



50th Anniversary

Montgomery Area Science Fair

March 10, 11, 12, 2006

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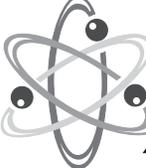
Medicines for Life

We are a Silver Spring biotechnology company focused on the development and commercialization of innovative therapeutic products for patients with chronic and life-threatening cardiovascular, cancer and infectious diseases.

We are proud to be a sponsor of *ScienceMONTGOMERY* and are counting on today's students to develop the medicines to save future lives.





2006  **Science** Fair Schedule
MONTGOMERY

www.ScienceMONTGOMERY.org

Friday, March 10, 2006

6 PM - 9 PM Student Project Set Up: Students set-up display boards and go through Safety Inspection in Building #6 at the Montgomery County, Fairgrounds, Gaithersburg, MD.

Saturday, March 11, 2006

8 AM - 12 Noon Judges Project Preview Period

12 Noon - 3 PM Students Grades 6-8 Interviews by Judges and Special Awards Organizations

2 PM – 5 PM Students Grades 9-12 Interviews by Judges and Special Awards Organizations

5:30 PM - 8 PM Open House for the General Public, in Building #6. Montgomery County Fairgrounds, Gaithersburg, MD

Sunday, March 12, 2006

12 Noon - 2 PM Open House for the General Public; Student Projects on exhibit in Building #6. Montgomery County Fairgrounds, Gaithersburg, MD

2 PM - 4 PM Awards Ceremony at the Gaithersburg High School Auditorium, Gaithersburg, MD

4:30 PM - 6 PM Project Break Down: Students dismantle projects

(Any projects not removed by 6 pm will be discarded.)



2006 **Science** Sponsors MONTGOMERY

Elements of Support

Au (\$10,000)	MedImmune
Ti (\$5,000-\$9,999)	Lockheed Martin Mary Elizabeth Ewing Foundation Spectrum Science Communications United Therapeutics Corporation
Ag (\$1,000-\$4,999)	Drs. Jay and Pepper Buckley Human Genome Sciences, Inc. Otsuka America Pharmaceutical, Inc Montgomery County Office of Economic Development Montgomery County Teachers Federal Credit Union National Institute of Standards and Technology Nuclear Regulatory Commission Tom Hoopengardner, Videographer/Producer justSeth-Website Design, Development, & Maintenance Verizon
Cu (\$500-\$999)	Adventist HealthCare Medispec Ltd. Montgomery County Agricultural Center Suburban Hospital Healthcare Systems, Inc. Technical Resources Intl, Inc., Anthony Lee Memorial Fund Washington Post Washington Suburban Sanitary Commission
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OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Douglas M. Duncan
County Executive

March 2006

Pepper D. Buckley, Ph.D.
Fair Director
Montgomery Area Science Fair Association
ScienceMONTGOMERY
11516 Dahlia Terrace
Potomac, Maryland 20854-1174

Dear Pepper:

I am again pleased to support the efforts of *ScienceMONTGOMERY*, the countywide Science Fair of the Montgomery Area Science Fair Association, which attracts more than 1500 students from the Montgomery County public and private schools each year. I support the mission of *ScienceMONTGOMERY*, to advance and celebrate outstanding performance in science education in our community. Congratulations on 50 years of scientific excitement for the students of Montgomery County.

Montgomery County's extraordinary young people who show early promise through their inventiveness, rigor, curiosity, imagination, and creativity in the physical and life sciences represent our employees, leaders, teachers, researchers, and scientists of tomorrow. I applaud all Montgomery County businesses who support *ScienceMONTGOMERY*, investing in today's youth by recognizing the promise of their talents and achievements.

Sincerely,

Douglas M. Duncan
County Executive





MONTGOMERY AREA SCIENCE FAIR ASSOCIATION

ScienceMONTGOMERY, one of the largest science fairs in the United States, welcomes you to a celebration of Science for an exciting 50th year. *ScienceMONTGOMERY* is dedicated to encouraging and promoting interest in science, encouraging scientific activities, and bringing together students, parents, educators, scientists, mentors, and supporters.

The Montgomery Area Science Fair brings our students into the international scientific community. As an affiliate of the Intel International Science and Engineering Fair (ISEF), *ScienceMONTGOMERY* follows the Intel ISEF rules and regulations to ensure the safest scientific research methods. This year's ISEF Award-winning entrants in the Senior Division and their chaperones will be sent to the Intel International Science and Engineering Fair 2006 in Indianapolis, Indiana where they will compete against other science fair winners from the United States and over 40 foreign countries. Participation in Intel ISEF makes our participants eligible for over three million dollars in scholarships, tuition grants, scientific field trips, internships and other awards. Last year over 300 students in the Montgomery County area competed in the local Fair. Our four top prize winners went on to the Intel ISEF in Phoenix, Arizona, and brought home a national 2nd place award and memories to last a lifetime.

The Montgomery Area Science Fair could not exist without the overwhelming generosity of the local community. To choose the Category and Special Award winners, *ScienceMONTGOMERY* recruits a distinguished panel of over 200 volunteer judges. These judges represent the area's business, scientific, professional, educational, and Government communities. They evaluate student projects and determine awards ranging from cash to scholarships, trips, bonds, banquets, certificates, medals, merchandise and books.

Additionally, an outstanding group of sponsors provide financial and "in kind" support to *ScienceMONTGOMERY*. Spectrum Science Communications donated their expertise to our publicity and fundraising campaign; Montgomery County Public Schools has provided key staff and services; and Montgomery County Executive Doug Duncan continues to support our efforts. **MedImmune, Inc.**, returned for a second year as a generous Au (gold) level sponsor. And Tom Hoopengardner has put *ScienceMONTGOMERY* on TV. We want to thank these sponsors and all the sponsoring organizations and individuals listed in this program for their continued support of our student scientists in this 50th year of the Montgomery Area Science Fair. Thanks to this support, this year we will award over \$25,000 in prizes provided by over 100 local and national groups for outstanding projects in the Junior and Senior Divisions.

ScienceMONTGOMERY congratulates the student scientists who prepared projects for the 2006 Fair and wishes them a happy and productive future in science. We also extend our sincere appreciation to the teachers, administrators, mentors, review committee members, judges, and all our volunteers who work year round to make this fair happen. We hope that you will enjoy the Fair as much as we have enjoyed preparing for it!

Laura Lee Johnson, Ph.D.

President, Montgomery Area Science Fair Association

Pepper D. Buckley, Ph.D.

ScienceMONTGOMERY Fair Director

www.ScienceMONTGOMERY.org



MONTGOMERY AREA SCIENCE FAIR ASSOCIATION

50th Montgomery Area Science Fairs – 2006

Montgomery County Agricultural Center & Fairgrounds, Gaithersburg, MD

Officers and Board, Montgomery Area Science Fair Association

President: Dr. Laura Lee Johnson
National Institutes of Health, NCCAM

Treasurer: Artemis Dagalakis
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Psychologist, Private Practice

Secretary: Deb Pober-Haas
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Dr. Kevin Connolly
Human Genome Sciences

Ex Officio Member at Large, Montgomery Co. Public Schools: Michael Szesze

Fair Director: Dr. Pepper D. Buckley, *Psychologist, Private Practice*

Persons interested in joining the *ScienceMONTGOMERY* Board should contact
Dr. Pepper Buckley at SciMONT@aol.com



AWARDS PROGRAM

2:00 P.M.

