

**MONTGOMERY
COUNTY
SCIENCE FAIR
2014**

MARCH 14, 15, 16

**FDA WHITE OAK CAMPUS
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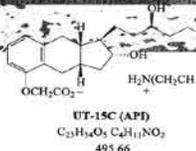
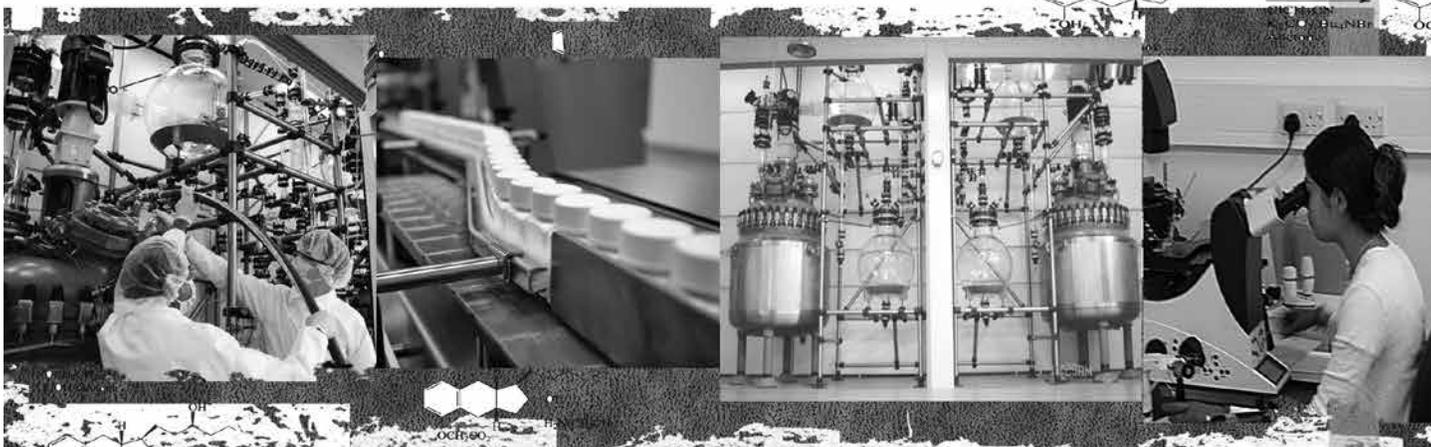
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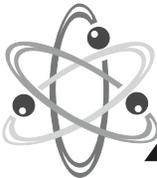
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2014  **Science** Fair Schedule
MONTGOMERY

www.ScienceMONTGOMERY.org

Location: Food and Drug Administration, White Oak Campus,
10903 New Hampshire Ave.
Silver Spring, MD 20993

FRIDAY, MARCH 14, 2014

4 PM–9 PM

Student Project Set Up: Set-up display boards and go through Safety Inspection at FDA White Oak Campus. Mentors, teachers, family members, and friends of Fair Participants are welcome to view the projects.

SATURDAY, MARCH 15, 2014

9:30 AM–12:15 PM

Judges Preview Period (No students present)

12:15–1:00 PM

Students admitted

1:00–4:00 PM

Student Interviews: All Judges, All Grades

4:00–5:00 PM

Project Removal: All projects must be removed by 5 PM, or they will be discarded.

SUNDAY, MARCH 16, 2014

2:00 PM–4:00 PM

Awards Ceremony at Albert Einstein High School
1135 Newport Mill Rd., Kensington, MD 20895

4:00 PM–5:00 PM

Meeting with ScienceMONTGOMERY Senior High School
International Science and Engineering Fair (ISEF) Winners about trip to
Los Angeles, CA for ISEF, Albert Einstein High School Auditorium Stage



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MONTGOMERY COUNTY

SCIENCE FAIR

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MRIGlobal is proud to support this year's Montgomery Area Science Fair and salutes the intelligence, inventiveness, and ingenuity of all the participating students.

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Montgomery County

Education Association

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Montgomery County Science Fair



MONTGOMERY AREA SCIENCE FAIR ASSOCIATION

Welcome to the Montgomery County Science Fair!

ScienceMONTGOMERY congratulates the students who are participating in the Fair and applauds them for their hard work. We hope that developing a Science Fair project was both enjoyable and a valuable learning experience.

We are most grateful for the parents, teachers and mentors who have supported and encouraged Fair participants. Adult sponsors are an essential part of the Fair program.

The Fair brings together scientists, engineers, mathematicians, educators, parents, and students from throughout the Montgomery County. ScienceMONTGOMERY provides a venue for competition among hundreds of students from public, private, and home school affiliations, in grades 6 through 12. We provide cash prizes for project excellence via our many Category Awards. Complementing these are the many Community Awards generously provided by various business, scientific, professional, and educational organizations and several US Government agencies. Students are competing for over \$40,000 worth of prizes: cash, scholarships, internships, travel, banquets, bonds, books, certificates, medals, and merchandise.

ScienceMONTGOMERY is a 501(c)3, nonprofit, all volunteer organization which relies on generous sponsors to fund the county-wide fair competition each year. MedImmune, for the tenth consecutive year, serves as our premier sponsor for which we are most grateful. We also are thankful for the generous support of GlobalNet Services, Inc., Northrop Grumman and the United Therapeutics Corporation. Other major sponsors are MRIGlobal, Lockheed Martin, the U.S. Nuclear Regulatory Commission and the Food and Drug Administration. All of our sponsors make the Fair possible and we thank you.

The all-volunteer ScienceMONTGOMERY Board of Directors wishes to thank each of the organizations and individuals listed in this program for making the Fair possible. Every year, we are indebted to the more than 200 volunteer judges, representing area business and professional organizations, who painstakingly evaluate projects, and perhaps more importantly, encourage students' further pursuit of scientific understanding.

I personally thank and acknowledge the ScienceMONTGOMERY Board members who have contributed significant talent, time, and resources, late at night, after work, on weekends, in good weather and bad to make the Fair happen.

As an affiliate of the Intel International Science and Engineering Fair (ISEF), ScienceMONTGOMERY follows the ISEF rules and guidelines to ensure the safety of our competing students. This year's top high school winners will be awarded a fully funded travel scholarship to present their projects at the 2014 International Science and Engineering Fair in Los Angeles, CA.

Kate M. Baldwin, Ph.D.

Fair Director

March 2014

ONE DAY SHE MAY LOOK BACK AND SAY THAT THE FUTURE STARTED HERE

At Lockheed Martin, when we envision the future, we see a world of never-ending possibility. But that future will never be realized unless we prepare today's students for tomorrow's challenges. That's why it is so vitally important for educators, parents, and companies like ours to encourage young people to study science, technology, engineering, and math. And it's also why Lockheed Martin is proud to support the Montgomery Area Science Fair.

