

48th

Montgomery Area Science Fairs

March 26, 27, 28, 2004

Au Sponsor:



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Science

MONTGOMERY

2004 ScienceMONTGOMERY Fair Schedule

Friday, March 26, 2004

6 PM — 9 PM Student Registration: Students register and set-up display boards in Building #6 at the Montgomery County Fairgrounds, Gaithersburg, MD.

Saturday, March 27, 2004

8 AM — 12 Noon Judges Preview Period

12 Noon - -5 PM Student Interviews by Category, Grand Award and Special Award Judges

6 PM — 9 PM Open House for the General Public, in Building #6. Montgomery County Fairgrounds, Gaithersburg, MD

Sunday, March 28, 2004

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

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

4 PM — 6 PM Project Break Down: Students dismantle projects

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





ScienceMONTGOMERY welcomes you to a celebration of Science, our 48th Annual Science Fair.

Already one of the largest science fairs in the United States, ScienceMONTGOMERY, the Montgomery Area Science Fair, continues to grow. This year John Seng and Spectrum Science Public Relations volunteered a dynamic fund raising and publicity campaign, securing the support of Doug Duncan, the Montgomery County Executive and our distinguished group of sponsors. Intelsat has become our first Au-some Level sponsor. We've found a new location, added many new sponsors to our loyal contributors, and expanded our Officers and Board of Directors to include 15 hard working professionals from the education and science communities of the Montgomery County Area. An all-volunteer operation, we've now been designated tax deductible for our donors. It's thanks to the organizations and individuals you see throughout this program that there is a 48th Annual Fair.

ScienceMONTGOMERY is dedicated to encouraging and promoting an interest in science to the youth of the Area, encouraging scientific activities, and bringing together scientists, engineers, mathematicians, educators, students, parents, and friends of science. ScienceMONTGOMERY awards over \$20,000 in prizes for outstanding projects in Life Science and Physical Science categories, Junior and Senior Divisions, and for special awards. A distinguished panel of more than 200 volunteer judges select the Category and Special Award winners. These judges representing the area's businesses, scientific, professional and educational organizations, and the United States Government, present awards including cash, scholarships, trips, bonds, banquets, certificates, medals, merchandise and books. Last year over 376 students in the Montgomery County area competed in the Fair, following competition in their own local fairs.

ScienceMONTGOMERY is affiliated with the Intel International Science and Engineering Fair (ISEF). We follow the Intel ISEF rules and regulations to assure the safest scientific research methods. Four Grand Prize winners in the Senior Division will be funded (and chaperoned) to the Intel International Science and Engineering Fair 2004, held in Portland Oregon, this year. There they will compete against 1200 winners from the United States and over 38 foreign countries. By participating in the Intel ISEF, students become eligible for over three million dollars in scholarships, tuition grants, scientific field trips, summer internships and other awards.

ScienceMONTGOMERY congratulates all the students who prepared projects for the 2004 Fair. Our thanks to our sponsors, judges, and other volunteers who make our celebration of science a super nova event!

Pepper D. Buckley, Ph.D.
2003-2004 President, Montgomery Area Science Fair Association



OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Douglas M. Duncan
County Executive

October 8, 2003

Pepper D. Buckley, Ph.D.
President
Montgomery Area Science Fair Association
11516 Dahlia Terrace
Potomac, MD 20854-1174

Dear Pepper:

I am pleased to support the efforts of *ScienceMONTGOMERY*, the countywide Science Fair of the Montgomery Area Science Fair Association, which attracts more than 1,500 students from 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.

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 encourage all Montgomery County businesses to support *ScienceMONTGOMERY* and invest in today's youth by recognizing the promise of their talents and achievements.

Sincerely,

Douglas M. Duncan
County Executive

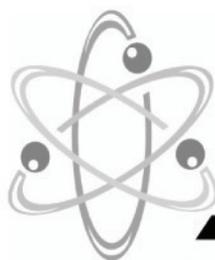


The Harry C. Deckert Trust

*Established by Juliabelle and Harry Deckert, of St. Louis, Missouri,
the Harry C. Deckert Trust chose to contribute to
2004 ScienceMONTGOMERY*

in recognition of its dedication to the advancement of scientific education. The Deckerts' three daughters have been working in collaboration with education through careers in high school and university teaching, public radio and cognitive psychology. This donation is made to emphasize the important influence of family life in making learning a life-long commitment.

Congratulations



Science
MONTGOMERY

2004

A Message from . . .

**THE NATIONAL INSTITUTE OF
STANDARDS AND TECHNOLOGY**

The National Institute of Standards and Technology (NIST) is privileged to mark its 31st year as a sponsor of the Montgomery Area Science Fair.

The fair gives high school and middle school students a unique opportunity to experience the thrills and hard work involved in scientific research and development projects. NIST believes the fair is an incubator of future scientists and engineers. The fair also gives students the well-deserved honor of seeing their work recognized.

We hope you will enjoy the many creative exhibits developed by students who are representing their schools. The exhibits display extraordinary variety and innovation.

NIST is pleased to express its gratitude to the many individuals and organizations that volunteer their time to the Science Fair every year. To the Montgomery County Public Schools, award sponsors, judges, teachers, parents, and Science Montgomery, we offer our congratulations on your dedicated support for this program and the young people whose impressive talents are demonstrated here.

We at NIST are honored to be a part of this event.

**Hratch G. Semerjian
Acting Director**



MONTGOMERY AREA SCIENCE FAIR ASSOCIATION

48th Montgomery Area Science Fairs – 2004
Montgomery County Fairgrounds, Gaithersburg, MD

Officers and Board, Montgomery Area Science Fair Association

President: Dr. Pepper D. Buckley
Psychologist, Private Practice

President elect: Dr. Andrea Sawczuk
National Institutes of Health, NINDS

Member at Large: Dr. James M. Adams
National Institute of Standards & Technology

Past President: Elena Pisciotta
Montgomery County Public Schools

Secretary: Dr. Laura Lee Johnson
National Cancer Institute, National Inst. of Health

Treasurer: Dr. Jay L. Buckley
JLB Associates

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Parent, Montgomery Co. Public Schools

Dr. Glenda Torrence
Montgomery County Public Schools

George Morse
Montgomery County Public Schools

Board Members to serve 1st year of 2 year Term

Dr. David W. Bonnell
National Institute of Standards & Tech, Retired

Ruth Checker
Montgomery County Public Schools

Artemis Dagalakis
Parent, Financial Advisor

Donna M. Matthews
Montgomery County Public Schools

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

Chairperson Category Judges: Dr. Howard Harary, National Institute of Stds. & Tech.

Awards Ceremony MC: William Kraye, Montgomery County Public Schools

Safety Committee: Lawrence and Laurie Bricker, Montgomery Co. Public Schools

AWARDS PROGRAM

2:00 P. M.

Sunday, March 28 2004

Gaithersburg High School Auditorium

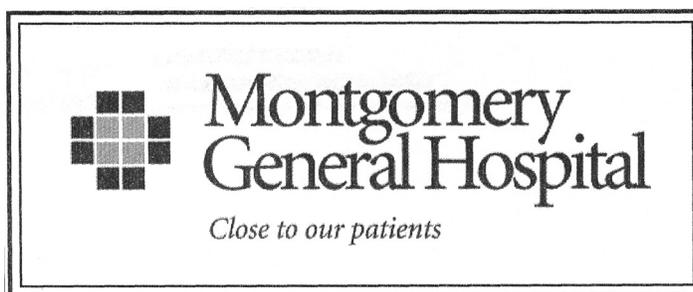
Opening of Awards Program	Pepper Buckley, Ph.D. President, Montgomery Area Science Fair Assoc.
Welcome to ScienceMONTGOMERY:	Hon. Chris Van Hollen, Congressman, Maryland 8th Congressional District
Presentation of Special Awards	William Krayner, Montgomery Co. Public Schools Special Awards Sponsor
Address:	Dr. William D. Phillips, Atomic Physics Division, Physics Laboratory National Institute of Standards and Technology, Nobel Laureate, Physics, 1997
Thank you to Teachers: & Project Sponsors	Michael Szesze, Program Supervisor for Science Montgomery County Public Schools
Presentation of Junior Awards Life Sciences Physical Sciences Grand Awards	Dr. Howard Harary, NIST
Presentation of Senior Awards Life Sciences Physical Sciences Grand Awards	Dr. Pepper Buckley
Thank you and adjournment	Pepper Buckley, Ph.D. President, MASFA

