MONTGOMERY COUNTY SCIENCE FAIR 2018

FAIR: MARCH 9TH & 10TH
FDA WHITE OAK CAMPUS
10903 NEW HAMPSHIRE AVE, SILVER SPRING

AWARD CEREMONY: MARCH 11TH
MONTGOMERY BLAIR HIGH SCHOOL
51 UNIVERSITY BLVD E., SILVER SPRING









Salient CRGT is proud to be a continuing supporter of the Montgomery County Science Fair.

We celebrate the notable achievements of all participating students.



A company moving forward with a vision—we are a leading technology company providing health, data analytics, cloud, agile software development, mobility, cyber security, and infrastructure solutions. We support these core capabilities with full lifecycle IT services and training—to help our customers meet critical goals for pivotal missions.



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Friends of ScienceMONTGOMERY

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Angelique Bosse

Alicja Dabrowska Brown Christopher Cochran

Jeffy George

Laura Lee Johnson Jan Linkenhoker

Anne Merrell Patricia Miller Ram Narula Schuyler Price Aprajita Srivastava

Program Cover Art & Design

Design: Someet Narang Art: "Waves" by Shanthi Chandrasekar

Description: Artist's fascination for ripples on water, topographical maps and images of magnetic fields inspired this drawing. The layering of the lines depicts wave formations over time. It also represents our unquenchable curiosity to unravel the mysteries of the cosmos.



United Therapeutics Corporation is a biotechnology company focused on the development and commercialization of innovative products to address the unmet medical needs of patients with chronic and life-threatening conditions.

We have five approved products on the market today and are relentless in our pursuit of "medicines for life".

2:00 PM – 4:00 PM





www.ScienceMONTGOMERY.org

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

FRIDAY, MARCH 9, 2018

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 10, 2018

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8:45 AM – 9:45 AM	Judges Registration Period (No students present)
9:45 AM – 11:45 AM	Judges Preview Period (No students present)
11:45 AM – 12:45 PM	Students admitted
1:00 PM – 4:00 PM	Student Interviews: All Judges, all grades; Students must stay until end of all judging
4:00 PM - 5:00 PM	Project Removal: All projects must be removed by 5 PM or they will be discarded.

SUNDAY, MARCH 11, 2018

Silver Spring, MD 20901

4:00 PM – 5:00 PM	Meeting with ScienceMONTGOMERY High School International Science and
	Engineering Fair (ISEF) Winners and First Runner-up and their families, about
	trip to Pittsburgh, PA for ISEF

Awards Ceremony at Montgomery Blair High School, 51 University Blvd E

FOOD AND DRUG ADMINISTRATION (FDA)

SCIENCE CENTER

WHITE OAK CAMPUS, SILVER SPRING, MD

IS & PROUD SPONSOR OF THE 2018 MONTGOMERY COUNTY SCIENCE FAIR





MONTGOMERY AREA SCIENCE FAIR ASSOCIATION

Welcome to the Montgomery County Science Fair!

*Science*MONTGOMERY congratulates and applauds the students who participated in the 2018 Montgomery County Science Fair. We hope that conducting these science projects and presenting the hard work that went into them was an enjoyable and valuable experience.

The Montgomery County Science Fair brings together scientists, engineers, mathematicians, educators, parents, and young student scientists from Montgomery County. *Science*MONTGOMERY provides a venue for competition and research presentation among hundreds of students from public, private, and home school affiliations in grades 6 through 12. We provide cash prizes for project excellence through our numerous Category Awards. Complementing these are a large number of Community Awards generously provided by various business, scientific, professional, and educational organizations, and US Government agencies. Students are competing for more than \$40,000 worth of prizes in the form of cash, scholarships, internships, travel, banquets, bonds, books, certificates, medals, and merchandise. As an affiliate of the Intel International Science and Engineering Fair (ISEF), *Science*MONTGOMERY also awards fully funded travel scholarships to four projects to compete in the International Science and Engineering Fair.

ScienceMONTGOMERY is a 501(c)3, nonprofit, all volunteer organization which relies on generous sponsors to fund the county-wide fair competition each year. For the fourteenth consecutive year, MedImmune serves as our premier sponsor, for which we are most grateful. We also are thankful for the generous support of Salient CRGT, Northrop Grumman, and the United Therapeutics Corporation. Another major sponsor is the Food and Drug Administration.

The all-volunteer *Science*MONTGOMERY 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 who painstakingly evaluate projects and encourage students' further pursuit of scientific understanding. All of our sponsors, judges, and volunteers make the Fair possible, and we thank you.

I would like to personally thank and acknowledge the *Science*MONTGOMERY Board members who have contributed significant talent, time, and resources late at night, after work, on weekends, and in good and bad weather to make the Fair happen. I also want to thank the parents, teachers, mentors, and sponsors who supported and encouraged Fair participants.

Finally, and most importantly, I want to thank all of the student participants for their hard work, dedication, enthusiasm, passion for science, and willingness to be part of the Montgomery County Science Fair. I sincerely hope this has been a rewarding, valuable, and unforgettable experience that you will carry with you in your careers.

Jan Linkenhoker, DVM, MSPH

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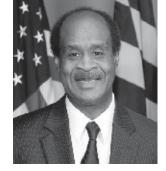
Fair Director March 2018



OFFICE OF THE COUNTY EXECUTIVE ROCKVILLE, MARYLAND 20850

Isiah Leggett County Executive

March, 2018



Dr. Jan Linkenhoker
Fair Director
ScienceMONTGOMERY
Montgomery Area Science Fair Association

Dear Dr. Linkenhoker:

Montgomery County supports and applauds *Science*MONTGOMERY, and your ongoing efforts to encourage interest in science throughout our community. 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 hundreds of Montgomery County public and private school students and we are very proud to support your mission to celebrate performance in science education throughout the County.

Montgomery County is continuing to do all that it can to ensure a strong, vibrant economy and healthy, sustainable communities 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 our community, and applaud those local businesses that recognize and honor the talents and achievement of our youth.

Sincerely,

Isiah Leggett County Executive





MONTGOMERY AREA SCIENCE FAIR ASSOCIATION

Montgomery Area Science Fair 2018 FDA Science Center, White Oak Campus, 10903 New Hampshire Ave, Silver Spring, MD

OFFICERS

Fair Director: Jan Linkenhoker, DVM, MSPH, DACLAM

NIH

Secretary: Angelique Bosse Treasurer: Aprajita Srivastava

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Jeffy George Schuyler Price

Henry M. Jackson Foundation FDA

Laura Lee Johnson, Ph.D. Raghavan Venkat, Ph.D.

FDA MedImmune

Shelley Kluska Dongbo Wang, Ph.D.

Northrop Grumman FDA

AWARDS PROGRAM

2:00 P. M. Sunday, March 11, 2018 Blair High School Auditorium

Opening of Awards Program andJan Linkenhoker, Fair DirectorWelcome to ScienceMontgomeryRaghavan Venkat, Board Member

Presentation of Category Awards*Jan Linkenhoker, Fair Director
Raghavan Venkat, Board Member

Presentation of Community Awards*Jan Linkenhoker, Fair Director
Raghavan Venkat, Board Member

Presentation of Broadcom and ISEF Awards** Patricia Miller, Community Awards Chair

Thank you and Adjournment Jan Linkenhoker, Fair Director

ISEF Award Winners Meeting 4:00-5:00 PMISEF Committee and ISEF finalists and parents

*When called on stage for awards, students will shake hands with board members and community awards representatives on stage and then receive awards off to the opposite side of the stage.

*Please hold applause until all awardees for a given category or community award are presented.

**Broadcom winners will be announced and asked to come onto the stage for Broadcom packets and group photo. After Broadcom winners are dismissed from the stage, the ISEF award winners will be announced and asked to come onto the stage for a group photo.