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ACCELERATING
TOMORROW

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OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Isiah Leggett
County Executive

March 2014

Dr. Kate Baldwin
Fair Director
*Science*MONTGOMERY
Montgomery Area Science Association
6422 Kenhowe Drive
Bethesda, Maryland 20817

Dear Dr. Baldwin:

Montgomery County supports and applauds *Science*MONTGOMERY, and your ongoing efforts to encourage interest in science throughout the County. Programs like yours help nurture and expand Montgomery County's longstanding national and international prominence in the life sciences and technology fields. The countywide Science Fair annually attracts over 400 Montgomery County public and private school students and we are very proud to support your mission to advance and celebrate performance in science education throughout our community.

Now more than ever, Montgomery County is doing all we can to ensure a strong, vibrant economy and healthy, sustainable communities today for future generations. Maintaining one of the nation's highest performing K-12 public school systems is essential to these goals, and the talented and dedicated students being recognized this year illustrate our success in this area.

I commend the important contributions you and *Science*MONTGOMERY make within the community, and applaud those businesses that, during these difficult economic times, pledged their support to recognize and honor the talents and achievement of our youth.

Sincerely,

Isiah Leggett
County Executive

**MONTGOMERY AREA SCIENCE FAIR ASSOCIATION**58TH Montgomery Area Science Fair – 2014

FDA Science Center, White Oak Campus, 10903 New Hampshire Ave, Silver Spring, MD

OFFICERS AND BOARD, MONTGOMERY AREA SCIENCE FAIR ASSOCIATION**President: Dr. Michael Burgett**

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for the Advancement of Military
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Persons interested in joining the Science MONTGOMERY Board should contact FairDirector@sciencemontgomery.org



AWARDS PROGRAM

2:00 P. M.

Sunday, March 16, 2014

Albert Einstein High School Auditorium

| | |
|---|---|
| Opening of Awards Program and Welcome to ScienceMONTGOMERY | Kate Baldwin, Fair Director Montgomery Area Science Fair Association |
| Presentation of Community Awards: | ScienceMONTGOMERY Board Members Community Award Organizations Presenters |
| Presentation of Category Awards: | ScienceMONTGOMERY Board Members |
| Presentation of ISEF Awards: | Milton Axley, Ph.D. |
| Thank you and Adjournment | |
| ISEF Award Winners Meeting | 4:00–5:00 PM |

SPECIAL FAIR RESPONSIBILITIES:

| | |
|---|---|
| Venue and Food: | Kate Baldwin, Brian Jackson |
| Website Oversight: | Kate Baldwin, Dilip Chhetri |
| Category Awards: | Kate Baldwin, Ram Narula |
| Community Awards: | Nuray Anahtar, Yavuz Anahtar, <i>Co-Chairs</i> , James Douglas, Taylor Douglas, William Kominers, Anne Merrell |
| Program: | Raghavan Venkat and Susan Baker, <i>Co-Chairs</i> , Robyn Bent, Ethan Haase |
| Display and Safety Committee: | Anne Merrell, Susan Baker, <i>Co-Chairs</i> , Milt Axley, Burgett, Christopher Cochran, Edward Kelty, Ray Skarda, Adam Berger, Megan Brady, Maggie Glaudemans, Kenny Rosenberg |
| Fund Raising: | William Kominers, Chair |
| Scientific Review Committee: | Michael Burgett, Deborah Pober Haase, Laura Lee Johnson, <i>Co-Chairs</i> Milton Axley, Kate Baldwin, Susan Baker, Christopher Cochran, Kevin Connolly, James Douglas, Brett M. Huhman, William Kominers, Cathryne Manner, Stephen Mason, Anne Merrell, Patricia Porter-Gill, Elizabeth Vincent |
| SRC Data Management: | Adam Berger, Megan Brady, Maggie Glaudemans, Ellen Kominers, Kenny Rosenberg |
| ISEF Delegation Adult-in-Charge: | Brian Jackson |



Community Organizations Presenting Awards–2014

Aerospace Corporation
American Industrial Hygiene Society—Potomac Section
American Institute of Aeronautics and Astronautics
(AIAA)
American Meteorological Society—DC Chapter
American Psychological Association
American Society of Mechanical Engineers
ASM Materials Education Foundation—DC Chapter
Association for Women Geoscientists
Biophysical Society
Broadcom MASTERS Competition
Central Intelligence Agency
Clean Air Partners
Friends of Agricultural Research-Beltsville, Inc.
GENIUS Olympiad—SUNY Oswego
Geological Society of Washington
Graduate Women in Science
IEEE--Institute of Electrical and Electronics Engineers,
Inc.—Washington Section
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I-SWEEEP
Lockheed Martin
MdBioLab
MIT Club of Washington DC
MedImmune
Metro Bethesda Rotary Club
MRIGlobal
Mu Alpha Theta
National Capital Astronomers
National Oceanic and Atmospheric Administration
(NOAA)
Office of Naval Research
Ricoh Americas Corporation
Rockville Science Center
Sigma Xi—NIST Chapter
Society for In Vitro Biology
Society of Manufacturing Engineers (SME)—Chapter 48
Stockholm Junior Water Prize
United States Air Force
United States Metric Association
United States Nuclear Regulatory Commission
United States Public Health Service-Surgeon General's
Award
United States Public Health Service--Commissioned
Officers Association, D.C.
Washington Statistical Society
Yale Science and Engineering Association, Inc.



ScienceMONTGOMERY 2014 Update

Congratulations to our 2013 ScienceMONTGOMERY Grand (ISEF) Prize Winners:

| | |
|----------------------------|------------------|
| Neil Davey & Katie Barufka | Biology |
| Anirudh Gubba | Computer Science |
| Joy Zeng | Engineering |
| Jinhie Skarda | Physics |
| Alternate: Elizabeth Liu | Biology |

We Proudly Announce that our ISEF Finalists were recognized with these Awards at ISEF 2013 (Phoenix):

| | |
|------------------------------|---|
| Neil Davey and Katie Barufka | Third Place, Microbiology Grand Awards; Fifth Place, American Society for Microbiology Special Award |
| Jinhie Skarda | Third Place, Physics and Astronomy Grand Awards; First Place, National Aeronautics and Space Administration Special Award |

