

UAB-CORD CARSEF Winners

March 5, 2022

CARSEF TOP HONORS & REGENERON ISEF WINNERS

TRISHA BHEEMANATHINI

12th Grade

Alabama School of Fine Arts

Local and Global Factors in the Generalized Poggendorff Illusion

ELIZABETH LANCASTER

12th Grade

Alabama School of Fine Arts

Estimating Particulate Matter Exposure Across Populations in Alabama

CATHERINE KUNG

12th Grade

Indian Springs School

Recognition of American Sign Language (ASL) Trigger Words Using RF Sensors in Combination with Deep Neural Networks

MAYU NAKANO

11th Grade

Indian Springs School

Project Title – *Evolution of Oncogenic Signatures within Glioblastoma Along a Spatiotemporal Axis*

CARSEF Category Winners

Senior Division

BEHAVIORAL AND SOCIAL SCIENCE

1st Place

TRISHA BHEEMANATHINI

12th Grade

Alabama School of Fine Arts

Local and Global Factors in the Generalized Poggendorff Illusion

2nd Place

JACUB HEL

10th Grade

Hoover High School

Putting Music Theory to the Test: Emotional Effects of Scales and Intervals

3rd Place

REN PETERSON & HENRY EVANS

9th Grade

Alabama School of Fine Arts

The Effects of Music on Reaction Time

Honorable Mention

CHRISTOPHER EDWARDS

11th Grade

Holy Family Cristo Rey Catholic High School

Effectiveness of Learning Through Music

JAHNANI GRIMES & ALANA FILES

11th Grade

Holy Family Cristo Rey Catholic High School

Movies and Heart Stress

ARION ALLEN

12th Grade

Holy Family Cristo Rey Catholic High School

Social Media vs. Mental Health

BIOLOGY

1st Place

ZOYA ALEEZADA

9th Grade

Alabama School of Fine Arts

The Effect of Various Mediums of Mint Serving as a Fly Repellant

2nd Place

CAROLINE HANNAH

10th Grade

Patrician Academy

Beat the Bug

3rd Place

EVA LEDVINA

10th Grade

Jefferson County International Bacculaureate

Seasonal Differences in Bird Diversity in North Central Alabama

Honorable Mention

MAYA LUNDY

12th Grade

Alabama School of Fine Arts

Analyzing Phenotypic Differences in Life Cycle Stages in Agarophyton vermiculophyllum

LUIS SALAZAR

10th Grade

Holy Family Cristo Rey Catholic High School

Who Can Hold It Longer Short or Taller

VANESSA OLGUIN

12th Grade

Holy Family Cristo Rey Catholic High School

Lettuce Race

CHEMISTRY

1st Place

TYLER BOSTON

10th Grade

Holy Family Cristo Rey Catholic High School

Sports Drinks vs OJ

2nd Place

MADISON DRAKE

10th Grade

Holy Family Cristo Rey Catholic High School

Will it Boil?

3rd Place

TAYLIN FLANNIGAN

10th Grade

Holy Family Cristo Rey Catholic High School

Fizz Fast? Or Fizz Slow?

Honorable Mention

BENJAMIN KORNEGAY

11th Grade

Holy Spirit Catholic High School

Sour Patch Sizzle

LAYDA SEVILLA & EDDIE MIRANDA

12th Grade

Holy Family Cristo Rey Catholic High School

How Many Can a Penny Hold?

ENERGY AND TRANSPORTATION

1st Place

ADAM RUF

12th Grade

Hewitt-Trussville High School

Solar Powered Generator for Environmental Disasters

2nd Place

BLAINE WHITT, TYLER BACON & AUSTIN SMITH

12th Grade

Hewitt-Trussville High School

Backseat Safety Device to Keep Children Buckled and Prevent Them from Being Left in Hot Cars

3rd Place

KAYLEE BROOKS, SHELBY STOWE & HOLLIS PROSSER

12th Grade

Hewitt-Trussville High School

Designing a Safer Intersection

ENGINEERING

1st Place

CATHERINE KUNG

12th Grade

Indian Springs School

Recognition of American Sign Language (ASL) Trigger Words Using RF Sensors in Combination with Deep Neural Networks

