

# UAB-CORD CARSEF Winners

March 7, 2015

## CARSEF Top Honors & Intel Winners

**Quinn McCormick**

11<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project Title – *Modifiers of Apis mellifera Flight Muscle Metabolism: A Field Study in a Working Apiary*

**Tyler Jackson & Austin Norwood**

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *Increased Efficiency in Solar Energy for Developing Countries*

**Makenzie Plyman & Madison Plyman**

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *The Removal of Arsenic (III) From Contaminated Drinking Water Using Iron Oxide Coated 3D Printed Beads*

**Maggie Knight**

10<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Correcting Ocean Acidification with Potassium Carbonate*

# CARSEF Category Winners

## Senior Division

<b>Behavioral &amp; Social Sciences</b>
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### 1st Place

Sameera Grandhi

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Increasing Interest and Understanding of Science Concepts through Lab Re-design*

### 2nd Place

Zahab Aleezada

10<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *How the Internet Affects Teenagers Based on BMI*

### 3rd Place

Alyssa Haynes

9<sup>th</sup> Grade

Pell City High School

Project Title – *The Effectiveness of Art Therapy*

### Honorable Mention

Jacy Coker

9<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project Title – *The Effect of Time Perception on Different Environments*

### Honorable Mention

Jazzlyn Miller

10<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Correlation Between Stress and Anxiety*

### Honorable Mention

Juan Cruz

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Examining Sleep Disturbance and Experimental Pain Sensitivity in Chronic Low Back Pain Participants and Healthy Controls*

## Biology

### 1st Place

Quinn McCormick  
11<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project Title – *Modifiers of Apis mellifera Flight Muscle Metabolism: A Field Study in a Working Apiary*

### 2nd Place

Jasmin Revanna  
12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Determining the Role of a Ganglion Cell Class in the Retina with Thermal Imaging*

### 3rd Place

Lauren Tinsley & Ashlynn Arnold  
12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *An Evaluation of the Effects of Vibrations on Bacteria Growth*

### Honorable Mention

Ryan Stack & Matt DeHart  
12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *Effect of Insulin Growth Factor-I on N98 Anchor Yeast*

### Honorable Mention

Madison Sinak  
11<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project Title – *The Effect of Household Materials on Red Harvester Ants*

### Honorable Mention

Ronnie Festok  
11<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project Title – *The Response of Hippodamia Convergens to a Light and Gravity Stimulus*

## Chemistry

### 1st Place

Mihir Limdi

11<sup>th</sup> Grade

Altamont School

Project Title – Effect of Indomethacin and Thrombin on Platelet Bioenergetics

### 2nd Place

Cordarian Banks

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – Purification and Crystallization of a Specific CFTR Synthetic Antigen Binding Fragment (Syn Fab)

### 3rd Place

Makenzie & Madison Plyman

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *The Removal of Arsenic (III) from Contaminated Drinking Water Using Iron Oxide Coated 3D Printed Beads*

### Honorable Mention

Varsh Sridhar

10<sup>th</sup> Grade

Jefferson County International Bacculaureate

Project Title – *The Electrochemical Determination of Potential Carcinogen, Bisphenol A (BPA), in Polycarbonate Plastic and Receipt Paper*

### Honorable Mention

Gregory Ridgel Jr.

11<sup>th</sup> Grade

Jefferson County International Bacculaureate

Project Title – *The Effectiveness of Various Proteases on Gelatin Digestion*

### Honorable Mention

Monica Pasala

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Cloning, Expression, and Characterization of Recombinant Coronavirus Microdomains*

## Energy & Transportation

### 1st Place

Austin Norwood & Tyler Jackson

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *Increased Efficiency in Solar Energy for Developing Countries*

### 2nd Place

Tyler Huang & Noel Dudeck

10<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Power Generation in Microbial Fuel Cells*

### 3rd Place

Andrew Smitherman

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *An Analysis of the Aerodynamic Efficiency of Wind Turbine Blade Designs*

### Honorable Mention

Samantha Sinak

10<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project title – *From Thermal to Electrical*

### Honorable Mention

Bela Patel

9<sup>th</sup> Grade

Indian Springs School

Project title – *Fuel Cell Future*

### Honorable Mention

Taylor Elliott & Ellyn Sartin

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *Alternative Method of Transporting Loads of Women in Developing Countries*