Kudos to These Members of our ScienceMONTGOMERY Family For Their Wonderful Accomplishments in the Past Year:

| | |
|---|--|
| Maryland Junior Science and Humanities Symposium (First Place) | Neil Davey |
| Greater Washington, DC, Junior Science and Humanities Symposium (First Place) | Daniel Liu |
| Stockholm Junior Water Prize: State of Maryland (First Place) | Madelyn Golding & Bianca Ruspi |
| National Junior Science and Humanities Symposium (Third Place) | Neil Davey |
| Broadcom MASTERS: Finalist | Katherine Wu |
| Semifinalist | Keren Herran |
| Davidson Fellows 2013 Scholarship | Vinay Sriram |
| Siemens Competition in Math Science and Technology Semifinalists | Neil Davey, Megan Chao, Vincent Hsaio, Daniel Liu, Jessica Shi, Vinay Sriram |
| Intel Science Talent Search: Finalists | Shaun Datta, Neil Davey, Jessica Shi |
| Semifinalists | Daniela Ganelin, Aanchal Johri, Daniel Liu, Vinay Sriram |
| Fabien Cousteau's Mission 31 Team Member | Grace Young (MIT '14) |
| NASA Aeronautics Scholarship 2013 | Daniel Liss (Columbia U. '16) |
| Marshall Scholar 2014 | Grace Young (MIT '14) |



Each year, *ScienceMONTGOMERY* alumni return to volunteer at our Fair.
Many thanks to these Distinguished *ScienceMONTGOMERY* Alumni
for their key help in making the Fair happen:

Melis Anahtar, Melodi Anahtar, Adam Berger, Kuo-Kai Chin, Re-I Chin, Stephanie Douglas, Taylor Douglas, Jeremy “Ozzie” Fallick, Maggie Glaudemans, Jacob Hurwitz, Phanna Iamlek, Sneha Kannan, Eric Keen, Matt Kinnard, Josh Klontz, Paul Kominers, Scott Kominers, Emily Levine, Daniel Liss, Gyyoung Oh, Sikandar Porter-Gill, Kenny Rosenberg, Reid Simon, Kevin Takiar, Carmelita Ugarte, Jennifer Wang, Louis Wasserman, Claire Wortmann, Grace Young, David Zhang

*We invite all ScienceMONTGOMERY alumni to join us as volunteers at future fairs.
To volunteer, email alumni@sciencemontgomery.org*



2014 Category and ISEF Awards Judges

| Name | Affiliation | Name | Affiliation |
|----------------------------|--|------------------------------------|---|
| Dr. Mohamed Abutaleb | Northrop Grumman | Dr. Cecilia Dupecher | University of Maryland |
| Mr. Cameron Adams | | Dr. Mohibullah Durrani | Montgomery College |
| Dr. Eric Afoakwah | Technical Resources International/ | Mr. Jason Eccleston | NIDDK/NIH |
| Dr. Ling-Ling An | MedImmune | Dr. Abdeladim Elhamdani | Science Fun4kids |
| Mr. Kyle Anderson | NIST | Ms. Virginia Fergus | QIAGEN |
| Mr. Yezdi Antia | Hughes Network Systems | Dr. Gisela Ferreira | MedImmune |
| Dr. Gunjan Arora | NIH | Dr. Andrew Flannery | University of Maryland |
| Mr. Patrick Asis | MedImmune | Dr. Sarah Gaillot | |
| Mr. Michael Askenase | NIH/NIAID | Mrs. Mary Galloway | FDA |
| Dr. Milton Axley | MedImmune | Dr. Eric Garber | US Gov't |
| Mr. John Bagnoli | MRIGlobal | Dr. Jeffy George | HJF |
| Dr. Kate Baldwin | Howard University (Retired) | Ms. Eleanor Gillette | University of Maryland |
| Dr. Mariana Baz | NIH | Mr. Karl R. Goller | |
| Dr. Amy Belton | Johns Hopkins University School of Medicine | Mr. Kyle Goodman | NIH |
| | | Dr. Lori Gordon | |
| Ms. Ebony Benjamin | MedImmune | Ms. Meg Goswami | NIH |
| Dr. Denis Bergeron | NIST | Mr. Sushanth Gouni | NIH |
| Dr. Sandra Bonne-Annee | NIH | Dr. Christian Graff | FDA |
| Dr. Alexis Boyd | NIH | Ms. Lauren Graham | UMD |
| Dr. Chad Brocker | NIH | Dr. Miranda Gray | Henry Jackson Foundation |
| Ms. Mary Bryson | Henry M Jackson Foundation | Mr. Jon Griffin | |
| Mr. Keith Bullock | The Foundation Schools | Ms. Irene Guendel | George Mason University |
| Dr. Jeffrey Burke | Circulomics, Inc. | Dr. Paridhi Gupta | USUHS |
| Dr. Tara Burke | NIH | Dr. Mohan Kumar Haleyur Giri Setty | FDA |
| Ms. Allyson Byrd | NIH | Ms. Mary Hanks | NIH |
| Ms. Nina Calantone | NIH/NIAID | Dr. Jonathan Hardis | NIST |
| Ms. Nicole Carvajal | NIH | Ms. Emily Harnish | NIH |
| Mr. Joseph Carver | NIH/NCI | Dr. J Terrell Hoffeld | U.S. Public Health Service (Retired) |
| Mr. Yong Chang | Mechanical Engineer | Mr. Larry Hothem | DOI/US Geological Survey |
| Mr. Leon Chao | NIST | Dr. Lei Hua | |
| Ms. Chaitali Chattopadhaya | FDA | Mr. Ingold Huang | NIH/NCI |
| Dr. Ping Chen | | Mr. Bryan Hurtle | |
| Dr. Shu Hui Chen | NIH | Dr. Muhammad Jamal | NIH/NCI |
| Dr. De Chen | FNLCR | Ms. Sophia James | Qiagen |
| Ms. Tiffany Chen | NIAID/Biotechnology | Dr. John Jones | University of Maryland |
| Dr. Cristine Chisholm | NIH, SeraCare Lifesciences | Dr. Dimosthenis Katsis | |
| Dr. Swati Choksi | NIH | Dr. Sukhbir Kaur | NIH |
| Mr. James Coburn | FDA | Dr. Bharat Khurana | FDA |
| Ms. Mandy Collar | NIAID/NIH | Mr. Gokhul Kilaru | NIAID/NIH |
| Dr. Kevin Connolly | Consultant | Mr. Paul Kim | The Aerospace Corporation |
| Mr. David Contois | NIH | Mr. Joshua Klontz | |
| Dr. Melissa Coughlin | MedImmune | Ms. Megan Kuhn | MedImmune |
| Dr. Luciana Crotti | USUHS | Dr. Seema Lakdawala | NIH |
| Mr. Jonathan Czisny | Group W Inc | Dr. William Lee | Naval Research Laboratory |
| Dr. Yi Dang | USP | Mr. Jason Lee | |
| Mr. George Daniello | | Dr. Adam Lee | University of Maryland |
| Mr. Salil Das | Montgomery College | Mr. Samuel Li | |
| Ms. Jeannie David | FDA | Ms. Suna Li | NIH |
| Dr. Todd Davidson | MedImmune | Dr. Sunil Lingayat | |
| Ms. Cynthia Davies-Venn | NIH | Dr. Jan Linkenhoker | NIH |
| Dr. Reema De Ray Choudhuri | NIH | Mr. Shubing Liu | QIAGEN |
| Mr. Matthew Dean | NIMH | Mr. Brian Lowe | |
| Dr. Jana Delfino | FDA | Ms. Dongying Ma | NIH |
| Dr. Anne Deschamps | FASEB | Dr. Quamrul Majumder | FDA |
| Dr. Soumyadeep Dey | NIH | Ms. Rebecca Mandt | NIH |
| Dr. Lena Diaw | NHLBI/NIH | Dr. Awais Mansoor | |
| Mr. Steven DiBenedetto | Underground Imaging Technologies | Dr. Jarrad Marles | Toeroek Associates, Inc. / Biodefense |
| Dr. Garry Didinsky | ATK | Dr. Philippe Marmillot | NIH |
| Ms. Alex Doyle | NIH | | |

