

The 57th annual
**CoorsTek Denver Metro Regional
Science and Engineering Fair**



LEARN

GROW



CONNECT

2019-2020
ANNUAL REPORT



University of Colorado **Denver**



CU IN THE CITY

WWW.CLAS.UCDENVER.EDU/DENVERSCIENCEFAIR

COORSTEK

DENVER
METRO
REGIONAL
SCIENCE AND
ENGINEERING
FAIR

LEARN, GROW, CONNECT

We are delighted to introduce the annual report for the 2020 CoorsTek Denver Metro Regional Science and Engineering Fair (DMRSEF), a program of the Dean's Office of the College of Liberal Arts and Sciences at the University of Colorado Denver. The DMRSEF provides Denver-area middle and high school students (6th-12th grade) an annual opportunity to present their original research in an atmosphere of competition, creativity, and education. For all of these students, the fair represents a culmination of months (in some cases, years) of hard work and dedication and we are honored to celebrate this commitment with them.

The 2019-2020 fair season was one of many firsts. On the positive side, this was the first season in partnership with title sponsor, CoorsTek, and the first season with new Director, Dr. Erin Golden, at the helm. Both of these firsts brought new energy to the 57th annual fair, which was held at CU Denver on February 28, 2020.

In unexpected firsts, this was the first time that the science fair season was cut short due to a global pandemic; a turn of events that DMRSEF students (and staff) took in stride! In an eloquent pivot, the Colorado Science and Engineering Fair (CSEF), shifted to a virtual event in early April. DMRSEF students embraced this

new format and took home top honors across categories and divisions, including Junior and Senior Best In Fair awards. The International Science and Engineering Fair (ISEF) was also held in a modified capacity; one that eliminated the competitive aspect of the event, but still provided Colorado students a chance to learn, grow, and connect with the global science fair community.

As we reflect on this past season and look forward to the next, it is impossible not to wonder how the events of 2020 will irreversibly change our world. COVID-19 has accelerated the pace of technological innovation as we seek to find new ways to connect in an increasingly digital world. This year has also brought to the forefront a long overdue social awakening as we, as a society, reexamine the institutions that inherently reinforce cultures of inequity. At DMRSEF, we are optimistic that the co-incidence of these events can be a force for good, leveling the playing field by increasing access to project-based learning and mentoring opportunities like our fair. During the 2021 season, we are committed to engaging and supporting partners that share this forward-thinking vision. If you have specific ideas or a desire to help, we look forward to hearing from you. **Thank you!**

Erin Golden PhD, Director

Kayla Ahr, Associate Director

DenverScienceFair@ucdenver.edu | www.clas.ucdenver.edu/DenverScienceFair

ABOUT DMRSEF



OUR MISSION

The CoorsTek Denver Metro Regional Science and Engineering Fair prepares the next generation of STEM professionals by fostering an enthusiasm for science and inquiry. Our annual event offers students an opportunity to engage the Denver metro STEM community and to present their original research in an atmosphere of competition, creativity, education, and fun.

282

student scientists presented original research at the 57th annual CoorsTek DMRSEF

junior **190**
division students

senior division
92 students

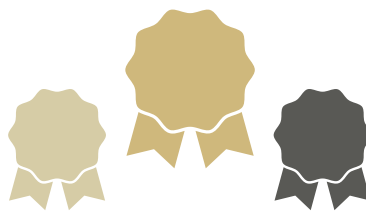


37 middle and high schools
from **4** Denver metro
counties

70 category
award winners

75 special
award winners

\$10,000 in cash
and prizes



120 community
volunteers

professional
200 judges

STEM Activities Fair
presenters &
speakers

22

\$40,000

cash and in-kind donations to
support year-round programming

2020
DMRSEF **11**
event partners



2020 SEASON



NEW PARTNERSHIP

This year, we welcomed **CoorsTek** as the three-year title sponsor of DMRSEF. CoorsTek employees joined the science fair community at every step, from kickoff, to planning, to awards!

NEW LEADERSHIP

DMRSEF bid a fond farewell to long-time director, Dr. Jennifer Hellier, and welcomed **Dr. Erin Golden** as our new director. **Kayla Ahr** was promoted to Associate Fair Director.



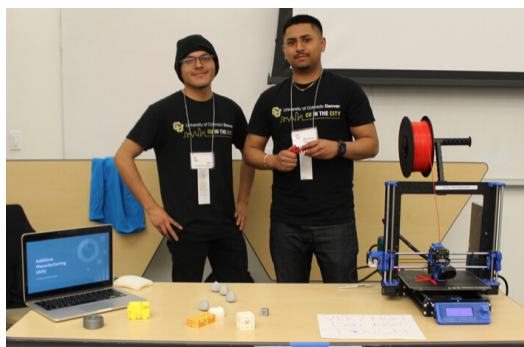
SEASON KICKOFF

The DMRSEF community came together to welcome new students and schools during an informational and social **celebration** of the beginning of science fair season.



