

## Junior Division

## Animal Sciences

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |  |
|----------------|--------------|------------------|--------------------------------------|--|
| JR-01-001      |              |                  |                                      | Hamster Motivation   |
| Liam Athenry   | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| Julia Warren   | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-01-002      |              |                  |                                      | Which dog food is most easily digested?  |
| Vera Welborn   | 7            | Spears, Emily    | Lakeside Middle School               |  |
| JR-01-003      |              |                  |                                      | Back It Up: Considering the impact of saddles when studying hoof pressure over fences    |
| Ellie Bruscia  | 7            | Bruscia, Michael | Charlottesville Catholic School      |  |
| JR-01-005      |              |                  |                                      | What color dog toys stand out best when dogs look at them?                               |
| Ava Tammen     | 7            | Spears, Emily    | Lakeside Middle School               |  |
| JR-01-006      |              |                  |                                      | It's Winter! Is the Beehive Running out of Food? Let's use Temperature to Figure it out! |
| Zepherin Soika | 6            | Bruscia, Michael | Charlottesville Catholic School      |  |
| JR-01-011      |              |                  |                                      | Are fingerprints inherited?  |
| Cecilia Nguyen | 7            | Kennedy, Beth    | Edward E. Drew Jr. Middle            |  |

## Junior Division

## Behavioral and Social Sciences

| <u>Student</u>    | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |   |
|-------------------|--------------|------------------|--------------------------------------|---|
| JR-02-001         |              |                  |                                      | Music and Memory  |
| Taylor Lively     | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |   |
| JR-02-002         |              |                  |                                      | In One Ear and Out the Hand   |
| Arianna Ainsworth | 7            | Anderson, Rachel | Community Christian Academy          |   |
| JR-02-004         |              |                  |                                      | Music and Memory  |
| Eli Nicoletti     | 7            | Conover, Tracy   | King George Middle                   |   |
| JR-02-005         |              |                  |                                      | Human and Environmental Stressors: Effects On Ant Colony Behavior                   |
| Matthew Cottler   | 8            | Bruscia, Michael | Charlottesville Catholic School      |   |
| JR-02-006         |              |                  |                                      | Online VS In-Person - Do students learn better through in person or online methods? |
| laurel sechser    | 8            | Deane, Anne      | Tandem Friends School                |   |
| JR-02-007         |              |                  |                                      | How Blue light affects Sleep Patterns   |
| Alayna Krumrie    | 7            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |   |
| JR-02-008         |              |                  |                                      | The effect of music and gum while testing   |
| Markus Washington | 8            | Schuh, Marie     | Thornburg Middle                     |   |

## Junior Division

## Biochemistry

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |  |
|----------------|--------------|------------------|--------------------------------------|--|
| JR-03-002      |              |                  |                                      | To beef or not to beef: the ultimate quandary  |
| Alex Lesicka   | 7            | McCallum, Deanne | Floyd T. Binns Middle                |  |
| Tenley Rendell | 7            | McCallum, Deanne | Floyd T. Binns Middle                |  |
| JR-03-003      |              |                  |                                      | The Nutrient Flow  |
| Taylor Bushman | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-03-004      |              |                  |                                      | Do Sports Drinks have more Electrolytes than Other Drinks?   |
| Sawyer Thomas  | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-03-005      |              |                  |                                      | Will the Sun Shine Through? How SPF levels affect the degradation of sunscreen by UV light and heat. |
| Maddie Farber  | 7            | Bruscia, Michael | Charlottesville Catholic School      |  |