**2014 Category and ISEF Awards Judges (continued)**

| Name | Affiliation | Name | Affiliation |
|---------------------------------|--|-------------------------|---|
| Mr. Stephen Mason Laboratory | Johns Hopkins University Applied Physics | Dr. Tamika Samuel | University of Maryland |
| Dr. Kenta Matsuda | NIH | Ms. Nicole Schneck | University of Maryland |
| Mr. Joseph McKennan | SoBran/NIH | Mr. Kevin Semmens | |
| Mr. Stephen McMurray | Technology Service Corporation | Ms. Wei Jie Seow | |
| Ms. Chun-yan Mi | | Mr. Lloyd Shockley | |
| Dr. Mayumi Miller | NIH/NICHD | Dr. Robert Silverberg | |
| Mr. Scott Miller | QIAGEN | Dr. Virginie Sjoelund | NIH |
| Dr. Bidyottam Mittra | University of Maryland | Dr. Ray Skarda | NRC |
| Dr. Kapinga Ngalula | | Ms. Jillian Smith | NIH |
| Dr. Veera Padmanabhan | MedImmune | Mr. Tyranny Smith | Institute of Public Health Innovation |
| Dr. Naimish Pandya | MedImmune | Ms. Jordan Smith | NCI/NIH |
| Mrs. Joy Pase | UVA | Dr. Barbara Sorkin | NIH |
| Dr. Anna Pasetto | NIH | Ms. Samantha Spellicy | NIH/ NIAID |
| Dr. Vaishali Patel | NIH | Dr. Brandy St. Laurent | NIH |
| Dr. Mira Patel | | Dr. Corey Stambaugh | NIST |
| Dr. Robert Peters | Stellar Solutions/NASA | Mr. Yujie Sun | |
| Dr. Norman Peterson | MedImmune | Ms. Amy Sweeney | NIH |
| Ms. Meagan Prophet | MedImmune | Dr. Kenneth Tercyak | Georgetown U. Medical Center |
| Mr. Jason Qian | NIH | Dr. Jason Tokayer | Northrop Grumman |
| Dr. Savelas Rabb | NIST | Ms. Amy Ton | NIH |
| Mr. Gazi Rashid | NIH | Dr. Gil Toombes | |
| Dr. Erica Raterman | Henry M. Jackson Foundation | Ms. Anna Trier | NIH |
| Dr. Amit Ray Choudhuri | NICHD/ NIH | Dr. Rachel Van Duyne | |
| Dr. Kempaiah Rayavara Kempaiah | NIH | Dr. Jithesh Veetil | NIH |
| Ms. Lisa Read | MRIGlobal | Dr. Raghavan Venkat | MedImmune |
| Dr. Tiffany Reed | NIH | Ms. Tresa Vidayathil | |
| Ms. Sara Reynolds | NIH/NIAID | Dr. Catherine Volle | NIH |
| Dr. Nadeene Riddick | NIH | Dr. Dongbo Wang | NIST |
| Mrs. Ekemini Riley | University of Maryland | Ms. Claire Weichselbaum | NIH |
| Mr. Dushon Riley | University of Maryland | Dr. Sara Woodson | NIH |
| Dr. Becky Robinson | FDA | Mr. Charles Yang | USUHS |
| Dr. Candace Robledo | NICHD/NIH | Dr. Roshan Yedery | Henry M. Jackson Foundation for the Advancement of Military Medicine |
| Dr. Jermaine Ross | NIH | Dr. Yuanyuan Zhang | NIH |
| Dr. Tejram Sahu | NIH | Ms. Ellen Zhang | |
| Dr. Andaleeb Sajid | NIH | Dr. Tong Zhou | |
| Mr. Krishna Samavedam | Hughes Network Systems | Mr. Xin Zhou | US DOL |

ScienceMONTGOMERY Participating Schools-2014

| School | Abbreviation | School | Abbreviation |
|------------------------------------|---------------------|--------------------------------|---------------------|
| Argyle Middle School | AGM | Roberto Clemente Middle School | RCM |
| Bethesda-Chevy Chase High School | BCH | Robert Frost Middle School | RFM |
| Montgomery Blair High School | BLH | Richard Montgomery High School | RMH |
| Winston Churchill High School | CHH | St. Andrew Apostle School | SAA |
| Clarksburg High School | CHS | School for Tomorrow | SFT |
| Eastern Middle School | ESM | St. Bartholemew's School | SBS |
| William H. Farquhar Middle School | FQM | Seneca Valley High School | SVH |
| Holy Cross School | HCS | Sherwood High School | SWH |
| Home Schooled | HS | Tilden Middle School | TIM |
| Charles E. Smith Jewish Day School | JDS | Takoma Park Middle School | TPM |
| John H. Poole Middle School | JPM | Westland Middle School | WEM |
| North Bethesda Middle School | NBM | Thomas S. Wootton High School | WHO |
| Northwest High School | NWH | Walter Johnson High School | WJH |
| Parkland Middle School | PLM | Walt Whitman High School | WWH |
| Poolesville High School | POH | Other Schools not listed | OTH |

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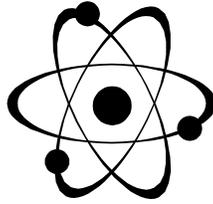
** See www.bestplacetowork.org*



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Congratulations to *ScienceMONTGOMERY* 2014

Best Wishes from the Kominers Family:

Ellen, Bill,

Scott (*ScienceMONTGOMERY* 2005), and

Paul (*ScienceMONTGOMERY* 2006-2008)

INTERESTED IN NEXT YEAR'S SCIENCE FAIR?

Are you supporting students with projects?

**Check out the Intel ISEF Document Library for 2015 Rules,
Guidelines, and Resources!**

Documents are usually updated by the end of May for the coming year.

