## 2009 SCIENCE FAIR PROGAM BOOK



**59th Annual Chicago Public Schools Student Science Fair** 

# SHAPING OUR FULURE Through Science and Mathematics



Museum of Science and Industry | March 24 – March 29, 2009 **S**ponsored by:





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# 2009 Science Fair Program Book

59th Annual Chicago Public Schools Student Science Fair

Shaping Our Future
Through Science and Mathematics

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CPS Student Science Fair, Inc.
Office of Mathematics and Science
Office of the Chief Executive Officer
Office of the Chief Education Officer

**Museum of Science and Industry** 

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# **Table of Contents**

Schedule of Events	4
Proclamation from the Mayor of the City of Chicago	5
2008 Opening Ceremony	6
About the Chicago Public Schools Student Science Fair (SSF)	7
Greetings from the SSF President of the Board of Directors	8
Greetings from BP America Inc., Corporate Sponsor	9
Greetings from ComEd, An Exelon Company, Corporate Sponsor	10
Greetings from Motorola, Inc., Corporate Sponsor	11
Greetings from the Museum of Science and Industry President and CEO	12
Greetings from the Chicago Public Schools (CPS) Chief Executive Officer	13
Greetings from the Chicago Public Schools (CPS) Chief Education Officer	14
Greetings from the CPS Office of Mathematics and Science Director	15
Greetings from the CPS Office of High Schools and HS Programs Chief Officer	16
Greetings from the CPS Office of HS Teaching and Learning Officer	17
Greetings from the SSF Chairperson	18
Greetings from the SSF Executive Director	19
Corporate Sponsors	20
Contributors	21
Symposium and Essay Contests	23
Symposium Schedule	24
Symposium Luncheon	26
Exhibit Information	27
Exhibit Judging Schedule	28
Exhibits by Category	29
Exhibit floor plan	38
Sixth-Grade Area Winners Recognition Luncheon Schedule	44
Sixth-Grade Area Winners	45
Awards Convocation	46
Special Awards	47
Special Programs	55
2008 Scholarship Winners	
Number of Scholarships Awarded to Date	58
ComEd High School Science Club Program	59
Peoples Gas Science Club Program	60
Science Fair Volunteers	61
Exhibit Judges	64
Symposium Readers and Judges	69
Memorial Tribute for Allen Nelson	70
Administrative Officers/Operating Committees	71
Area Science Fair Committees	75
Science Fair Teacher-Sponsors	83
Acknowledgments	88



## **Schedule of Events**

#### Thursday, March 26, 2009 - Symposium - details on page 23

9:30 A.M. – 11:30 A.M.	Symposium Morning Sessions (Balcony Classrooms)	
11:30 A.M. – 12:45 P.M.	Symposium Luncheon (Columbian Room)- by invitation only	
1:00 P.M. – 3:30 P.M.	Symposium Afternoon Sessions (Balcony Classrooms)	

#### Friday, March 27, 2009 - Exhibit Judging - details on page 27

7:30 A.M. – 8:30 A.M.	Judges Briefing and Breakfast (Auditorium)
8:30 A.M. – 12:00 NOON	Judging of Exhibits (West Pavilion)
11:00 A.M. – 11:30 A.M.	Opening Ceremony (West Pavilion Main Entrance)
11:30 A.M. – 12:00 P.M.	Ribbon Cutting and Exhibit Tour (West Pavilion)
11:30 A.M. – 1:30 P.M.	Judges Buffet Luncheon (Great Train Story)
12:00 NOON – 1:00 P.M.	Recognition Luncheon (Columbian Room) - by invitation only
12:00 NOON – 1:00 P.M.	Judging Continues (West Pavilion)
1:00 P.M. – 3:15 P.M.	Science Fair Open to the Public (West Pavilion)