Associations Offering Special Awards

American Cancer Society
American Association for Clinical Chemistry – ACC, Capitol Section
American Astronautical Society
American Industrial Hygiene Association
American Institute of Aeronautics & Astronautics - AIAA
American Meteorological Society
American Nuclear Society
American Psychological Association (APA) & Teachers of Psychology in Secondary Schools
American Society of Engineers of Indian Origin (ASEI)
American Society of Mechanical Engineers – ASME-DC Section
American Society of Naval Engineers (ASNE), Nat'l Committee on Environmental Engineering
American Society of Safety Engineer - National Capital Chapter
Armed Forces Communications & Electronics Association Logistics Management Institute
ASM International, Washington DC Chapter
Association for Computing Machinery, DC Chapter
Association for Women Geoscientists
Association of Practicing Psychologists of Montgomery and Prince Georges Counties
Association of Scientists & Engineers of the Naval Sea System Command
Baltimore-Washington Chapter, Health Physics Society
Capital PC Users Group
Central Intelligence Agency (CIA)
Chemical Society of Washington
Commissioned Officers Association of the U.S. Public Health Service
Discovery Young Scientist Challenge
Eastman Kodak Company
Electrochemical Society, National Capitol Chapter
Energy & Air Quality Advisory Committee of Montgomery County
Federal Water Quality Association (FWQA)
Gem, Lapidary & Mineral Society of Montgomery County Maryland, Inc.
Geological Society of Washington
George Washington University Engineering Alumni Association
Graduate Women in Science, Omicron Chapter
Herbert Hoover Presidential Library Association
Institute of Electrical and Electronics Engineers - IEEE
Institute of Food Technologists - DC Section
Intel Excellence in Computer Science Award
Intel Excellence in Environmental Health and Safety Award
International Society for Optical Engineering
League of Women Voters of Montgomery County
Montgomery Bird Club, a Chapter of Maryland Ornithological Society
NACE Foundation
National Association of Biology Teachers
National Capital Area Skeptics

Associations Offering Special Awards, continued

National Capital Astronomers, Inc.
National Space Club
National Society of Professional Engineers
Northrop Grumman
Office of Naval Research
Optical Society of America - National Capital Section
Organization of Chinese Americans - Greater Washington DC Chapter
Sigma Xi - FDA Chapter
Sigma Xi - NIST Chapter
Society for Mining, Metallurgy and Exploration, Inc.
Society of Manufacturing Engineers
Spectrum Science Public Relations
U.S. Air Force 317 RCS
U.S. Army Research Office
U.S. Metric Association
U.S. Nuclear Regulatory Commission
Washington Society of Engineers
Washington Statistical Society
Water Environment Federation
Yale Science & Engineering Association, Inc.



Congratulations!!!

From

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2004 Montgomery Area Science Fair



2004 Category and Grand Awards Judges

Dr. Rajeev Agarwal	National Institutes of Health
Dr. Cem Akin	National Institutes of Health
Ms Susan Audino	National Institute of Standards and Technology
Dr. Lokesh Bhattacharyya	US Pharmacopeia
Dr. Eric Bolda	National Institute of Standards and Technology
Dr. David Bonnell	National Institute of Standards and Technology (retired)
Dr. Christina Bradley	National Institutes of Health
Mr. Charlie Brannon	National Institute of Standards and Technology
Dr S. Lori Brown	Public Health Service
Dr. Pepper Buckley	Psychologist, Private Practice
Dr. Jay Buckley	JLB Associates, Ltd.
Dr. Stephen Bullock	National Institute of Standards and Technology
Professor James Carton	University of Maryland
Dr. Kishalaya Chakrabarti	US Department of Health and Human Services
Dr Pratip Chattopadhyay	Vaccine Research Cnter, National Institutes of Health
Dr Vivian Chen	
Dr. Wenpeng Chen	US Patent and Trademark Office
Dr Kevin Connolly	Human Genome Sciences
Dr. Hall Crannell	
Ms Terrie Crescenzi	
Dr. Nicholas Dagalakis	
Mr. George Daniello	
Ms Jennifer Davis	US Nuclear Regulatory Commission
Dr Laurent Deshayes	National Institute of Standards and Technology
Dr Ted Drzewiecki	Defense Research Technologies, Inc.
Mr. Walid Eltaraboulsi	
Dr. Jeffrey Kopp	
Ms. Joanne Emerson	The Institute for Genomic Research
Dr Bryan Fantie	American University (Psychology Department)
Dr. Chad Fertig	National Institute of Standards and Technology
Dr. Christine Foster	National Institutes of Health
Dr Malou Gemeniano	Food and Drug Administration
Dr. Dennis Glanzman	National Institutes of Health
Mr. Carter Glass	American Geophysical Union
Ms Gloria Gridley	National Cancer Institute
Dr. Joshua Grossman	National Institute of Standards & Technology
Mr. Douglas Gwyn	US Army Research Laboratory
Dr. Howard Harary	National Institute of Standards and Technology
Dr. Jonathan Hardis	National Institute of Standards and Technology
Dr. William Healy	National Institute of Standards and Technology
Dr. Shannon Hill	National Institute of Standards and Technology
Dr. J. Terrell Hoffeld	U.S. Public Health Service

2004 Category and Grand Awards Judges, continued

Dr Stephen Hoffman	Sanaria Inc.
Dr. Tsaii Hong	
Dr Adriana Hornikova	Natl. Inst. of Standards & Technology - foreign guest researcher
Mr. Walter Houser	Department of Veterans Affairs
Dr. Samuel Howerton	Natl. Inst. Stands & Tech.-Organic Analytical Methods Group
Dr. Jianzhong Huang	National Institute of Standards and Technology
Ms Kathleen Huddleston	Human Genome Sciences, Inc
Dr. Larry Hudson	National Institute of Standards and Technology
Prof. Eugenia Kalnay	University of Maryland, College Park
Dr. Daniel Kirk-Davidoff	University of Maryland
Mr. Saunders Kramer	
Dr. Krish Krishnan	National Institutes of Health
Mr. Kang Lee	National Institute of Standards and Technology
Dr. Lyle Levine	National Institute of Standards and Technology
Mr. George Liao	General Services Administration
Ms. Susan Linna	Human Genome Sciences, Inc.
Mr. Joshua Lubell	National Institute of Standards and Technology
Ms. Johnalyn Lyles	National Institute on Drug Abuse, National Institutes of Health
Dr. Gordon LYON	
Dr Sam Margolis	
Dr Gerald Marti	Food and Drug Administration
Mr. Stephen Mason	
Dr George Mattingly	National Institute of Standards and Technology
Dr. Susan McCune	Food and Drug Administration
Dr Ross Micheals	National Institute of Standards and Technology
Ms Diane Milenic	Radiation Oncology Branch, National Cancer Institute
Dr. Steve Miller	
Mr. Raymond Moore	Sindarin Technologies
Dr. Philip Murphy	
Dr Bjorn Mysen	
Dr Richard Nakamura	National Institute of Mental Health
Dr. Sumant Nigam	University of Maryland
Dr Nicolai Nygaard	
Dr. Joshua Pomeroy	National Institute of Standards and Technology
Dr. Margaret Pratt	National Cancer Institute/National Institutes of Health
Col. Walter Probka	
MS Anita Pustelnik	
Dr. Menon Radha	Food and Drug Administration
Mr. Bruce Ramsay	National Oceanic and Atmospheric Administration
Dr. John Randall	US Nuclear Regulatory Commission
Dr Larry Reeker	National Institute of Standards and Technology
Nancy Ronsvale	MCSW

2004 Category and Grand Awards Judges, continued

Dr Linda Silversmith	National Institutes of Health Clinical Center
Dr. Kim Lee Sim	Protein Potential LLC
Dr Michelle Snyder	National Institutes of Health (NIAID)
Dr Maria Souto-Carneiro	National Institutes of Health
Dr Bruce Strauss	U.S. Department of Energy
Dr Gary Temple, M.D.	
Mr. Roland Theodore	IBM Global Services
Mr. Robert Toense	National Institute of Standards and Technology
Mr. Stefan Trach	
Dr. Michael Twery	National Institutes of Health
Ms Marel Ver	National Institutes of Health
Dr. Michael Verkouteren	National Institute of Standards and Technology
Mr. Thomas Vetter	National Institute of Standards and Technology
Dr. John Villarrubia	National Institute of Standards and Technology
Dr Srikant Viswanadha	
Dr. Jianhua Xu	National Institutes of Health
Mr. Liang Yang	Harvard University
Dr. James Yen	National Institute of Standards and Technology
Ms. Naomi Yoo	
Prof. Ning Zeng	University of Maryland



Otsuka

The name "Otsuka" translates to "major milestone." Indeed, Otsuka's people—healthcare professionals, scientists, researchers, sales and marketing professionals, and others—have achieved many major milestones while maintaining a commitment to address unmet medical needs, improve health and enhance the quality of life worldwide.