E-mail *ScienceMONTGOMERY's* Scientific Review Committee
src@sciencemontgomery.org any time with questions,
or to ask for comments on a proposed research plan.



EXHIBITORS

STUDENTS IN THE JUNIOR FAIR

BEHAVIORAL AND SOCIAL SCIENCES

| | | | |
|------|---|---------------------|-----|
| M101 | The Effects of Isolation on Red Ruffed Lemurs (<i>Varecia rubra</i>): A Case Study | Tiara Oldfield | TPM |
| M102 | Are Cell Phones Really a Distraction? | Jaya Hinton | PLM |
| M103 | Game Smart | Miranda Liu | RCM |
| M104 | How the Amount of Formatted Text Affects Memory | Nancy Lovos | PLM |
| M105 | Insect Challenges | Sofia Bzhilyanskaya | RCM |
| M106 | Does Smell & Sight Affect Taste? | Maddie Ewers | HCS |
| M107 | The Effect of Handedness on the Interpretation of Ambiguous Visual Illusions | Morgan Hamel | SFT |
| M108 | Multitasking: Fact or Fiction? | Katherine He | RCM |
| M109 | Texting + Walking = :(| Brennan Lyons | HCS |
| M110 | Button Down Blues: Do School Uniforms Positively Impact Student Behavior? | Marie Clare Paxton | HCS |
| M111 | Action-Reaction | Bilal Siddiqui | PLM |
| M112 | How do Video Games Affect Stress? | Leah TenEyck | PLM |
| M113 | Water Water Everywhere | Chloe Thomas | SAA |
| | | Ashley Reyes | SAA |
| M114 | It's Controlling the Way I Look!!! An Inside Look into How Thinking Causes You to Look Different Places | Maija Woodruff | PLM |
| M115 | Does Butter Matter? | Madeline Zalewski | HCS |
| M116 | How Well Does Your Toothbrush Clean? | Tran Nguyen | RCM |
| | | Christina Nguyen | RCM |
| M117 | Stroop Effect and Warped Words | Autumn Wang | RCM |

BIOLOGY

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| M201 | The Effects of Temperature on Pectinase | Jason Hsu | RCM |
| M202 | Get Your Heart Pumping | George Carson | PLM |
| M203 | The Salt-Plant Effect | Adan Castillo | PLM |
| M204 | The Effect of Natural Antioxidants on Cancerous Cells | Alan Lin | RCM |
| | | Alvin Ya | RCM |
| M205 | Plants Can Drown, Too! | Nicole Miranda | PLM |
| M206 | How Plants React to Sun and Lamp Lights | Eric Solis | RCM |
| M207 | Exploring the Correlation Between Woolly Bear Caterpillars and Winter Weather | Alison Ransom | JPM |
| M208 | What are the Antioxidant Levels in Various Foods? | Sriya Srikanth | RCM |
| | | Vaishnavi Sesetty | RCM |
| M209 | Stop the Rot! | Joshua Starost | RCM |
| M210 | Dinoflagellate Bioluminescence | Sebastian Goldberg | TPM |
| M211 | Kitchen Cleaner Wars | Devin Hoover | RCM |
| M212 | Fractal Analysis of Leaf Structures | Anand Blum | TPM |
| M213 | Affect of Soil pH Levels Toward Plants | Jonathan Cruz | PLM |
| M214 | The Effect of Fruit Juices on the Effectiveness of Antibiotics | Amogh Narendra | RCM |
| | | Shashidhar Manoharan | RCM |
| M215 | Growing Plants in UV light | Bhuvana Pandalai | PLM |
| M216 | The Likelihood of Immune Disease in Humans Based on the Location of an Amino Acid Substitution Relative to the Components of a Protein | Daniel Schaffer | TPM |



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| M217 | Soap vs. Hand Sanitizer | Jerry Yang | RCM |
| M218 | Hey Do You Feel Something? Effect of Electromagnetic Radiation on Single Celled Organisms | Benjamin Solomich | RCM |
| M219 | The Effect of the Amount of GFP Added to a Cell on the Time of Wait Before Expression and the Brightness of the Fluorescent Glow | Andrew Zhang | TPM |
| M220 | Effects of Different Colored Light on Plants | Bryan Foo | RCM |
| M221 | Find an Effective Water Cleaning Process | Edward Bian | RCM |
| M222 | The Truth About Our Water | Maggie Chen | RCM |
| M223 | What is the Effect of Different Lights on Wisconsin Fast Plants Height Growth? | Ponprome Luu | RCM |
| M224 | How Much Acid Rain Does it Take to Kill a Hydroponic Plant? | Alison Neirotti | AGM |
| M225 | Sugar: Does it Affect Blood Pressure? | Salem Alamirew | PLM |
| M226 | Yeast Reproduction with Different Sugars | Grace Wu | RCM |
| M227 | Exercise's Effect on Blood Pressure | Nikki Ropeta | PLM |
| M228 | Experiment with Different Soils and Fertilizers on Radishes | Joshua Carter | SBS |
| M229 | Does Music Affect Plant Growth? | Jonathan Huang | RCM |
| | | Rohit Chari | RCM |
| M230 | Verifying Gregor Mendel's Theories | Hannah Duling | PLM |
| M231 | The Effect of Exercise on Heart Rate | Jake Alexander | PLM |
| M232 | Soil Science | Sriman Maddineni | FQM |
| M233 | America's Next Fuel Source: Will Surface Area Affect Algae Growth? | Sue Lee | RCM |
| M234 | Physical Inactivity, Access to Healthy Food, and Race Determine Obesity Prevalence in Maryland | Siri Ranganath | RFM |
| M235 | What's with All the Buzz? | Rithik Sebastian | RCM |
| M236 | Do Plants Find Magnets Attractive? | Lisa Yang | RCM |
| M237 | Do More Memory Cells, Antibodies Fight Off More Pathogens? | Srinivasan Madhavan | RFM |
| | | Soumith Gadilla | RFM |
| M238 | The Sound of Music for Plants | Varsha Iyer | RCM |
| M239 | Bacteria on Toothbrushes | Divya Katti | RCM |
| M240 | Relationship between Genome Size and Extinction | Gautom Das | TPM |
| M241 | The Effect of Different Environments on Plants | Eugene Domrachev | RCM |
| M242 | Chemicals and Plants | Dantannie Mahmoud | RCM |
| | | Alexander Scott | RCM |
| M243 | The Effects of Hydrogen Peroxide on Grass Seed Germination | Shwetha Kunnam | TPM |
| M244 | Oxidants Happen | Nishar Pillai | PLM |
| M245 | Effect Different Growing Mediums have on Plants | Alan Wang | RCM |
| | | William Liu | RCM |
| M246 | Are "Eco-friendly" Detergents Actually More "Eco-Friendly" Than Conventional Detergents? | Luke Xia | RCM |
| M247 | Plant Growth Variables | Danny Tabaa | RCM |
| M248 | Effective Genetic Transformation of Yeast: Agrobacterium vs. Biolistic Methods | Kevin Su | RCM |
| | | Shriyash Upadhyay | RCM |
| M249 | The Best for Your Money: How Plant Food Affects Plant Growth | Raven Devore | RCM |
| M250 | The Effect of Changes in the Light/Dark Cycle of a Dinoflagellate Pyrocystis Noctiluca on its Bioluminescence | Cassia Williams-Rogers | TPM |
| | | Meili Gupta | TPM |
| M251 | The Effect of CO ₂ on Basil Plants | Jason Maa | TPM |