Sunday, March 12, 2006

Gaithersburg High School Auditorium

Opening of Awards Program	Laura Lee Johnson, Ph.D. President, Montgomery Area Science Fair Assoc.
Welcome to <i>ScienceMONTGOMERY</i>:	Hon. Chris Van Hollen, Congressman, Maryland 8th Congressional District
Congratulations to Student Scientists:	Toni Stiefel, Sr. Mgr., Community Relations & Employee Communications, MedImmune John Seng, President Spectrum Science Communications
Keynote Address:	JoAnn Suzich, Ph.D., Senior Director, Infectious Disease Research MedImmune
Presentation of Special Awards:	Mrs. Deb Pober-Haase, <i>ScienceMONTGOMERY</i> Board Member Pepper D. Buckley, Ph.D., Fair Director Special Award Organizations Presenters
Thank You to Teachers & Project Sponsors:	Michael Szesze, Program Supervisor for Science Montgomery County Public Schools
Presentation of Senior Category Awards:	Laura Lee Johnson
Presentation of Junior Awards:	Pepper D. Buckley
Presentation of ISEF Awards:	Laura Lee Johnson, Pepper D. Buckley Toni Steifel, Michael Szesze, JoAnn Suzich, John Seng
Thank You & Adjournment:	Pepper D. Buckley President-Elect, <i>ScienceMONTGOMERY</i>

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Organizations Offering Special Awards

American Astronautical Society
American Industrial Hygiene Association
American Institute of Aeronautics & Astronautics - AIAA
American Meteorological Society
American Nuclear Society, Washington DC Section
American Psychological Association and Teachers of Psychology in Secondary Schools
American Society of Mechanical Engineers
American Society of Metals, International Foundation
American Society of Metals, Washington DC Chapter
ASRC Aerospace Corporation
American Society of Naval Engineers
American Society of Safety Engineer - National Capital Chapter
Association for Women Geoscientists
Association of Practicing Psychologists - Montgomery and Prince George's Counties
Association of Scientists & Engineers of the Naval Sea System Command
Capital PC Users Group
Central Intelligence Agency
Commissioned Officers Association of the U.S. Public Health Service
Discovery Young Scientist Challenge
Energy & Air Quality Advisory Committee of Montgomery County
Federal Water Quality Association
Friends of Agricultural Research-Beltsville
Gem, Lapidary & Mineral Society of Montgomery County Maryland, Inc.
George Washington University, Engineering Alumni Association
Geological Society of Washington
Herbert Hoover Presidential Library Association
Institute of Electrical and Electronics Engineers
Institute of Food Technologists - DC Section
Intel Excellence in Computer Science Award
International Society for Optical Engineering
MdBio
MedImmune
Mu Alpha Theta
National Association of Biology Teachers
National Oceanic and Atmospheric Administration
National Space Club
National Society of Professional Engineers
Northrop Grumman
Office of Naval Research
Optical Society of America - National Capital Section
Ricoh Group
Sigma Xi - FDA Chapter
Sigma Xi - NIST Chapter
Society for Mining, Metallurgy and Exploration, Inc.
Spectrum Science Communications
Towson University
U.S. Air Force
U.S. Army Research Office
U.S. Metric Association
U.S. Nuclear Regulatory Commission
U.S. Public Health Service/Commissioned Officers Association
Washington Statistical Society
Water Environment Federation Stockholm Junior Water Prize
West Montgomery County Citizens Association
Yale Science & Engineering Association, Inc.



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Category and ISEF Awards Judges

Mr. James Acklin	Howard University Hospital
Dr. Jason Anane-Sefah	Digene Corp
Dr. Mary Anderson	MedImmune
Mr. Patrick Asis	National Institutes of Health
Dr. Jonathan Arias	National Institutes of Health
Dr. Inna Belfer	Food and Drug Administration
Dr. Lori Bibb	National Institutes of Health
Dr. Rasmus Birn	Natl Institute of Standards & Technology-Ret.
Dr. David Bonnell	National Institutes of Health
Dr. Amanda Boyce	
Dr. Christina Bradley	
Dr. Thomas Brody	NINDS, National Institutes of Health
Dr. Pepper Buckley	Psychologist, Private Practice
Dr. Jay Buckley	JLB Associates, Ltd.
Dr. Kish Chakrabarti	
Mrs. Hsiu-Chuan Chen	National Institutes of Health, NCBI, NLM
Dr. Anit Choudhary	HM Jackson Found. for Adv of Mil. Research
Mr. Jeffery Cohen	University of Maryland
Dr. Kevin Connolly	Human Genome Sciences Inc
Mr. John Craig	Retired
Dr. Nicholas Dagalakis	National Institute of Standards & Technology
George Daniello	US Government--retired
Dr. Mathew Daniels	National Institutes of Health
Dr. Mrinal Dewanjee	CBER, Food & Drug Administration
Dr. Jennifer Dickey	National Institutes of Health
Dr. Elia Duh	Johns Hopkins University
Barbara Fahey	Clinical Center, National Institutes of Health
Dr. Bryan Fantie	American University
Dr. Xin Feng	Laryngeal Speech Section, NINDS/NIH
Dr. Christine Foster	U.S. Patent & Trademark Office
Mr. Alan Gambrell	3by4: Public Health & Human Servs Consulting
Dr. Eric Garber	U.S. Government
Dr. Mia Gaudet	National Cancer Institute
Dr. Theresa Geiman	SAIC-Frederick at NCI-Frederick
Dr. Dennis Glanzman	National Institutes of Health
Dr. Janet Goodwin	Federal Water Quality Association
Dr. Shefa Gordon	National Institutes of Health
Gloria Gridley	National Institutes of Health
Dr. Anthony Hamins	National Institute of Standards & Technology
Dr. Bill Healy	National Institute of Standards & Technology
Dr. Shannon Hill	National Institute of Standards & Technology
Dr. Adam Hsieh	University of Maryland, College Park
Dr. Asher Hyatt	Retired –National Institutes of Health
Dr. Kenneth Inn	National Institute of Standards & Technology
Dr. Laura Lee Johnson	National Institutes of Health, NCCAM
Dr. Christine Kiefer	National Institutes of Health / NIDDK
Ms. Bevan Kirley	Public Health
Dr. Aimee Kreimer	National Institutes of Health
Dr. Steve Kronheim	University of Maryland, University College
Dr. Lyle Levine	National Institute of Standards & Technology
Dr. Morris Makobongo	National Institutes of Health
Mr. James Mallos	Alice-on-Mars (toy licensor)
Dr. Cathy Manner	



Category and ISEF Awards Judges (continued)

Stephen Mason
 Dr. Roger Miller
 Dr. Fatemeh Mojtabai
 Dr. Bjorn Mysen
 Ms. Laura Odell
 Dr. Louis Ostrach
 Dr. Josh Pomeroy
 Dr. Mangala Rao
 Dr. Leslie Sage
 Dr. James Saunders
 Dr. Fran Scher
 Daniel Shapiro
 Dr. Jennifer Shen
 Dr. Kim Lee Sim
 Dr. Aman Singh
 Mr. Greg Snyder
 Mr. Abdullah Sawayan
 Mr. Gary Spindler
 Ms. Jeanice Thomas
 Dr. Chanda Wan
 Dr. Jason Wan
 Dr. Teresa Washington
 Dr. Frederick White
 Mr. Joel Widenor
 Dr. Jianhua Xu
 Ms. Angie Yu
 Dr. Tan Zhang

Johns Hopkins University
 National Institutes of Health, NIDCD
 Biotechnology
 Carnegie Institution of Washington
 KPMG
 National Aeronautics & Space Administration
 National Institute of Standards & Technology
 Walter Reed Army Institute of Research
Nature/University of Maryland
 Towson University
 Digene Corporation

 National Cancer Institute
 Protein Potential
 National Institutes of Health
 National Institutes of Health
 Lockheed Martin
 KPMG
 National Institute Of Standards & Technology
 Winchester Foot and Ankle Associates
 National Institutes of Health
 National Institutes of Health
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 MDA Federal, Inc.
 National Institutes of Health
 National Institutes of Health, NCI
 National Institutes of Health, NIAMS

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MONTGOMERY COUNTY FAIR
AUGUST 11-19, 2006
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Home of the Annual Montgomery Area Science Fair

Livestock Show Community Square Great Food

Racing Pigs
Tractor Pull
Arts & Crafts
Demo Derby



Participating Schools-2006

School

Abbreviation

A.Mario Loiederman Middle School	MLM
Benjamin Banneker Middle School	BAM
Bethesda-Chevy Chase High School	BCH
Bullis School	BUS
Cabin John Middle School	CJM
Charles E. Smith Jewish Day School	JDS
Col Zadok Magruder High School	MGH
Earle B. Wood Middle School	EWM
Francis Scott Key Middle School	FKM
Gaithersburg High School	GBH
Georgetown Day School	GDS
Hebrew Day Institute	HDI
Herbert Hoover Middle School	HHM
Holton-Arms School	HOA
Home Schooled	HS
John H. Poole Middle School	JPM
John T. Baker Middle School	JBM
Kingsview Middle School	KIM
Montgomery Blair High School	BLH
Muslim Community School	MCS
Newport Mill Middle School	NMM
North Bethesda Middle School	NBM
Parkland Middle School	PLM
Quince Orchard High School	QOH
Redland Middle School	RLM
Richard Montgomery High School	RMH
Robert Frost Middle School	RFM
Roberto Clemente Middle School	RCM
Seneca Valley High School	SVH
Sherwood High School	SWH
Sligo Middle School	SLM
St. Andrew Apostle School	SAA
St. Catherine Laboure School	SCL
Stone Ridge School of the Sacred Heart	SSH
Takoma Park Middle School	TPM
Thomas S. Wootton High School	WOH
Thomas W. Pyle Middle School	PYM
Walt Whitman High School	WWH
Watkins Mill High School	WMH
Westland Middle School	WEM
Winston Churchill High School	CHH