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people creating new products for better health worldwide



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Participating Schools

SCHOOL	CODE
Benjamin Banneker Middle School	BAM
Bethesda-Chevy Chase High School	BCH
Cabin John Middle School	CJM
Charles E. Smith Jewish Day School	JDS
Col. E. Brooke Lee Middle School	LEM
Col. Zadok Magruder High School	MGH
Earl B. Wood Middle School	EWM
Eastern Middle School	EAM
Francis Scott Key Middle School	FKM
Gaithersburg High School	GBH
Gaithersburg Middle School	GBM
Hebrew Day Institute	HDI
Herbert Hoover Middle School	HHM
Holton-Arms School	HOA
M.L. King Jr. Middle School	KGM
Montgomery Blair High School	BLH
Montgomery Village Middle School	MVM
Muslim Community School	MCS
Neelsville Middle School	NLM
Newport Mill Middle School	NMM
North Bethesda Middle School	NBM
Quince Orchard High School	QOH
Redland Middle School	RLM
Robert Frost Middle School	RFM
Roberto Clemente Middle School	RCM
Rockville High School	RVH
Sherwood High School	SWH
Sligo Middle School	SLM
St. Catherine Laboure School	SCL
St. John's Episcopal School	SJE
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
Tilden Middle School	TLM
Walt Whitman High School	WWH
Watkins Mill High School	WMH
White Oak Middle School	WOM
William H. Farquhar Middle School	FQM
Winston Churchill High School	CHH

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Every year National Parks are visited by millions of Americans. And each time they take away something different.

What will you see?

I first saw

the Statue of Liberty

from the ship.

What s that?

a man asked.

My mother whispered

the answer.

"Home."



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Exhibits in the Junior Division, Grades 6-8

Project	Title of Project	Exhibitor's Name	School
Behavioral and Social Sciences			
JL101	Impact Of Training On The Development Of Motor Skills In Toddlers	Alina Bengert	TLM
JL102	Don't Forget The Details	Tegan Brennan	SSH
JL103	Tricky Tasting	Alyse Chirumbolo	HHM
JL104	Does Music Soothe The Savage Beast?	Chris Fantasia	NMM
JL106	Which Dog Treat Do Dogs Like Best?	Christine Hsu	GBM
JL107	Issues Influencing Intelligence	Jacob Hurwitz	RFM
JL108	Ink Blots	Brian Kincaid	HHM
JL109	People's Associations Between The Male And Female Sexes And The Concepts Of Science And Liberal Arts	Benjamin Moskowitz	TLM
JL110	Glow in the Dark?	Rachael Moss	SSH
JL111	How Depth Of Processing Affects Memory	Sara Moss	NBM
JL112	Psychological Reaction Difference Of Someone Interacting With A Disabled Person In A Sitting Wheelchair As Opposed To A Standing Wheelchair	Sarah Paleg	TPM
JL113	In The Blink Of An Eye Someone Can Reveal A Lot	Daniel Pouridas	NMM
JL114	Do Males Or Females Have Better Navigating Skills?	Rebecca Ricketts	GBM
JL115	Are Warning Labels In All Capital Letters Easier To Understand And Comprehend Than Labels In Ordinary Type?	Aaron Ruby	SLM
JL116	How Much Do Students Know About Geo-political Issues?	Tory Schreffler	EWM
JL117	The Revolution Of The Brain	Xin Shan	TPM
JL118	Mouse Maze: The Effect Of Light And Time Of Day	Madeleine Wright	NMM
Biochemistry			
JL201	What Dentists Go Through	Patrick Fernandes	FKM
JL202	Chocolate On The Brain	Thomas O'Brien	SLM
JL203	Does The Color Of Vegetables Affect Calcium Levels	Stephan Roessler	RLM
Botany			
JL301	If The Mass Of An Apple Increases, Does The Amount Of Seeds Also Increase?	Miriam Bachman	EWM
JL302	The Effects Of Different Components Of Soil And Sand On Plant Growth	Bessie Chan	TPM
JL303	Does The Color Of Light Affect Plant Growth?	Maura Ellsworth	FKM
JL304	Does The Amount Of Sand Affect The Growth Of Cat Grass?	Amy Ferro	EWM
JL305	How Microwaves Affect Peas	Cosmo Filas	NBM
JL306	Bouncing Light Rays	Mahima Govil	HOA
JL307	The Affect Of Microorganisms On Plants	Ansh Johri	TPM
JL308	Does The Type of Light Affect Plant Growth?	Pamela Katz	EWM
JL309	How Fast Will an Oak Leaf Absorb Water When the Environment Changes?	Lindsey Kaufmann	GBM
JL310	How Will Vitamins Affect Bluegrass?	Janice Lan	RCM
JL311	Growing Taller Against The Odds	Marco Mocchiatti	CJM
JL312	The Effect Of Variations On The Hydroponis Environment	Prapti Muhuri	FQM
JL313	How The Type Of Water And Soil Affects The Grass	Duy Nguyen	SCL
JL314	What Effect Do Different Household Chemicals Have On The Development Of Lima Bean Plants?	Jeffrey Rappaport	RLM
JL315	The Effect Of The Frequency Of Acid Rain On The Height Of Bean Plants Grown In Limestone Enriched Soil	Rachita Sood	TPM
JL316	The Effects Of Gibberellic Acid On The Pea Plant	Zaheer Valivullah	TPM
JL317	How Ferns Are "Maid" To Be Grow	Tony Wells	SLM

Project	Title of Project	Exhibitor's Name	School
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Chemistry

JP401	The Effects Of Soil pH Changes On Different Methods Of Testing Soil pH	Katherine Bertaut	TPM
JP402	Metal Corrosion	Robert Bishop	SCL
JP403	Getting Into Hot Water	Sarah Bolmer	CJM
JP404	Invisible Holes In Water	Brett Bowers	CJM
JP405	Cookies On The Run	Elizabeth Brown	HHM
JP406	The Acid Effect	Alec Burns	NMM
JP407	Does The Color Of Water Affect Its Evaporation?	Gabrielle Cantor	GBM
JP408	I'm All Burned Out: A Novel Method To Measure Volume	Amalia Cowan	JDS
JP409	Does The Temperature Of Water Affect The Time It Takes To Freeze?	Ivanna De La Rosa	GBM
JP410	How Does The Type Of Soapy Substance Affect How Long A Bubble Will Last?	Nneka Ekechukwu	GBM
JP411	Flammability Investigation	Steven Feldman	EWM
JP412	Comparative Corrosion Rates Of Metals By Hydrochloric Acid	Jonathan Gootenberg	TPM
JP413	Does pH Affect The Solubility Of Different Salts In Different Liquids?	Molly Grossman	TPM
JP414	Which Will Melt Faster, A Scented Candle Or An Unscented Candle?	Natasha Haddad	GBM
JP415	Liquid Fuels	Ari Klein	SLM
JP416	How Does the Amount of Salt in Water Affect the Corrosiveness of a Coin?	Kristin Leiter	EWM
JP417	What Melts Ice The Fastest?	Kevin Lewi	CJM
JP418	Detergent Dilemma	Taylor McCarthy	FQM
JP419	The Situation On Insulation	Caitlin Murphy	HHM
JP420	The Kinetics Of The Rust Removal By Ionquest-201 Solution	A. Sarada Rao	PYM
JP421	Vitamin C In Different Food Groups	Ryan Richman	FKM
JP422	Salt or Fresh -- Which H ₂ O Retains Heat Longer?	Zachary Roth	HDI
JP423	Candles!	Kathryn Schaus	NMM
JP424	Now You See It, Now You Don't: The Effectiveness Of Non-Commercial Stain Removers On A Variety Of Everyday Stains	William Shepherdson	TPM
JP425	Proving Faraday's Law Through The Electrochemical Plating Of Metals	Earl Smith	NBM
JP426	The Effect Of Different Solutions On Crystal Growth	Elizabeth So	TPM
JP427	When It Comes To Fruit Juices, "C" The Difference	Emily Wolf	HHM
JP428	With Starches, Fats, And Proteins Too, Which Detergent Is Best For You?	Lindsay Kubasik	HHM
JP429	Weather Wood Staining Products	Marcella McAlarnen	NMM