## Junior Division

## Chemistry

| <u>Student</u>    | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |  |
|-------------------|--------------|------------------|--------------------------------------|--|
| JR-05-003         |              |                  |                                      | Ink Chromatography   |
| Harper Jones      | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-05-004         |              |                  |                                      | Do You See What I See?   |
| Olivia Goodwin    | 8            | Bruscia, Michael | Charlottesville Catholic School      |  |
| JR-05-005         |              |                  |                                      | Playing With Fire  |
| Andelyne Wangberg | 8            | Owen, Mendy      | Freedom Middle                       |  |
| JR-05-007         |              |                  |                                      | How do Different pH Levels of Acidity Affect Different Metals? |
| Ananya Singla     | 7            | Spears, Emily    | Lakeside Middle School               |  |
| JR-05-008         |              |                  |                                      | The Effects of Different Salts on the Freezing Point of Water  |
| Bela Jones-Twiggs | 7            | Deane, Anne      | Tandem Friends School                |  |
| JR-05-009         |              |                  |                                      | Oobleck viscosity test   |
| Dawn Murray       | 8            | Conover, Tracy   | King George Middle                   |  |
| JR-05-010         |              |                  |                                      | How much Iron is in your Cereal                                |
| Nico Spees        | 7            | Deane, Anne      | Tandem Friends School                |  |
| JR-05-011         |              |                  |                                      | Dryer Dryer Pants on Fire                                      |
| Jillian Fenton    | 7            | Fenton, Laura    | Piedmont Regional Home School        |  |

## Junior Division

## Computer Science

| <u>Student</u>  | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                   |  |
|-----------------|--------------|------------------|---------------------------------|--|
| JR-06-005       |              |                  |                                 | Can a 1980s Chip Run A 2020s AI program? |
| Matthew Whittle | 8            | Bruscia, Michael | Charlottesville Catholic School |  |
| JR-06-006       |              |                  |                                 | Can AI Learn to Solve a Maze?            |
| Caroline Enos   | 8            | Schuh, Marie     | Thornburg Middle                |  |

## Junior Division

## Earth and Planetary Science

| <u>Student</u>  | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                   |                                |
|-----------------|--------------|------------------|---------------------------------|--------------------------------|
| JR-07-002       |              |                  |                                 | Does eye black block out light |
| Carter Broomall | 7            | Bruscia, Michael | Charlottesville Catholic School |                                |
| JR-07-003       |              |                  |                                 | The Black Hole Show!           |
| Miles Cross     | 7            | Green, Sarah     | The Covenant School             |                                |
| JR-07-004       |              |                  |                                 | Can a Rock be a Sponge         |
| Michael Caro    | 8            | Conover, Tracy   | King George Middle              |                                |

## Junior Division

## Energy and Transportation

| <u>Student</u>  | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                   |   |
|-----------------|--------------|------------------|---------------------------------|---|
| JR-10-001       |              |                  |                                 | Pedal Performance   |
| Dylan Russell   | 8            | Bruscia, Michael | Charlottesville Catholic School |   |
| JR-10-002       |              |                  |                                 | How much electricity is stored in fruits and vegetables?    |
| Zachary Belford | 7            | Spears, Emily    | Lakeside Middle School          |   |
| JR-10-004       |              |                  |                                 | Can Weight effect a Maglev Train                            |
| Jayse Henderson | 8            | Schuh, Marie     | Thornburg Middle                |   |
| JR-10-005       |              |                  |                                 | What Was the Effect of 5-10G on the Flight Time Of my Drone |
| Seth Beach      | 7            | Green, Sarah     | The Covenant School             |   |

## Junior Division

## Engineering: Electrical and Mechanical

| <u>Student</u>  | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |   |
|-----------------|--------------|------------------|--------------------------------------|---|
| JR-09-001       |              |                  |                                      | Magnetism and Electromagnetism  |
| Rudra Dave      | 8            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |   |
| JR-09-003       |              |                  |                                      | A 3d printed robotic prosthetic hand with added reflexes              |
| Micah Appiah    | 8            | Spears, Emily    | Lakeside Middle School               |   |
| JR-09-004       |              |                  |                                      | Acoustic Levitator  |
| Corbin Gunther  | 8            | Conover, Tracy   | King George Middle                   |   |
| JR-09-005       |              |                  |                                      | Go With The Flow or Rise Above It: A Hydraulic Lift Weight Experiment |
| Garin Felini    | 7            | Bruscia, Michael | Charlottesville Catholic School      |   |
| JR-09-006       |              |                  |                                      | How does stealth aircraft work?                                       |
| Elliott Lopez   | 7            | Spears, Emily    | Lakeside Middle School               |   |
| JR-09-007       |              |                  |                                      | Efficient Throwing Angle  |
| Sagnik Biswas   | 7            | Spears, Emily    | Lakeside Middle School               |   |
| JR-09-008       |              |                  |                                      | Golf Ball Price vs Performance  |
| Jason Carter    | 8            | Schuh, Marie     | Thornburg Middle                     |   |
| JR-09-009       |              |                  |                                      | The Power of Fruit!   |
| Devin Rodriguez | 7            | Kennedy, Beth    | Edward E. Drew Jr. Middle            |   |
| JR-09-010       |              |                  |                                      | Trebuchet: The Counterweight Machine                                  |
| Aksha Somu      | 6            | Kennedy, Beth    | Edward E. Drew Jr. Middle            |   |
| JR-09-013       |              |                  |                                      | Brooming Power  |
| Daniil Pestov   | 7            | Anderson, Rachel | Community Christian Academy          |   |
| JR-09-015       |              |                  |                                      | How different Apexes affect you Time                                  |
| Zac Morris      | 7            | Green, Sarah     | The Covenant School                  |   |

