UAB-CORD CARSEF Winners
March 1, 2014

CARSEF Top Honors & Intel Winners

Amber Gibson, Billy Smith & Isaac Searcy
12th Grade
Hewitt-Trussville High School
Project Title – Renovated Cane to Aid Indoor Travel for the Visually Impaired

Hayden Fowler
12th Grade
Alabama School of Fine Arts
Project Title – The Effect of α-Cyclodextrin on the Solubility of Methane into Water for the Formation of Clathrate Hydrates

Silin Li
12th Grade
Vestavia Hills High School
Project Title – The Reactivation of X-linked Tumor Suppressor Gene FOXP3 by Anisomycin and Xist Small Interfering RNA in Breast Cancer Cells

Tara Market
12th Grade
Indian Springs School
Project Title – Cytochrome c Oxidase Activity and Chemoresistance
CARSEF Category Winners
Senior Division

Behavioral & Social Science

1st Place
Monica Pasala
11th Grade
Alabama School of Fine Arts
Project Title – Observing the Correlation Between Brain Wave Patterns During the Assimilation of a Student’s Knowledge

2nd Place
Pooja Wagle
12th Grade
Alabama School of Fine Arts
Project Title – Neural Mechanisms Mediating Temporal Pavlovian Conditioning

3rd Place
Noel Dudeck & Charles Elmer
9th Grade
Alabama School of Fine Arts
Project Title – Does Natural Athleticism Imply Superior Hand-Eye Coordination

Honorable Mention
Maggie Bollinger
10th Grade
Pell City High School
Project Title – The Art of Being Yourself

Honorable Mention
Lauryn Graff
9th Grade
Pell City High School
Project Title – Does Caffeine Affect Short-Term Memory?

Honorable Mention
Abby Hodgens
9th Grade
Pell City High School
Project Title – What’s In A Face?
Biology

1st Place
Silin Li
12th Grade
Vestavia Hills High School
Project Title – The Reactivation of X-linked Tumor Suppressor Gene FOXP3 by Anisomycin and Xist Small Interfering RNA in Breast Cancer Cells

2nd Place
Mihir Limdi
10th Grade
Altamont School
Project Title – Cigarette Smoke Extract (CSE) Induced Changes in Prolyl Endopeptidase (PE) in Macrophages

3rd Place
Hannah Noah
11th Grade
Jefferson County International Baccalaureate
Project Title – Adaptation of Yeast Strains for Increased Biofuel Production from Waste Cellulose Biomass

Honorable Mention
Nikki Newman, Chloe Wilks & Darcy Echols
12th Grade
Hewitt-Trussville High School
Project Title – The Development of a Phosphate Sensing Plasmid Through Use of a Shuttle Vector in S. Cerevisiae

Honorable Mention
Elquis Castillo
10th Grade
Indian Springs School
Project Title – Survival of Tardigrades Exposed to Ionizing Radiation

Honorable Mention
Lydia Lindsey
11th Grade
Jefferson County International Baccalaureate
Project Title – What is the Effect of Light Availability on Carassius auratus Growth?
Chemistry

1st Place
Hayden Fowler
12th Grade
Alabama School of Fine Arts
Project Title – The Effect of α-Cyclodextrin on the Solubility of Methane into Water for the Formation of Clathrate Hydrates

2nd Place
Ian Smith, Micah Starnes & Logan McAlpin
12th Grade
Hewitt-Trussville High School
Project Title – Absorption of Cations from Aqueous Solutions Using Functionalized Carbon Nanotubes

3rd Place
Arrix Ryce
12th Grade
Jefferson County International Baccalaureate
Project Title – Spectrophotometric Determination of the ATP-dependent Steady-state Kinetic Parameters of E.coli Caseinolytic Peptidase B

Honorable Mention
Blake Adams
10th Grade
Jefferson County International Baccalaureate
Project Title – The Effect of Sucralose, Sacchrin, and Aspartame on the Fermentation of Yeast

Honorable Mention
Cailan Bevel
10th Grade
Thompson High School
Project Title – Investigation of Anti-Corrosive Agents for Aluminium

Honorable Mention
Dipali Patel
11th Grade
Jefferson County International Baccalaureate
Project Title – Optimization of Temperature in the Enzymatic Hydrolysis of Pretreated Hedera helix Biomass to Maximize the Glucose Yield for Bioethanol Production
**Energy & Transportation**

**1st Place**
Will Pannell  
11th Grade  
Altamont School  
Project Title – *Exploring Magnetohydrodynamic Propulsion Part 2*