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| M252 | Composting: An Organic Phenomenon | Suzanne Kmetz Miriam Meskel | SAA SAA |
| M253 | Constant Direct Current (DC) Promotes the Indoor Germination and Sprouting of the Garden Bean, Ejote Silvestre, in Winter Months | Jonathan Odim | TPM |
| M254 | The Effect of Nitrogen Dioxide on Mint Plants | Julia Chien Carissa Wu Christine Cho | TPM TPM TPM |
| M255 | Magnets Effect on Plants | Sourabh Vellala | RCM |
| M256 | How Does Soil pH Affect Plant Growth? | Kevin Tsai | PLM |
| M257 | The Effect of Different Colors of Light on a Plant's Height | Shawn Zhao Cato Wang | TPM TPM |
| M258 | Which One of These is a Better Method for Decontamination of Drinking Water: Filtration, Boiling, or Solar Disinfection (SODIS)? | Shreeya Khurana | TPM |

CHEMISTRY

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| M301 | Comparing Emulsifiers | Ekesh Kumar | PLM |
| M302 | Does Adding Carbon Dioxide to the Environment Increase its Temperature? | Edward Lee | RCM |
| M303 | Fe ₂ O ₃ and H ₃ O ⁺ : How do They React? | Jason Lee | RCM |
| M304 | Environmental Factors in the Corrosion of Iron | Kile Scott | RCM |
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| M306 | Acid vs. Base | Michelle Ling | RCM |

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| M310 | Water Desalination and How the Iv Affects the Dv | Ijeoma Obi | TPM |
| M311 | The Effect of Acid Rain on Plant Growth | Connor O'Brien | RCM |
| M312 | Purifying Water | Laura Yao | ESM |
| | | Joy Shi | ESM |
| M313 | Frozen Cascades | Emmanuel Ojamo | TPM |
| M314 | Cookies and Flour, How Much Flour Really Does Affect the Cookie? | Caitlin On | PLM |
| M315 | Vegetable Power | Mihika Peshwa | RCM |
| M316 | Water Pollution in Different Environments | Yasmine Pierre | PLM |
| M317 | Does the Type of Nail Affect How Fast it Corrode | Jonathan Zhang | RCM |
| M318 | Does the pH of a Liquid Affect the Time it Takes to Dissolve Pills? | Logan Saar | RCM |
| | | Yash Atitkar | RCM |
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| M320 | Brownie Science | Haja Sannoh | PLM |
| M321 | Battery Performance and Durability | Marshall Nambiar | RCM |
| M322 | Comparison of Enzyme Activity in Popular Honey Brands | Konstantin Tomashevsky | RFM |
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| M324 | Antioxidant vs. Free Radicals | Varshini Selvadurai | RCM |
| M325 | The Effect of a Liquid's Viscosity on the Speed of a Marble | Srish Udayakumar | TPM |
| M326 | Cabbage Chemistry | Alessandra Sena | RCM |
| M327 | The Effect of Particle Size on Reaction Rate | Ananya Tadikonda | RCM |
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| M329 | How Will the Number of Openings Around the Geothermal Reservoir Impact the Efficiency of the Geothermal Plant? | Ethan Tang | TPM |
| M330 | How to Get the Best Model Volcano | Liuel Tiebe | PLM |
| M331 | Fruit Battery | Jeffrey Tran | RCM |
| M332 | Scrub A Dub Dub: Which Soap Removes the Grub? | Stephen White | SAA |
| M333 | Ascorbic Acid Content Determination in Fruits and Vegetables | Ryan Halli | AGM |
| M334 | pH vs. Temperature | Kaitlyn Yang | RCM |
| M335 | I Scream, You Scream, Wait! It Melted! | Michelle Zheng | RCM |
| M336 | Charging on Plants | Daniel Zhu | RCM |
| M337 | Effectiveness of Different Sunscreen Products in Blocking UV Radiation | Sapna Bagalkotkar | RCM |
| | | Anjali Kalra | RCM |
| M338 | Water Color Affecting Light to Heat Reaction | C. Tyler Austin | RCM |
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| M340 | Race to Erosion | Basaam Malik | RCM |
| M341 | Development of the Curcumin Scaffold in the Potential Treatment of HIV-Associated Neurocognitive Disorders (HAND) | Mehana Daftary | ESM |
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| M345 | The Effect of Water Filtering Methods on How Well a Pollutant is Filtered | Ankitha Durvasula | TPM |



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| M346 | All That Glitters Isn't Gold: Glitter Nail Polish Durability | Rianna Ehrenreich Grace Blanco | SAA SAA |
| M347 | What Happens When Salt Water and Fresh Water Meet? | Chloe Godfrey | TPM |
| M348 | Salt: Friend or Foe ? | Kaya Edmondson-Deigh | PLM |
| M349 | How Does Soap Affect How Clean Laundry Detergent Is? | Emeka Ejimogu | PLM |
| M350 | The Effect of Water Filtration Systems on Altered Water | Laura Espinoza Charlotte Hirsch | TPM TPM |
| M351 | What is the Ratio of Sugar and Corn Syrup That Produces the Best-Tasting and Best-Textured Marshmallow? | Yaneelee Felicien | TPM |
| M352 | Fuels for Household Use: A Comparison Study of Fuel Efficiency | Patrick Wang | RCM |
| M353 | Hard Candy | Lauren Herring | PLM |
| M354 | Electricity and Corrosion | David Hinds | PLM |
| M355 | Growing Crystals at Different Temperatures | Kameron Hnath Gianmarco Guzman | RCM RCM |
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| M357 | Stick to It | Kevin Hu Steven Lu | RCM RCM |
| M358 | pHun with Soil | Justin Hung | RCM |
| M359 | What is the Effect of pH on Corrosion? | Ella Jiang Phoebe Qiu | RCM RCM |
| M360 | Diet Coke and Mentos: How Many Mentos is Too Much? | Brian Kee | RCM |
| M361 | Microwave Cooking: Worthwhile, or Wasteful? | Ashwin Kalidas | RCM |
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COMPUTER SCIENCE AND MATHEMATICS