## Junior Division

## Engineering: Materials and Bioengineering

| <u>Student</u>   | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                 |  |
|------------------|--------------|------------------|-------------------------------|--|
| JR-08-002        |              |                  |                               | Comparing Metal and Wooden Bats  |
| William Trivette | 7            | Anderson, Rachel | Community Christian Academy   |  |
| JR-08-004        |              |                  |                               | Does the Speed of Electricity Change if the Conductor Does                           |
| Ayden Land       | 8            | Owen, Mendy      | Freedom Middle                |  |
| JR-08-005        |              |                  |                               | How Do Different Sized Buildings Stand In An Earthquake                              |
| Molly Habgood    | 8            | Conover, Tracy   | King George Middle            |  |
| JR-08-006        |              |                  |                               | Slime Races  |
| Anna Tidwell     | 8            | Conover, Tracy   | King George Middle            |  |
| JR-08-007        |              |                  |                               | Impact of Cold Temperatures on Football PSI  |
| Traian Langa     | 8            | Conover, Tracy   | King George Middle            |  |
| JR-08-008        |              |                  |                               | The Effects of Different Cooking Oils and Water Temperature on Blobs in a Lava Lamp. |
| Jaiylen Sigler   | 6            | Quail, Courtney  | Rodney E. Thompson Middle     |  |
| JR-08-009        |              |                  |                               | The effect of different filters on water quality                                     |
| Emi Nushin       | 7            | Quail, Courtney  | Rodney E. Thompson Middle     |  |
| JR-08-010        |              |                  |                               | Sound obliteration   |
| Nicholas Child   | 6            | Schuh, Marie     | Thornburg Middle              |  |
| JR-08-012        |              |                  |                               | Tsunami Prevention   |
| Ethan Moulds     | 7            | Spears, Emily    | Lakeside Middle School        |  |
| JR-08-013        |              |                  |                               | Investigating the effect of shades on AI's perception of color clashing.             |
| Srija Pradhan    | 6            | Spears, Emily    | Lakeside Middle School        |  |
| Charlotte Zhang  | 6            | Spears, Emily    | Lakeside Middle School        |  |
| JR-08-015        |              |                  |                               | Testing Corrosion: Types of Cathodic Protection of Steel                             |
| Parker Flynn     | 7            | Flynn, Patrick   | Piedmont Regional Home School |  |

## Junior Division

## Environmental Management

| <u>Student</u>  | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |  |
|-----------------|--------------|------------------|--------------------------------------|--|
| JR-11-001       |              |                  |                                      | Detergent Detering Algae                           |
| Tyler Kerrigan  | 8            | Bruscia, Michael | Charlottesville Catholic School      |  |
| JR-11-002       |              |                  |                                      | How Riparian Buffers Affect the Turbidity of Water |
| Madeline Thomas | 7            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-11-003       |              |                  |                                      | Oh Deer!   |
| Eva Wise        | 7            | Bruscia, Michael | Charlottesville Catholic School      |  |