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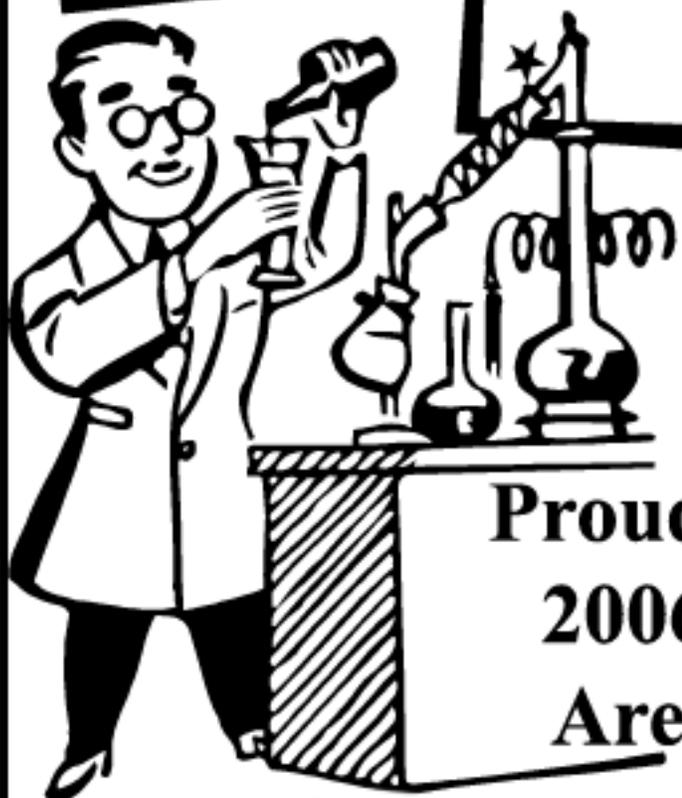


Exhibits in the Junior Division, Grades 6-8

<u>Project</u>	<u>Title of Project</u>	<u>Exhibitor's Name</u>	<u>School</u>
<u>Behavioral and Social Science</u>			
J101	Animanipulation: How Subliminal Messages Affect How One Thinks	Diana Jing	TPM
J102	Blind Spots & Brain Function	Caroline Diehl	TPM
J103	Can My Dog and I Drink from the Same Bowl?	Eddie Stall	KIM
J104	Color and Memory	Hannah Moore	SLM
J105	Disumbocoblated	Jacob Hurwitz	RFM
		Scott Yu	RFM
J106	Does Age Affect Visual Selective Attention?	Elliot Shein	EWM
J107	Gasoline Prices and Distance from the City Center	Diego Nogales	EWM
J108	How Does Color Affect Memory?	Kristen Rosano	TPM
J109	Blood Types & Social Behavior	Krzysztof Franaszek	RFM
		Mark Zong	RFM
		Timothy Hwang	RFM
J110	Is Your Eye a Rightie or is Your Ear a Leftie?	Kathleen dePorter	SAA
J111	Optical Illusions	Tenji Tembo	RLM
J112	Owls and Larks: A Study on the Effect of Birth Time on Human Circadian Typology	Lyla Lawless	HS
J113	Relations Between Video Games and Aggression?	Justin Chang	TPM
J114	The Effect of Color and Brightness of Light on Perception of Music Pitch	Eleanor Sheers	HOA
J115	The Effect of Color on One's Speed and Accuracy on an Arithmetic Test	Jennifer Wang	RCM
J116	The Relaxation Response	Elizabeth Regan	SAA
J117	What Color Prints Have More Effect on Human Memory, Blue, Green, Black, or Orange Prints?	Farida Uddin	NMM
J120	Effects of Color on Short Term Memory Retention in 6th Graders	Sahaana Arumugam	TPM
J121	The Hearing Challenge	Maura Ehrick	FKM
JL309	How Different Ratios of Cytokinins to Auxins Affect the Growth of the Pea Plant (<i>Pisum sativum</i>)	Zaheer Valivullah	TPM
JL310	Effect Acid Rain has on Plant Growth	Josh Weil	SLM
JL311	Thirsty? Have an Apple!	Ilana Weisz	JDS
JL312	The Effects of Acidity of Soil on the Growth of Garlic	Conway Xu	TPM
<u>Biochemistry</u>			
J201	Does Cooking Change the Nutritional Value of Food?	Caitlin DeSantis	SAA
		Caroline DeSantis	SAA
		Maty Dunn	SAA
J203	Exploring the Structure of DNA	Matthew Schliep	RFM
		Thomas Mielewczyk	RFM
		Christopher Liu	RFM

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Project	Title of Project	Exhibitor's Name	School
J204	Extracting the DNA of a Fruit Using Different Household Products	Sonia Gaur Savannah Cheo	TPM
J206	Sick or in Pain? Eat Active Bromelian! A Comparison of Bromelain Activity in Fresh Pineapple with Three Brands of Canned Pineapple.	Brogan Murphy	SCL
J207	The Effects of Ascorbic Acid On Collagen Fibrils: Will an Orange A Day Keep the Surgeon Away?	Juliana Biro	CJM
J209	Yeast in Bread	Katherine Sanders	NBM
Botany			
J301	A Comparison of the Effects of Gamma Radiation on Zinnia and Parsley	Nathalie Deroin Jessica Repep	RCM
J303	Acoustic-biological Aspects on the Seed Germination of Phaseolus lunatus (Lima Bean): Influence of Mid-range (300 - 2800 Hz) Audio Frequencies.	Arthur Colle	NBM
J304	Composting	Milo Johnson	SLM
J305	Do Plants Need Sleep?	Erin Auel	JPM
J306	Do Plants Respond to Music	Ciara Baez	MLM
J307	Does Increased CO ₂ in the Atmosphere Accelerate Green Bean Plant Leaf Growth?	Neha Prasad	HOA
J308	How Does the Amount of Minerals in the Water Affect the Growth of African Violets ?	Alexandra Blajan	EWM
J309	It's All About the Poop!	Lori Defnet	JPM
J310	Miracle Growth	Matauka Ikachana	SCL
J311	Nuclear Beans	Nicholas Chisholm	EWM
J312	Potting Soil Matters	Jessica Wilson Elaine Oves	CJM CJM
J313	Ripening Fruit for Thought: Do Bananas Ripen Faster When Exposed to More Ethylene?	Brina Seidel	TPM
J314	Rotten Apples!	Laura Brockdorff Claire Jones	JPM JPM
J315	The Best Way to Preserve Bananas	Jane Pan	BAM
J316	The Effect of Different Amounts of Salt (NaCl) on the Height of a Wisconsin Fast Plant (Brassica rapa)	Marianne Naval	TPM
J317	The Effect of Gibberellic Acid on Seed Germination and Plant Growth.	Vishnu Rao	TPM
J318	The Effect of Light on Plant Growth	Shane McNally	SAA
J319	The Effect of Nitrogen(N) and Phosphates(P) on the Growth of the Pea Plant(Pisum Sativum)	Lina Valivullah	TPM
J320	Plergents	Daneila Cordero	FKM
Chemistry			
J401	Behind The Stains	Bobby Ullman	TPM
J402	Crystal, Crystal, Which One is Bigger?	Youjong Oh	EWM



Project	Title of Project	Exhibitor's Name	School
J403	Do Nanotechnology-based Fabric Protectors have Better Spill Resistance than Conventional Ones?	Pranav Gokhale	RCM
J404	Fastest Frozen Liquid	Kadiatu Koroma	FKM
J405	Got Water? Is it Safe to Drink?	Bradley Ragazinsky	JPM
J406	Great Balls of Fire!	Brooke Reio	JPM
J408	How Chemical Elements Affect the Strength of Human Hair	Valeria Nogales	EWM
J409	Humpty Dumpty...Lost Weight??	Zaena Tessema	NMM
J410	Keeping it Cool	Jonathan Frame	FKM
J411	Percentage of Acetone In Nail Polish Remover Vs. Number of Rubs on A Nail	Anne Wagner	EWM
J412	Rust Prevention	Daniel Darvish	SLM
J413	Sugar Crystals by Baseer	Baseer Azizi	RLM
J414	Sweetness	Priscilla Le	EWM
J415	The BEST Way to Dye Eggs!!!	Julia Barnes	JPM
J416	The Boiling Point Of Water with a Certain Amount of Salt in the Water	Zack Solomon	SLM
J417	The Effect of Varying Percentages of Sugar and Splenda on the Taste of Different Products "Is Splenda Really Splendid?"	Hillary Siegall Caitlin Campbell	RCM

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Congratulations to the students, teachers, parents and supporters who help
ScienceMONTGOMERY renew the spirit of scientific discovery.
They bring the promise of an exciting future to mankind.