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| M402 | Securing Computer Networks | George Klees Theo Tosini | TPM TPM |
| M403 | Start your Engines! | Elvin Liu Alex Hu | RCM RCM |
| M404 | How Does the Size of a Hit Box Affect the Score? | Vincent Gao | TPM |
| M405 | The Effect of Environmental Factors on the Population of Surrounding Species | Prem Chandrasekhar | TPM |
| M406 | Arduino to the Rescue | Faith Burton | ESM |
| M407 | The Effect of Orbital Debris Removal on the Estimated Population of Orbital Debris 10 cm or Greater | Naveen Durvasula | TPM |
| M408 | The Efficiency of Data Encryption Methods | Andrew Komo Noah Kim | TPM TPM |
| M409 | Where and Why Does Math Appear in Plants? | Lydia Wang | ESM |
| M410 | Reaction of Gamers? | Saket Mishra | RCM |
| M411 | Mathematical, Computer Models and Algorithms to Improve Speed and Accuracy of UAV Based Relief to Hurricane Impacted Regions | Siddharth Taneja Anish Thakker Avanish Yendluri | RFM CJM KIM |



ENGINEERING

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| M501 | Three Dimensional Maneuver Gear | Sadia Nourin | AGM |
| | | Vicky Ma | AGM |
| | | Tyler Flores | AGM |
| M502 | Evaluating the Effect of Microwave Radiation on Food Molecules and Plant Nutrients | Juliet Niebylski | WEM |
| M503 | String Strength | Rohan Abraham | PLM |
| M504 | Bright Light Creations | Alyssa Anglin | HCS |
| M505 | Just Glue It! | Philip Bernstein | PLM |
| M506 | The Effect of Fuel Type on the Amount of Heat Energy Released per Gram of Fuel | Michael Yin | TPM |
| | | Soyoung Hong | TPM |
| | | Miku Maeda | TPM |
| M507 | Hovercraft Havoc | Asad Caicedo | HCS |
| M508 | Raspberry Pi Controlled Robots | Kevin Chen | RCM |
| M509 | Wind Turbine Designs | Ryan Choi | RCM |
| | | Josh Park | RCM |
| M510 | Which Paper Density Makes a Traditionally Designed Airplane Fly the Farthest Distance? | Noah Hope | SAA |
| M511 | Aerodynamics Project | Maxim Galkin | RCM |
| | | Eduardo Perez | RCM |
| M512 | Clean Cookstoves and Fuel | Everest Bloomer | TPM |
| M513 | Different Methods of Maximizing Energy Absorbency of Solar Panels | Sumin Goh | TPM |
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| M517 | Hovercraft or Hovercrash | Dominic Manzella | AGM |
| | | Hirschel Nambiar | AGM |
| | | Reynald Oliveria | AGM |
| M518 | Shapes, Are They Important? | Daniel Lee | RCM |
| M519 | Large or Small? A Project Based on Paper Airplanes | Andrew Li | RCM |
| M520 | The Effect of Temperature on Electronic Devices | Daniel Li | RCM |
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| M522 | Steam Powered Boat | Daniel Lopez | AGM |
| M523 | Money is Power: What Coin and Electrolyte Solution Combination Would Produce the Most Electricity in a Coin Battery? | Raphael Brown | AGM |
| M524 | What Changes the Speed of a Motor? - Effect of Coils on the Speed of a Simple Motor | Shiv Luthra | TPM |
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| M526 | Rescue Robots | Parth Oza | RCM |
| | | Jagan Prem | RCM |
| M527 | Smart Phone or Non-Smart Phone - Which phone emits more microwave radiation? | Safiullah Rifai | AGM |
| M528 | Towering on Slopes | Sahil Sahni | PLM |
| M529 | The Hydraulic Lift-Hot versus Cold | Kennedy Salamat | NBM |
| M530 | Flat or Curved Pressure? | Aman Jaiman | RCM |
| | | Joon Bang | RCM |
| M531 | ROBOT: 'Independence': A Self-driven Robotic Vehicle to Help Seniors Stay Independent and Active | Isaak Shrestha | SAA |
| M532 | How to Make Our Middle School a Net Zero Energy Building | Nikita Singh | TPM |
| | | Esther Lee | TPM |
| M533 | The Future of Flight | Dylan Snow | RCM |
| M534 | Melting Speed of Materials By Induction Heating | Brian Spates | RCM |
| | | Mitchell Fream | RCM |
| M535 | Wi-Fi Antenna Signal Directivity and Polarization, and Signal Loss Through Different Materials | Catherine Rodriguez | TPM |
| M536 | Magnet Efficiency | Anthony Suarez | RCM |
| M537 | Are You As Strong As You Wood Like To Be? | Jorin Vincent | PLM |
| M538 | Swimmers' Maximum Leg Propulsion | Ryan Vipavetz | SAA |
| M539 | What is the Effect of Changing Movement Type of a Robot on the Efficiency of its Movement? | Kevin Shen | RCM |
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| PHYSICS | | | |
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| M704 | The Effect of the Material on the Amount of Static Produced | Simon Chervenak | TPM |
| | | Jacob Palosky | TPM |



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| M705 | How Resistant to Sound Are Your Lightbulbs? | Nicolas Duverneuil | ESM |
| | | Benjamin Auslin | ESM |
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| | | Catherine Dang | RCM |
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| | | Kevin Haeger | RCM |
| M732 | pH level and Conductivity | Ryan Lertora | PLM |
| M733 | Wind Power Energy Verses Battery Energy - Which is Better for our Future | Tete Narh-Mensah | AGM |
| M734 | Roller Coaster Marbles | Dylan Medina | SAA |
| M735 | How to Win the Big Prize: Which Throwing Style is Best for Winning the Ring Toss Game at a Fair? | Michael O'Reilly | HCS |
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| M739 | See the Light by Making a Cellphone Spectrophotometer | Anna Nguyen | RCM |
| M740 | How to Smash Castle Walls | Thomas Wrona | RCM |



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| M742 | The Amazing Siphon | Orrin Ni | RCM |
| M743 | The Long Jump | Andrew Wilkerson | HCS |
| M744 | Bouncing Balls: How High Can They Bounce? | David Singleton | PLM |
| M745 | Marble Energy | Yashvi Shah | AGM |
| M746 | Tracking Geomagnetic Storms | Sreya Vangara | RCM |

STUDENTS IN THE SENIOR FAIR

BEHAVIORAL AND SOCIAL SCIENCES

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| H101 | A Comparative Analysis of the Physicochemical Properties of Bio-Repellents for Tetramorium Caespitum | Sarah Asfari | HS |
| | | Yousuf Asfari | AHH |
| H102 | Differences in Word Usage Patterns between Well-Recovered Aphasic Patients and Control Subjects on a Picture Description Task | Daniela Ganelin | BLH |
| H103 | Biometric Study of Genetically Correlated Footprints | Anurudh Ganesan | CHS |
| H104 | The Effects of Surface Area on the Proxemic Distance Between California Black Worm Clusters | Jacqueline Hwang | WHO |