Computer Science

JP501	Analysis Of Various Sorting Algorithms	Jitu Das	TPM
JP502	What's Your Grade? - Is Text Compression A Valid Indicator of Grade Level?	Akimitsu Hogge	TPM
JP503	What Affects Computer Performance The Most: CPU, Memory Or Cache?	Arleen Thukral	MVM

Earth and Space Sciences

JP601	How A Refractor Telescope Works	Allison Arai	TPM
JP602	Catchy Crystals	Kimberly Burgess	BAM
JP603	Fossils ROCK	James Edward	HHM
JP604	Phosphorescent Minerals	Jessica McHale	NBM
JP605	Why Sky-Blue?	Mackenzie Miller	CJM



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portal



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IBM ThinkPad R50

Distinctive IBM Innovations:

- Access Connections – easiest wired and wireless connectivity
- NEW! Hard Drive Active Protection System – helps prevent some hard drive crashes when a fall is detected

System Features:

- Intel® Centrino™ mobile technology
 - Intel PRO/Wireless Network Connection 802.11b*
- Microsoft Windows XP Professional[†]
- UltraNav™ multipointing system
- 5.4-lb travel[‡] weight, 1.3" thin[†]

\$1,453* #18362NU

IBM ThinkPad T41

(not shown)

Distinctive IBM Innovations:

- Access Connections – easiest wired and wireless connectivity
- NEW! Hard Drive Active Protection System – helps prevent some hard drive crashes when a fall is detected

System Features:

- Intel Centrino mobile technology
 - Intel PRO/Wireless Network Connection 802.11b
- Microsoft Windows XP Professional
- UltraNav multipointing system
- 4.5-lb travel weight, 1" thin

\$1,615 #2378DHU

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Linksys EtherFast Wireless Access Point with 4-Port Router #22P7130 \$60

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Project	Title of Project	Exhibitor's Name	School
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Engineering

JP701	The Tensile Strength Of Spaghetti	Younna Ansari	BAM
JP702	Is A Reed Switch Electric Motor More Efficient With Four Magnets Or Two?	Benjamin Austin	EWM
JP703	Hull Resistance	Christopher Bodine	TPM
JP704	The Effect Of Blade Length On The Speed Of A Windmill	Deepa Chellappa	TPM
JP705	The Effects Of Different Amounts Of Satellites On The Efficiency And Accuracy Of A Global Positioning System (GPS)	Lyonel Dario	TPM
JP706	Pneumatic And Motor-driven End-effectors Applied To LEGO Mindstorms	Sanford Diehl	TPM
JP707	Batteries: What Really Keeps Going	Kavita Goyal	SSH
JP708	Medieval vs. Modern	Sharif Kronemer	FQM
JP709	Breaking Point: Will A Beam, Triangle, Arch, Or Double Truss Bridge Support The Most Weight?	Lauren Lee	KGM
JP710	Get The Hull Out Of The Water: Testing The Lift Of Different Hydrofoil Designs	Alexander Leishman	FQM
JP711	What Is The Effect Of The Dihedral Of The Wings On A Small Balsa Wood Plane On The Plane's Maximum Distance	Edwin Lillie	TLM
JP712	Picnic Perfect Plates	Amanda Lukas	BAM
JP713	The Effect Of Multiple Recharges On Different Brands Of Rechargeable Batteries	Stephanie Muncill	SLM
JP714	To What Extent Do Supports Help Buildings Maintain Their Structural Integrity During Earthquakes?	Peter Myers	TPM
JP715	Development Of An Algorithm For Toddler Robot To Detect The Edge /Boundary And Also Avoid Any Object	A. Yashodhara Rao	PYM
JP716	Effect Of Shape On The Drop Time Of An Object Using An AccuWatch	Sridar Ravi	NLM
JP717	To Hold Or Not To Hold, That Is The Question	Emily Reynolds	FKM
JP718	Robotic Transportation Man vs Machine	Robert Schwartz	TLM
JP719	Don't Get Wrapped Up In Which Wrap To Buy	Katie Susman	BAM
JP720	Does The Type Of Wood Determine How Strong It Is?	Philip Termini	SLM
JP721	Capillary Action	Meghana Vodela	BAM
JP722	The Effect Of A City's Road Design On Average Commute Distance	Albert Wang	TPM
JP723	Woods: All Washed Up?	Sophie Wereley	HHM
JP724	Paper Towels	Prathyusha Yanigandla	BAM

Environmental Sciences (Life)

JL801	The Big Bloom Theory	Chelsea Fechter	HHM
JL802	You Are What You Drink!!	Michael Feldstein	HHM
JL803	Ash Effects On Plant Growth From The Mt. St. Helens Volcanic Eruption	Rachel Hill	PYM
JL804	Acid Rain	Judy Lillibridge	NBM
JL805	Water Quality Improvement Techniques for the Chesapeake Bay Watershed	Helena Lubliner	NBM
JL806	The Effect Of Different Dilutions Of DEET On Bean Plants	Melissa Rice	TLM
JL807	The Effects Of Different Plants On The Removal Of Nutrients In Water	Christopher Silberholz	TPM
JL808	The Effect Of Electromagnetic Waves On The Growth Of Bean Plants	Boris Vassilev	TPM
JL809	Effects of Light Wattages on Plant Photosynthesis	Joel Wasserman	RCM

Environmental Sciences (Physical)

JP810	A Salt Substitute For Increasing Friction On Icy Roads	Dawn Brimmer	TPM
JP811	Radon In Your Bedroom? Testing The Effects Of House Level On Ambient Radioactivity	Sam Carton	TPM

**THERE COMES A POINT WHEN KIDS FORGET THEY'RE LEARNING.
THEIR IMAGINATIONS IGNITE. AND THAT MOMENT
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Project	Title of Project	Exhibitor's Name	School
JP812	Barometer Predicting The Weather	Dusan Djolevic	MVM
JP813	Do You Really Trust Your Drinking Water?	Taylor Douglas	SJE
JP814	What Should You Flush?	Joe Martin	FKM
JP815	Best Filter	Yiwen Shi	TPM

Gerontology

JL901	Does Age Affect The Sense Of Touch?	Claire Paulson	NMM
JL902	What Was On That Shopping List?	Jordan Rutter	NMM

Mathematics

JP1001	3D Cellular Automata	Molly Carton	HOA
JP1002	Site Percolation On A Square Lattice	Michael Cohen	TPM
JP1003	The Algebraic Structure Of Decimal Expansions As A Function Of Their Base	Jordan Hirsh	TPM
JP1004	Do Note Patterns Exist In The Works Of The Same Composer?	Stephen Hurley	TPM
JP1005	Snack Food Weight Accuracy?	Katherine Sharpe	BAM
JP1006	Does The Value Of Pi Match The Value Of That Said In History?	Prashanth Venkataram	CJM
JP1007	Study On The Accuracy Of Methods To Predict Stock And Option Volatility Using A Computer Program	Louis Wasserman	TPM
JP1008	Randomness Creates Deterministic Fractals: A Study Of The Chaos Game And Sierpinski Triangles	Christina Zou	TPM