STEAM OUTREACH

Throughout fair season, **CU Denver STEAM Team** students worked with participating classrooms to provide support and mentoring.



SRC REVIEW

Our volunteer team of **local science and engineering experts** worked directly with students to ensure their projects followed all rules and were science fair ready.



IN REVIEW

57TH ANNUAL DMRSEF

The CoorsTek Denver Metro Regional Science & Engineering Fair and awards ceremony were held at the University of Colorado Denver on February 28 and March 1, 2020.

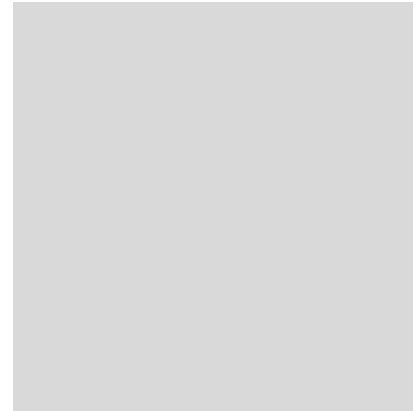


CSEF GOES ONLINE

Students prepared for the **state fair** to go virtual through online practice sessions with the DMRSEF committee, and took home multiple awards including **Best in Fair** spots in both the Junior and Senior Divisions.

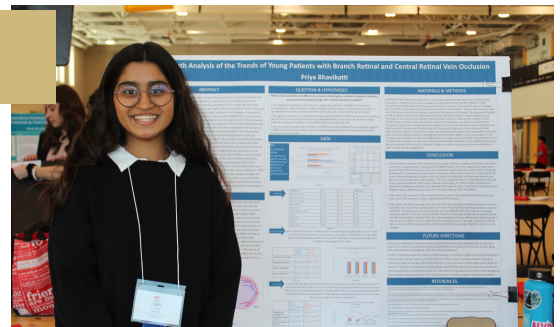
MODERN SOLUTIONS

The DMRSEF Team worked with Best in Fair winners to launch a Twitter campaign, encouraging students to continue sharing their projects despite competition cancellations. **#StayHomeAndScience**



VIRTUAL ISEF

In light of COVID-19, the **International Science & Engineering Fair** was held online in the form of a virtual project exhibit hall, learning experiences, and lineup of scientific discussion panels.



BEYOND DMRSEF

DMRSEF students participated in **other virtual science competitions** throughout the spring including CU Denver RaCAS, the 3M Young Scientist Challenge, the Junior Science & Humanities Symposium, Broadcom MASTERS, and more!

STUDENT EXPERIENCE



WHAT IS YOUR FAVORITE PART OF SCIENCE FAIR?

"Testing and being able to obtain results was definitely my favorite part! It was super cool being able to create and conduct my own experiments, talk to judges, and present my results."

"I have loved talking to the judges and presenting my project because I love answering people's questions and teaching them about our research"

"For me it is a place to learn, improve, interact with people, and share my hard work."

"It's an opportunity to share my findings with the world! I love it!"

WHAT DOES SCIENCE FAIR MEAN TO YOU?

"The science fair is a way to experience the projects that other brilliant minds came up with. It's a way to learn and improve my abilities, mistakes, and ideas."

STUDENT SATISFACTION SURVEY

Overall Experience



4.6/5

Volunteers & Staff



4.4/5

Judging & Presenting



4.5/5

AWARDS



BEST IN FAIR WINNERS

JUNIORS

1st Place: Rithvik Ijju, Challenge Middle School

"Neuroplasticity: Enabling Stroke Patients to Repair Motor Skills by Imitating Motion Between Hands"

2nd Place: Ayan Vaishnav, Campus Middle School

"What's Up Th-air? Utilizing a Simulation to Design the Impeccable Airfoil for a Commercial Airliner"

3rd Place: Diego Gutierrez-Raghunath, Escuela de Guadalupe

"Turning Heat into Electricity"

SENIORS

1st Place: Krithik Ramesh, Cherry Creek High School

"Determining Gene Interactions in Congenital Heart Disease as a Diagnostic Aid for Fetal Surgery"

2nd Place: Siddarth Ijju, Cherry Creek High School

"Predicting the Progression of Alzheimer's Disease using Graph Neural Networks and Diffusion MRI"

3rd Place: Gitanjali Rao, STEM School Highlands Ranch

"A Novel Approach to Early Directional Diagnosis of Prescription Opioid Addiction"



ADVANCING TO CSEF

DMRSEF nominated **47 individual and team projects to compete at the 2020 Colorado Science and Engineering Fair (CSEF)**, which was held virtually due to the COVID-19 pandemic.