Project	Title of Project	Exhibitor's Name	School
J418	The Ph Test	Daniel Wolf	EWM
J419	Time Wood Takes to Char vs. Density of Wood	Paul Trigonoplos	EWM
J421	What is Potential Hydrogen?	Danielle Tafuri	EWM
J422	What the FIZZ?!	Jeffanie Rantung	EWM
		Dan Barizo	EWM
J423	Would the Alka-Seltzer Tablet make the Bottle Rocket Explode Faster than the Efferdent Tablet?	Crystal Thompson	MLM
J425	How will the color of light affect the melting of an ice cube	Erin Ingeholm	MLM
J426	Icy Colors	Michell Soto	FKM
		Ingrid Santa-Cruz	FKM
J427	How do you Grow Crystals?	Jerson Ayala	FKM
		Jerel Cook	FKM
J428	Slow Motion	Robert Quizart	FKM
J429	Chemical Flowers	Shannon O'Hearn	FKM
J430	How Does Acid Affect Metals	Christian Coles	FKM
J431	Tape Testing	Adian Howard	FKM
J432	Viscosity...The Thick and Thin of it	Jordan Neal	FKM
J433	Viscosity's Effect on the Process of Boiling and Freezing Liquids	Rafiat Abdulai	FKM
J434	Does Calcium Carbonate React More with Acid, Base, or Neutral Solution?	Tiara Cobbin	FKM
		Eunice Ahogotou	FKM
J435	Variations on the pH of a Shampoo	Giliana Garcia	MLM
J436	Disappearing Ice	Ngoc Nyugen	FKM
		Lisa Macharrie	FKM
Computer Science			
J501	Curved Angles? An Investigation into Hyperbolic Geometry Models	Prashanth Venkataram	CJM
J502	Further Investigations of the Chaos Game	Anand Oza	TPM
J503	The Effects of Different Pseudorandom Number Generating Algorithms on the Randomness of the Produced Number	Scott Zimmermann	RCM
		Andrew Gallagher	



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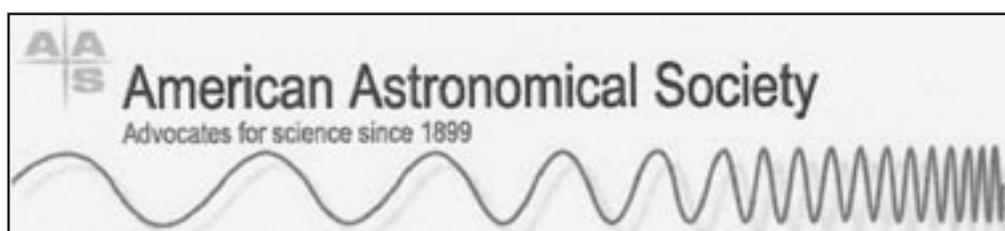
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Project	Title of Project	Exhibitor's Name	School
J504	The Effect of Process Adjustments on the Quality of a Product or Service	Urja Mittal	TPM
Earth and Space Sciences			
J602	Daylight and Darkness	Maryam Ramadhan	MLM
J603	Do Different Amounts of Soil Hold Different Amounts of Water?	Armani Edwards	MLM
J604	Does the Earth Quake as the Sun Spots?	Manoli Anagnostiadis	CJM
J605	Origin of Life: Spontaneous Arrangements of Disordered Objects into Regular Structures	Ilya Papatsenko	RFM
J606	The Power of Dirt	Alison Post	RLM
J607	Tsunami Waves	Jessica McHale	NBM
J608	Using Signal Averaging to Enhance Astronomical Images	Allison Arai	TPM
J609	The Affect of Lamps Heat on Block of Ice	Sahr Foyoh	MLM
J610	Harnessing Power of the Sun	Miles Jackson	FKM
Engineering			
J701	Amount of Popsicle Sticks Used to Build a Bridge vs. Amount of Weight Held	Andy Schmitt	EWM
J702	Are Your City's Parking Meters Accurate?	Sam Horwich	EWM
J703	Design and Construction of a Video Camera Stabilizer for Manual Movement Control	Eric Damtoft	WEM
J704	Dynamics of Fluid Flow Around Objects of Different Shapes including Model Submarine	A. Yashodhara Rao	PYM
J705	Effect of Aerodynamics on Rocket Flight	Steven Bodine	PLM
J706	Hurricane-Safe Housing	Mary Kate Macedonia	NBM
J707	In Search of the Optimal Insulators	Colin Kuserk	RLM
J709	The Effect of Airfoil Length on the Lift Created By the Wing	Jeffrey Lin Christopher Luo	RCM
J710	The Effect of Blade Shape and Angle on the Power Generated by a Wind Turbine	Alan Morrison	NBM
J711	The Effect of Sail Shape on Boat Speed	Yi (Amy) Xiao Anita Or	TPM TPM
J712	The Trebuchet	Daniel Toretsky	SLM
J713	Trebuchet Projectile Densities	Liam Regan	CJM
J714	Which is More Effective - the Space Heater, or the Radiant Parabolic Heater?	Sanjay Chainani	RCM





Project	Title of Project	Exhibitor's Name	School
J715	Which Truss Design Supports the Most Weight?	Michelle Callahan Pamela Katz	EWM EWM
J717	What is the Best Type of Arrow?	Josh Waldman	FKM
J718	Look at it Go!	Medhane Amanuel Amit Jani	FKM FKM
J719	How Weight Affects Speed of a Roller Coaster	Valeria Espinoza Erica Blanco	FKM FKM
J720	Vibrations of a Glass of Water	Benjamin Grmyzck	FKM
Environmental Science			
J801	Bean Growth Vs. Air Composition	Margaret Gratian	EWM
J802	Cleaning Up Oil Spills	Moira Malloy Ashley Foley	SCL SCL
J803	Eat My Garbage	Amy Defnet	JPM
J804	Saturation of Carbon on the Efficiency of Carbon Filters	Poorna Natarajan	TPM
J805	Environmental Impacts: Effect of a Commercial Herbicide on Frog Eggs	Curtis Betz	JPM
J806	How Does Music Affect Plant Growth?	Sam Mengistu Deo Kakukle	FKM FKM

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Project	Title of Project	Exhibitor's Name	School
J807	How Does Water Temperature Affect Tadpole Activity Level	Emily Newcomb	NBM
J808	Make the Right Choice	Noam Schildhaus	JDS
		Tomy Pinto	JDS
J809	Parasitic Crawling Vines And Their Impact on Native Flora	David Tao	TPM
J810	Soil Gets a Little Relief	Matthew Kostecka	RLM
J811	Solar Powered Car	Danielle Lembo	SAA
		Katy Gillis	SAA
		Maddy Cuddihy	SAA
J812	Temperature Effect on the Number of Insects Found in a Stream	Elizabeth Axley	MLM
J813	The Effect of Different Materials on the Absorbency of Oil	Deepa Chellappa	TPM
J814	The Grass is Greener in the Other Cup	Rebecca Fradkin	JDS
		Meryl Kravitz	JDS
J815	Using Carbonate Dissolution to Reduce Atmospheric Carbon Dioxide	Devin Zhang	TPM
J816	Was New Orleans A Good Idea?	Tiffany Chang	TPM
J817	Which Building Design Best Withstands an Earthquake?	Elissa Shiau	TPM
		Lena Jia	
J818	Which Paper Towel is the Strongest when Wet?	William Smith	BAM
J819	Adding Organic Amenities to Clay Soil to Improve Water Retention	Hannah Kebede	MLM
J820	Bug or Not to Bug	Sapha Kumar	FKM
		Jisha George	FKM
J821	Decomposition of Different Types of Litter	Katherinne Trigeros	FKM
		Joselyn Sagastome	FKM

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50th Anniversary

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Dr. Daniel Lewis Kraft, 1985 and 1986 Grand Prize Winner

Science Fair Project: Inhibition of IgE Mediated Histamine Release Both In-vitro and In-vivo with Monoclonal Antibodies Against the IgE Receptor.