Medicine and Health

JL1101	The Effects Of Antioxidants On Blood Pressure	Juliana Biro	CJM
JL1102	Lungs with Asthma	Kharlya Carpio	HHM
JL1103	The Effects Of Antibiotic Concentration On Antibiotic Resistance Of Bacteria	Priyanka Gokhale	TPM
JL1104	Effect of Tooth Care on Presence of Streptococcus Mutans in Saliva	Benjamin Hoffman	EAM
JL1105	Effects Of NSAIDs On Carcinoma And Endothelial Cells	Sneha Kannan	TPM
JL1106	The Medicinal Effects of Garlic	Austin Miller	TLM
JL1107	Acid Battles	Monica Tenjarla	RCM
JL1108	What's For Breakfast?	Seth Whitehead	MVM
JL1109	Which Brand Of Microwave Popcorn Pops The Best?	Conway Xu	TPM
JL1110	Biological Effects Of Green And Black Tea Extract On Human Cancer Cell Lines	Yang Yang	TPM

Microbiology

JL1201	The Effect Of Cadmium On Cell Growth	Amanda Chan	TPM
JL1202	Antibacterial Effects Of Some Common Substances	Rajarshi Chattopadhyay	TPM
JL1203	Bacteria For Breakfast	Sarah Gutkind	HHM
JL1204	Soapy Science	Daniel Kator	HHM
JL1205	Are Humans More Like Dogs Or Horses?	Sonya Lu	HHM
JL1206	Leavening Genetics: The Genetics Of Baker's Yeast	Adam Pelta-Pauls	TPM
JL1207	The Effect Of pH On <i>E. coli</i> Growth	Ethan Wang	TPM
JL1208	Engineering Bacteria To Resist Antibiotics	Qiyu Wang	TPM
JL1209	How Can The Amount Of Bacteria Found On Kitchen Dishcloths And Sponges Be Reduced?	Chatura Nagaradona	RLM
JL1210	The Effect Of Yogurt Fat Content On Bacterial Production	Abiola Lanionu	TPM

Physics

JP1301	Marble Chaos	Rachel Anderson	WOM
JP1302	Rain, Sleet, Shine or Snow; How Fast Can You Go?	Michael Boyland	HHM
JP1303	The Strength Of Basic Structures	Alex Comas	SLM

Project	Title of Project	Exhibitor's Name	School
JP1304	The Effects Of Color On Heat Absorption	Caitlin Connelly	EWM
JP1305	What Is The Effect Of Increasing Voltage And Increasing Resistance On The Amount Of Current Flowing Through The Wire?	Mahdi Dadfarnia	MCS
JP1306	The Effect of Temperature on Trumpets	Patrick Deem	PYM
JP1307	Which Substance-Lemon Juice Or Boiling Water- Can Unravel A Baseball Fastest In 15 Minutes?	Caitlyn Edwards	SLM
JP1308	Does The Type Of Surface Affect How A Toy Car Will Travel?	Robert Fowler	GBM
JP1309	Does The Angle Of A Ramp Affect How Far A Toy Car Will Fly?	Ross Francis	GBM
JP1310	Weight Weight Don't Tell ME	Ezra Gray	SLM
JP1311	What Type Of Ramp Makes A Car Fly The Farthest?	Bryan Heffner	GBM
JP1312	How Far Can An Airplane Go Using Three Different Materials	Aaron Henkell	FKM
JP1313	Will Changing The Environment Effect The Elasticity Of Rubber?	Josh Ingeholm	FKM
JP1314	Shrinking T-shirts	Brian Jacobs	BAM
JP1315	The Effects Of Water Density On Buoyancy Of Floating Objects	David Jia	TPM
JP1316	How Far Cars Travel?	Nathaniel Jolivet	EWM
JP1317	Sure Shots	Whitney Kendall	FQM
JP1318	Which Puck Travels Farthest? Black or Blue?	Caitlin Lackner	HOA
JP1319	What Do Leo Fender And Michael Faraday Have In Common?	Brian Lenardo	CJM
JP1320	Does A 3D Shape On A Flat Pine Wood Box Car Affect Its Speed?	Ryan Magusiak	GBM
JP1321	Is That Winter Jacket Really The Warmest?	Brockett McBride	SLM
JP1322	Backyard Ballistics	Ian McNally	NBM
JP1323	Study Of Thermal Conductivity Of Different Metals	Poorna Natarajan	TPM
JP1324	Which Will Have A Farther Average Throw, A Trebuchet Or A Catapult?	David Newsham	SLM
JP1325	Will The Number Of Washers Affect The Depth Of The Crater In The Sand?	Zachary Olivos	EWM
JP1326	How The Mass Of A Toy Car Affects Its Movement	Peter Petrovics	NBM
JP1327	The Cost Of Paper Towel Absorption	Julia Power	EWM
JP1328	The Refraction Of Light With Different Prisms	Katy Rebois	SLM
JP1329	Heat Convection	Udayan Sabharwal	RCM
JP1330	Does The Shape Of An Airplane Affect The Flight Distance?	Mark Salita	GBM
JP1331	How The Aspect Ratio Of A Plane Wing Effects How Far The Plane Flies	Nate Schrier	SLM
JP1332	The Relative Drag Coefficient Of Parachutes	Rose Schweinhart	EWM
JP1333	At What Angle Will a Ramp Launch a Toy Car the Farthest Away?	Matt Tran	GBM
JP1334	How Fast Does A Ball Roll Down With Different Types Of Surfaces	Grecia Vidaurre	FKM
JP1335	The Effect Of Magnets On Removable Storage Devices	Ryan Waldman	TPM
JP1336	The Effect Of Color On Temperature	Nicholas Wells	FKM
JP1337	Weight vs. Speed And Distance Of A Toy Car	Yi (Amy) Xiao	TPM

Zoology

JL1401	How Are Night Crawlers Affected By Heat?	Lauren Burgess	GBM
JL1402	17-Year Cicadas	Erica Federhen	TLM
JL1403	Are Birds Attracted To Color?	Hannah Moore	SLM

Team Projects (Life)

JL1501	Anticoagulant Properties Of Herbs In Prevention Of Heart Disease	Deepanjali Jain	TPM
JL1501	Anticoagulant Properties Of Herbs In Prevention Of Heart Disease	Elaine Levey	TPM
JL1502	Are Plants Affected by Different Colored Sunlight?	Kelly Holleran	GBM
JL1502	Are Plants Affected By Different Colored Sunlight?	Dreka Williams	GBM
JL1503	Bye Bye Bacteria!	Sandra Stibitz	TPM
JL1503	Bye-Bye Bacteria!	Kriti Paul-Gera	TPM
JL1503	Bye Bye, Bacteria!	Abby Klein	TPM

Human Genome Sciences
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Human Genome Sciences