**2nd Place**
Cole Crownhart  
10th Grade  
Jefferson County International Baccalaureate  
Project Title – *Comparing the Efficiency of Kudzu by Section for Use as a Biomass*

**3rd Place**
Aartni Namasivayam  
9th Grade  
Altamont School  
Project Title – *Optimizing Microbial Fuel Cells*

**Honorable Mention**
Josh Evens  
9th Grade  
Pell City High School  
Project title – *Natural Vs. Synthetic Insulation*

**Honorable Mention**
Craig Cantley  
10th Grade  
Altamont School  
Project title – *Will Dimples on the Wing of a Glider Affect its Drag*

**Honorable Mention**
Hanna Becerra  
9th Grade  
Jefferson County International Baccalaureate  
Project title – *Use of Enzymes in the Production of Biogas from Biodegradable Materials*
### Engineering

**1st Place**  
Amber Gibson, Billy Smith & Isaac Searcy  
12th Grade  
Hewitt-Trussville High School  
Project Title – *Renovated Cane to Aid Indoor Travel for the Visually Impaired*

**2nd Place**  
Lue Riddle, Callie Olszak & Thomas Maynard  
12th Grade  
Hewitt-Trussville High School  
Project Title – *High Altitude Battery Charge Using Temperature Differential as Sole Source*

**3rd Place**  
Jonah Sharkins  
12th Grade  
Alabama School of Fine Arts  
Project Title – *Fatigue Testing of Biodegradable Magnesium Implants Processed by Laser Shock Peening*

**Honorable Mention**  
Marisa Garrett  
12th Grade  
Hewitt-Trussville High School  
Project Title – *Hydraulic Cannon Bone Brace*

**Honorable Mention**  
Carson Bruce  
11th Grade  
Pell City High School  
Project Title – *Testing 1,2,3*

**Honorable Mention**  
Mary Beth Eaves, Tiffany Thornhill & Skylar Reaves  
12th Grade  
Hewitt Trussville High School  
Project Title – *Development of a Hand Prosthetic for an Arm Amputee*
Environmental & Earth Science

1st Place
Katelynne Herron
11th Grade
Jefferson County International Baccalaureate
Project Title – The Effects of Sedimentation on the Biodiversity of Benthic Macro-Invertebrates

2nd Place
Quinn McCormick
10th Grade
Jefferson County International Baccalaureate
Project Title – The Effect of Bisphenol A (BPA) On Oxidative Stress Enzymes in Artemia Salina and Neocaridina heteropoda: A Potential Mechanism of Increased Risk of Breast Cancer From Environmental Exposure

3rd Place
Briganna Abernathy
10th Grade
Jefferson County International Baccalaureate
Project Title – Various Water Filters Using Charcoal, Sand and Gravel

Honorable Mention
Azim Merchant
12th Grade
Alabama School of Fine Arts
Project Title – The Effects of Environmental Stimuli on Phenotypic Trends for Wild and Mutant Types for Arabidopsis Thaliana

Honorable Mention
Lauren Wall
12th Grade
Jefferson County International Baccalaureate
Project Title – Feeder Color Preferences of Hummingbirds

Honorable Mention
William Morgan
11th Grade
Pell City High School
Project Title – Fertilizer Impact on Paper White Narcissus Growth and Blooming
Mathematics & Computer Science

1st Place
Eric Lienert
12th Grade
Alabama School of Fine Arts
Project Title – Stimulation of Genetic Algorithms: Traffic Light Efficiency

2nd Place
Jack Ullrich
11th Grade
Altamont School
Project Title – Protecting Intellectual Property with Code Virtualization

3rd Place
Devin Sun
12th Grade
Alabama School of Fine Arts
Project Title – Control of Robotic Arm Through Facial Expressions: An Exploration of EEG Technology in Prosthetics

Honorable Mention
Wesley Biddie
11th Grade
Evangel Christian School
Project Title – Creating a Java Program to Evaluate Newtonian Physics

Honorable Mention
Ali Hakim
12th Grade
Alabama School of Fine Arts
Project Title – Using Non-parametric Techniques and the CAPM to Better Model Returns on an Asset

Honorable Mention
Cade Carter
10th Grade
Pell City High School
Project Title – Can You Make Your Wireless Faster
**1st Place**
Tara Market
12\textsuperscript{th} Grade
Indian Springs School
Project Title – *Cytochrome c Oxidase Activity and Chemoresistance*

**2nd Place**
Nicole Johnson
10\textsuperscript{th} Grade
Altamont School
Project Title – *Will the Use of Non-abrasive Potentially Harmful Bleaching Substances Affect the Rate at Which Stains are Removed from the Enamel*