2nd Place

JUDSON UPCHURCH

12th Grade

Hewitt-Trussville High School

Mid-Powered Rocket with Embedded Apogee and Time of Flight Control Systems

3rd Place

RYAN MONTGOMERY

12th Grade

Alabama School of Fine Arts

Synthesis and Characterization of Quercetin-, Tannic acid-, and Citric acid- Iron Complex Nanoparticles

Honorable Mention

J'ESSENCE BAILEY

12th Grade

Jackson-Olin High School

Which Bridge Can Hold the Most Weight?

CHASE ARMSTRONG & ZAC WILLIAMS

12th Grade

Hewitt-Trussville High School

Magnetic Space Boot System for Convenient and Easy Spacewalking

CARTER PARKER, ADDISON LOCKHART & OWEN SWINNEY

12th Grade

Hewitt-Trussville High School

Automatic Tee Machine

ENVIRONMENTAL AND EARTH SCIENCE

1st Place

ELIZABETH LANCASTER

12th Grade

Alabama School of Fine Arts

Estimating Particulate Matter Exposure Across Populations in Alabama

2nd Place

AANCHAL BEHARA

9th Grade

Alabama School of Fine Arts

Effect of Ocean Acidification on Calcification of Gastropod Shells

3rd Place

MARY CLARE INGRAM & MAREN SMITH

10th Grade

Homewood High School

Soiled Soils

Honorable Mention

ANNA EUBANKS

12th Grade

Hewitt-Trussville High School

Water Bottle Recycling Machine

AMILYAH SMITH

10th Grade

Holy Family Cristo Rey Catholic High School

Does Environmentally Friendly = Effective

ESTEFANI GARCIA

12th Grade

Holy Family Cristo Rey Catholic High School

Are Ants Picky Eaters

MATHEMATICS AND COMPUTER SCIENCE

1st Place

DANIEL ZHAO

11th Grade

Alabama School of Fine Arts

Lan-DLE: Uncertainty-Aware Autonomous Landing of Fixed-Wing Aircraft with Deep Learning Ensembles

2nd Place

ALEX HALBESLEBEN

11th Grade

Holy Spirit Catholic High School

Traffic Simulation

3rd Place

AARON PIYA

12th Grade

Alabama School of Fine Arts

Using Machine Learning to Predict Muon Neutrino Effective Area

Honorable Mention

SHAH MCNAIR & EMIL ANTSELEVICH

9th Grade

Alabama School of Fine Arts

Classification of Emotion in Text by a Recurrent Convolutional Neural Network

BETHANY FORDING

11th Grade

Holy Spirit Catholic High School

The Josephus Problem

MASON KELLER

12th Grade

Mountain Brook High School

How EDR and Dashcam Data Can Be Combined to Better Recreate a Car Accident

MEDICINE AND HEALTH SCIENCE

1st Place

MAYU NAKANO

11th Grade

Indian Springs School

Evolution of Oncogenic Signatures within Glioblastoma Along a Spatiotemporal Axis

2nd Place

IAN SHEN & WILLIAM PENG

9th Grade

Alabama School of Fine Arts

Evaluation of Antibacterial Activity in Garlic Extract and Oregano Essential Oil

3rd Place

AMITH VARAMBALLY

11th Grade

Vestavia Hills High School

Gene Expression Profiling of Tamoxifen Treated Estrogen Receptor Positive Breast Cancers Identify FOS and Jun as Potential Therapy Resistance Genes

Honorable Mention

JARI CHEN

11th Grade

Hoover High School

Mutational Spectrums of LZTR1

JAMES SHI

12th Grade

Alabama School of Fine Arts

Determining the Best shRNA for Knockdown of ATRX mRNA

LAURA PHILLIPS

12th Grade

Hewitt-Trussville High School

Arthritic Hand Device

PHYSICAL SCIENCE

1st Place

ARJUN IYER

10th Grade

Homewood High School

Determining the Optimal Martian Trajectory

2nd Place

DAVID MAZUR & MIDHUN SADANAND

11th Grade

Hoover High School

Optimizing the Extrusion of Polymers for Fused Deposition Modeling (FDM) Through Enhanced Contact Pressure Distribution Mechanisms

