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”
      - 11th, 12th, 12th 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”
    7th 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
    7th Grade, Challenge School

• **Senior Division Microbiology & Molecular Biology**
  - **Honorable Mention**
    Fathima Thathey
    “Effectiveness of Turmeric as an Antibiotic against E. coli”
    11th 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”
    10th 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 Biosolids 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. elegan

- 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 Mazenko 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