**3rd Place**
Arjun Guru
9\textsuperscript{th} Grade
Altamont School
Project Title – *Hyperoxia Increases Endoglin, a Transforming Growth Factor-Beta-Co-Receptor III, in Newborn Mouse Lung Fibroblasts*

**Honorable Mention**
Maria Wall
10\textsuperscript{th} Grade
Jefferson County International Baccalaureate
Project Title – *Growth Rate of Bacteria in Room Temperature Infant Formula Over Time*

**Honorable Mention**
Arjun Lakhanpal
9\textsuperscript{th} Grade
Altamont School
Project Title – *The Effect of Niclosamide Analogs on Triple Negative Breast Cancer Cells*

**Honorable Mention**
Rofael Aleezada
12\textsuperscript{th} Grade
Alabama School of Fine Arts
Project Title – *Association Between BMI and Surgical Outcome in Patients with Crohn’s Disease*
1st Place
Jasmine Revanna
11th Grade
Alabama School of Fine Arts
Project Title – Linking Images to Digital Cameras by Observing Noise Patterns

2nd Place
Michael McGinnis
10th Grade
Jefferson County International Baccalaureate
Project Title – Tensile Strength and Bell’s Spaceship Paradox

3rd Place
Madison Sinak
10th Grade
Jefferson County International Baccalaureate
Project Title – Effect of Shielding on Moon Radiation

Honorable Mention
Takiria Lee & Denisha McNearly
11th Grade
Wenonah High School
Project Title – Temperature: Cold or Warm Does the Temperature on a Surface Effect the Extracting of Fingerprints

Honorable Mention
Alyssa Carpenter
9th Grade
Pell City High School
Project Title – Unknown Strength

Honorable Mention
Jacob Murdock
10th Grade
Cornerstone Christian School
Project Title – The Battery
CARSEF Category Winners
Junior Division

Behavioral & Social Sciences

1st Place
Duha Aishah
7th Grade
Islamic Academy of Alabama
Project Title – Curiosity Killed the Cat

2nd Place
Alexandra Pritchard
7th Grade
Altamont School
Project Title – Is it Really That Funny?

3rd Place
David Zell
8th Grade
Altamont School
Project Title – Do “Hands Free” Devices Make Driving While Conserving Safer?

Honorable Mention
Ada Cohen
8th Grade
Indian Springs School
Project Title – Do You Remember?

Honorable Mention
Sarah Toms
8th Grade
Indian Springs School
Project Title – Light at Night

Honorable Mention
Aliyah Abasy
7th Grade
Islamic Academy of Alabama
Project Title – Dare to Doodle
Biology

1st Place
Seema Mallah
7th Grade
Islamic Academy of Alabama
Project Title – Effect of Drinks on the Heart

2nd Place
Wamda Eltoum
7th Grade
Islamic Academy of Alabama
Project Title – Can Cinnamon Act as a Rooting Hormone

3rd Place
Sophie Sabri
8th Grade
Altamont School
Project Title – Lights for Flies

Honorable Mention
Jackson Shields
7th Grade
Our Lady of the Valley School
Project Title – No Ants in My Pants!

Honorable Mention
Rama Mansar
7th Grade
Islamic Academy of Alabama
Project Title – Chewy Bacteria

Honorable Mention
Elizabeth Murry
7th Grade
Altamont School
Project Title – Ladybug Eyesight
Chemistry

1st Place
Vivek Sasse
7th Grade
Altamont School
Project Title – How Blue Are You? Concentration of Food Dyes in Everyday Drinks

2nd Place
William Dennistan
7th Grade
Altamont School
Project Title – Let Them See You Sweat: The Evaporative Cooling Effect

3rd Place
Andrea Nicastro
8th Grade
Duran Junior High School
Project Title – Fruit Juices Vs. Sport Drinks: Which Beverage Contains More Electrolytes to Replenish the Body?

Honorable Mention
Malik El-Husari
8th Grade
Islamic Academy of Alabama
Project Title – Challenge of the Fittest pH

Honorable Mention
Saba Al-Mansoob
6th Grade
Islamic Academy of Alabama
Project Title – Drinks, Teeth, How?

Honorable Mention
Huan Yu Chang
7th Grade
Altamont School
Project Title – Which Drink to Choose?
Energy and Transportation

1st Place
Jake Colvert & Robert Plummer
8th Grade
Riverchase Middle School
Project Title – How Does a Spoiler Affect the Speed and Handling of a Car?