#### Saturday, March 28, 2009 – Public viewing and additional events

9:00 A.M. – 11:30 A.M.	Sixth-Grade Area Winners Tour of the Museum
9:30 A.M. – 3:15 P.M.	Science Fair Open to the Public (West Pavilion)
9:30 A.M. – 3:00 P.M.	International Science and Engineering Fair Judging (Auditorium)
11:45 A.M. – 1:00 P.M.	Sixth-Grade Area Winners Luncheon (Columbian Room) – p. 44
2:00 P.M 2:30 P.M.	Bangs, Flashes and Fire Chemistry Show (Auditorium)
2:00 P.M. – 3:00 P.M.	Science Club Social (Columbian Room) – by invitation only

#### Sunday, March 29, 2009 - Awards Convocation - details on page 46

11:00 A.M. – 12:00 NOON	Science Fair Open to the Public (West Pavilion)
1:00 P.M. – 3:00 P.M.	Awards Convocation (Auditorium) - by ticket only





# Proclamation from the Mayor of the City of Chicago



OFFICE OF THE MAYOR

RICHARD M. DALEY

#### PROCLAMATION

WHEREAS, from March 24 through March 29, 2009, the Chicago Public Schools, in association with the Museum of Science and Industry, will host the 59<sup>th</sup> Annual Citywide Chicago Public Schools Student Science Fair; and

WHEREAS, the 2009 Student Science Fair follows the theme Shaping Our Future Through Science and Mathematics; and

WHEREAS, approximately 350 students from a total of 10,000 participants at the local school and area levels will be selected to exhibit their projects and symposium papers at the Museum of Science and Industry; and

WHEREAS, 70 of those students will be sent to the Illinois Junior State Science Fair at the University of Illinois at Urbana-Champaign, and four will be sent to the International Science and Engineering Fair in Reno, Nevada; and

WHEREAS, students will compete in sixteen categories, including aerospace science, behavioral science, biochemistry, botany, chemistry, computer programming, earth science, electronics, engineering science, environmental science, health science, materials science, mathematics, microbiology, physics, and zoology:

NOW, THEREFORE, I, RICHARD M. DALEY, MAYOR OF THE CITY OF CHICAGO, do hereby proclaim March 24 to 29, 2009, to be CHICAGO PUBLIC SCHOOLS STUDENT SCIENCE FAIR DAYS IN CHICAGO, in recognition of the exceptional talents displayed by these students and in appreciation of the teacher sponsors and parents who have provided support and encouragement of these young scientists.

Dated this 27th day of January, 2009.

5



## **Opening Ceremony**

On Friday March 28th the 58th Annual Chicago Public Schools Student Science Fair opened with corporate and CPS sponsors' greetings, accolades and words of encouragement for the student scientists at this year's fair.



CPS Chief Executive Officer, Arne Duncan congratulates and encourages science fair participants.



David Mosena, CEO and President of the Museum of Science and Industry, welcomes students, judges, teachers and parents to the 58th CPS Student Science Fair.



Ribbon cutting: - (left to right): Catherine Zimmerman, Hortense Brice, Fidel Marquez, Arne Duncan and David Mosena



BP's Catherine Zimmerman extends congratulations to the student participants, symposium participants and to their parents and teachers.



ComEd's Fidel Marquez congratulates HS science club members at the City Science Fair and relates his experience as a former science fair participant



Opening Ceremony onlookers include former CPS Science Manager Melanie Wojtulewicz (lower left) and Alderman Toni Preckwinkle (to her left)



# **About the Chicago Public Schools Student Science Fair (SSF)**

#### **About the Fair**

We are proud to present the 59th Annual Chicago Public Schools (CPS) Student Science Fair. The fair originated in 1950 as a vehicle to encourage and motivate young science students. Since then, a volunteer army of teachers and administrators has sustained this exemplary program. The objectives of the CPS Student Science Fair are to:

- provide opportunities and support for students to conduct authentic research
- expose students to diverse science learning communities
- obtain scholarships for selected Chicago Public Schools graduating seniors
- maintain perpetual interest in fostering scientific research, invention, and technological development
- promote scientific interests and hobbies of students
- conduct an annual science fair, symposium and essay contest

#### School, Area, and City Science Fairs

More than 12,000 students enter projects, beginning at the local school level. Local school winners exhibit at the area level. Approximately 300 winners from 23 areas are exhibiting at this three-day citywide fair. The CPS Student Science Fair is always held in the spring at the Museum of Science and Industry.