Community Organizations Presenting Awards-2018

American Industrial Hygiene Society

—Potomac Section

American Institute of Aeronautics and Astronautics-National Capital Section

American Meteorological Society—DC Chapter

American Nuclear Society, Washington, DC Section

American Psychological Association

American Society of Mechanical Engineers

Association for Women Geoscientists

ASU Walton Sustainability Solutions Initiatives

Broadcom MASTERS Competition

Clean Air Partners MWCOG

Educational Systems FCU

Geological Society of Washington

Graduate Women in Science

Intel Excellence in Computer Science

IEEE Washington Section

KJW Young Scientists Association

MIT Club of Washington DC

MedImmune

MRIGlobal

Mu Alpha Theta

NASA EARTH System Science Award

National Oceanic and Atmospheric Administration (NOAA)

National Capital Area Chapter of the Society of Toxicology

NSA Research Directorate

Office of Naval Research (U.S. Navy/ U.S. Marine Corps)

Optical Society of America, National Capital Section/IEEE Photonics

Patent & Trademark Office Society

Qiagen Sciences Inc

Rockville Science Center

Regeneron Science Talent Search

Ricoh Americas Corporation

Rockville Science Center

Sigma Xi—FDA Chapter

Sigma Xi—NIST Chapter

Society for In Vitro Biology

Stockholm Junior Water Prize

The Aerospace Corporation

U.S. Air Force

United States Metric Association

United States Nuclear Regulatory Commission

United States Public Health Service -- **Commissioned Officers Association, D.C.**

Washington Statistical Society

Yale Science and Engineering Association, Inc.



2018 Update

Congratulations to our 2017 ScienceMONTGOMERY Grand (ISEF) Prize Winners:

BIOLOGY: Garyk Brixi (Winston Churchill HS), Innovative Optimization for Malnutrition Treatment

<u>COMPUTER SCIENCE & MATHEMATICS:</u> Allie Batista (Our Lady of Good Counsel HS) & Clara Benedon (Poolesville HS), Using 3D Modeling to Save Our Reefs: Exploring the Accuracy of Reef Assessment Techniques Using Structure from Motion Naveen Durvasula (Montgomery Blair HS), Metrics for Kidney Transplantation

<u>PHYSICS:</u> Sambuddha Chattopadhayay (Montgomery Blair HS), On T-Reflection via Analytic Continuation in Quantum Mechanics

<u>Alternate: BIOLOGY:</u> Daniel Schaffer (Montgomery Blair HS), What are the Protein Domains in Wolframin, an Endoplasmic Reticulum Protein Mutated in a Monogenic Form of Diabetes?

Our Finalists were recognized with these awards at Intel ISEF 2017 (Los Angeles):

Garyk Brixi: Fourth Place Grand Award, Biomedical and Health Sciences

Sambuddha Chattopadhayay: Third Place Grand Award, Physics and Astronomy

Naveen Durvasula: Second Award, Ashtavadhani Vidwan Ambati Subbaraya Chetty Foundation

Our ScienceMONTGOMERY Family's Wonderful Accomplishments in the Past Year:

Junior Science and Humanities Symposium (DC Region): Ethan Chen (Second Place), Mehana Daftery (Runner-up), and Daniel Chen (First Place, Poster Presenter)

Junior Science and Humanities Symposium (Nationals) First Place: Ethan Chen

Moody's Mega-Math Challenge (Team Members, Top Six Team): Siddharth Taneja, Andrew Komo

NSF Research Fellowship (2017): Melodi Anahtar, Stephanie Douglas

Putnam Fellow: Samuel Zbarsky

Goldwater Scholar: Jared Lichtman, Clare Singer

Kleiner Perkins Caufield & Byers (KPCB) Engineering Fellow: Ishaan Parikh

i-i-SWEEP: Silver: Bethany Chen & Olivia Wang; Honorable Mention: Aaron Liss, Jonathan Simak

Maryland Women of Tomorrow Award: Laura Espinoza

It's Academic (Champion & Super Bowl Champion Team, Member): Sambuddha Chattopadhayay

U. Toronto National Biology Competition (International Biology Scholar): Shriyash Upadhyay

Siemens Competition: 1st Place National Winner: Andrew Komo; National Semifinalists: Mengmin Luo, Anish Senapati, Shriyash Upadhyay, Carissa Wu

Forbes 30 Under 30 in Healthcare: Jonathan Gootenberg

Regeneron Science Talent Search: Finalists: Sarah Gao, Andrew Komo; Scholars: Bethany Chen, Anish Senapati, Shriyash Upadhyay, Sreya Vangara, Katherine Wu, Ariel Zhang





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 · Megan Brady

Katherine Brizzolara · Mandy Chen
Kuo-Kai Chin · Re-I Chin
Stephanie Douglas · Taylor Douglas
Chinasa Ejiofor
Jeremy Fallick · Sarah Gao · Anurudh Ganesan
Maddie Golding · Maggie Glaudemans · Jacob Hurwitz
Phanna Iamlek · Joshua Kalampanayal · Sneha Kannan
Eric Keen · Matthew Kinnard · Josh Klontz
Paul Kominers · Scott Kominers
Ekesh Kumar · Kyle Le · William Lee · Emily Levine
Daniel Liss · Nina Jessica Lu · Reethika Maddenini
Mikala Marville · Hermela Mengesha · Tete Narh-Mensah

Waliullah Rifai · Kenny Rosenberg
Nathan Schilling · Lea Shand · James Sheperdson
Reid Simon · Mike Sousane
Suzanne Tamrakar
Haroula Tzamaras · Carmelita Ugarte
Jennifer Wang · Louis Wasserman
Claire Wortmann · Grace Young · David Zhang

Gyyoung Oh · Jason Qian · Sikandar Porter-Gill

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



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& 11, 2018 Montgomery County Science Fair 2018 Category and ISEF Awards Judges