Project	Title of Project	Exhibitor's Name	School
JL1504	Cancer Detection with DNA Mutations	Ramita Dewan	TPM
JL1504	Cancer Detection with DNA Mutations	Sally Huang	TPM
JL1505	Do Adult Women Blink More than Adult Men?	Amanda Chacon	GBM
JL1505	Do Adult Women Blink More than Adult Men?	Allison Humphress	GBM
JL1506	Do Cut Flowers Live Longer In Salt Water, Regular Water, Or Club Soda?	Olivia Winant	GBM
JL1506	Do Cut Flowers Live Longer In Salt Water, Regular Water, Or Club Soda?	Mary Krauss	GBM
JL1507	Effect Of Text Spacing On Reading Comprehension	Julie Zhu	TPM
JL1507	Effect Of Text Spacing On Reading Comprehension	Poorva Singal	TPM
JL1508	Effects Of Antibiotics On <i>E. Coli</i> Bacteria	Anshul Sood	TPM
JL1508	Effects Of Antibiotics On <i>E. coli</i> Bacteria	Kevin Chai	TPM
JL1509	Glowing Bacteria	Eric Alexander	EWM
JL1509	Glowing Bacteria	Eric Sachs	EWM
JL1510	How Do The Genres Of Books You Read Affect Your Personality?	Purnima Balakrishnan	TPM
JL1510	How Do The Genres Of Books You Read Affect Your Personality?	Miriam Hauser	TPM
JL1511	How Does The Type/Tempo Of Music Played Affect How Fast Mice Run?	Kristin Nordstrom	GBM
JL1511	How Does The Type/Tempo Of Music Played Affect How Fast Mice Run?	Marissa Galfond	GBM
JL1512	Insulin Attacks!	Stephanie Bastek	TPM
JL1512	Insulin Attacks!	Talia Prussin	TPM
JL1513	Memory Madness	Caroline Kern	FQM
JL1513	Memory Madness	Lauren Henratty	FQM
JL1514	pH And Its Effect On Plant Growth	Varsha Kishore	CJM
JL1514	pH And Its Effect On Plant Growth	Joanna Cornell	CJM
JL1515	Pivoting Poultry	Holly Wiencek	GBM
JL1515	Pivoting Poultry	Julia Furey	GBM
JL1516	Right Brain vs. Left Brain	Grace Gnall	EWM
JL1516	Right Brain vs. Left Brain	Katey Webber	EWM
JL1517	Silence- Is It Really Golden? Inside The Investigation Of Gender Differences In Distracting Situations	Solena Laigle	TPM
JL1517	Silence- Is It Really Golden? Inside The Investigation Of Gender Differences In Distracting Situations	Shelby Smith	TPM
JL1518	Statistical Manipulation: Does A Person's Familiarity With The Name Of A Substance Affect His/Her Opinion Of That Substance?	John (Jack) Hatchett	TPM
JL1518	Statistical Manipulation: Does A Person's Familiarity With The Name Of A Substance Affect His/Her Opinion Of That Substance?	Will Bucher	TPM
JL1519	The Effect Of Different Antibiotics On Streptococci Bacteria	Laura Mirviss	TPM
JL1519	The Effect Of Different Antibiotics On Streptococci Bacteria	Jasleen Salwan	TPM
JL1520	The Effect Of Gestation On The Reflexes Of Pregnant Women	Caleb Fan	TPM
JL1520	The Effect Of Gestation On The Reflexes Of Pregnant Women	Michael Hsu	TPM
JL1521	The Effect Of Recycled Water On Grass Growth	Kathryn Rother	TPM
JL1521	The Effect Of Recycled Water On Grass Growth	Zuri Sullivan	TPM
JL1522	The Effect Of Text Color On Memory Retention	Molly Reed	TPM
JL1522	The Effect Of Text Color On Memory Retention	Pia Nargundkar	TPM
JL1523	The Influence Of Television On A Person's Vision And Color Perception	Jikwang Kim	TPM
JL1523	The Influence Of Television On A Person's Vision And Color Perception	Brian Chang	TPM
JL1524	Two Shades Lighter	Maryam Badakhsh	MCS
JL1524	Two Shades Lighter	Shima Gholamimhrabadi	MCS
JL1525	What Effects Do Drinks Have On Memory?	Melinda Paul	GBM
JL1525	What Effects Do Drinks Have On Memory?	Nora Belblidia	GBM

Project	Title of Project	Exhibitor's Name	School
JL1526	What Whitens Teeth Best?	Jessica Chen	TPM
JL1526	What Whitens Teeth Best?	Arlene Gao	TPM
JL1527	Which Color of Light Affects Plant Growth The Most?	Italia Tran	GBM
JL1527	Which Color Of Light Affects Plant Growth The Most?	Kyle Bridgett	GBM
JL1528	Whlch One of the Chewing Gum Brands Holds Its Flavor Intensity the Best?	Elizabeth Roberts	GBM
JL1528	Which One of the Chewing Gum Brands Holds Its Flavor Intensity the Best?	Emmeline Hoang	GBM
JL1529	Will A Plant Grow Taller With Different Amounts Of pH?	Dana Galuska	GBM
JL1529	Will A Plant Grow Taller With Different Amounts Of pH?	Elizabeth Zimmerman	GBM
JL1530	What Characterisitics Affect Super-Tasters?	Walker Hatchett	TPM
JL1530	What Characteristics Affect Super-Tasters?	Vijay Baharani	TPM
JL1531	Why Pokemon?	Bryan Huang	TPM
JL1531	Why Pokemon?	Eric Kuang	TPM

Team Projects (Physical)

JP1532	Bridges Breaking?	Jessie Gutierrez	SCL
JP1532	Bridges Breaking?	Marybeth Butler	SCL
JP1533	Do Scented Candles Burn Longer Than Unscented Candles?	Ashley Engel	GBM
JP1533	Do Scented Candles Burn Longer Than Unscented Candles?	Morgan Quinn	GBM
JP1534	Do Some Waterballoons Break Faster Than Others When Thrown?	Amy Luong	GBM
JP1534	Do Some Water Balloons Break Faster Than Others When Thrown?	Tabitha Asante	GBM
JP1535	Does The Amount Of Salt Affect Buoyancy In Water?	Emily Sillcox	GBM
JP1535	Does The Amount Of Salt Affect Buoyancy In Water?	Brianna Lasslett	GBM
JP1536	Does The Amount Of Salt Affect The Rate That Ice Melts?	Charles Oboh	GBM
JP1536	Does The Amount Of Salt Affect The Rate Ice Melts?	Haibo Cheng	GBM
JP1537	Does The Amount Of Weight Added To A Model Rocket Affect Flight Time?	Michael Kang	GBM
JP1537	Does The Amount Of Weight Added To A Model Rocket Affect Flight Time?	Kevin Helsel	GBM
JP1538	Hovercraft	Lucas Murphey	FQM
JP1538	Hovercraft	Vincient Ho	FQM
JP1538	Hovercraft	Jonathan Chan	FQM
JP1539	How Do Diaper Ingredients Affect The Amount Of Water They Can Hold?	Mary Sigler	GBM
JP1539	How Do Diaper Ingredients Affect The Amount of Water They Can Hold?	Charlotte Chaze	GBM
JP1540	How Do Ingredients In A Drink Affect Freezing Time?	Christopher Smith	GBM
JP1540	How Do Ingredients In A Drink Affect Freezing Time?	Tim Cullen	GBH
JP1541	How Does Popcorn Brand Affect Amount Of Kernels Popped?	Rebecca Prasher	GBM
JP1541	How Does Popcorn Brand Affect Amount Of Kernels Popped?	Meghan Milstead	GBM
JP1542	How Fast Do Different Brands Of Jeans Burn?	Steve Chu	GBM
JP1542	How Fast Do Different Brands Of Jeans Burn?	Amrith Wadhera	GBM
JP1542	How Fast Do Different Brands Of Jeans Burn?	Michael Clay	GBM
JP1543	How Friction Is Affected By Different Lubricants	Daniel Vierra	HHM
JP1543	How Friction Is Affected By Different Lubricants	Jack Slattery	GBM
JP1544	Let's Burn Things	Mario Finelli	PYM
JP1544	Let's Burn Things	alex Edelman	PYM
JP1545	Mental Acuity Of Students At Different Times Of The Day	Jeremy Gradwohl	TPM
JP1545	Mental Acuity Of Students at Different Times of the Day	Benjamin Jonas	TPM
JP1545	Mental Acuity Of Students At Different Times Of The Day	Andrew Hyder	TPM
JP1546	Old Fashioned Fire Extinguisher	Beena Patel	LEM
JP1546	Old Fashioned Fire Extinguisher	Theresa Price	LEM
JP1546	Old Fashioned Fire Exstinguisher	Caitlin O'Donnell	LEM

Project	Title of Project	Exhibitor's Name	School
JP1547	Shocking Foods	Julie Radomski	TPM
JP1547	Shocking Foods	Peggy Houn	TPM
JP1548	Soundproofing	Girish Sankar	TPM
JP1548	Soundproofing	Evan Curdts	TPM
JP1549	The Effects Of Different Suits On Swimming	Henry Crocker	NMM
JP1550	The Perfect Degree Of Tilt To Launch A Small Sibling Into Deep Space	David Neudorfer	PYM
JP1550	The Perfect Degree of Tilt to Launch a Small Sibling into Deep Space	Peter Boucher	PYM
JP1551	The Proportional Area Of A Spectrum To A Prism And Effects On Spectrum Detail After Reflection Upon Mirror(s)	Jeongsoo Yoon	TPM
JP1551	The Proportional Area Of A Spectrum To A Prism And The Effects On Spectrum Detail After Reflection Upon Mirror(s)	Frank Wen	TPM
JP1552	The Search For The Perfect Polish	Sydney Liss	JDS
JP1552	The Search For The Perfect Polish	Samantha Trenk	JDS
JP1552	The Search For The Perfect Polish	Gabrielle Cohen	JDS
JP1553	Water Quality	Devin Zhang	TPM
JP1553	Water Quality	Jeechee Chen	TPM
JP1554	What Type of Liquid Would Make A Water Balloon Break Faster?	Sara Ehrlich	GBM
JP1554	What Type of Liquid Would Make A Water Balloon Break Fastest?	Amanda Berger	GBM
JP1555	Which Bunny Runs The Longest? The Life Of A Battery	Keith Stakes	NBM
JP1555	Which Bunny Runs The Longest? The Life Of A Battery	Sean Breen	NBM
JP1556	Which Material Burns Faster?	Linh Nguyen	GBM
JP1556	Which Material Burns Faster?	Andrew Mayn	GBM
JP1557	Wood Burning And Pollution	Jason Sekiguchi	EWM
JP1557	Wood Burning And Pollution	Joshua Lerner	EWM
JP1558	Gas Expansion	Patrick Phillips	SCL
JP1558	Gas Expansion	Sam Rainard	SCL

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The Montgomery Area Science Fair Association is the organizational vehicle for the annual ScienceMONTGOMERY, science fair for public parochial and private schools students in the Montgomery County, MD, area. The Association sponsors and produces the Fair.