3rd Place

ALEJO JONES & LEANDRO FELIPS

12th Grade

Holy Family Cristo Rey Catholic High School

Long vs. Short

Honorable Mention

AMBER TONI SMITH

10th Grade

Holy Family Cristo Rey Catholic High School

Does Hand Eye Dominance Affect Shooting Percentages

IAN MAXWELL

10th Grade

Holy Family Cristo Rey Catholic High School

Which Battery Brand Lasts the Longest

RACHEL MORROW

9th Grade

Holy Family Cristo Rey Catholic High School

Isopropyl Alcohol vs. Water

CARSEF Category Winners

Junior Division

BEHAVIORAL AND SOCIAL SCIENCE

1st Place

BRIONY LOPER

7th Grade

Holy Spirit Catholic School

Comprehension for Students' Attention

2nd Place

WASFI AWWAD

7th Grade

Islamic Academy of Alabama

The Effect of Color

3rd Place

RHYANA MAHATSENTE

8th Grade

Tuscaloosa Magnet Middle School

How Does Video Gaming Affect Reaction Time in Adolescents?

Honorable Mention

ALIYYAH KHATOON-PETTY

8th Grade

Islamic Academy of Alabama

Stressed Out

DEANDRA THOMAS & MAKAILA STOECKER

8th Grade

Huffman High School

How Music Affects Your Test Taking Accuracy

JAIDEN SCOTT, JEREMIAH PICKETT & JACOB RAY

7th Grade

Green Acres Middle School

An Examination of the Correlation Between a Person's Knowledge of a Song and the Song's Tempo

Impact Walking Forwards and Backwards

BIOLOGY

1st Place

AESHA MULANI

6th Grade

Tuscaloosa Magnet Middle School
Which is More Effective in Killing Germs

2nd Place

GEORGE GRIFFIN GORDY

7th Grade

Holy Spirit Catholic School
Hey Bass, What's For Dinner

3rd Place

LAILA MUGHAL

8th Grade

Islamic Academy of Alabama
Iron City Eats

Honorable Mention

HAROON NABI

6th Grade

Islamic Academy of Alabama
How Clean Are Your Hands

AMELIA DILLARD

8th Grade

Duran North Junior High School
Acidic Soil Friend or Foe

BRODY MACOLLY

8th Grade

Duran North Junior High School
Bacteria is Everywhere

CHEMISTRY

1st Place

JOSEPH HARDIN

8th Grade

Holy Spirit Catholic School
Which Wood Smokes Least?

2nd Place

BRAYLYN ARRINGTON

6th Grade

Holy Spirit Catholic School
Spinny, Spinny Let Me Clean Your Penny

3rd Place

JULIA GRAY, KAYCE MURRAY & MCKINLEIGH DAWDELL

8th Grade

W.J. Christian School
Enchanted Crystals

Honorable Mention

SAFA ALNAHAM

7th Grade

Islamic Academy of Alabama
Ironic Breakfast

SAVANNAH STUBBS

7th Grade

Helena Middle School
What Melts the Ice Fastest?

MARAM ALAMARI

7th Grade

Islamic Academy of Alabama
Healthy Nails

ENERGY AND TRANSPORTATION

1st Place

ATHARV UDDI

8th Grade

Northridge Middle School

What is the Optimal Operating Temperature for Batteries in Electric Vehicles

2nd Place

HUDHAYFAH RASHEED & ZUBAYR RASHEED

8th Grade & 7th Grade

Islamic Academy of Alabama

Biodiesel vs Diesel

3rd Place

YUSUF NABI

7th Grade

Islamic Academy of Alabama

Cradle of Energy

Honorable Mention

REAGAN COTTINGHAM

7th Grade

Helena Middle School

Up, Up, and Away!