## Junior Division

## Environmental Sciences

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |  |
|----------------|--------------|------------------|--------------------------------------|--|
| JR-12-004      |              |                  |                                      | How Pollution Affects Earth  |
| Ellie Partsch  | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-12-005      |              |                  |                                      | Chlorine is my Perfume: What Factors Affect Pool Air Quality?                            |
| Emily Wells    | 7            | Bruscia, Michael | Charlottesville Catholic School      |  |
| JR-12-006      |              |                  |                                      | Assessing Water Contamination: Impact of Various Plastic Materials and Detection Methods |
| Shriya Perumal | 7            | Spears, Emily    | Lakeside Middle School               |  |

## Junior Division

## Medicine and Health Sciences

| <u>Student</u>      | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                   |   |
|---------------------|--------------|------------------|---------------------------------|---|
| JR-14-001           |              |                  |                                 | Feeling Full?   |
| Charlotte Lee       | 8            | Anderson, Rachel | Community Christian Academy     |   |
| JR-14-003           |              |                  |                                 | Toilet Lid Up vs Down                                       |
| bryn higinbotham    | 7            | Green, Sarah     | The Covenant School             |   |
| JR-14-004           |              |                  |                                 | 1,000 Colors! How Young Can Colored Blindness Be Detected?  |
| Katherine Albert    | 7            | Bruscia, Michael | Charlottesville Catholic School |   |
| Whitney Waller      | 7            | Bruscia, Michael | Charlottesville Catholic School |   |
| JR-14-006           |              |                  |                                 | Does your hair type change the effectiveness of rice water? |
| Caroline Fowlkes    | 8            | Bruscia, Michael | Charlottesville Catholic School |   |
| JR-14-008           |              |                  |                                 | Sanitizer Vs Soap   |
| Alexandra McClellan | 7            | Green, Sarah     | The Covenant School             |   |
| JR-14-011           |              |                  |                                 | Can You See it?   |
| Ella Niemi          | 8            | Conover, Tracy   | King George Middle              |   |

## Junior Division

## Microbiology

| <u>Student</u>       | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                        |  |
|----------------------|--------------|------------------|--------------------------------------|--|
| JR-15-001            |              |                  |                                      | The Rate of Fruit Molding                      |
| Leela Dieng          | 6            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-15-002            |              |                  |                                      | How Dirty is your Chicken before it's Cleaned? |
| Lillian Evans        | 7            | Buell, Mitchell  | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-15-003            |              |                  |                                      | Moldy Surfaces vs Cleaners                     |
| Kiplyn Lentz         | 8            | Lentz, Julie     | Piedmont Regional Home School        |  |
| JR-15-004            |              |                  |                                      | Do You Double-Dip?                             |
| Kayla Gillette       | 7            | Oltman, Kyle     | Andrew G. Wright Middle              |  |
| JR-15-005            |              |                  |                                      | Ready Set Glow                                 |
| Ashlyn Blackburn     | 6            | Bruscia, Michael | Charlottesville Catholic School      |  |
| JR-15-006            |              |                  |                                      | T4r Coliphages and E. Coli                     |
| Macy Catalan         | 8            | Spears, Emily    | Lakeside Middle School               |  |
| Becca Harrison       | 8            | Spears, Emily    | Lakeside Middle School               |  |
| JR-15-007            |              |                  |                                      | How temperature affects mold growth            |
| Thomas Hernandez Lop | 8            | Owen, Mendy      | Freedom Middle                       |  |
| JR-15-008            |              |                  |                                      | Nature's Antibiotics: Fact or Fiction?         |
| John Harvey          | 7            | Pinney, Jennifer | Andrew G. Wright Middle              |  |
| JR-15-009            |              |                  |                                      | The Spread of Germs                            |
| Jon Derby            | 7            | Deane, Anne      | Tandem Friends School                |  |