## Engineering

### 1st Place

Priya Shah  
12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Non-Invasive Monitoring of Inflammation in a Genetically-Modified, Tissue Engineered Vascular Model*

### 2nd Place

Tiffany Salas-Lopez & Abby Lewis  
12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *Budget Assistance App for Grocery Shopping*

### 3rd Place

Alexis Jordan & Jacob Spruiell  
12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *The Development of a Car Seat System Using Around UNO*

### Honorable Mention

Tameron Williams  
10<sup>th</sup> Grade

Pell City High School

Project Title – *Building a Better Safety Device*

### Honorable Mention

Natalia Duran  
9<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project Title – *What is the Effect of Saltwater Batteries on the Conductivity of a LED Lights on a Life Jacket*

### Honorable Mention

Jason Strickland & Vince Corey  
12<sup>th</sup> Grade

Hewitt Trussville High School

Project Title – *Increased Detection of Search and Rescue Missions*

## Environmental & Earth Sciences

### 1st Place

Maggie Knight  
10<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Correcting Ocean Acidification with Potassium Carbonate*

### 2nd Place

Briganna Abernathy  
11<sup>th</sup> Grade

Jefferson County International Baccalaureate

Project Title – *The Various Effects of Man Made Water Filters Utilizing Filters Using Fabric and Chemical Aids on Properties of Water*

### 3rd Place

Rowan El-Qishawi & Rozan El-Qishawi  
11<sup>th</sup> Grade & 9<sup>th</sup> Grade  
Hoover High School

Project Title – *Coal Energy or Pure Water...but Maybe Both, Alabama to Choose*

### Honorable Mention

Ben Mostafavi  
11<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *Biodiversity Along a Stream Gradient*

### Honorable Mention

Laura Beth Curlee & Ashlee Burns  
12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *The Development of a Qualitative Indicator for Vibrio Bacteria in Drinking Water*

### Honorable Mention

Dansby Benedict  
12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Efficacy of Microencapsulation in Oil Degradation*

## Mathematics & Computer Sciences

### 1st Place

Joshua Walker

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – Modeling a New Drug Delivery System in Silico

### 2nd Place

Noah Phillips

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Factors Correlating to Obesity in Alabama Counties*

### 3rd Place

Nath Tumlin

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *The Flying Pi Eye*

### Honorable Mention

Gavin Young

10<sup>th</sup> Grade

Indian Springs School

Project Title – *Cryptanalysis of a Vigenere Cipher*

### Honorable Mention

Sruti Josyula

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Crowdsourcing Diabetes Application*

### Honorable Mention

Wesley Biddie

12<sup>th</sup> Grade

Evangel Christian School

Project Title – *Building a Computerized and Writing Java Code for Solving Physics Equations*



## Medicine & Health Sciences

### 1st Place

Katie Delaney & Courtney Bradford

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *A Comparison of Foot Stride, Stride Rate, and Knee Angle at Foot Strike Between High-Performing and Low-Performing Females and Then Again Between High-Performing and Low-Performing Males of the High School Cross Country Team*

### 2nd Place

Arjun Guru & Amy Zhao

11<sup>th</sup> Grade

Altamont School

Project Title – *Gene Expression in Primary and Metastatic Kidney Cancer to Discover Drivers of Metastasis and Targets for Drug Development*

### 3rd Place

Arjun Lakhanpal

10<sup>th</sup> Grade

Altamont School

Project Title – *The Inhibition of the WNT-B Catenin Signaling Pathway by the Drug Niclosamide and its Analogs: A Therapeutic Agent for Triple Negative Breast Cancer*

### Honorable Mention

Krishna Shah

12<sup>th</sup> Grade

Alabama School of Fine Arts

Project Title – *Influence of the Cardiomyocyte Circadian Clock on Diabetes-Induced Alterations in Cardiac UCP3 Expression*

### Honorable Mention

Kenneth Jiao

9<sup>th</sup> Grade

Indian Springs School

Project Title – *Examine Abnormal Cardiomyocyte Differentiation in CHARGE Syndrome Using Mouse Embryonic Stem Cells*

### Honorable Mention

Kaylie Adcox

9<sup>th</sup> Grade

Pell City High School

Project Title – *Age of Onset of Common Rett Syndrome Symptoms*

## Physical Sciences

### 1st Place

Michael Elridge

12<sup>th</sup> Grade

Hewitt-Trussville High School

Project Title – *Examinations of Visible Light Intensity Given Off by Various Cathode Ray Tubes with Different Anodes*