Bio: After graduating from Montgomery Blair High School, Dr. Daniel Kraft went to Boston University, where he obtained his degree in Biochemistry, with honors. During this time he also worked summers at the National Institutes of Health. Dr. Kraft completed medical school at Stanford University, where he was a Howard Hughes medical research fellow, and published his work on the development of human T-cells. Dr. Kraft interned and did his residence in the Harvard Department of Internal Medicine/Pediatrics at

Massachusetts General Hospital, in Boston. He then returned to Stanford with a fellowship in hematology/oncology and bone marrow transplants. Currently, he conducts research in stem cell biology and stem cell-mediated therapies at Stanford, where he is on faculty. He also performs pediatric bone marrow transplants at the UCSF Medical School. His interest in flying and aerospace medicine has involved him in research projects with NASA. In 2003, Dr. Kraft was interviewed for a mission specialist astronaut position. He serves as a flight surgeon with an F-16 squadron in the California Air National Guard.

“I had an early realization that I could be creative in science and develop ideas into potentially novel therapies. I was lucky after winning the fair the first year, to take the project to the next level (using animal models) to show that this new approach would work in-vivo. This whole experience helped to open doors for me, and inspired me to pursue a career as a physician-scientist where I hope to take concepts from the lab bench to the patient bedside and back again.”



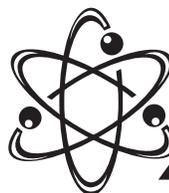
Dr. Lawrence C. Fritz, 1970 Grand Prize Winner

Science Fair Project: Hydrogen Bonds

Bio: A 1970 graduate of Wheaton High School, Dr. Larry Fritz went on to earn an A.B. from Harvard, an M.Sc. from University College, London, and his Ph.D. from The Rockefeller University. Dr. Fritz founded Conforma Therapeutics Corporation, where he is President and CEO. Conforma Therapeutics is pioneering a new approach to cancer therapy, developing drugs that induce tumor cells to degrade their deregulated signaling proteins. Prior to founding Conforma, Dr. Fritz successfully co-founded Athena Neurosciences, now wholly-owned by the Elan Corporation and Idun Pharmaceuticals,

which were recently acquired by Pfizer. As Vice President of Research at Athena, Dr. Fritz's work led to the clinical development of products for fighting multiple sclerosis, Alzheimer's disease, and other neuromuscular disorders. While Executive Vice President of Research, at Idun, he led research and development teams working to develop pharmaceutical applications for programmed cell death (apoptosis). These efforts have led to new approaches to the treatment of hepatitis C, inflammation, and cancer.

“The Science Fair was extremely important in my own development. The recognition I received helped give me the confidence to pursue science professionally, first as a college student and later as a member of the international scientific community.”

Science

MONTGOMERY



Jean Li, 2002 Grand Prize Winner

Science Fair Project: The Chemical Origins of Extraterrestrial Organic Macromolecules in Carbonaceous Chondritic Meteorites

Bio: Jean Li is currently a senior at Columbia University, NYC. She graduated from the Math, Science and Computer Science Magnet Program at Montgomery Blair High School, where she completed her senior thesis at the Geophysical laboratory of the Carnegie Institute of Washington. Besides her success at the Montgomery Area Science Fair, she was a finalist in the Intel Science Talent Search. Jean is a chemistry major at Columbia, where she is the Vice President of the Chandler Society for Undergraduate

Chemistry, as well as a member of Women in Science, teaching assistant for organic chemistry labs and tutor at the Peer Led Learning Center. During summers she has worked in a number of labs, including the NASA Goddard Astrochemistry division. Jean plans on graduate study with the goal of teaching in a research university...or back at Montgomery Blair HS.

“The science fair has helped to cement my desire to go into academia. I was lucky enough to have role models who themselves were very successful. When I competed in the science fair, it both allowed me to taste success and gave me a preview of the dynamic and exciting free flow of ideas that is available at the forefront of research. I’ve always loved public speaking, and being able to share my ideas and hard work with others that understood and appreciated it was incredibly rewarding. Plus, I met a lot of other young researchers and their mentors at the science fair—it’s always interesting to get a taste of what’s going on in the science community, what questions people are excited about, and what new techniques are being developed.”



Dr. Kenneth Haase, 1980 Grand Prize Winner

Science Fair Project: Bionic Computational Devices

Bio: Since graduating from Richard Montgomery High School in 1980, Dr. Kenneth Haase founded *beingmeta, inc.*, which continues his early work on knowledge description and natural language processing. He earned his BS in philosophy, his MS in computer science, and his Ph.D. from the Artificial Intelligence Lab, all at MIT. He is currently a Senior Research Scientist in Media Lab Europe, the MIT Media laboratory’s European Research Partner and also holds a professorship at the University of Tampere, in Finland. Dr. Haase has consulted in the IT, manufacturing and finance sectors. He has lived and worked in

Europe, mastering collaboration and cooperation across languages, cultures and points of view. Dr. Haase is also involved in XML standardization efforts, in particular, the addition of conceptual markup to the News Industry Text Format wire standard.

“My science fair experience gave me an early immersion in the experience and excitement of scientific discovery, learning, and invention. By starting to ‘think as a researcher’ so early, I was inspired and enabled to think more deeply and playfully about the intellectual universes I encountered and the scientific and engineering problems I faced.”



Project	Title of Project	Exhibitor's Name	School
Math			
J901	Are You Nuts For Nuts?	Pooja Mathur	BAM
J903	Do Different Types of M&M Have Different Color Distribution?	Irene Lemberos	BAM
J905	Predicting Pendulum Position	Tyler Babich	EWM
J906	The Combinatoric Structure of Multi-Sets	Jordan Hirsh	TPM
J908	The Formation of Impact Craters in 2D and Quasi-2D Granular Systems	Andrew Das Sarma	TPM
J909	What Brand of Peanut Butter has the Most Peanut Pieces?	Ashlyn Tripp	BAM
J910	Which Brand of Chicken Pot Pie has More Chicken?	Nicole Byrd	BAM
Medicine and Health			
J1001	Acid Attack	Gregory Segal	NBM
J1002	Analyzing Genetic Traits	Chris Hamer	RCM
J1004	Development of Human Growth Hormone using Recombinant DNA on E-coli	Shilpa Kannan	TPM
J1005	Does Your Toothpaste Really Whiten?	Adrienne Lane	EWM
J1007	Is Red the Easiest Color for the Brain to Recognize?	Sara Hou	HOA
J1008	Stretch...or Not?	Rhea Chung	HOA
J1009	Effect of Age on Touch Sensitivity in Children Ages 5-12	James Shepherdson	TPM
J1010	The Effect of Caffeine on You	ThuyVy Duong	EWM
J1011	The Effect of Covering a Person's Ear on Their Ability to Perceive the Direction of a Sound When Their Eyes are Blindfolded	Emily Farr Xinyi Zhou	TPM
Microbiology			
J1101	Effect of Toilet Lid on Airborne Bacteria	Caitlin Montgomery	HOA
J1102	Examination of Mutagenicity of Household Cleaners Using Yeast	Hakyung Shin	TPM
J1103	Please Pass the Salt	Meagan Carr	HOA
J1104	Project Storm Surge: The Impact of Storm Surge on the Chesapeake Bay Estuary	Helena Lubliner	NBM
J1105	The Bacteria I Live With	Colin Smith	SLM
J1106	The Effect of Contaminants on Bacteria Growth in Water	Jeechee Chen Conway Xu	TPM TPM
J1107	The Effects of Caffeine and Sugar on the Activity of Paramecia caudatum	Sarah Bao Jan-ice Lan	RCM
J1108	The Other Side of Yeast	Laura Sirbu	RCM
J1109	What's That Stringy Stuff?	Emma Luigard Phylicia Mpsi	TPM SCL