NAME	AFFILIATION	NAME	AFFILIATION
Ms. Abolade Adepiti		Dr. Basil Golding	FDA
Dr. Erin Adkins	NIST	Ms. Laura Gorrell	NICHD
Dr. Richa Agrawal	Florida International University	Dr. Kirill Gorshkov	National Center for Advancing Translational
Dr. Kyle Anderson	NIST	Sciences	č
Dr. Omozusi Andrews		Mr. Jon Griffin	
Mr. Yezdi Antia	Hughes Network Systems	Dr. Carlos Guardia	NIH
Ms. Jenna Antonelli	US Census Bureau	Dr. Suna Gulay French	
Mr. Diego Arenas	American Institutes for Research	Dr. Kanchan Gupta	NIH through Kelly government solutions
Mr. Jared Au Yeung		Ms. Megan Hahn	7 8
Dr. Mahesh Bachu	NIH	Dr. Jonathan Hardis	NIST
Dr. Donifan Barahona	NASA	Dr. Colin Heikes	NIST
Ms. Stephanie Bates	Lonza Walkersville/Biotechnology	Dr. Geoffrey Heinzl	FDA
Dr. Erica Berilla	FDA CDER	Dr. J Terrell Hoffeld	U.S. Public Health Service (Retired)
Mr. Michael Berilla		Mr. Larry Hothem	USGS
Dr. Lokesh Bhattacharyya	FDA	Dr. Ping Hu	
Dr. Yotam Blech-Hermoni	NIH	Dr. Mary Anne Hutchison	Qiagen
Ms. Melissa Breiner	Aeras	Mrs. Damilola Ishola	
Dr. Steven Brooks	NIH	Dr. Moriah Jacobson	Uniformed Services University
Dr. Thomas Calder	NIH	Dr. Mihir Jaiswal	,
Ms. Marilyn Carson	Northrop Grumman	Dr. Yuyoung Joo	NIH
Dr. King Chan	Leidos Biomedical	Dr. Devika Kapuria	NIH
Dr. Sabarni Chatterjee	NCI	Dr. Sukhbir Kaur	NIH
Dr. Somesh Chattopadhyay	FDA	Dr. Mehdi Kazemzadeh-Narbat	
Dr. Maitreyi Chattopadhyay	FDA	Mr. Edward Kerns	retired
Dr. Manas Chattopadhyay		Dr. Ferdous Khan	
Dr. Gouri Chattopadhyay		Dr. Bharat Khurana	FDA
Mr. Maysum Chaudhri	FDA	Ms. Laura Klenow	FDA
Dr. Sitara Chauhan	FDA	Ms. Mary Kombolias	-2
Mr. Ethan Chen		Dr. Sastry Kompella	
Dr. Shu Hui Chen	NIH	Dr. David Kosub	NIH
Dr. Swati Choksi	NIH/NCI	Mr. David Krell	AstraZeneca/MedImmune
Dr. Tatiana Claro da Silva	FDA	Dr. Edward Kwee	NIST
Dr. Kevin Connolly	Retired Biotech scientist	Dr. Seung Kyu Lee	National Institute on Aging/ NIH
Ms. Elizabeth Coyle	FDA	Dr. William Lee	Naval Research Laboratory
Ms. Marie Cronin	NIH	Mr. Eric Liang	Arcadis / Environmental Engineering
Mr. Jonathan Czisny	Group W Inc	Dr. Dawei Lin	NIH
Dr. Salil Das	Prince Georges Community/	Ms. Heidi Lovett	NOAA Fisheries Service
	Montgomery College	Ms. Maria Jose Luna	NIH
Mr. Jose F Delgado		Ms. Pallavi Malla	
Ms. Giji Dennard	AstraZeneca	Dr. Mohanraj Manangeeswaran	FDA
Mr. Ashutosh Dhanesha	Independent Consultant	Dr. Shirin Marfatia	FDA
Mrs. Ketki Dhanesha	US Patent and Trademark Office	Ms. Theresa Marth	USDA-ARS
Dr. Lena Diaw	NCI/NIH	Mr. Stephen Mason	
Dr. Garry Didinsky	OrbitalATK	Mr. Asad Masood	Accenture
Ms. Larissa Erben	NIH	Mr. Joseph McKennan	Bioqual Inc
Mr. Thomas Erickson	Northrop Grumman	Mr. Kevin McPherson	NIH
Dr. Luis Espinoza	NIH	Ms. Barbara Medvar	NIH/NVCC Manassas
Dr. Luis Espinoza	NIH	Ms. Chy Mi	
Dr. Wenchun Feng		Mr. Scott Miller	Canon BioMedical
Mr. Darryl French		Dr. Sunil Mittal	University of Maryland, College park
Mr. Kyle Gallun		Dr. Mi Sun Moon	FDA
Mr. Alex George	US Army Research Lab	Dr. Sarah Morgan	NIH
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Mr. Jeffy George		Mr. Jack Morgan	



2018 Category and ISEF Awards Judges (continued)

NAME	AFFILIATION	NAME	AFFILIATION
Dr. Suman Mukhopadhyay	NIH/NIAID	Dr. Upasana Sahu	
Dr. Nisha Nagarsheth		Dr. Arthur Samuel	Northrop Grumman
Dr. Santosh Nanda	FDA	Dr. Tamika Samuel	
Dr. Mukil Natarajan	NIH	Mr. Richard Schmidt	retired
Dr. Kapinga Ngalula		Dr. Matthew Scholfield	GSK-Vaccines
Dr. Andy Nieto	US Army Research Laboratory	Dr. Alyxandria Schubert	
Dr. sayantanee niyogi		Dr. Sherri-Gae Scott	American Gastroenterological Association
Dr. Mariia Novikova		Dr. Birong Shen	
Ms. Winter Okoth		Ms. Nicole Shyong	TTB
Ms. Cathy Oliveri	HHS/FDA/CDRH	Mr. Abid Siddiqui	FDA
Dr. Sarala Padi	NIST	Dr. Robert Silverberg	NASA
Or. Vinay Pai	Data Informatics company co-founder	Dr. Corey Stambaugh	NIST
Dr. Sri Vikram Palagummi		Dr. Jennifer Symonds	ChromaDex Spherix Consulting
Ms. Kalpana Parvathaneni	Uniformed Services University	Dr. Irina Tiper	
	of Health Sciences	Dr. Andriy Tkachenko	US FDA
Mr. Ed Pase	Self	Ms. MEGAN TSUI	NIH
Mrs. Joy Pase	NIH	Dr. Malgorzata Turalska	US Army Research Laboratory
Dr. Vinay Patil	FDA	Dr. Rachel Van Duyne	
Or. Norman Peterson	MedImmune	Dr. Prajakta Varadkar	FDA
Or. Timothy Petros	NIH/NICHD	Dr. Raghavan Venkat	MedImmune
Ms. Adriana Prada	FDA, CBER	Mrs. Padma Venkatachalam	Montgomery County Govt
Dr. Christine Ring		Dr. Anita Verma	FDA
Mr. Jeff Rodman	Northrop Grumman	Dr. Jessica Wayt	NIH
Mr. Keith Rosenberger	Northrop Grumman	Dr. David Wei	NIH
Dr. Divya Sagar	MedImmune	Dr. Katie Winarski	FDA
Mr. Alok Saha		Mr. Terry Wu	NIH

ScienceMONTGOMERY Participating Schools-2018

School	Abbrev	School	Abbrev
Argyle Middle School	AGM	Parkland Middle School	PLM
Bullis School	BUS	Poolesville High School	POH
Montgomery Blair High School	BLH	Roberto Clemente Middle School	RCM
Churchill High School	СНН	Robert Frost Middle School	RFM
Farquhar Middle School	FQM	Richard Montgomery High School	RMH
Key Middle School	FKM	Rocky Hill Middle School	ROM
Holy Cross School	HCS	Seneca Valley High School	SVH
Holton-Arms School	HOA	St. Andrew Apostle School	SAA
Home Schooled	HS	Shady Grove Middle School	SGM
Kingsview Middle School	KIM	Tilden Middle School	TIM
Muslim Community School	MCS	Takoma Park Middle School	TPM
Northwest High School	NWH	Walter Johnson High School	WJH
Other	OTH	Wootton High School	WHO

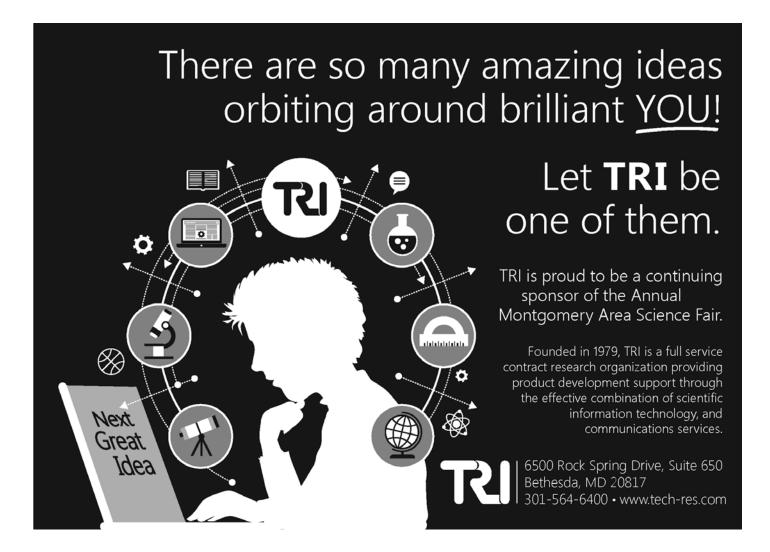


Interested in next year's Science Fair? Are you supporting students with projects?

Check out the Intel ISEF Document Library for 2019 Rules, Guidelines, and Resources!