BIOLOGY

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| H201 | Do Cell Phone and WiFi (RF-EMF) Waves Increase the Risk of Cancer? | Sanyukta Deshmukh | WHO |
| H203 | Lysine Dimethylation in the BH4 Domain of Bcl-2 and Its Functional Significance | Richard Zhu | BLH |

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| H205 | Hyper-Variability Analysis and Prediction in the Genome and Proteome of Influenzavirus A | Trinish Chatterjee | RMH |
| H206 | What Chemicals in Ginger are Most Useful in Slowing Biofilm Formation in Bacteria? | Yomiyou Geleta | BLH |
| H207 | Automated Image Analysis to Measure the Immunohistochemical Expression Profiles of Novel Protein Markers to Assess their Utility as Biomarkers for Renal Cell Carcinoma | Sreejan Kumar | POH |
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| H212 | Attacking Tumors: Testing TDP Inhibitors | Gabrielle Tender | WWH |
| H213 | Early Cancer Diagnosis and Treatment through the Detection of Circulating Tumor Cells using Drop-based Microfluidics | Neil Davey | BLH |
| H214 | ADAMTS13 and Thrombotic Risk: The Influence of Hypoxia | Neha Wali | WHO |
| H215 | The Effects of Oncogenic KRAS and c-Myc on the Transcriptomic Output of the Cell: A Novel Role for a Master Oncogene | Hueyjong Shih | BLH |
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| H219 | The Future of Personalized Medicine | Soham Sen | NWH |

CHEMISTRY

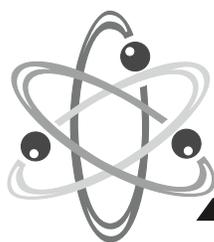
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| H308 | Antioxidants in Tea | Thanushree Manjunath Nidhi Mathew | POH POH |
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| H403 | Stabilization in Conway's Game of Life | Chuan Chen John Ahrens | POH POH |
| H404 | Is the Bernoulli Principle the Main Reason Why Airplanes Fly? | Kevin Boby James Donovan Kahlil Greene | POH POH POH |
| H405 | The Effect of Fluid Motion on Oxygen Diffusion in Capillaries | Ramya Durvasula | BLH |
| H406 | Seven Years to Renovation | Devin Smedira | POH |
| H407 | Novel Algorithm for Cancer Genomics and Analysis of Disease-Causing Mutations | Sanna Madan | POH |
| H408 | Simulating Satellite and Rocket Launch and Motion | Azeem Mohammed | POH |
| H409 | Using Sensor Fusion to Improve the Accuracy of Position and Orientation Data on Mobile Devices | Arjun Blum | BLH |
| H410 | Using Keystroke Timings to Flag Suspicious Behavior | Christine Jean Jared Marx-Kuo | BLH BLH |
| H411 | Comparing the Speed of Pathfinding Algorithms in a 2-Dimensional Array | Winston Grenier Henry Gao Sahil Mayenkar | POH POH POH |
| H412 | Examining the Relative Effectiveness of Path-finding by Artificial Intelligence in the Source Engine | John Greer | POH |
| H413 | Implementing a Novel Approach for Inferring Haplotypes from Genotype Data While Modeling their Evolution in Populations | Ayush Goyal | POH |
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| H417 | Using Distributed Computing and Social Media to Calculate Many Decimal Digits of Pi | Thomas Buarque de Macedo Daniel Goldenberg | WWH BCH |
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| H422 | Generating a Threshold Value Comparing the Efficiencies of the Deutsch Jozsa and Shor Quantum Algorithms to Their Brute Force Counterparts for Applications in Quantum Computation | Aakarshan Bhardwaj | POH |
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| H424 | The Stable Marriage Problem: Stable Matching for P Parties | Jared Lichtman Daniel Mangoubi | BLH Other |

**ENGINEERING**

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|------|--|---|-------------------|
| H501 | Time Course of Air Temperature Changes Above a Roof Planted with Sedum kamschaticum | Paul B. Ellis | BLH |
| H502 | Making the Game Safer: Prototyping an Economically Feasible System of Detecting Concussions and Other Head Injuries | Anish Prasanna Jihoon Jang | POH POH |
| H503 | Replacing Modern Sprinkler Systems with Infrared Detection to Locate and Extinguish Fires | Ishan Mundra Karan Chawla | POH POH |
| H504 | Adjustable Zoom Lens Design for LED Lamps Without Light Loss | Alan Li | BLH |
| H505 | Three Dimensional Positioning System Through Attenuation of Low Frequency Radio Waves | Andrew Wang Brandon Grinkemeyer Elan Guzman | POH POH POH |
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| H507 | Near Perpetual Motion: Is It Possible With Magnets? | Derek Colby Gabe Fernandez | POH POH |
| H508 | Determining the Effectiveness of Slayer Exciter Coils in Lighting Bulbs with Various Initial Voltages | Kalin Vassilev | BLH |
| H509 | How Much Energy do Windmills Produce? | Harshal Shah Kevin Manakkunnel | POH POH |
| H510 | Solar Powered Biofuel Distillation and Production | Dana Cook Sam Bolgiano | BLH BLH |
| H511 | Analysis of Natural Pigments As Gamma Radiation Blockers and Their Use In Environmentally-Friendly Protective Compositions | Max Niebylski | BCH |
| H512 | Measuring Heat Flow for Various Insulation Materials | Peregrine Lowe | SWH |
| H513 | What Type of Wood is Best to Build a Bridge, Based on Tensile Strength? | Kashif Rahman | POH |
| H514 | Determining the Effectiveness of Three Different Plastic Melting Devices Used for Recycling 3D Printer Waste | Nathan Schilling | BLH |
| H515 | Finding the Most Efficient Angle and Type of Winglet for Several In-Flight Scenarios | Andrew Lent | POH |



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| H517 | Speed and Stability: Finding the Most Effective Bilge Keel Design to Achieve Both | Ethan Chen | BLH |
| H518 | How Helicopters Fly - An Investigation into the Aerodynamics of Helicopters | Nathan Kwon | POH |
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| H521 | Nanowires and Electroposition | Grace Cheung | RMH |

PHYSICS

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| H701 | Saturated Nuclear Matter in the Large Nc and Heavy Quark Limits of Quantum Chromodynamics | Ishaun Datta | BLH |
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| H705 | Investigating Electrical Properties of Graphene Through Materials Modeling Simulation | André Guzmán | POH |
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| H708 | Colloidal Rods at the Oil-Water Interface | Rahul Menon | POH |
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