The goals of the Association are to:

- Encourage students to explore science through experimentation using the scientific method, including writing of scientific papers and abstracts.
- Provide opportunities for students to present the results of their scientific experimentation.
- Provide opportunities for the senior level Grand Award Winners to enter their projects in the Intel International Science and Engineering Fair.
- Raise funds from community sponsors to support the Fair

Community sponsoring organizations supply 90% of the funds needed to run the Fair. Entry fees and MASFA fair association memberships provide the remaining 10%. It costs about \$100 per student to support their participation in the Fair. We ask you to support the students of the Montgomery County area by joining the Association and becoming involved with the annual fair.

Please complete the membership form below and return it to the membership person at the desk, or mail to the address below. Your help will be greatly appreciated.

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11516 Dahlia Terrace
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Exhibits in the Senior Division, Grades 9-12

Project	Title of Project	Exhibitor's Name	School
Behavioral and Social Sciences			
SL101	3D Optical Illusions How And Why We See Them	Natalija Djolevic	WMH
SL102	Cross-Country Empirical Analysis Of The Scarcity Of Long-Term Credit In Developing Countries And The Factors Affecting Countries' Access To Such Credit	Han Hu	BLH
SL103	Subliminal Messages: The First Method In Advertising	Stacie Kriese	SWH
SL104	A Comparison Of Body Image In Female Varsity Athletes Participating In Aesthetic And Non-Aesthetic Sports	Leah Marks	WOH
SL106	Back Off!	Chinwendu Opara	SWH
SL107	The Effect Of Physical Activity On The Intelligence Of Mice	Hyo Song	MGH
SL108	The Effects Of Economic Globalization On Income Inequality In Post-Mao China	Gordon Su	BLH
SL109	Can Caffeine Make Teenagers Perform Better In School?	Christianne Thomas	WMH
Biochemistry			
SL201	Changes In The Hardness of Bone And Dentin After Storage At Refrigerated And Freezing Temperatures	Debbie Cheng	BLH
SL202	Novel Algorithms For Surface Plasmon Resonance Data Processing In A Parallel Multitask Environment	Lauren Cohen	BLH
SL203	GH Time Course	Devang Sharma	MGH
Botany			
SL301	Too Much Of A Good Thing Is Not Always Wonderful: Nitrogen Fertilizers And Plant Growth	Dara Scher	BCH
Chemistry			
SP401	A Novel Prebiotic Route to Pyrimidine Synthesis: A Hydrothermal Threshold to the RNA World	Elena Chung	BLH
SP402	The Effect Of Water On The Development Of Pinhole Leaks In Pipes	Mark Glucksman-Glaser	MGH
SP403	Disappearing Vitamin C?	Arti Khanna	WMH
Computer Science			
SP501	Metal and Water Vs. Heat	Brian Cockerham	QOH
SP502	Performance Evaluation of Color Based Road Detection Using Neural Networks and Support Vector Machines	Patrick Conrad	BLH
SP503	The Effect of the Weather on the Number of Points Scored per Period in An NFL Football Game.	Harry Rosenbaum	MGH
SP504	Prevention of Resource Overload in Distributed Networking Systems Through Self-Adaptive Algorithms	Ceryen Tan	BLH
Earth and Space Sciences			
SP601	The Relationship Between Geomagnetic Disturbance And Magnetospheric Conditions	Aditi Bhaskar	BLH
SP602	Binary, Double, Or Variable, Which One Is It?	Micah Chock	MGH
SP603	Oahu To Kodiak: Observations On Phosphorus In The North Pacific	Nicholas Jachowski	WOH
SP604	Element Partitioning Between Olivine And Silicate Melt At 1400-1450 °C	Jessica Shang	BLH
SP605	Water Indicators In Sirenum Terra And Around The Argyre Impact Basin, Mars	Joshua Stern	BLH

Project	Title of Project	Exhibitor's Name	School
Engineering			
SP701	Microfluidic Device for Rapid Isolation of Pure Leukocyte Populations	Melis Anahtar	BLH
SP702	The Effect Of Force And Mass On The Firing Range Of The Trebuchet	Jonathon Sally	MGH
SP703	Floating On Air: The Effects Of Weight On A Hovercraft	Constantine Simantiras	QOH
Environmental Sciences (Life)			
SL801	To Determine Which Automobile Anti-freeze Is Most Biologically Safe	Aneesa Azizi	MCS
SL802	Discovering Ecological Impairments In Seneca Creek Through A Systematic Study Of Habitat, Biology And Chemistry.	Kristin Foringer	QOH
Environmental Sciences (Physical)			
SP803	The Effect Of Rainfall On Suspended Sediments In Streams	Rebecca Erbe	MGH
SP804	Effects of Restoration of Geomorphic Complexity on Benthic Organic Matter in Urban Streams	Rebecca Pass	BLH
Medicine and Health			
SL1101	Mustard Gas Injury In Epithelial Tissues: Application Of Protease Inhibitors And Structural Proteins	Joanna Chin	BLH
SL1102	p53 Splice Variants In Human And Mouse	Urania Dagalakis	CHH
SL1103	The Role Of Genistein And Daidzein In Preventing The Reduction Of Body Weight In Irradiated Mice	Joseph Kramer	BLH
SL1104	Differential Effect Of Val-158-Met Single Nucleotide Polymorphism On Catechol-O-Methyltransferase Activity In Male And Female Subjects	Yeelan Ku	BLH
SL1105	Development Of A Multi-site Malaria Vaccine-Exploration Of The Cleavage Site On MSP142 And The Effects Of P115MSP138 On Erythrocyte Binding In The Blood Stage Of The Parasite P. Falciparum	Rishi Kumar	WWH
SL1106	Using Immunocytochemistry To Study The Effect Of Estrogen On Amyloid Protein In Brain Cells	John McManigle	BLH
SL1107	Dancers' Stretching And Flexibility	Christine Minardi	SWH
SL1108	Distribution Of Aspartoacylase In Specific Myelin-Synthesizing Cells: Implications For Myelin Disorders	Sreela Namboodiri	BLH
SL1109	Saccharification By Salivary Amylase	Courtney Nelson	SWH
SL1110	What Is The Difference In Gene Expression Profiles Of Malignant Brain Tumor And A Normal Brain By Micro Array Analysis?	Radhika Puri	CHH
SL1111	The Effects Of Acids On Bones	Leah Scanlan	QOH
SL1112	Apoptosis: A Cause For The Generation Of Reactive Oxygen Species	Sonia Sekhar	WMH
Microbiology			
SL1201	Protein Synthesis Inhibitors In <i>Akt</i> -tion!	Tessa Carducci	WOH
SL1202	Construction of <i>Anti-PA Fab</i> Fragment Antibody	Lauren Efird	SWH
SL1203	Designing A SARS Coronavirus Main Protease Inhibitor	James Gao	BLH
SL1204	Disinfectants Vs. <i>E. coli</i>	Shilpa Kurapati	SWH
SL1205	Signatures Of Natural Selection In Human Genes	Charlene Ng	BLH
SL1206	Development of a Siderophore-based Optical Array Biosensor for Detection of Pathogenic Bacteria	Xinlei Wang	BLH
SL1207	Identification Of New Targets for HIV-1 Antivirals Using A Model Retrovirus In Yeast	Kenneth Yan	BLH
Physics			
SP1302	Pressure-Induced Phonon Frequency Shifts In Transition-Metal Nitrides	Simon Kung	CHH
SP1303	Modelling A Synchrotron-Source Based Varied Line Space Grating Monochromator With SHADOW v2.3.3	Kaitian Liu	BLH