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

Email 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 HIGH SCHOOL FAIR

	BEHAVIORAL AND SOCIAL SCIENCES		
		A · 1 A 11 1	TIC
H101	Mutations of influenza viruses and the challenges in predicting disease pandemics: epidemiology analysis in relation to public health	Ajeetha Arudchandra	n HS
H102	Mining Big Data in Social Media for Sociology Studies	Michael Gan	RMH
H103	Cancer Risk Perception and Fruit and Vegetable Consumption: Analysis from the Health Information National Trends Survey (HINTS) V, Cycle 1 survey	Varsha Krishnan	WHO
H104	Development and Implementation of Metrics to Measure Stress Level in High School Students	Chloe Noh Tesia Shi	RMH RMH
H105	Exploring the Relation Between Time-Of-Day and Performance in Cognitive Tasks	Rhea Rakheja	POH
	BIOLOGY		
H201	Self-Assembling Polyplexes for Cancer Vaccine Delivery	Allie Amerman	WHH
H202	Precision Medicine: Specific Targeting of Resistant Hypoxic Cancer Cells	Luckshika Arudchandrar	
H203	Optimizing microRNA Detection through e-Datasets for Next Generation Sequencing (NGS) Alignment Algorithms	Joon Bang	РОН
H204	Denaturing Proteins	Nadia Baten	MCS
H205	Assessing Sheep's Mothering Abilities through Vocalization Analysis	Clara Benadon	POH
H206	Studying Bovine Neutrophil Response to Parasitic Stimulation	Faith Mindy Burton	BLH
H207	Optimizing Production of a Novel Carbon Monoxide Dehydrogenase in <i>E.coli</i>	Jason Cao	WHO
H208	New and improved models of single-copy bacterial core genes	Marisa Casay	POH
H209	Comparison of Candidate Biomarkers from Urine Exosomes to Diagnose and Predict the Severity of Acute Kidney Injury in Mice	Rohit Chari	POH
H210	Generation of a Therapeutic Monoclonal Antibody for Acute Myeloid Leukemia by Employing the U937 Cell Line as a Surrogate Antigen	Bethany Chen	СНН
H211	Comparison of Variant Callers using Exome Sequencing Data on CGCs (Cancer Genomic Clouds)	Sai Abhishek Ganginen	і РОН
H212	Developing Phage Endolysins as Novel Therapeutics for Multi-Drug Resistant Bacterial Infections	Sarah Gao	BLH
H213	Computerized Quantitation of Lysosomes in Gaucher's Disease	Gianmarco Guzman	POH
H214	The effect of Potassium on the Muscle contractions of Brine Shrimp	Yerin Han	WHO
H215	RNAi knockdown of nuclear receptor co-repressor 1 genes in malignant breast cancer cell lines affects cell invasion	Robert Huang	РОН
H216	Biometric, data analytics, and automated health monitoring tools for individual and public health and safety	Devan Kapoor	СНН
H217	The Effect of Isolation on the Pulse rate of Blackworms	Deepa Kori	WHO
H218	Determining the Most Vulnerable Age for the Contraction of Six Water Borne Illness	Neil Kundagrami Prayag Gordy Itamar Fiorino	BLH BLH BLH
H219	Determining the Effectiveness and Efficiency of Low Cost Water Decontamination Methods	Kelley Li Hannah Kim Elisabeth Jang	BLH BLH BLH



H220	The Effect of Calcium Sulfate on Nannochloropsis oculata Growth	Amanda Liu	BLH
		Daphne Amir	BLH
T.T.O.O.1		Zoe Fong	BLH
H221	Validation of The NCI-ALMANAC Potential to Identify Radiation Modifiers	Sadhana Lolla	POH
H222	The Effect of pH on Bioremediation Rates of Oil Eating Bacteria	Tarun Mattikalli	BLH
1.1000	THE LOADE DRIVED AND A STATE OF THE STATE OF	Srish Udayakumar	BLH
H223	Think SAFE DRINK: Determining an efficacious purification procedure for potable water	Ipsa Mittra	BLH
H224	Analysis of Deceased Limulus Polyphemus to Find Causes of Mortality	Mikaela Moore	BLH
11221	on Wallops Island	Emma Schillerstrom	BLH
H225	Natural vs. Synthetic	Reihanha Nasrati	MCS
H226	Plant Adaptation to Climate Change	Lara Ojha	BLH
H227	The Effect of Mutations in the -35 Region of a Ptac Promoter on Promoter Strength	Ryan Santhoshkumar	BLH
,	6,	Rajen Dey	BLH
H228	What is the role of wolframin in the endoplasmic reticulum Ca ²⁺ signaling network?	Daniel Schaffer	BLH
H229	Ethanol tolerance of E. coli membranes	Andrew Selvadoss	POH
H230	Air Quality on Animal Health	Alexander Sherwin	RMH
H231	To Elucidate the Hippo Pathway in Breast Cancer using Data Analysis	Abhinaasi Singh	WHO
		Winnie Liang	WHO
H232	The Effect Of Coffee and Coffee Grind on Plant Growth	Ethan Tang	BLH
H233	Computer-Assisted Diagnosis of Cervical Abnormalities using Deep Learning	Michelle Tang	BLH
H234	Enterovirus D68 (EV-D68) Proteins 2B and 2C Induce Autophagy	John Ting	POH
	in the Yeast Saccharomyces cerevisiae		
H235	Applying the Oligodynamic Effect to Water & Bacterial Purification	Alice Varughese	BLH
		Shwetha Kunnam	BLH
H237	The Effects of Light Cycles on Adult Neurogenesis	Victoria Xin	BLH
H238	Characterization of a novel HepG2 Cell Line for the Evaluation of Drug-induced hepatotoxicity	Amit Yavasani	РОН
H239	Characterizing APOBEC3G Protein Antiretroviral Protein Mutants	Avanish Yendluri	POH
	and their Ability to Block HIV-1 Replication		
	CHEMISTRY		
H301	The Thermal Effect of Microwave Radiation on Various Polar and Nonpolar Liquids	Claire Brizzolara	WJH
H302	System for Biphasic Graphene Transfer	Stephen Chung	POH
H303	The Effect of Salinity on the Enzyme Catalase	Tanaya Jha	POH
H304	Blood Flood!	Abeni Kazi	MCS
H305	Understanding Pharmacogenetics: Why do people react to drugs differently?	Sareet Nayak	RMH
		Samarth Nayak	RMH
H306	Analyzing the Effectiveness of Coagulant Cations in Direct Filtration of the Water Purification Process	Kush Savsani	RMH
H307	The Future of Portable Water and Production of Renewable Energy: Air Cathode Microbial Desalination Cells	Shreya Shete	РОН
H308	Detection of Copper(II) by Aggregation of Functionalized Gold Nanoparticles	Justin Song	RMH
H309	Correlation Between Barometric Pressure and Methane Emissions from	Suveena Sreenilayam	BLH
	Municipal Solid Waste Landfills in the DC Metropolitan Area	Jennifer Ren	BLH