### 2nd Place

Michael McGinnis

11<sup>th</sup> Grade

Jefferson County International Bacculaureate

Project Title – *Input Power Dependency of White Light Generation*

### 3rd Place

Cayla Carpenter

10<sup>th</sup> Grade

Pell City High School

Project Title – *Are You Out of Tune?*

### Honorable Mention

Elijah Rose

10<sup>th</sup> Grade

Jefferson County International Bacculaureate

Project Title – *Temperature Effects on the Magnetism Process*

### Honorable Mention

Mohammad Hamo

9<sup>th</sup> Grade

Indian Springs School

Project Title – *X-Ray Machine*

### Honorable Mention

William Levant IV

9<sup>th</sup> Grade

Jefferson County International Bacculaureate

Project Title – *What is the Effect of Environmental Temperatures on the Strength of Permanent Neo Magnets?*

# CARSEF Category Winners

## Junior Division

### Behavioral & Social Sciences

#### 1st Place

Anna-Julia Kutsch

8<sup>th</sup> Grade

Altamont School

Project Title – *The Confidence Issue*

#### 2nd Place

Aliyah Abasy

8<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *What's So Funny?*

#### 3rd Place

Yasmeen Almatubsi

6<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *How Fast Are You?*

#### Honorable Mention

McLean Bell

8<sup>th</sup> Grade

Altamont School

Project Title – *E-readers, Helpful or Hurtful*

#### Honorable Mention

Alexandra Pritchard

8<sup>th</sup> Grade

Altamont School

Project Title – *Gender Based Weight Preferences*

#### Honorable Mention

Jana Graves

7<sup>th</sup> Grade

Zora Ellis Junior High School

Project Title – *Instrumental Intelligence*

## Biology

### 1st Place

Jack Markert  
8<sup>th</sup> Grade

Indian Springs School

Project Title – *Smart Phone App and Jellyfish*

### 2nd Place

Krishna Josyula  
8<sup>th</sup> Grade

Indian Springs School

Project Title – *Bacteria Around Us*

### 3rd Place

Swapnil Patel  
8<sup>th</sup> Grade

Indian Springs School

Project Title – *Germ Invasion*

### Honorable Mention

Bentley Walker & Emma Faircloth  
7<sup>th</sup> Grade

Nicholas-Lawson Middle School

Project Title – *How Does Aspirin Water Affect Pansy Growth?*

### Honorable Mention

Ella Buckingham  
7<sup>th</sup> Grade

Saint Rose Academy

Project Title – *The Science of Clean Hands*

### Honorable Mention

Shurooq Elbahrawi  
6<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *Preservatives to the Rescue!*

## Chemistry

### 1st Place

Abigail Lowe

8<sup>th</sup> Grade

Altamont School

Project Title – *Which is the Best Way to Detect Forgery?*

### 2nd Place

Alexine Treist

8<sup>th</sup> Grade

Altamont School

Project Title – *Homemade or Industrial Detergent? Which one is Better?*

### 3rd Place

Shawn Cross

8<sup>th</sup> Grade

Huffman Middle School

Project Title – *Do Disinfectants Really Work?*

### Honorable Mention

Katherine Wilson

8<sup>th</sup> Grade

Altamont School

Project Title – *The Affect of Temperature on Acidity Level*

### Honorable Mention

Kelvin Ray Jr.

7<sup>th</sup> Grade

Huffman Middle School

Project Title – *Oh My Stomach!*

### Honorable Mention

Timothy McGrady

7<sup>th</sup> Grade

Nicholas-Lawson Middle School

Project Title – *Growing Sugar Crystals*

## Energy and Transportation

### 1st Place

Mohammad Ashour  
8<sup>th</sup> Grade  
Islamic Academy of Alabama  
Project Title – *Biodiesel Fuel*

### 2nd Place

Maya Guru  
8<sup>th</sup> Grade  
Altamont School  
Project Title – *The Fuel Cycle of the Future*

### 3rd Place

Ryan Wozniak  
7<sup>th</sup> Grade  
Our Lady of the Valley  
Project Title – *Wings a Flyin'*

### Honorable Mention

Jacob Steele, Hall Welborn, Peter Anella  
6<sup>th</sup> Grade  
Our Lady of the Valley  
Project Title – *Up, Up and Away*