## Junior Division

## Physics and Astronomy

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>                   |  |
|----------------|--------------|------------------|---------------------------------|--|
| JR-16-001      |              |                  |                                 | Thrust is money  |
| Ethan Russell  | 6            | Bruscia, Michael | Charlottesville Catholic School |  |
| JR-16-002      |              |                  |                                 | Catching Air: Testing how aerodynamic drag affects falling objects |
| John Kerrigan  | 6            | Bruscia, Michael | Charlottesville Catholic School |  |
| JR-16-003      |              |                  |                                 | Up, Up and Away  |
| Andrew Goyne   | 6            | Bruscia, Michael | Charlottesville Catholic School |  |
| JR-16-004      |              |                  |                                 | Electromagnetism   |
| Anzar Zubair   | 6            | Quail, Courtney  | Rodney E. Thompson Middle       |  |
| JR-16-006      |              |                  |                                 | Marvelous Magnets  |
| Phoebe Lee     | 7            | Anderson, Rachel | Community Christian Academy     |  |

## Junior Division

## Plant Sciences

| <u>Student</u>       | <u>Grade</u> | <u>Teacher</u>        | <u>School</u>                        |  |
|----------------------|--------------|-----------------------|--------------------------------------|--|
| JR-17-001            |              |                       |                                      | How LED Lights affect Plant Growth   |
| Teagan Gemellaro     | 6            | Buell, Mitchell       | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-17-002            |              |                       |                                      | What type of Water keeps Cut Flowers alive the longest?                            |
| Madeleine Pollok     | 7            | Buell, Mitchell       | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-17-003            |              |                       |                                      | Non-Water Solutions affecting Plant Growth.  |
| James Grossnickle    | 7            | Buell, Mitchell       | Donald B. Dixon-Lyle R. Smith Middle |  |
| JR-17-004            |              |                       |                                      | Nature's water purifier. seeing if plants can purify water                         |
| Bristol Hux          | 7            | Bruscia, Michael      | Charlottesville Catholic School      |  |
| JR-17-005            |              |                       |                                      | Extracting DNA of a strawberry   |
| Quiron Mason         | 8            | Owen, Mendy           | Freedom Middle                       |  |
| JR-17-006            |              |                       |                                      | Genius of Germination  |
| Knox Hunter          | 7            | Green, Sarah          | The Covenant School                  |  |
| JR-17-007            |              |                       |                                      | Strawberry decomposition   |
| Alanni McDowell      | 8            | Owen, Mendy           | Freedom Middle                       |  |
| JR-17-008            |              |                       |                                      | Will the growth of the plant be affected if I change the type of soil it grows in? |
| Madison Joura        | 6            | Kirchgessner, Justina | Andrew G. Wright Middle              |  |
| Addison Kirchgessner | 6            | Kirchgessner, Justina | Andrew G. Wright Middle              |  |
| JR-17-009            |              |                       |                                      | Flora Filtration: The Effect of Plant Type on Water Filtration Quality             |
| Samantha Schillo     | 8            | Quail, Courtney       | Rodney E. Thompson Middle            |  |
| JR-17-010            |              |                       |                                      | Lets Light Growing Basil   |
| Ryder Castro         | 7            | Kennedy, Beth         | Edward E. Drew Jr. Middle            |  |
| JR-17-011            |              |                       |                                      | The Effect of Different Lights on Fruit Ripeness                                   |
| Jailyn Griste        | 8            | Schuh, Marie          | Thornburg Middle                     |  |
| JR-17-012            |              |                       |                                      | Effects of Water on Seeds  |
| Khloe Arquette       | 6            | Spears, Emily         | Lakeside Middle School               |  |
| Abby Way             | 6            | Spears, Emily         | Lakeside Middle School               |  |

## Senior Division Animal Sciences

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>  |
|----------------|--------------|------------------|--|
| SR-01-004      |              |                  | Using Biopesticides to Prevent Freshwater Livestock Diseases |
| Emma Carson    | 11           | Burke, Stephanie | Mountain Vista Governor's School                             |

## Senior Division Behavioral and Social Sciences

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u> | <u>School</u>                             |
|----------------|--------------|----------------|---|
| SR-02-011      |              |                | The Impact of Physical Exercise on Memory |
| Mukund Marri   | 9            | Marri, Sri     | William Monroe High                       |

## Senior Division Biochemistry

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u> | <u>School</u>   |
|----------------|--------------|----------------|---|
| SR-03-006      |              |                | Nanoscopic Delineation of Rodent and Human Neuromodulatory Transmission |
| Roger Zhu      | 11           | Barlow, Trey   | Albemarle High  |