	COMPUTER SCIENCE		
H401	Seeing a 1,000 Color Image: Unsupervised Machine Learning with Barcoded Spectra	Cindy Chen	РОН
H402	Parkinson's Metric Classification with Neural Networks	Gautom Das	BLH
H403	General Artificial Intelligence to Manipulate Intelligent Agents	Naveen Durvasula	BLH
H404	SNPrimer: A primer design software for SNP genotyping in agriculture, medicine and forensics	Steven Fang	POH
H405	Relevance Feedback Using Neural Networks	James Jackson	POH
H406	Unsupervised Machine Learning and Other Techniques in Patient Matching	Ching-Yuan Lin	POH
H407	Determining the Optimal Algorithms for ordering Boolean Expressions using And-Or trees	Chandan Murthy	РОН
H408	Sing a Bipartite Reformulation of Influence Networks to Model Complex Contagion	Steven Qu	BLH
H409	Optimizing Stock Market Prediction through Social Media using NLP Decision Trees and Deep Regression Neural Networks	Safiullah Rifai	РОН
H410	Using Data Analytics to determine Optimal Location for the Construction of Hydropower systems	Ronoy Sarkar	РОН
H411	Use of KadNode for Hajime Botnet Data Collection and Filtration to Investigate the Overall Purpose of the Hajime Bot	Vaishnavi Sesetty	РОН
H412	Analyzing and Modeling the Spread of Influence in a Network with Virtual Reality	Kevin Shen	POH
H413	Listeria App: The Dynamic Shopping Advisory	Valentina Simon Rachel Rosenzweig	BLH BLH
H414	The Effect of Nonuniform Discretization on Dynamic Programming Algorithms that Quantify Shape Dissimilarity in 2D	Kevin Su	РОН
H415	ZContract: An Anonymous Consensus-based Cryptocurrency Scheme with Homomorphic Smart Contracts	Artemis Tosini	BLH
H416	High Dimensional Data Processing via Image Space Embeddings of the Wisconsin Breast Cancer Dataset	Alex Wang	BLH
H417	Protocols and Efficiency in the Microcontroller Internet of Things	Thomas Wrona	POH
H418	Using Side Channel Analysis to Infer Read and Write Operations of Solid State Drives	Claude Zou	РОН
	ENGINEERING		
H501	Emergency Hull Repair Apparatus	Nicolas Aparicio-Feli	
		Shivam Amin Yuvan Sundrani	NWH NWH
H502	Groundwater Flow and Contaminant Transport Modeling of the Poolesville Aquifer		POH
H503	Novel Synthesis of Ultra-High Temperature Carbon Fiber Reinforced Ceramics for Shielding and Space Technologies	Mehana Daftary	BLH
H504	Can a maglev train carry a payload and be used for transportation and freight work?	Aidan Douglas	SVH
H505	Designing and Testing Pressure-Driven Unmanned Underwater Vehicle	Christian Fuhrmann	
H506	Detecting Fires Using Its Near Infrared Flame Flicker	Kshitij Gupta	POH
H507	Intelligent Transportation Systems using Vehicle-to-Vehicle (V2V) Communication	Pranav Hegde	NWH
H508	Novel Dopants for Lithium Garnet	Jason Hsu	POH
H509	Particulate Contamination Monitoring and Verification Techniques	Ryan Johnston	POH
H510	The Effect of Salt Water Concentration on Power Output and Quality of Water	Sri Kanipakala Eshaan Moorjani	WHO WHO
H511	Handy Prosthetics	Isha Katyal	WHH



H512	Analysis of Surface Elevation and Water Management Conditions Influencing the Houston Flooding from Hurricane Harvey	Katie Kolodner	RMH
H513	Solar Hot Spring	Marie-Elise Latorre	WJH
H514	My First Robot	Heather Lin	CHH
H515	Analysis of Dynamics, Stability, and Control of a Tethered Quadcopter for Firefighting	Shashidhar Manoha	aranPOH
H516	Development of Cost Effective Compact Air Conditioner	Ryan Needle	CHH
		Ian Rosenthal	CHH
H517	Efficiency Test: Canting Keel vs. High Density Ballast	Ali Reza Salimi	MCS
H518	New Design for fire protection	Nataraj Shivaprasad	WHO
H519	What are the best wind turbine blade shapes and numbers?	Eashan Siddalingaia	h POH
H520	Monitoring air pollutants at the street level by mobile devices	Sonia Stan	POH
H521	No-Electric, Life Saving - Oxygen Concentrator	Sanjit Thangarasu	POH
H522	Stay Connected: Rapidly Deployable Wi-Fi Network for Disaster Relief	Ayush Varshney	BLH
	MATHEMATICS		
H601	Prediction of exacerbation in asthma patients using Real World Data	Iris Gupta	BLH
H602	An Evaluation of Factors Influencing a 2007 Clinical Trial on the Efficacy of Voltaren	David Hinds	BLH
H603	A Characterization of N-Way Fitness Graphs that Imply N-Way Epistasis	Mengming Luo	BLH
H604	Linear Algebra and Frame Theory for Finite Fields	Justin Park	POH
H605	Statistical Outliers: The Underdogs of Data Science in the 21st Century	Surya Perla	WHO
H606	Evolution of Language Complexity by the Press: A Statistical Analysis	Kennedy Salamat	BLH
	PHYSICS		
H701	Investigation of transition metal-doped semiconductors as potential	Ivy Han	RMH
	high-efficiency photovoltaic materials using density functional theory	Grace Zhou	RMH
H702	The Spectral Power Distribution of Different Sources of Light	Soojin Jang	NWH
H703	How to Use More Energy From the Sun	Marzieh Kazemi	MCS
H704	A Comparison of Models that Predict Magnetopause Location Changes	Shreeya Khurana	BLH
H705	A Novel Method for Remote Detection of Missing Craft in the Ocean Using Passive Commercial Satellite Multispectral Imagery	Matthew Kolodner	RMH
H706	The Thermodynamics of Hurricanes: A Continued Study of the Factors Which Increase the Frequency and Strength of Tropic Cyclones	Medha Kotti	POH
H707	Tunable Bandgap of Graphene/MX2 (M=W, Mo; X=S, Se) Heterobilayers for Photovoltaic Materials	Jintong Li Yi Lu	BUS OTHER
H708	High Performance, Low Cost, Silicon-Based Solar Blind Detector Systems for Missile Plume Detection	Sujay Swain	BLH
H709	Novel Detection Method of Subatomic-Scale Motion through Plasmonic Resonators	Sreya Vangara	POH
H710	How Does Temperature Affect the Performance of Glide Wax for Skis?	Sresth Viswanathan	RMH
H711	Procedural Determination of Novel Stoichiometric Topological	Carissa Wu	CHH
	Superconductors through Surface and Pressure Effects	Abhishek Allamsetty	OTHER
H712	Statistical Analysis of Radial Velocity and Transit Photometry Methods of Exoplanet Detection	Shawn Zhao Cato Wang	BLH BLH



STUDENTS IN THE MIDDLE SCHOOL FAIR

	BEHAVIORAL AND SOCIAL SCIENCES		
M101	Gender Roles: How Gender Affects Perception of Optical Illusions	Pelin Altintas	PLM
M102	Hurricane Warning 24 Hours To Evacuate before it's to late	Mykel Bailey	HCS
N/102	Do you stay or do you go?	Dankar Cai	LICC
M103	Fidget Spinners- Stress or No Stress	Donhee Cui	HCS
M104	How music affects a person's productivity	Jordan De La Rosa	RCM
M105	Color vs. Quality	Sara Fitzgerald	HCS
M106	How Does Self-Esteem Change During Middle School	Grace Fogarty	HCS
M107	Is It Worth the Price? An experiment on speed cubes	Corbin Aquino	RCM
M108	Can False Information Change People's Perception of Celebrities?	Justin Harris	HCS
M109	Stress - Will it affect your next test?!?!	Brady Heafitz	HCS
M110	Inkblot Project	Julian Black	RCM
M111	What Are You?	Jessica Kotchenreuther	
M112	The Best Motivator	Anushka Poddar Anuprova Bhowmik	TPM TPM
M113	Effect of playing video games on reaction speed	Soren Brown	RCM
M114	Handedness and Optical Illusions	Michael Ryan	HCS
M115	Peer Pressure in Middle School	Isabella Stiehm-Conra	
M116	Social Upbringing and the Recognition of Other-Race Faces	Victoria Tong	TPM
M117	Environmental Stimulus	Carmen Kenfack	RCM
M118	The affect of video games on heart rate	Sayuri Modi	RCM
M119	Texting and Reaction Time	Colby Trenor	TPM
M120	Coffee and the Placebo Effect	Lillie Weaver	HCS
M121	Calorie Tesification	Megan Zeng	RCM
M122	The Effect of the Holiday Paradox on How Time Perception Changes with Age	Grace Hu	TPM
		Grace Tru	
	BIOLOGY		
	What are the germiest locations in your bathroom?	Suhani Agrawal	RCM
	Effect of Copper Sulfate on Green Algae	Darya Alimoradi	HOA
	DNA Extraction from Fruits in Different Stages of Ripeness	Mallige Anand	RCM
M204	The Effect of Magnetism on the Growth of Mealworms	Ellie Bahador Sadie Vinson	HOA HOA
M205	Can Microwaves kill E-coli?	Simon Ambrozak	RCM
		Ritwik Behera	RCM
101200	Drug Solubility	Robert Song	RCM
M207	Tubulin Isotypes - Finding a proper experimental model to study	Sreejato Chatterjee	RFM
111207	Tubulin-Drug Interactions	oreejato Oriatterjee	1(1111
M208	Effect of Antioxidants on Planarians	Daniel Choi	RCM
M209	The effect of different hand-cleansing agents on the inhibition of bacterial growth	Elizabeth Chu	TPM
M210	Which fruit or vegetable has the highest voltage?	Caleb Collins	RCM
M211	Which is the Best Method of Providing Nutrients to Grow Tomatoes: Hydroponics, Soil or Simulated Aquaponics?	Tiffany Costa	SAA
M212	The Effects of Triclosan on Development in Drosophila melanogaster	Lana Anderson	TPM
M213	WiFi and Plant Growth	Kavi Daliparti	RCM
		-	