Project	Title of Project	Exhibitor's Name	School
SP1304	How Hair Treatments Affect The Elasticity And Strength Of Hair	Siyuan Wang	WOH

Zoology

SL1401	3D Structural Physiology Of Immune Synapses As Determined By Electron Tomography And Computational Image Analysis	David Germain	CHH
SL1402	The Effect Of Overcrowding On <i>Tenebrio</i> Reproduction And Morphogenesis	Carlton Klein	BCH
SL1403	Effect Of Nitrate Levels On The Growth And Development Of Young And Old <i>Xenopus</i> Tadpoles	Andrew McCarron	BCH
SL1404	Types Of Music Effecting The Ability And Movement Of A Hamster In A Maze	Christina Stradone	MGH
SL1405	The Short-term Effects Of UVB Rays on Red Eared Sliders	Jacinda Zhong	MGH

Team Projects (Life)

SL1501	Do You Have the Heart To Hold'em?	Mark Avera	SWH
SL1501	Do You Have the Heart To Hold'em?	Brian Crawford	SWH
SL1502	Just An Innocent Bystander?	Michele Callahan	SWH
SL1502	Just An Innocent Bystander?	Catherine Benson	SWH
SL1503	The Effects Of Habitat Destruction On Squirrel Behavior	Laura Swartz	BCH
SL1503	The Effects Of Habitat Destruction On Squirrel Behavior	Eniko Horvath	BCH
SL1504	The Effects Of Nitrate On Zebrafish Growth	Matthew Mirsky	BCH
SL1504	The Effects Of Nitrate On Zebrafish Growth	Ann Norton	BCH
SL1505	The Growth of Cat Nibbles	Jennifer Kapetanovic	RVH
SL1505	The Growth of Cat Nibbles	Amanda Ferro	RVH
SL1506	Reaction Time in Teenagers	Julia Burton	BCH
SL1506	Reaction Time in Teenagers	Julia Heynen	BCH
SL1506	Reaction Time in Teenagers	Jessica Lennon	BCH

Team Projects (Physical)

SP1507	Force And Wheelchairs	Nathaniel Stokoe	BCH
SP1507	Force And Wheelchairs	Alex Ruda	BCH
SP1507	Force And Wheelchairs	David Horn	BCH
SP1508	How Impulse And Materials Affect Armpad Protection	Stephen McInerney	BCH
SP1508	How Impulse And Materials Affect Armpad Protection	Peter McCarron	BCH
SP1508	How Impulse And Materials Affect Armpad Protection	Benjamin Schneider	BCH
SP1509	Magnetohydrodynamics: Generating An Electrical Current By Electromagnetic Induction Of A Saline Solution	Joshua Martin	WWH
SP1509	Magnetohydrodynamics: Generating An Electrical Current By Electromagnetic Induction Of A Saline Solution	David Martin	WWH
SP1510	Preventing Hearing Damage By Limiting Sound Output	Renee Park	BLH
SP1510	Preventing Hearing Damage By Limiting Sound Output	Greg Eden	BLH
SP1510	Preventing Hearing Damage By Limiting Sound Output	Jansen Sheng	BLH
SP1511	Programming A Model Rocket Flight Simulator	Joshua Klontz	BCH
SP1511	Programming A Model Rocket Flight Simulator	Brian Go	BCH
SP1512	Relation Between Impact And Volume Change Of An Air Bag	Jeffrey Taylor	BCH
SP1512	Relation Between Impact And Volume Change Of An Airbag	Asaf Korkut	BCH
SP1512	Relation Between Impact And Volume Change Of An AirBag	Mark Stewart	BCH
SP1513	Viscosity Related To Medicine Dosage	Britta Glennon	BCH
SP1513	Viscosity Related To Medicine Dosage	Lauren Robinson	BCH
SP1513	Viscosity Related To Medicine Dosage	Jennifer Slesinger	BCH
SP1514	What Can Your Detergent Do?	Sivacharan Gaddam	WMH
SP1514	What Can Your Detergent Do?	Saketram Komanduri	WMH

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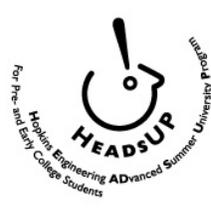
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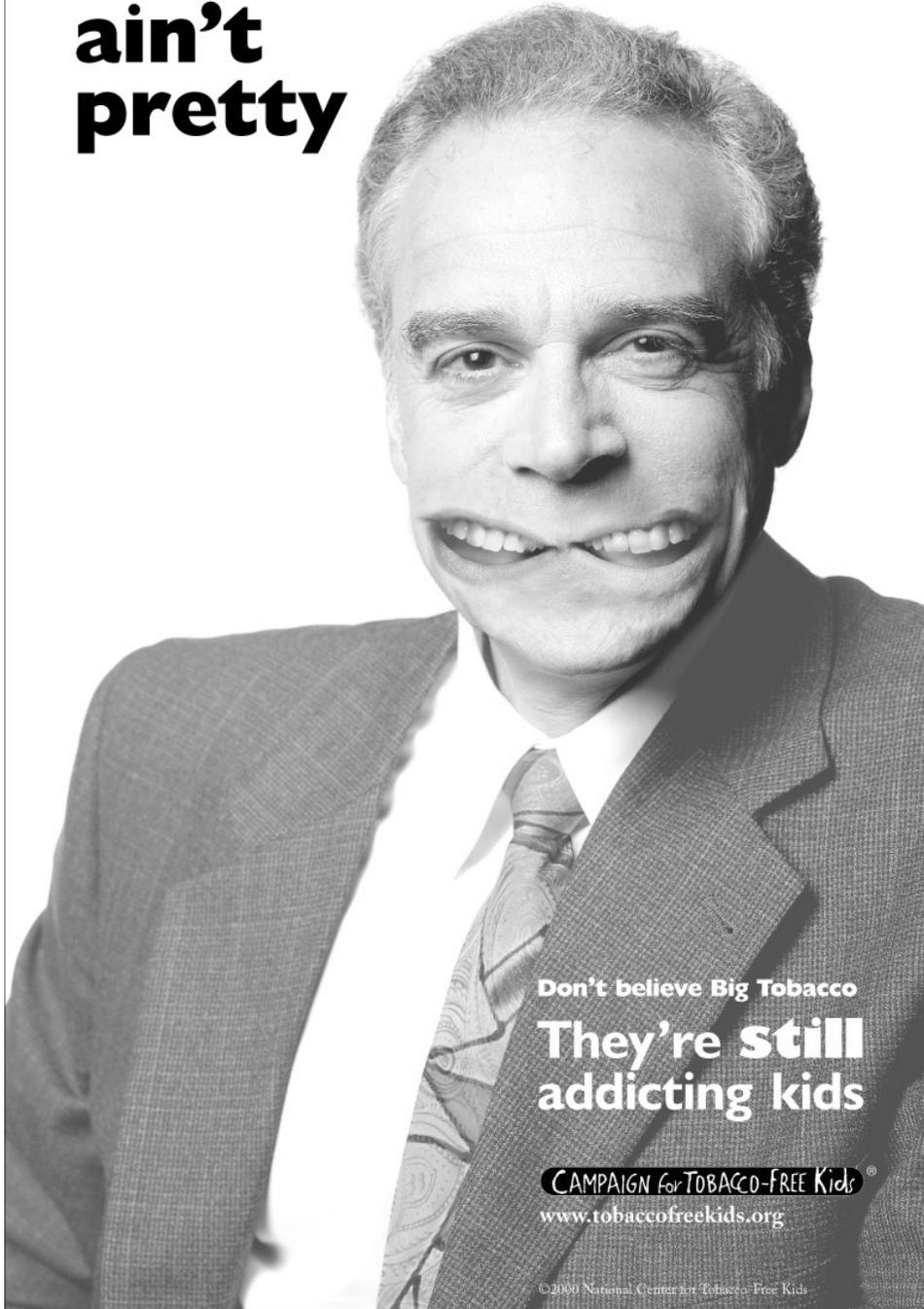
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