## Senior Division Cellular and Molecular Biology

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u> | <u>School</u>  |
|----------------|--------------|----------------|--|
| SR-04-001      |              |                | Generative AI-assisted Drug Identification and Cell Engineering to Suppress Medulloblastoma Cell Proliferation |
| Sean Fu        | 11           | Huff, Kevin    | Albemarle High   |

## Senior Division Chemistry

| <u>Student</u>  | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>  |
|-----------------|--------------|------------------|--|
| SR-05-002       |              |                  | Effect of Water Hardness and Salinity on the Removal of Plastic.         |
| Marshall Howard | 11           | Burke, Stephanie | Mountain Vista Governor's School   |
| SR-05-006       |              |                  | The Viscosity Voyage: A comparative study of different thickening agents |
| Juhee Lee       | 11           | Huff, Kevin      | Albemarle High   |
| Richard Wang    | 11           | Huff, Kevin      | Albemarle High   |

## Senior Division Computer Science

| <u>Student</u>  | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>   |
|-----------------|--------------|------------------|---|
| SR-06-004       |              |                  | Real or Fake? Using Artificial Intelligence to Detect Filtered Images |
| Tamara Otten    | 11           | Burke, Stephanie | Mountain Vista Governor's School                                      |
| SR-06-010       |              |                  | Rendermagic: A Fast 3D Rendering Software                             |
| Caleb Burnett   | 11           | Huff, Kevin      | Albemarle High  |
| SR-06-011       |              |                  | Automatic Generation of Practice Tests from Class Materials           |
| Alexander Chang | 10           | Foutz, Brian     | Western Albemarle High  |
| Vivian Foutz    | 9            | Foutz, Brian     | Western Albemarle High  |



## Senior Division

## Energy and Transportation

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u> | <u>School</u>  |  |
|----------------|--------------|----------------|----------------|--|
| SR-10-003      |              |                |                | Can Golf Ball Dimples Reduce a Car's Drag? |
| Michael Fawell | 11           | Barlow, Trey   | Albemarle High |  |

## Senior Division

## Engineering: Electrical and Mechanical

| <u>Student</u>        | <u>Grade</u> | <u>Teacher</u>     | <u>School</u>                    |  |
|-----------------------|--------------|--------------------|----------------------------------|--|
| SR-09-002             |              |                    |                                  | Cloud Control: An E-Cigarettes Emission Detector                         |
| Amy Infante           | 11           | Burke, Stephanie   | Mountain Vista Governor's School |  |
| Neema Kamunya         | 11           | Burke, Stephanie   | Mountain Vista Governor's School |  |
| Meredith Rickabaugh-D | 11           | Burke, Stephanie   | Mountain Vista Governor's School |  |
| SR-09-011             |              |                    |                                  | Underwater Wall Adsorption Mobile Robot Based On Bernoulli's Principle   |
| Shiyu Dong            | 12           | Magee, Rich        | Miller School of Albemarle       |  |
| Chujia Yang           | 10           | Robbins, Luke      | Miller School of Albemarle       |  |
| SR-09-014             |              |                    |                                  | Floodbot   |
| Lorraina Balsavich    | 9            | Balsavich, Racquel | Piedmont Regional Home School    |  |
| SR-09-016             |              |                    |                                  | Self-Applicable Wrist Brace  |
| Aidan Kroetz          | 11           | Burke, Stephanie   | Mountain Vista Governor's School |  |
| Madison Pearson       | 11           | Burke, Stephanie   | Mountain Vista Governor's School |  |
| SR-09-017             |              |                    |                                  | Reinventing the Screwdriver  |
| Thomas Lancaster      | 11           | Huff, Kevin        | Albemarle High                   |  |
| SR-09-018             |              |                    |                                  | Designing a Hydroelectric Generator to Accommodate Various Water Sources |
| Elizabeth Wynkoop     | 11           | Burke, Stephanie   | Mountain Vista Governor's School |  |
| SR-09-019             |              |                    |                                  | A Long-Range Tracking Device to Assist in Rescuing Survivors Lost at Sea |
| Kristie Yates         | 9            | Yates, Steve       | Peninsula Catholic High School   |  |