DMRSEF students rose to the challenge of this novel presentation format, with **24 projects receiving recognition**, including multiple Best in Fair awardees!

SENIOR DIVISION BEST OF CSEF

1st Place: Matthew Anderson, Cherry Creek High School

3rd Place: Derek Fearon, Hope James, & Sage Wheeler, Rock Canyon High School

JUNIOR DIVISION BEST OF CSEF

2nd Place: Rithvik Ijju, Challenge Middle School



STEM ACTIVITIES FAIR

In addition to the competition itself, DMRSEF partners with local STEM outreach organizations, CU Denver, and the region's scientific community to host an activities fair that teaches students about the real-world applications of research science. Thank you to the **22 partners and presenters** who helped us spread excitement for STEM!



What students have to say...

"It's an opportunity to expand my knowledge and have professional conversations about science."

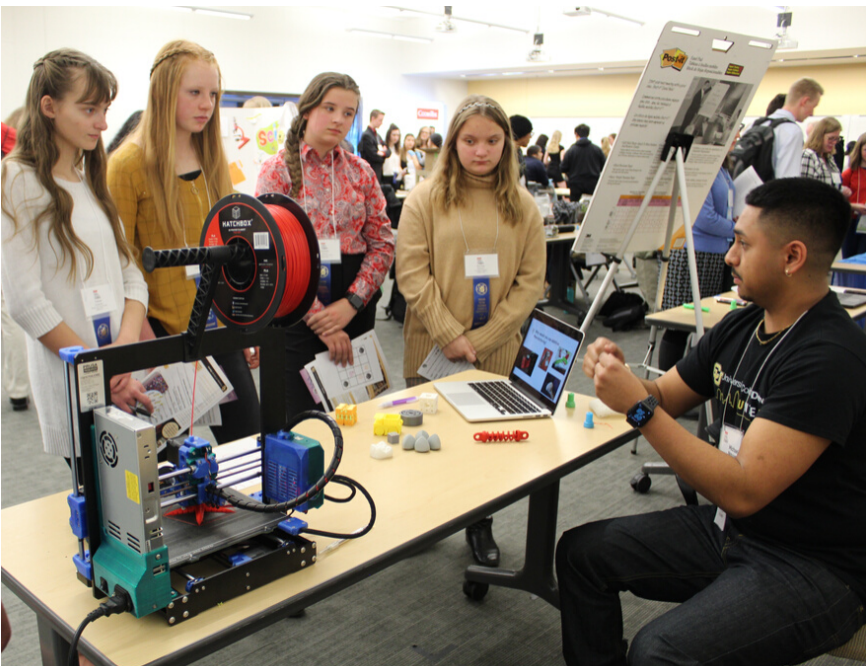
"Science fair is an opportunity for me to see female representation in STEM fields."

"I've become part of this community of science enthusiasts and I've learned a lot about different aspects of science"

