Computer Modeling, Simulation, and Calculation of GPS Error Due to Fluctuations in Space Weather
  - United States Navy & Marine Corps Office of Naval Research Award
    - Rahul Thomas from Cherry Creek High School  
A Comparative Study of Neural Networks vs. Classical Methods for Solving Differential Equations
  - American Chemical Society Colorado Local Section ACS's Excellence in Chemistry Award
    - Dominic Moser from Notre Dame Parish School Denver  
Shocking Water
    - Akber Shaikh from Cherry Creek High School  
Degradation, Stabilization, and Delivery of Immune System Targeted Drugs
    - Calvin Ewing, Olivia Cesarone, and Sarah Mellett from Rock Canyon High School  
Efficacy of Triton X-100 as a Candidate for Whole Organ Decellularization
  - American Industrial Hygiene Association Rocky Mountain Section Excellence in Protection of Occupational Health and Safety Award

- Matthew Anderson from Cherry Creek High School  
Reduction of Aircraft Noise Via Landing Gear Surface Controls
- **American Institute of Aeronautics and Astronautics, Rocky Mountain Section AIAA Prize**
  - Matthew Anderson from Cherry Creek High School  
Reduction of Aircraft Noise Via Landing Gear Surface Controls
- American Statistical Association Colorado/Wyoming Chapter David Young Memorial Award
  - Krithik Ramesh from Cherry Creek High School  
Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time  
Navigational and Surgical Aid for Spinal Reconstructions
- United States Geological Survey USGS Excellence in Geological Research Award
  - Skylar Gale from Evergreen High School  
Relationships between Induced Seismicity and Saltwater Injection in Oklahoma
- Colorado Association of Science Teachers CAST Award
  - Calvin Ewing from Rock Canyon High School  
Efficacy of Triton X-100 as a Candidate for Whole Organ Decellularization
- National Oceanic and Atmospheric Administration Taking the Pulse of the Planet Award
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
- Colorado Biology Teachers' Association CBTA Best Biology Project
  - Lia Dino from Skinner Middle School  
The Effect of Biosolid Sludge on the Growth Curve of Escherichia Coli and the Impact of  
Antibiotics
  - Gabriel Lorenz from SkyView Academy  
Optimizing Mangrove Root Structure by Using 3D Printed Mangrove Models to Prevent  
Hurricane Waves
- Rocky Mountain Association of Geologists Excellence in Earth Science Award
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
- Colorado Dental Association CDA Excellence in Oral Health Award
  - Edwin Bodoni from Cherry Creek High School  
Bruxism: A Novel Diagnostic Approach - Part II
- Colorado Mycological Society Excellence in Mycological Research Award
  - Emma Purvis from Challenge School  
The Erosion Is Real: Comparing the Effectivity of Mycelium and Plant Roots on Soil Erosion
- Colorado Mineral Society Best Earth Science Award
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma

- Colorado Scientific Society Excellence in Geology Award
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
- Colorado State University Department of Chemistry Excellence in Chemistry Award
  - Calvin Ewing 12th grade Olivia Cesarone 12th grade Sarah Mellett 12th grade certificate, \$100 Rock Canyon High School Highlands Ranch Efficacy of Triton X-100 as a Candidate for Whole Organ Decellularization
- Colorado State University Dept. of Horticulture & Landscape Architecture Excellence in Horticulture Award
  - Julian Kramer from Good Shepherd Catholic School  
Growing with Color
  - Aubrey Stevens from Rock Canyon High School  
The Efficacy for Varying Methods for the Genetic Engineering of *I. purpurea* with the AtPCS1 Gene
- Lockheed Martin Lockheed Martin Aerospace Award
  - Matthew Anderson from Cherry Creek High School  
Reduction of Aircraft Noise Via Landing Gear Surface Controls
- Platte River Power Authority Special Award for Environmental Responsibility
  - Maxwell Benedict from Grant Beacon Middle School The Effect of Air Pollution on Solar Panel Yield
- Geological Society of America GSA Awards in Environmental Geology
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
- National Security Agency, Colorado Section NSA Award
  - Siddarth Ijju from Cherry Creek High School  
Fast MRI: Reconstructing MR Images Using Undersampled K-Space and a GAN
- Society of Women Engineers Rocky Mountain Section SWE Award
  - Amanda Castillo-Lopez from Challenge School Grey  
Water Recycling System Using Arduinos
- SPIE, the international society for optics and photonics SPIE Optics and Photonics Award
  - Julian Kramer from Good Shepherd Catholic School  
Growing with Color
  - Maxwell Benedict from Grant Beacon Middle School The Effect of Air Pollution on Solar Panel Yield
  - Krithik Ramesh from Cherry Creek High School  
Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions
  - Siddarth Ijju from Cherry Creek High School  
Fast MRI: Reconstructing MR Images Using Undersampled K-Space and a GAN

- Wojtaszek Family Paul Wojtaszek Memorial Award
  - Megan Hupka, Tabitha Samuel, and Seth Rohr from Rock Canyon High School  
Piracetam's Effect on Beta-Amyloid Plaque Formation and Paralysis on an Alzheimer's Model *C. elegans*
- University of Northern Colorado Mathematics and Science Teaching Institute Award
  - Amanda Castillo-Lopez from Challenge School Grey  
Water Recycling System Using Arduinos
- Intel Corporation Intel Excellence in Computer Science Award
  - Siddarth Ijju from Cherry Creek High School  
Fast MRI: Reconstructing MR Images Using Undersampled K-Space and a GAN
- Mu Alpha Theta Outstanding Achievement in Mathematics
  - Austen Mazonko from Cherry Creek High School  
Cop Strategy and Cop Number Analysis of  $k$ -Regular, Fully Active Cops and Robber Games
- Society for In Vitro Biology
  - Evelyn Bodoni from Cherry Creek High School  
The Role of NGAL as a Biomarker for Acute Kidney Injury
- Yale Science & Engineering Association Outstanding Achievement in Science & Engineering Award
  - Siddarth Ijju from Cherry Creek High School  
Fast MRI: Reconstructing MR Images Using Undersampled K-Space and a GAN
- Colorado Earth System Science Collaborative Colorado ESS Best Data Use Award
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
- Colorado Environmental Health Association Environmental Health Award
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
- Colorado Scientific Society Excellence in Geology Award
  - Skylar Gale from Evergreen High School  
Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma
- **SCHOLARSHIPS AWARDED**
  - Colorado School of Mines Colorado School of Mines CSEF Scholarships  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines
    - Siddarth Ijju
    - Evelyn Bodoni
  - Colorado State University, Fort Collins CSU-Fort Collins Scholarships  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years
    - Shreya Naik
    - Callandra Peters

- Kezia Dick
- Krithik Ramesh
- Gabriel Lorenz
- **BROADCOM MASTERS NOMINATIONS**
  - Amanda Castillo-Lopez
- **TEACHER AWARDS**
  - **CSEF Teacher of the Year Nominees**
    - Annette Humphrey  
Good Shepherd Catholic School Denver
    - Shawndra Fordham  
Rock Canyon High School Highlands Ranch
  - **CSEF Teacher of the Year Award**
    - Annette Humphrey  
Good Shepherd Catholic School Denver