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Project	Title of Project	Exhibitor's Name	School
Physics			
J1201	The Metropolis Algorithm: The Magnetic Susceptibility as a Function of Temperature in the Ising Model	Michael Cohen	TPM
J1202	Angular Momentum	Caitlyn Diaz Monica Josing Emily Ebner	SCL SCL SCL
J1203	Batteries and How Long They Last	Saad Merzouk	MLM
J1204	Blast Off	Michael Aubertin	EWM
J1205	Can You Lift 1000 Pounds?	Jessica Grimes	JPM
J1206	Demonstrating How Herschel Discovered Infrared Light	Eunjae Lee Margalit Pelta-Pauls	CJM
J1207	Depth of Water versus How Far Water Shoots Out	Stuart Badger	EWM
J1208	Does the Amount of Camber Affect Lift?	Matthew Johnson	SLM
J1209	Effect of Mass, Height, and Length on the Period of Harmonic Motion	Gabriela Mujica	EWM
J1210	Finding the Best Pendulum	John Lee Lillibridge	NBM
J1211	How Does Heat Affect Starting Water Temperatures?	Chris Brown Jonas Rosen	EWM
J1212	How Fast can a Basketball go on Different Surfaces?	Alante Rhoden	MLM
J1213	How Will the Temperature of Water Affect its Freezing Time?	Erika Ortega	MLM
J1214	Magnet Strength vs. The Distortion Of A Black And White TV Image	Eliot Rudnick-Cohen	EWM
J1215	Magnet Train	Matan Kline Bryce Weisberger	JDS JDS
J1216	Optical Fingerprints of the Elements	Earl Smith	NBM
J1217	Phonebook Shots	Ryan Romig	BAM
J1218	Reducing Harmful Electromagnetic Waves	Kyujoo Choi	TPM
J1219	Ripples Effect	Tahira Raja	EWM
J1220	Solar Energy: Playing the Angles	Griffin Lerner	SLM
J1221	The Effect of Temperature on Magnet Strength	Ajay Kannan	TPM
J1222	The Amazing Static Electricity	Shannon Barton	EWM
J1223	The Effect of Container Dimensions on the Freezing Time of Water	Zeke Gonzalez	SLM
J1224	The Effect of Current and Coils on Electromagnetic Strength	Mark Berry	TPM
J1225	The Effect of Limited Oxygen Applied to a Burning Flame	John Paul Francis	SLM
J1226	The Effect of Temperature on Battery Life	Michael Dunlow	SAA
J1227	The Weight of a Projectile vs. the Distace it Travels when Launched out of a Catapult	Ross Vincent	EWM
J1228	Thermal Retention of Winter Textiles	Kellie Chafin	MLM
J1229	Too Hot	Chris Salzano	EWM
J1230	Was That a Trumpet or a Violin?	Scott Lawrence	TPM



Project	Title of Project	Exhibitor's Name	School
J1231	Weight and Speed	Ketan Morris	SCL
		Nathaniel Fikru	SCL
		Miguelangel Grande	SCL
J1233	Hot Shots	Abel Azanaw	FKM
		Boniface Tene	FKM
J1234	How to Make an Electromagnet	Demtrius Young	FKM
J1235	Which Parachute Can Save Your Life?	Kavi Girdhari	FKM
Zoology			
J1301	Climatic Survivability	Alexander Bae	HHM
		Lawrence Yen	HHM
J1302	Mouse Environment Enrichment Device Evaluation	Julia Snoy	HS
J1303	The Ultimate Pillbug Vacationing Spot	Kelly Stottlemeyer	JPM
		Mary Gillespie	JPM
J1304	Which Materials Do Crickets Prefer: Man-made Versus Natural	Rebecca Murtha	SLM
J1305	Hold Your Horses and Ponies	Emily Jones	JPM



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Exhibits in the Senior Division, Grades 9-12

<u>Project</u>	<u>Title of Project</u>	<u>Exhibitor's Name</u>	<u>School</u>
Behavioral and Social Science			
S101	But I Work Better Under Pressure!	Meredith Hickson	SWH
S102	Cognitive Deterioration in Men vs. Women	Jessica Wolfe	SWH
S103	Depression vs. Weather	Ryan Blaustein	SWH
S104	Do Placebos Actually Work?	Aviana Cooper	SWH
S105	Do You Have "Common Sense"?	Swati Nanda	SWH
S106	Do You Remember the Time?	Tharanie Amarawardana	SWH
		Erin Kelly	SWH
		Chelsea Sickinger	SWH
S107	Does Money Buy Happiness?	Jill Kurnot	SWH
		Andy Lowy	SWH
S108	Does Speed Reading Really Help?	Jabel Prom	SWH
S109	Gender Graphology	Nathaniel Weinman	BCH
		Jake Stevens	BCH
S110	Gender Role and Monopoly	Melissa Lee	SWH
S111	GluR1-Deficient Mice Display Impaired Trace Fear Conditioning and Hyperactivity	Ryan Ly	BLH
S112	Goth vs. Prep	Christine Be	SWH
S113	Holiday Shopping: When is it the Worst	Lindsay Lethbridge	SWH
		Jamie Fewell	SWH
S114	How Much Control do We Really Have?	Samantha DeBow	SWH
		Kathleen Rafferty	SWH
S115	Math Achievement and Favorite Reading Genre	Pingting Nie	WHO
S116	Memory in Color	Cynthia Lawson	SWH
S117	Memory: What Makes Sense	Blake Gilbert	SWH
S118	Music, The Smart Art	Andrew Delapenha	SWH
		Daniel Martins	SWH
S119	Optical Illusions: Looks Can Be Deceiving	Arielle Dubin	SWH
		Helene Rosendorf	SWH



Steven E. Linberg, Ph.D.
Managing Director, Treasurer

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Project	Title of Project	Exhibitor's Name	School
S120	Perception of Intelligence Based on Biases	Joe Levy Evan Spiller	BCH BCH
S121	Reaction Time and it's Relationship to Basketball Skills	Michael Reives	BLH
S122	Revealing the Origin of Taste	Rachael Kurtis	SWH
S123	Senses and Memory	Joy Song	SWH
S124	Smarter Siblings? How Birth Order Affects Intelligence	Lauren Ochsenreiter Cody Hysell	SWH SWH
S126	The Effect of Video Games: Boys vs. Girls	Jillian Newhall	SWH
S127	The Taste of Color	Andrea Hoffmann	SWH
S128	Type Caffeine	Thomas Brown Margaret Veith	SWH SWH
S129	Um, Like, Yeah!	Emma Newhall Rachel Feinberg	SWH SWH
S130	What is the Effect of Music on Memorization?	Steven Anderson	SWH
S131	What Was That Word Again?	Arslaan Arshed	SWH
S132	When in Rome	Sammy Seligh Julia Omotade	SWH SWH
S133	Why Can't I Remember Anymore?	Mahrokh Soltanzadeh Neha Sharma Shilpa Kurapati	SWH SWH SWH

Biochemistry

S201	Absolute Gene Quantitation of Melanoma Associated Tumor Antigens	Daniel Eichberg	CHH
S202	Cellular Characteristics of Plasmodium Falciparum Sodium Proton Exchanger.	David Chen	WWH
S203	Determination of Optimal Temperature for Pectin Methyl Esterase Activity and Construction of a Counter-Current Purification Device	Joseph Dario	BLH
S204	Diversity in the Hemoglobin-Beta Locus in the Island Populations of Mice	Urania Dagalakis	CHH
S205	Do All Genes in a Chromosomal Segment Cotranscribe Together from a Single Transcriptional Factory?	Tania Chatterjee	MGH
S206	Effects of Sex and Feeding on Expression of Olfactory System Associated Genes in Anopheles Mosquito Antennae	Seth Hoffman	RMH