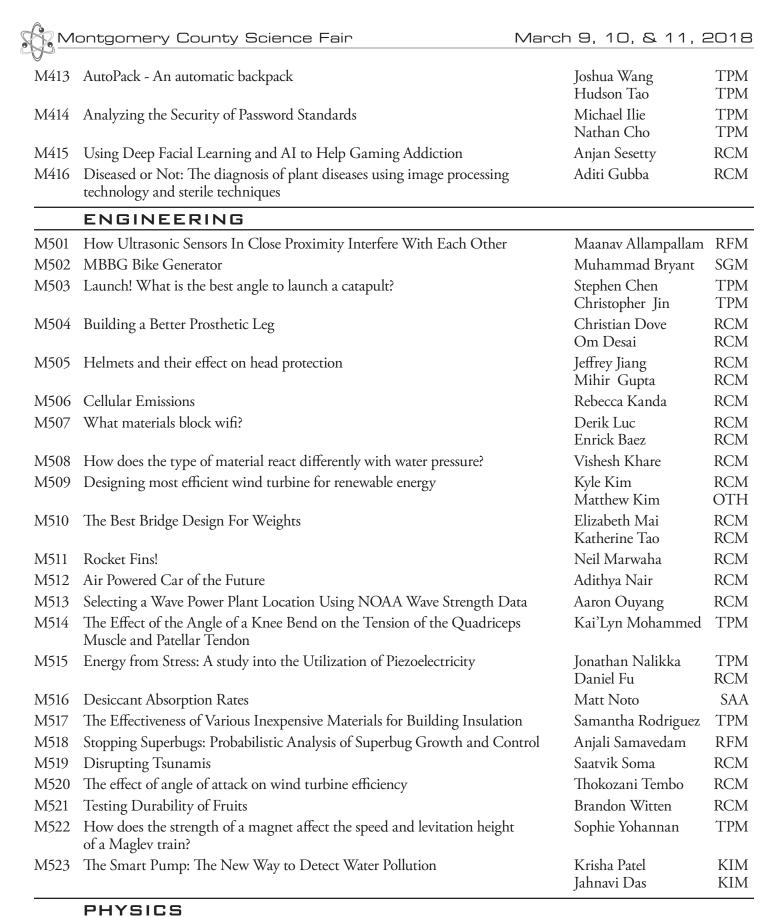
M214	The Effect of Ultraviolet Light on Allelochemical Production in Helianthus annuus Foliage Leachates and the Response of Ipomoea purpurea to these Leachates	Sanjana Das	TPM
M215	Cocoa & Cognitive Function	Lynna Deng	TPM
M216	The Effects of Acid Rain on Plant Growth	Kausar Djahanmir	MCS
M217	True Colors: The Effect of Illumination Intensity on Perception of Color Shades comparing Adults over 40 to Adults between 18 and 40 years of age and Children	Lottie Doughty	TPM
M218	GMO vs Natural Foods	Vrinda Bhandari	RCM
M219	Determining the Effectiveness of Lettuce Seed Bioassay	Efe Eroz	RCM
M220	Digestive Enzymatic Activity and Lipid Digestion	Kyra Freeman	AGM
M221	Acid Rain Effect on Plants	Mariam Guru	MCS
M222	Bacterial Growth in Food	Aizhong He	RCM
M223	How do Shooting Sleeves Help?	Abhiram Cheerla	RCM
M224	How Water Affects Mold Growth on Fruit	Kyle Inman	RCM
M225	Hydroponics vs. Soil	Bitanya Kebede	AGM
M226	What is the effect of changing mints on the temperature of the water?	Justin Li	RCM
M227	The New Recyclers: Plastic-eating Wax Worms	Anne Lippard	HOA
M228	The Effect of Salt on Plant Growth	Henri Ly	RCM
M229	The Effect of Warmer Seas on Hurricanes	Simran Mattikalli	TPM
M230	Mold Growth Bread Testing	Brent Midlam	RCM
M231	Measuring the Effect of Different Seaweed Based Bio-stimulants on the Growth of Plants	Benjamin Nachod	RCM
M232	Microwave = Micro Plant??	Fatemeh Naghavi	MCS
M233	What's Your Color?	Ali Nilforoushan	MCS
M234	The Effect of Ethanol and Dimetapp on Daphnia magna Heart Rate	Sydney Ozbun	RCM
M235	Single Cell Protein	Srirashmika Kanipaka	aRFM
M236	Using antibiotics and agricultural agents to study bacterial diversity in soil	Dhruv Pai	TPM
		Josh Wolfson	TPM
M237	The Effect of Caffeine on Plant Growth	Tanya Paul	RCM
M238	Proving the Ineffectiveness of Oil Spill Cleanup Methods With Scaled-Down Models	Justin Pham	RCM
M239	The Effect of Hand Sanitizer on Grass	Emmanuel Reyes	RCM
M240	Attack of the Fatal Funnel?	Cole Rodia	HCS
M241	Is It Going To Grow	Salma Sanad	MCS
	Natural Antibiotics	Renita Santhoshkumai	· TPM
M243	Antimicrobial Resistance: Natural or Synthetic	Simoni Mishra	TPM
	How does the amount of time on the ground affect the amount of bacteria on a food?	Derek Sha	RCM
M245	What is the effect on the pH of water by planting aquatic plants in the water?	Niyati Sharma	RCM
M246	Use of Foldscope to Study the Effect of Pollution on Aquatic life	Yashaswin Shivaprasad	RFM
M247	It is too cold! Will I catch the flu? The Effect of Weather on the Spread of Influenza	Steven Su	TPM
M248	How do plants grow depending on depth of seed planted	Saragha Surendra	RCM
	The effect of natural blood thinners on blood coagulation	Yas'Lyn Mohammed	TPM
	_	Wongel Gebru	TPM
M250	What is the best method for purifying water: boiling, chlorination, or ionization?	Ruth Taddesse	TPM