Activity Fair Rating



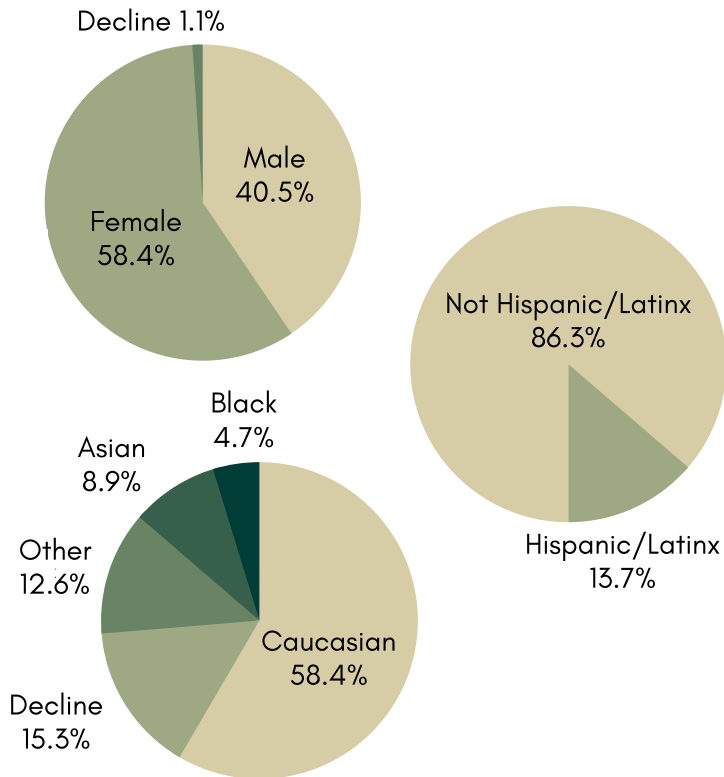
4.4/5



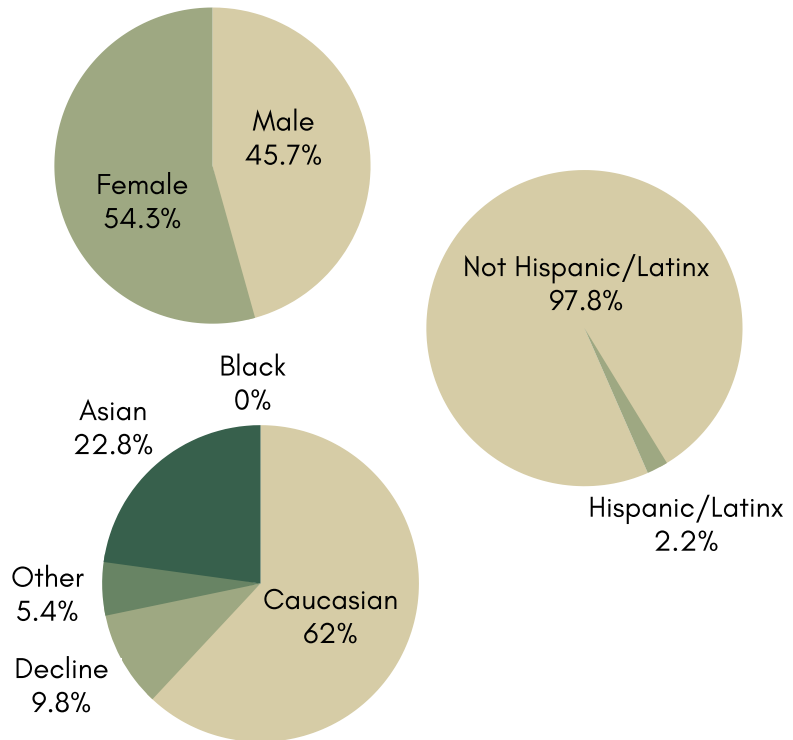
DEMOGRAPHICS

GENDER, RACE, & ETHNICITY

JUNIOR DIVISION



SENIOR DIVISION



SCHOOL PARTICIPATION

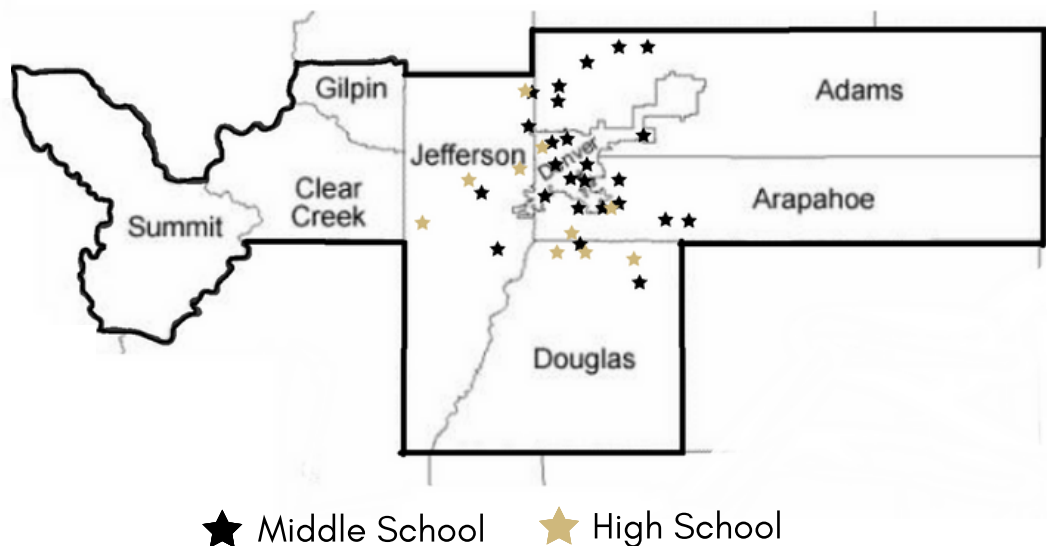
JUNIOR DIVISION

- 17 Public Schools
- 9 Private Schools
- 14% of students from schools with at least 50% free or reduced lunch

SENIOR DIVISION

- 11 Public Schools
- 0 Private Schools
- 2% of students from schools with at least 50% free or reduced lunch

Denver Metro Counties



EVENT PARTNERS

COORSTEK



College of Liberal Arts and Sciences
UNIVERSITY OF COLORADO **DENVER**

LAKE REGION OPTICS



DENVER MUSEUM OF
NATURE & SCIENCE



Undergraduate Admissions & K-12 Outreach
UNIVERSITY OF COLORADO **DENVER**

 **DONOR
ALLIANCE**
Organ & Tissue Donation

 **NREL**
Transforming ENERGY

**LEYENDECKER
LEMIRE, LLC**




Department of Medicine
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS



VIEW THE 2020 PROMO VIDEO