## Senior Division

## Environmental Management

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u> | <u>School</u>  |   |
|----------------|--------------|----------------|----------------|---|
| SR-11-004      |              |                |                | Cloudy With a Chance of Carbon  |
| Daniel Cao     | 11           | Huff, Kevin    | Albemarle High |   |
| Lily McCune    | 11           | Huff, Kevin    | Albemarle High |   |
| SR-11-005      |              |                |                | Development of an Efficient and Recyclable Method of Recovering Rare Earth Elements from Industrial Waste |
| Suah Kwon      | 11           | Huff, Kevin    | Albemarle High |   |

## Senior Division

## Environmental Sciences

| <u>Student</u>     | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>  |
|--------------------|--------------|------------------|--|
| SR-12-002          |              |                  | Revolutionizing Local Weather Forecasting: Using Forecast Biases to Create a Local Weather Model |
| Sebastian Krushkal | 11           | Huff, Kevin      | Albemarle High   |
| SR-12-003          |              |                  | Typhoon Toothpaste   |
| Andrew Mossman     | 11           | Burke, Stephanie | Mountain Vista Governor's School   |
| Oliver Paul        | 11           | Burke, Stephanie | Mountain Vista Governor's School   |
| Owen Strong        | 11           | Burke, Stephanie | Mountain Vista Governor's School   |
| SR-12-007          |              |                  | Making Blue the New Green: Recycling Possibilities for Hospital Blue Wrap                        |
| Emily Uthlaut      | 11           | Huff, Kevin      | Albemarle High   |

## Senior Division

## Mathematical Sciences

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u> | <u>School</u>                                    |
|----------------|--------------|----------------|--|
| SR-13-001      |              |                | Hex Marks the Spot: A Treasure Hunt for Fairness |
| Jingyi Li      | 11           | Huff, Kevin    | Albemarle High                                   |
| Isabelle Wang  | 11           | Huff, Kevin    | Albemarle High                                   |

## Senior Division

## Medicine and Health Sciences

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u>   | <u>School</u>   |
|----------------|--------------|------------------|---|
| SR-14-005      |              |                  | Optimizing Sun Safety: UV Sensor Hat for Personalized Real Time Sun Exposure Monitoring                                     |
| Elle Crosley   | 11           | Burke, Stephanie | Mountain Vista Governor's School  |
| SR-14-007      |              |                  | Recasting an Anti-Psychotic As a Prevention for Multiple Arthritides: Discovery of a Novel Receptor and Mechanism of Action |
| Vidya Ambati   | 11           | Barlow, Trey     | Albemarle High  |
| SR-14-009      |              |                  | Effects of Prednisone on Calcium Phosphate Bone Mass in Treating Corticosteroid-Induced Osteoporosis                        |
| Margaret Lee   | 11           | Stutzman, Carol  | Western Albemarle High  |
| SR-14-010      |              |                  | Finding Alternatives to the Use of a 2000 Meter Ergometer Time Trial  |
| Luke Lambert   | 10           | Stutzman, Carol  | Western Albemarle High  |
| Thomas Lambert | 10           | Stutzman, Carol  | Western Albemarle High  |
| Logan Sibiski  | 11           | Stutzman, Carol  | Western Albemarle High  |
| SR-14-012      |              |                  | Improvements of in vivo Diode Calculations and Validation of SRS Cone Alignment   |
| Dylan Kupcis   | 11           | Barlow, Trey     | Albemarle High  |
| SR-14-013      |              |                  | New Determinants for Warfarin Dosing and A New Finding about the VKORC1 Gene  |
| Crystal Feng   | 9            | Padron, Zoe      | Western Albemarle High  |

## Senior Division

## Physics and Astronomy

| <u>Student</u> | <u>Grade</u> | <u>Teacher</u> | <u>School</u>  |
|----------------|--------------|----------------|--|
| SR-16-005      |              |                | The Effect of Solar Energetic Particle Events on the Earth's Geomagnetic Field |
| Amna Zakriya   | 11           | Hamill, Kali   | Mountain View High   |