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Project	Title of Project	Exhibitor's Name	School
S207	Revitalization!	Shima Gholamimeh-rabadi	MCS
S209	The Beast Yeast	Eric Sim	SWH
		Harith de Silva	SWH
S211	Transfer of Wheat Simple-Sequence Repeats (SSR) Markers to Various Crops	Dalue Song	CHH
S212	Transient Gene Expression in HEK-293 Cells: Efficacy of Liposomal Transfection for Protein Production by Suspension Cultures	Yueyang Li	BLH
S214	The <i>rsp5</i> Gene in <i>Saccharomyces cerevisiae</i>	Julie Hurvitz	WWH
S215	Extracting Onion DNA	Rana Sharaf	MGH
S216	Identification of Genes Differentially Expressed in Humans Lung Cancer Using Microarrays	Andrew Mertz	MGH
S217	Effect of Irradiation on Gene Expression in <i>Plasmodium falciparum</i> Sporozoites	Benjamin Hoffman	GDS

Botany

S301	A Clean House: Is it Worth the Risk?	Lauren Widmaier	SWH
		Celina Pereira	SWH
S302	A Different Corner	Amandeep Babra	SWH
S303	As Long as a Plant gets Light, Does it Really Matter if that Period of Light is Constant?	Charles Schupler	SWH
S304	Effect of Vernalization on Hyacinth Bulbs	Meghan Hughes	BCH
S305	Growth by Vegetative Propagation vs. Growth by Seed	Hoon Chae	SWH
S306	Growth of Spider Plants in Different Conditions	Upjot Babra	SWH
		Manjot Babra	SWH
S307	Hydroponics Systems	Ron Tadmor	SWH
S308	Just Give Me Some Space	Reino Sammeta	SWH
		Yevgeniy Rubin	SWH
S309	My Plant Orchestra	Francesca Bozzelli	SWH

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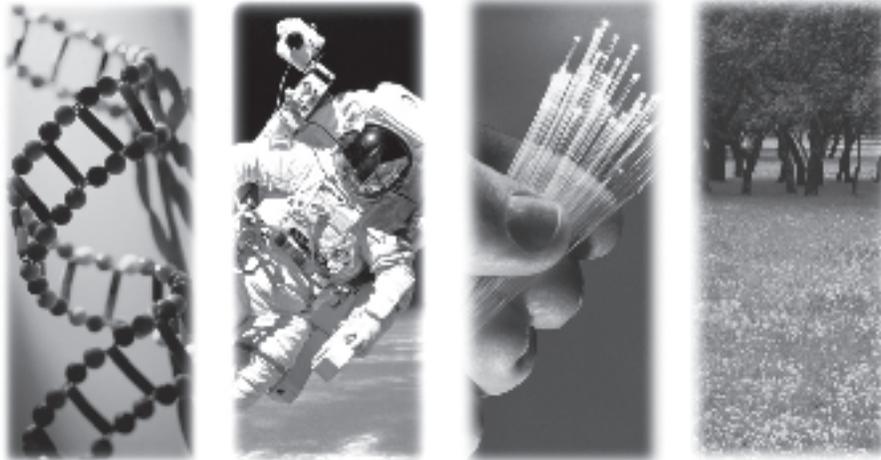
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Douglas M. Duncan, Montgomery County Executive



Project	Title of Project	Exhibitor's Name	School
S310	Red or Blue Makes Pea Plant to Grow Faster?	Getachew Mengistu	SWH
S311	Soil pH vs. Plant Growth & Availability of Nitrogen	Erin Hendricken	SWH
S312	Terror! In the Greenhouse	Maria Perez	SWH
S313	The Effect of Household Liquids on the Response of Venus Flytraps	Danny Brann	SWH
S314	The Effects of Acids and Bases on the Growth of Plants	Audrey Wong Ahmed Abdi	SWH
S315	The Progression of Parenchyma Cell Death in the Secondary Xylem of Angiosperms vs. Gymnosperms	Cindy Cheng	BUS
S316	What is the Effect of Cytokinins and Gibberelic Acid on Pea Plant?	Yonas Gebremicale	SWH
S317	Which Type of Carnivorous Plant can Produce the Most Antiseptic Digestive Fluid?	Tiffany Chu	QOH
Chemistry			
S401	A High Powered Aluminum-air Fuel Cell with a Long Discharge Time	Sridar Ravi	WMH
S402	Carbonic Acid and Our Modern World: Homo Sapiens from an Atmospheric Perspective	Steven Overly	SWH
S403	Orthophosphate Levels Required to Form a Protective Patina against Pinhole Leaks in Copper Water Pipes	Mark Glucksman-Glaser	MGH
S404	Shockingly Delicious	Michelle Shero	SWH
S406	Vitamin C in Fruit Juices	Amanda Burton	SWH



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Project	Title of Project	Exhibitor's Name	School
S407	Growing Metallic Crystals	Stephanie Douglas	SSH
S408	Effect of Polymer-supported Nanoparticles and Supercritical Carbon Dioxide on the Catalysis of Nafion-based Fuel Cells	Sarvesh Ramprakash	CHH
S409	Investigating Methods for Determining Lead Concentration in Drinking Water	Samuel Teitelbaum	BLH
Computer Science			
S501	A Steganographic Video Algorithm to Utilize Existing Encryption Technology in Inter-Frame Digital Video Container Formats	Daniel Green	BLH
S502	Adaptive Parallelization of Multi-agent Cellular Automata Simulations	Jeremy Ong	CHH
S503	Solving Sudoku with Java Programming	Nick Latourette	BCH
S504	The Application of Novel Improvements in Genetic Algorithms to Generalized Traveling Salesman Problem Heuristics	John Silberholz	BLH
Earth and Space Sciences			
S601	Can Katrina Happen Again?	Stephany Salazar	BCH
S602	Solar Flares and Sudden Ionospheric Disturbances: The Effect of Class vs. Solar Zenith Angle	Kira Maker	WHO
S603	Stellar View	Peyton McGuire	SWH
S604	Using Radio Astronomy to Analyze Active Regions and Flares on the Sun	Lauren Bodin	BLH
Engineering			
S701	Alternate Power Sources for MagLev Trains	Sean Vaskov	BCH
S702	Bicycle-Powered USB Recharger	Kyle Saylor	BCH
S703	Distal and Proximal Search Strategies for Robotic Path Recovery	James McKinney	BCH
		Walter Beller-Morales	BCH
		Sam Wagner	BCH
S704	Do Different Shaped Levees have Destruction Times?	Peter Sebrechts	BCH
		Darya Gakh	BCH
		Adam Evans	BCH
S705	Effect of Fire Whirls on Fuel Consumption	Michael Tsai	BLH
S706	Effectiveness of the Nano-Tip Maker method of Etching Nano-tips	Tim Gallahan	SWH
S707	Examining Different Mask Designs in the Construction of Photovoltaic Solar Cells.		
S708	How Does a Butterfly Fly? The Design of a Model Butterfly Wing Mechanism	Faith Kung	CHH
S709	LED vs. The Light Bulb	Stuart Carroll	SWH
S711	Role of the Engineering Design Considerations and Materials Selection on the Performance and Structural Integrity of Airplane During Subsonic Wind Tunnel Testing.	A. Sarada Rao	WWH
S712	Synthesis and Superconducting Properties of MgB ₂ Coatings	Garrett Drayna	CHH
S714	Weighing in on Bridges	Lauren Sylvester	SWH



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We salute Science Montgomery for providing an opportunity for the business, local government, and education communities to partner their efforts and resources in support of the Montgomery Area Science Fair and the students, teachers, parents, volunteers, and judges who come together in the celebration of science and learning.