M251	Early Prediction of Alzheimer's Disease Using Neurophysiological Data and Statistical Methods	Ashley Thommana	TPM
M252	Optimizing Conditions For a Cost-Effective working model of a photobioreactor	Moiz Uddin	RCM
M253	Design Accuracy of Influenza Vaccines	Visesh Uppoor	RCM
M254	Nonprescription medication dissolution time test	Saraansh Wadkar	RCM
M255	Leftover Food Fertilizer	Eric Wang	RCM
M256	The Effects of Ocean Acidification on Coral Growth and Reproduction	Dale Ren	RCM
		Matthew Owusu	RCM
M257	The Affect of Different Detergents on Worms	Jackie Wang	TPM
14250	William Control of the Control of th	Gabriella Maitra	TPM
M258	What is the effect of the amount of DNA added on the Transformation Efficiency of <i>E. coli</i> ?	Vivian Xiao	RCM
M259	The Inheritance of Fingerprint Patterns	Tianlai Yang	TPM
1112))	The inheritance of imgerprine racteris	Sophia Zeng	TPM
M260	The effect of aerobic conditions (through the use of aeration) on the	Adeline Yu	RCM
	metabolic efficiency of yeast	Sarah Thomas	RCM
M262	Soil Water Absorption	Roc Yu	RCM
M263	The Effect of Soil pH on Plant Growth	Lindsey Zhang	RCM
M264	Effect of seconds run for Pur? Advanced Faucet Water Filter on drinking water quality index	Thomas Zhong	RCM
M265	What is the effect of antibiotics on gram-positive and gram-negative bacteria?	Diana Zhu	RCM
M266	Effect of Soda on Heart Rate and Blood Pressure	Ethan Zhang	RCM
	CHEMISTRY		
M301	Influence of Cooking Methods on Protein Value	Roshni Arun	TPM
M302	Can we melt ice faster?	Uday Annavrapu	RCM
M303	Baking Soda and Vinegar Balloon Reactions	Jesmyn Heart Bagasba	sRCM
M304	How does the type of material used to filter water affect the water's turbidity?	Anishka Basheerbad	RCM
M305	The Neutralization of Acids	Rohan Bhat	RCM
		Justin Yi	RCM
M306	Effect of Medicine Coating on Drug Solubility	Erik Bhattacharyya	RCM
M307	Freezing Point Depression	Jeffrey Chen	RCM
		Jason Yih	RCM
M308	The Exploding Glove	Connor Chung	RCM
M309		0	
	What is the effect of temperature on lipases? Ability to deconstruct oil without bile?	Rachel Daniels Maaya Senthilkumar	RCM RCM
M310	What is the effect of temperature on lipases? Ability to deconstruct oil without bile? The affects of acids and bases on protein molecules and texture	Rachel Daniels	RCM
M310 M311		Rachel Daniels Maaya Senthilkumar	RCM RCM
	The affects of acids and bases on protein molecules and texture	Rachel Daniels Maaya Senthilkumar Grace Doughty	RCM RCM TPM
M311	The affects of acids and bases on protein molecules and texture Burning Candles	Rachel Daniels Maaya Senthilkumar Grace Doughty Sarah Briggs	RCM RCM TPM SAA
M311 M312	The affects of acids and bases on protein molecules and texture Burning Candles How do different soils affect plant growth?	Rachel Daniels Maaya Senthilkumar Grace Doughty Sarah Briggs Mostafa Elamin	RCM RCM TPM SAA RCM
M311 M312 M313	The affects of acids and bases on protein molecules and texture Burning Candles How do different soils affect plant growth? Effect of Bleach on Soil	Rachel Daniels Maaya Senthilkumar Grace Doughty Sarah Briggs Mostafa Elamin Zahra Esfahani Vindhya Iyer Kendall Frederick	RCM RCM TPM SAA RCM MCS RCM HAA
M311 M312 M313 M314	The affects of acids and bases on protein molecules and texture Burning Candles How do different soils affect plant growth? Effect of Bleach on Soil The Effects of Varying Amounts of Steel Wool on Atmospheric Air Biodegradable Plastic	Rachel Daniels Maaya Senthilkumar Grace Doughty Sarah Briggs Mostafa Elamin Zahra Esfahani Vindhya Iyer Kendall Frederick Emerson Mccarthy	RCM RCM TPM SAA RCM MCS RCM HAA
M311 M312 M313 M314 M315	The affects of acids and bases on protein molecules and texture Burning Candles How do different soils affect plant growth? Effect of Bleach on Soil The Effects of Varying Amounts of Steel Wool on Atmospheric Air Biodegradable Plastic Basic Biomass: The Effects of Different Types of Biomass on Energy	Rachel Daniels Maaya Senthilkumar Grace Doughty Sarah Briggs Mostafa Elamin Zahra Esfahani Vindhya Iyer Kendall Frederick Emerson Mccarthy Luke Griffith	RCM RCM TPM SAA RCM MCS RCM HAA HAA
M311 M312 M313 M314 M315 M316 M317	The affects of acids and bases on protein molecules and texture Burning Candles How do different soils affect plant growth? Effect of Bleach on Soil The Effects of Varying Amounts of Steel Wool on Atmospheric Air Biodegradable Plastic Basic Biomass: The Effects of Different Types of Biomass on Energy Tough Buildings-standing up to Acid Rain	Rachel Daniels Maaya Senthilkumar Grace Doughty Sarah Briggs Mostafa Elamin Zahra Esfahani Vindhya Iyer Kendall Frederick Emerson Mccarthy Luke Griffith Amna Hasni	RCM RCM TPM SAA RCM MCS RCM HAA HAA RCM MCS
M311 M312 M313 M314 M315	The affects of acids and bases on protein molecules and texture Burning Candles How do different soils affect plant growth? Effect of Bleach on Soil The Effects of Varying Amounts of Steel Wool on Atmospheric Air Biodegradable Plastic Basic Biomass: The Effects of Different Types of Biomass on Energy	Rachel Daniels Maaya Senthilkumar Grace Doughty Sarah Briggs Mostafa Elamin Zahra Esfahani Vindhya Iyer Kendall Frederick Emerson Mccarthy Luke Griffith	RCM RCM TPM SAA RCM MCS RCM HAA HAA



			9
M319	Let Us Make Our Water Clean!	Hanieh Hootkany	MCS
M320	The Ratio of Antioxidants to Glucose in Juice	Frank Horrigan	RCM
M321	What is the effect of the surface tension of a fluid on the rate of evaporation?	Stella In	RCM
		Lucille Wang	RCM
M322	Carbon Dioxide Concentration Ishaan Jain		RCM
M323	Acid-Base Catalysis	Alaine Sathuluri	RCM
		Nisha Athrey	RCM
M324	Strawberry Storage Methods and Their Effects On Shelf Life	Keejay Kim	RCM
1.5005		Philip Huang	RCM
M325	Does My Drinking Water Meet EPA Standards?	Sophia King	HAA
M326	Citric Acid Bathbomb Experiment	Sophia Li Alisha Wu	TPM
14227	M:II C		TPM
M327	Milky Cheese	Peter Vinogradov	HS
M328	What is the effect of temperature on the absorbance of CO ₂ by water?	Daniel Lian Davy Wang	RCM RCM
M220	The truth behind the scam of laundry determents?	Meherzan Gai	RCM
M329	The truth behind the scam of laundry detergents?		RCM
M330	Splitting Water A Kernel of Truth	Deepak Menon	HS
M331		Meredith Midgett	
M332	The Science of Luminol	Arpita Raman	RCM
M333	Testing Water Purification Methods Based On Time, Cost, and Efficacy	Eric Wang Max Chen	RCM RCM
M22/i	The necessity of keeping drinks warm	Neel Shah	RCM
M335	Extracting DNA From Different Types of Strawberries	Keya Suri	RCM
M336	The Amount Of Vitamin C in Various Fruits	•	RCM
M337	The Power of Fruit	Aishwarya Thalla Luke Vincent	RCM
	Desalination II. In the state of the state	Jeffery Wei	RCM
	How do cooking methods affect the vitamin C content in foods?	James Xu	RCM
M340	Electricity and pH	Noah Ferrara Ishaan Bhardvaj	RCM RCM
		1811aa11 Dilaitivaj	
	COMPUTER SCIENCE		
M401	Deep Learning for Detecting Malaria Parasites in Microscopic Thin-Smear Images	Ishaan Antani	RCM
M402	How Easily Can Your Password Be Cracked?	Ishaan Bhardwaj	RCM
M403	Neural Network Based Drug Image Recognition: Effect of data set noise on the performance of a drug recognition system	Lauren Choi	TIM
M404	Detection of Primary color in an image	Jonathan Fan	TPM
		Alexander Liu	TPM
M405	Who is the real Mastermind? A human or a computer?	Arun Ghosh	RCM
M406	How do different compression rates affect different types of music?	Katharina Kiryutin	RCM
M407	SSD VS HDD	Jude Lwin	RCM
M408	Maze Solving Algorithms	Sameer Mehta	TPM
M409	Can a smartphone camera measure the heart rate?	Srihari Kompella	KTM
M410	SmartBand: An Arduino-Powered Wristband To Keep Kids Safe	Shivani Nanda	TPM
M411	Why is it so laggy?	Arnav Poddar	FQM
M412	How do different light conditions affect the effectiveness of Aerial Photo Analysis?	Mateo Rodriguez	RCM
		O	