2nd Place
Bela Patel
8th Grade
Indian Springs School
Project Title – The Human Antenna

3rd Place
Asia Childs
8th Grade
Duran Junior High School
Project Title – What Type of Oil is Denser

Honorable Mention
Isabella Boackle
7th Grade
St. Rose Academy
Project Title – Who’s the Brightest in the Class: Saltwater or Freshwater

Honorable Mention
Reece Jones
8th Grade
Duran Junior High School
Project Title – How Long can a Water Rocket Stay in the Air with Different Volumes of Water and Different Launch Air Pressures?
Engineering

1st Place
Joey Brown
8th Grade
Altamont
Project Title – Swimming Hand Position

2nd Place
Will Stahlhut
8th Grade
Duran Junior High School
Project Title – What is the Best Material and Design to Protect Against Tsunamis?

3rd Place
Caleb Page
8th Grade
Riverchase Middle School
Project Title – Electric Motor Conductivity

Honorable Mention
Jacob Steele & Hall Welborn
5th Grade
Our Lady of the Valley
Project Title – Fling It

Honorable Mention
Mason Finch
8th Grade
Duran Junior High School
Project Title – Robots to the Rescue! Building and Testing a Search and Rescue Robot
Environmental and Earth Sciences

1st Place
Colin Mobley
6th Grade
Islamic Academy of Alabama
Project Title – The Effect of Artificial Lights on Plants

2nd Place
Malak Nasser
7th Grade
Huffman Middle School
Project Title – Does Homemade Fertilizer Help with Plant Growth

3rd Place
Nooraldein Alabsi
6th Grade
Islamic Academy of Alabama
Project Title – The Effect of Music on Plant Growth

Honorable Mention
Noor Ashouri
6th Grade
Islamic Academy of Alabama
Project Title – How Microwaves Affect Plants

Honorable Mention
Chandni Patel
7th Grade
Altamont School
Project Title – What Sorbent Absorbs the Most Oil

Honorable Mention
Fred Bonnie
7th Grade
Columbiana Middle School
Project Title – Temperature Variation in Atmospheric Air Vs. CO2 Enriched Air
1st Place
Tianxin Zhang
8th Grade
Indian Springs School
Project Title – Golden Ratio: Standards of Beauty

2nd Place
Conner Hamlin
8th Grade
Duran Junior High School
Project Title – Which Holds More Data: a CD or DVD?

3rd Place
Tyler Morris
8th Grade
Columbiana Middle School
Project Title – Linear Frequencies

Honorable Mention
Kaylie Adcox
8th Grade
Duran Junior High School
Project Title – Which Genre of Music has the Most Mathematical Sequences: Classical, Country, Rap, Pop or Rock?

Honorable Mention
Karli Blankenship
8th Grade
Duran Junior High School
Project Title – Does the Birthday Paradox Stand True?

Honorable Mention
Amrita Lakhanpal
7th Grade
Altamont School
Project Title – Covering Numbers: The C++ Way
1st Place
Danna Refai
8th Grade
Indian Springs School
Project Title – Sugar Rush Part 2

2nd Place
Nivedita Rao
8th Grade
Altamont
Project Title – Vitamin C - “A Wonder Nutrient” - How to Get More In a Healthy and Delicious Way!

3rd Place
Hader Ahmed
6th Grade
Islamic Academy of Alabama
Project Title – Spices Vs. Bacteria

Honorable Mention
Zuka Al-Safarjalani
8th Grade
Islamic Academy of Alabama
Project Title – Sleep for Memory

Honorable Mention
Will Morris
7th Grade
Columbiana Middle School
Project Title – What Does the Meter Say?

Honorable Mention
Mohammad Ashow
7th Grade
Islamic Academy of Alabama
Project Title – Augmentin? Think Again!
**Physical Sciences**

**1st Place**
Jonathan Sexton  
7th Grade  
St. Rose Academy  
Project Title – *Weight Versus Inertia – Which Wins?*

**2nd Place**
Will Roberts  
7th Grade  
Columbiana Middle School  
Project Title – *Weighing in on Density*

**3rd Place**
Jacob Walton  
7th Grade  
Columbiana Middle School  
Project Title – *Swoosh! Starting Position of Basketball Hit or Miss*

**Honorable Mention**
Hollie Thweatt  
8th Grade  
Duran Junior High School  
Project Title – *How Does Vocal Range Change with Age?*

**Honorable Mention**
Danielle Hanrahan, Nicole Wilson & Dalton Hanrahan  
7th Grade  
Nichols-Lawson Middle School  
Project Title – *Busted*

**Honorable Mention**
Noah Harper  
6th Grade  
Columbiana Middle School  
Project Title – *Battle of the Battery Brands*