VENDETTA MUEHLBAUER

6th Grade

Islamic Academy of Alabama

Solar Car

HIBAH MOTHANA

6th Grade

Islamic Academy of Alabama

Keep It Cool

ENGINEERING

1st Place

ASHER WARREN

8th Grade

Duran North Junior High School

Avoiding Disaster

2nd Place

KASEN VIELLON

6th Grade

Holy Spirit Catholic School

Car Collision Damage Deduction

3rd Place

ALEX PADGETT

6th Grade

Holy Spirit Catholic School

Making Colonial Brick

Honorable Mention

CAYDEN ALLEN

7th Grade

Helena Middle School

Lego Bubbles

WYATT JERNIGAN

7th Grade

Helena Middle School

The Affects of Low Tire Pressure on the Speed of a Bicycle

HAMZAH ALZAT

7th Grade

Islamic Academy of Alabama

Longevity of Roofs

ENVIRONMENTAL AND EARTH SCIENCE

1st Place

SARAH SABATINO

7th Grade

Holy Spirit Catholic School

Is a Bundle Better?

2nd Place

KELLUM RANKIN

6th Grade

Hilltop Montessori School

Okra Seed Germination

3rd Place

AUBREY KENNEDY

7th Grade

Helena Middle School

Does the Type of Fertilizer Affect the Growth of Rye Grass?

Honorable Mention

JAMES REYNOLDS JR., LOGAN STINSON & KELSEY MURRAY

8th Grade

W.J. Christian School

Pyro Prevention

ABBY GIVENS

6th Grade

Holy Spirit Catholic School

Which Will Grow the Fastest?

LUCA ZELLNER

7th Grade

Evangel Homeschool

Red, Green, and BlackLights Tested, How Will These Plants Be Affected?

MATHEMATICS AND COMPUTER SCIENCE

1st Place

LOUISA MARKERT

8th Grade

Indian Springs School

MRI Image Analysis Using an Image J Based Algorithm to Predict New-Onset Dementia

2nd Place

MAYS MANGO & HAFSAH ALMUNTHAREE

6th Grade

Islamic Academy of Alabama

Catchy

3rd Place

MALAK ALABSI

6th Grade

Islamic Academy of Alabama

Zhould I Open It?

Honorable Mention

ANNA DEMPSEY & JACKSON HENDRIX

7th Grade

Helena Middle School

What Materials Can Block a WiFi Signal?

MEDICINE AND HEALTH SCIENCE

1st Place

SOPHIA GUO & NATHAN LEE

8th Grade

Northridge Middle School

Effectiveness of Hand Sanitizers by Price

2nd Place

SYMONE DAVIS & ALAN CHISEM

6th Grade

Green Acres Middle School

An Analysis of the Access to Whole Foods and its Impact on the Life Expectancy in Urban and Suburban Jefferson County Alabama Communities

3rd Place

GILIA JOHNSON & BRENNAN BALLARD

8th Grade

W.J. Christian School

"You Got Me Bent"

Honorable Mention

CATHERINE OSUCHA

6th Grade

Holy Spirit Catholic School

Which Stains

RAGHAD SALEH

7th Grade

Islamic Academy of Alabama

Safe Deodorant

PHYSICAL SCIENCE

1st Place

NOORAAN ELBAHRAWI & LEEN ZIDAN

8th Grade & 7th Grade

Islamic Academy of Alabama

That's Intense

2nd Place

OUSMANE DIALLO

8th Grade

Islamic Academy of Alabama

Temperature Tug of War

3rd Place

MARSHALL WILEY

7th Grade

Helena Middle School

Catching Stardust

Honorable Mention

ETHAN SWARDSON

6th Grade

Holy Spirit Catholic School

Let's Roll

CHANCE LACEY

8th Grade

W.J. Christian

Resistance of Materials

ALEX ZHU & RACHEL SHU

6th Grade

Northridge Middle School

How to Discover an Exoplanet?