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Project	Title of Project	Exhibitor's Name	School
Environmental Science			
S801	Economical Solar Water Distillation System	Bryant Renaud	BCH
S802	Effects of UV-C Radiation on the Germination of Raphanus Sativus L	John Liu	WHO
S803	Examination of the Efficacy of MCPS's Lead Mitigation Program	David Damtoft	BCH
S804	Harvesting Energy from Wastewater in a 2-Chamber Microbial Fuel Cell	Sikandar Porter-Gill	GBH
S805	How Brine Shrimp Affect Pollution	Katherine Perino	QOH
		Anna Ralchenko	QOH
S806	Removing Arsenic from Drinking Water	Tom Swartz	BCH
S808	Soil pH as a Role in Eacles Imperialis Pupation Preference	Soo-Hwa Kim	MGH
S809	The Effects of Global Warming on Marine Ecosystems	Krista Block	SWH
		Maggie Rollings	SWH
S810	The Effects of Human Activities On the Greenhouse Effect	Sophia Rizvi	MGH
S811	The Effects of Oil on Algae	David White	BCH
		Jonathan Krynitsky	BCH
S812	The Effects of pH on Lemna minor Growth	Elisa Chen	WHO
S813	The Effects of Precipitation on Nutrient Concentrations in the Chesapeake Bay Watershed	Kelly Hinkle	SWH
S814	What can Foil the Oil?	Sara Falk	SWH
		Brittany Creeden	SWH
S815	Ice on Roads, What is the Best Solution?	Bernard Wong	MGH
S816	The Effect of Different Surface Materials on the Greenhouse Effect	Dan Gardner	MGH
S817	The Effect of Erosion on Different Types of Soil	Sameera Rizvi	MGH
Math			
S901	A Sociological Analysis of the Human Immunodeficiency Virus Using Statistical Modeling	Avishek Panth	BCH
S902	Developing Customer Value Model for Banks	Esteban Carrillo	BLH
		Estefany Carrillo	BLH
S903	Generalizations of a Coin-Removal Problem	Paul Kominers	WWH
Medicine and Health			
S1001	Aluminum Content of Soy Products	Liam McMahon	BCH
		Gordon Sommers	BCH
S1003	ATPase Assay Exploring EWS-FLI1/RNA Helicase A Interaction in Ewing's Sarcoma Family of Tumors	Alexander Mazerov	BLH
S1004	Can You Jump?	Joshua Brobbey	SWH
		Jelani James	SWH
S1005	Cell Adhesion and Time Lapse Microscopy Studies of Mouse Keratinocytes	Adith Sekaran	BLH
S1007	Dihydroartemisinin: a New Drug in Therapy of Ovarian Cancer	Lu Chen	BLH
S1008	Discovery of Small Molecules for Prostate Cancer Treatment	Rachel Lee	BLH



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Project	Title of Project	Exhibitor's Name	School
S1009	Do Asthmatics of Different Ages Respond Differently to Weather and Air Quality?	Erik Klontz	BCH
S1011	Does Two of a Kind Affect the Mind?	Craig Raphael	CHH
S1012	Effect of a Laminin Alpha-1 Chain Peptide, AG73, on Breast Cancer Cell Metastasis	Kiran Belani	BLH
S1013	Endothelial Cell Procoagulant Activity By Tumor Cell Lines	Scott Roberts	CHH
S1014	Engineering Applied to Human Aging	Rishi Gharpuray	QOH
S1016	Hibernation Induced Hypoxia Resistance in C8 Cells	Carlton Klein	BCH
S1017	Impact of Clothing on Skin Cancer Risks	Sharena Daniel	BCH
S1018	Inducing Resistance: Does Repeated Exposure to Antibiotics Increase Resistance?	Nellie Darling	WHO
S1019	Is Tumor Suppressor Gene Important in Causing Cancer?	Eunsol Lee	CHH
S1020	Laser Stimulated Neuronal Cell Growth Using Integrated and Nano-Probe Illumination Models Based on Fiber-Optic Delivery	Kristi Chakrabarti	BLH
S1021	Leptin and Sleep Duration as Predictors of Weight Gain During Childhood	Neha Agarwal	SVH
S1022	Novel Compound Heterozygote Mutations of the IL12Rb 1 Gene in a Female with Disseminated Mycobacterial Infection	Laura Zaim	WWH



Pepper Buckley, Ph.D.
Licensed Psychologist
Potomac, MD
(301) 987-7278
Adults, children, families

Congratulations to all students exhibiting their work at this celebration of science, and to the volunteers, judges, parents, science teachers, mentors and sponsors whose gifts of time, knowledge, guidance, support and excitement shaped this

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Project	Title of Project	Exhibitor's Name	School
S1024	Red Bull...Is it Bull?	Felicite Chiang Nicole Bachman	SWH SWH
S1025	Strength of Demineralized Bones	Robert Coe Sylvia Tsakos	BCH BCH
S1026	Suppress the Stress	Jasjeet Khural Ashwin Ranwala Cassandra Heibein	SWH SWH SWH
S1027	The Activity and Expression of Synthetic ADAMTS13, the Von Willebrand Factor Cleaving Protease	Elizabeth Plum	SVH
S1028	The Effects of Music on the Human Body	Christian Weber Apurva Parikh	SWH SWH
S1029	The Rhythm of Running	Matt Schneider	SWH
S1030	ViPAR: A Novel Tool for Visualization, Paint, Alignment, and Rotation in the Study of Cerebellar Peduncle Degeneration and its Relationship to Severity of Ataxia	Shwetadwip Chowdhury	BLH
S1032	Absorbance of Calcium in Bones	Reem Sharaf	MGH
S1034	What's More Effective: Water or Gatorade?	Steven Caporaletti	SWH

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ScienceMONTGOMERY wishes to thank all the teachers, supervisors and other school staff, for their unstinting contributions to the students in our 2006 Fair. We especially thank New Hampshire Estates Elementary School and the Montgomery County



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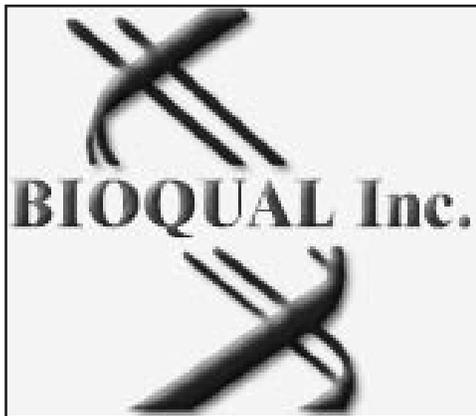


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Project	Title of Project	Exhibitor's Name	School
Microbiology			
S1101	Bacteria Invades the Nursery	Jorden Jones	SWH
S1102	Creating A Transgenic Mouse Line That Knocks Out the Expression of Oxytocin in the Endocrine System	Clair Briggs	BLH
S1103	Culturing Microorganisms From Kefir	Abigail Fitzsimons	BCH
S1104	Effects of an Electromagnetic Field on Algae	Alex Vaskov	BCH
S1105	Electro-Sterilization Techniques	Alexander Bernstein	BCH
S1106	How Clean is a High School?	Kunj Patel	SWH
S1107	Is More of a Cleaner Better?	Nauran Heshmat	SWH
S1108	What is the Ratio of Cells to Genomes to 16S Ribosomes in Different Cells?	Katherine Hlavinka	WHO
Physics			
S1202	Microwaves: Transmission of a Wireless Network Signal via Unidirectional Antenna	Erin Wolpert	BCH
S1203	Sound in Different Mediums	Kyle Peters	SWH
S1204	The Importance of Mass vs. Surface Area	Nina Simkova	SWH
Zoology			
S1301	A Study to Assess the Effect of Surface Area on the Reproductive Success of <i>Tribolium castaneum</i>	Haley Simpson	WHO
S1303	Examination of Long-term Memory in Heterozygous Mindbomb Mutant Zebrafish	Beatrice Parker	BCH
S1304	Investigation of Cerebral Blood Vessel Vasoconstriction during Hypothermia	Ini Li	WHO
S1306	Quantitative Trait Loci for Sperm Length in Stalk-eyed Flies, Genus <i>Cyrtodiopsis</i>	Yang Shan	BLH
S1307	Temperature Effect on the Sex-Ratio of <i>Drosophila Melanogaster</i>	Wendolyn Quintanilla	BLH
S1308	To Eat or Not To Eat	Marisol Williams	BCH
S1309	What is the Effect of Fruits and Vegetables on Egg Capsule Production for Earthworms?	Berglind O'Callaghan	SWH



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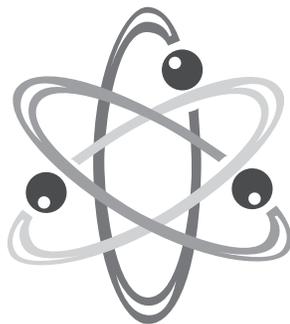
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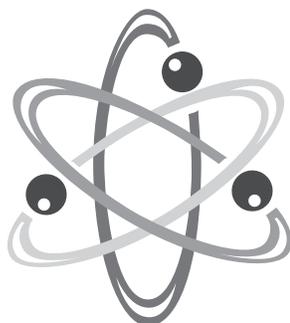
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