### Honorable Mention

Nora El Mubaid  
7<sup>th</sup> Grade  
Islamic Academy of Alabama  
Project Title – *Does an Incandescent or Fluorescent Bulb Heat Faster?*

## Engineering

### 1st Place

Wesley Yeatman & Steve Kagia

5<sup>th</sup> Grade

Our Lady of the Valley

Project Title – *Which Bridge Design is Stronger?*

### 2nd Place

Madeleine Bond

7<sup>th</sup> Grade

Agape Academy

Project Title – *Portable Solar Charging Station for Developing Countries*

### 3rd Place

Mary Elizabeth Madden

5<sup>th</sup> Grade

Our Lady of the Valley

Project Title – *Save the Egg*

### Honorable Mention

Jessica Heberlein

5<sup>th</sup> Grade

Our Lady of the Valley

Project Title – *Zoom Coasters*

### Honorable Mention

Joshua Jayroe

8<sup>th</sup> Grade

Duran North Junior High

Project Title – *Trusted Everywhere?*

### Honorable Mention

Ahmad Hakim

7<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *Sound Detection Circuit*

## Environmental and Earth Sciences

### 1st Place

Maya Cassady  
8<sup>th</sup> Grade

Indian Springs School

Project Title – *Surface Ages of Planetary Bodies*

### 2nd Place

Mahmoud El-Qishawi  
8<sup>th</sup> Grade

Bumpus Middle School

Project Title – *Molluscs!...Will You Save Alabama Drinking Water from Coal Contamination!*

### 3rd Place

Wamda Eltoum  
8<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *Cinnamon as a Rooting Hormone: Extracting the Active Ingredient*

### Honorable Mention

Colin Mobley  
7<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *The Effect of Water Sources on Plants*

### Honorable Mention

Catalina Font de Mora  
8<sup>th</sup> Grade

Altamont School

Project Title – *The Potential Effects of Non-native Aquatic Plants on the Amount of Dissolved Oxygen in Lake Guntersville*

### Honorable Mention

Kaitlyn Shields  
5<sup>th</sup> Grade

Our Lady of the Valley

Project Title – *Who Needs Dirt*



## Mathematics & Computer Sciences

### 1st Place

Amrita Lakhanpal

8<sup>th</sup> Grade

Altamont School

Project Title – *Help! I Got Hacked! How Fast Can Your Password Be Cracked?*

### 2nd Place

John Rose

5<sup>th</sup> Grade

Our Lady of the Valley

Project Title – *Which Color Makes You A Winner?*

### 3rd Place

Omar Qashou

7<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *Can Video Games Make You Smarter?*

### Honorable Mention

Jordan Fluker

8<sup>th</sup> Grade

Duran North Junior High

Project Title – *What Materials Can Weaken a Wi-Fi Signal?*

## Medicine & Health Sciences

### 1st Place

Seema Mallah

8<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *The Rapid Heartbeat*

### 2nd Place

Jackson Shields

8<sup>th</sup> Grade

Our Lady of the Valley

Project Title – *Got You Covered*

### 3rd Place

Ashley Bowen

8<sup>th</sup> Grade

Our Lady of Fatima

Project Title – *I've Got the Beat*

### Honorable Mention

Waleed Abdelqader

8<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *Heartburn Problems?*

### Honorable Mention

Elamin Elimam

6<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *Preservatives ad Health*

### Honorable Mention

Ernest Samuel

8<sup>th</sup> Grade

Riverchase Middle School

Project Title – *How Does Attention Deficit Hyperactivity Disorder Medication Affect an Individual*

## Physical Sciences

### 1st Place

Will Ashley

7<sup>th</sup> Grade

Cornerstone Christian Academy

Project Title – *No Strings Attached*

### 2nd Place

Serj Mee, Nathan Besch & Matthew Hosmer

5<sup>th</sup> Grade

Our Lady of the Valley

Project Title – *May The Force Be With You*

### 3rd Place

Lawson Seay

8<sup>th</sup> Grade

Duran North Junior High

Project Title – *Angry Balls*

### Honorable Mention

Talal Abdel Aal

6<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *The Effect of Temperature on the Amount of Carbon Dioxide in Carbonated Beverages*

### Honorable Mention

Alaa Karassi

8<sup>th</sup> Grade

Islamic Academy of Alabama

Project Title – *Electrophoresis*

### Honorable Mention

Thomas Wilcox

8<sup>th</sup> Grade

Zora Ellis Junior High School

Project Title – *Point Me Towards the Sugar*