M701 How do different substances affect the surface tension of water? Adam Bacso TPM M702 Egg Saver Kaustubh Bhal RCM



M703	Effect of Capacitance on Guitar Tone	Leonard Bian Preston Steimel	RCM RCM
M704	The Science of Invisibility	Ian Boehm	OTH
M705	Efficacy of Cheap vs. Expensive Soccer Balls	Sulayman Bryant	HS
M706	Testing Wireless Signal Through Different Materials	William Boehm	OTH
M707	Do Submarines Need Fins?	Karen Cao	TPM
		Sarah Zhang	TPM
M708	Characterizing Properties of the Sound of Musical Instrument	Abjini Chattopadhyay	TPM
M709	Analyzing the relation between Coronal Mass Ejections and Sunspots	Justin Chen	TPM
M710	Can the Type of Light Affect What You See Through Magnification?	Diego Lopez	HCS
M711	Brave the Wave: The Effect of Water Depth on Tsunami Wave Velocity	Wilson Convis	HS
M712	What is the effect of the temperature of the sea on the intensity of a hurricane?	Kai Daniels	RCM
M713	How does temperature affect the distance a rubber band can stretch?	Jeffrey Deng	RCM
M714	The Catastrophic Catapult	Naomi Forsythe	HS
M715	Biologically Enhanced Artificial Leaf Technology	Samhitha Gandla	ROM
M716	Fabrication, Optimization, and Characterization of Natural Dye Sensitized Solar Cells	Pratyusha Mandal	TPM
M717	pH Level Affect Electrical Conductivity	Alexander Goldstein	RCM
M718	It's Fracking me out	Sayeda Hasni	MCS
M719	The effect of temperature on the strength of rare earth magnets and electromagnets	Johann Kuruvilla	RCM
M720	Tightrope Walking and Pole Lengths	Mulan Liu	RCM
M721	Cleaning up Oil Spills using Magnetism	Satvik Lolla	RCM
		Ziyan Ahmed	RCM
M722	Shake, Shake Your Flashlight	Maegan Mathews	HCS
M723	How Heat Affects the Bounce of a Basketball	William McNamee	HS
M724	What Cools a Can of Soda Fastest?	Tom Mygatt	HS
M725	Which household material acts best as a insulation material?	Janet Ruan	RCM
M726	To what extent does changing the density of the medium of which light travels through affect the displacement of the refraction	Alexander Tong Orion Foo	RCM RCM
M727	Hurricane Accelerando	Rohan Ojha	TPM
M728	Simulating Earthquakes	Aidan Vaca	RCM
M729	Are coin flips really 50/50?	Daniel Zheng	RCM
M730	Dependence of Depth Perception on Number of Detectors	Sudhish Swain	TPM



ScienceMONTGOMERY's
Scientific Review Committee
would like to thank the
students, teachers, volunteers and
all of the local IRBs and SRCs
for their efforts

Recognizing Excellence in Communication of Science

Science Café

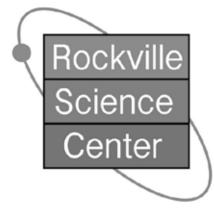
3rd Tuesday every month, 7-8pm Branded 72 Pit Barbecue 387 E Gude Dr, Rockville 20850

Science/Engineering Festival

April 7/8, 2018, 10am-6pm/10am-4pm Walter Washington Convention Center Washington, DC 20001

Rockville Science Day

Sunday, April 22, 2018, noon-5pm Montgomery College, Rockville 51 Mannakee St, Rockville 20850



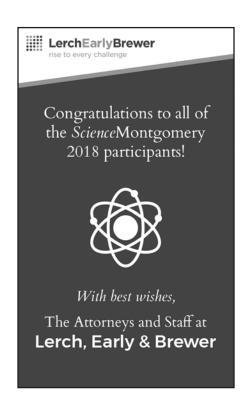
RockvilleScienceCenter.org

Join us for our **Science Cafés** and **Rockville Science Day** all which are free and open to the public.

Check out our **Maker Space** and our **Summer Camps**.

Please visit our website for details about these programs, volunteer opportunities, and other upcoming events.

The Rockville Science Center congratulates all the participants in the 2018 *Science*Montgomery Science Fair.







Interested in next year's Science Fair? Are you supporting students with projects?

Check out the Intel ISEF Document Library for 2019 Rules, Guidelines, and Resources! Documents are usually updated by the end of May for the coming year.

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



ScienceMONTGOMERY wishes to thank the staff of the MCPS Printshop for always making our annual Fair program look so wonderful!



Join ScienceMONTGOMERY The Montgomery Area Science Fair Association (MASFA)

The Montgomery Area Science Fair Association is the organizational vehicle for the annual county science fair, *ScienceMONTGOMERY*, for public, parochial, private, and home school students in Montgomery County, MD.

The goals of the Association are to:

- •Encourage students to explore science through experimentation and to present their results.
- •Produce a top quality, annual science fair.
- •Raise funds to conduct the fair through personal and corporate contributions.
- •Provide for the top high school winners to attend the Intel International Science and Engineering Fair.

The Fair costs about \$125 per student. We ask you to support these talented students by joining with us and becoming involved with this venerable, all volunteer, 60 year old science fair. Please complete the form and return it to the address below. Your help is greatly appreciated.

Please print	the following information:	
want to be an Associate Member of the Mo	ontgomery Area Science Fair Assn.	\$50.00
I would like to support MASFA with a contribution of		
Name:		
Address:		
Email address:		
Completed forms can be mailed to:	ScienceMONTGOMERY	
-	20604 Summer Sweet Terrace,	
	Germantown, MD 20876	



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HELP US TO FOSTER TOMORROW'S SCIENTISTS AND ENGINEERS!

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Ti	 \$5,000 Titanium (Ti) Sponsor Full page advertisement and prime location in event program Logo and link from <u>ScienceMONTGOMERY.org</u> 			
Ag	 \$1,000 Silver (Ag) Sponsor Full page advertisement in event program Organization name listed on ScienceMONTGOMERY.org 			
Cu	 \$500 Copper (Cu) Sponsor Half Page advertisement in event program Organization name listed on ScienceMONTGOMERY.org 			
Fe	 \$150 Iron (Fe) Sponsor Business-card sized advertisement in event program 			
	\$15,000+\$10,000\$5,000\$1,000\$500\$150Other Please contact me. We are interested in volunteering.			
	Please make checks payable to the Montgomery Area Science Fair Association Mail to 20604 Summer Sweet Terrace, Germantown, MD 20876			
Name	Title			
CompanyNam	e			
Address				

Telephone Email

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