## Student Science Symposium and IJAS Essay Contest

Additional components of the fair are the CPS Student Science Symposium and IJAS Essay Contests. High school students participate in the symposium competition, presenting their research to a panel of judges. High school students and 7th- and 8th-graders participate in the essay contests, writing about a given contemporary issue in science.

#### **State and International Fairs**

Each year, approximately 50 students are selected to participate in the exhibition, and 25 research paper presentations are delivered at the Illinois Junior Academy of Science (IJAS) State Science Fair. This event is scheduled May 8 and 9, 2009, at the University of Illinois, Champaign-Urbana Campus. In addition,

the four top-scoring students from the CPS Student Science Fair will participate at the International Science and Engineering Fair (ISEF), which will be held in Reno, Nevada, May 10-15, 2009.

#### **Sponsors**

Primarily, the CPS Student Science Fair, Inc. has three sponsoring organizations.

The Chicago Public Schools Chief Executive Officer appoints an executive director to oversee the planning for the local school, area, and citywide science fairs. The CPS Office of Mathematics and Science is the host department for CPSSSF, employing the Citywide Science Fair Coordinator and contributing operational funds to run the Fair each year.

The Museum of Science and Industry hosts the citywide fair and provides technical support services to the participants and teacher volunteers.

Chicago-area corporations spearhead the drive within the Chicago business community to obtain the necessary financial support for a successful science fair experience. The Motorola Foundation, BP America Inc., and ComEd, An Exelon Company are this year's corporate sponsors.

#### **How You Can Help**

To help the CPS Student Science Fair and encourage young people to consider careers in science and technology, monetary contributions must be solicited. Without this financial support, the school and area fair support, the production of the high quality event of the City Science Fair, and the participation in the state and international science fairs would be greatly limited.

Please consider being a contributor to the operating fund or scholarship fund, or providing special awards and tours prizes.

Please contact Pamela Sherley at CPS Student Science Fair, Inc., P.O. Box 803945, Chicago, IL 60680-3945, or email her at pdsherley@cps.k12.il.us for opportunities to contribute.



# Greetings from the President of the Board of Directors Chicago Public Schools Student Science Fair, Inc.

#### Congratulations and Welcome

Even in these challenging times, we know that our city has a bright future when we see the hard work and achievement of this year's participants in the 59th Annual Student Science Fair and Symposium at the Museum of Science and Industry. This year's theme – Shaping Our Future Through Science and Mathematics – is exactly what our students have done this year. Congratulations to the over 300 students who were chosen from among thousands of local and area science fair participants.

More than 70 of our students will be chosen to represent the Chicago Public Schools at the Illinois Junior Academy of Science State Science Fair May 8 – 9, 2009 at the University of Illinois, Champaign-Urbana. Four of our students will represent the Chicago Public Schools at the International Science and Engineering Fair May 10-15, 2009 in Reno, Nevada. Many of our high schools seniors will receive Science Fair college scholarships from our many supporters and contributors. Everyone who participates is a winner, and can proudly count themselves among the best and the brightest of the Chicago Public Schools.

While the Science Fair showcases our students' achievements in science, math, and engineering, none of these achievements would be possible without the support of many people in our Chicago community. This event is a testimony to the strength and dedication to excellence of the Chicago Public Schools administration and Chicago Mathematics and Science Initiative staff. And let us not forget the teachers, parents, and family members who stand behind every student, and deserve credit for going the extra mile to make their students' participation possible.

The CPS Student Science Fair Board extends its sincere thanks to everyone who contributed time, talent and financial support to the Science Fair. In particular we thank the following: Mayor Richard M. Daley, for his personal commitment to education and to the Fair and our students; all of the officers and leadership of the Chicago Public Schools, who provide us resources, guidance, and on-going support (and we wish former Chicago Public Schools CEO Arne Duncan the best of luck in his new job!); the Museum of Science and Industry President and CEO David Mosena and the museum staff, especially Pam Barry, who provide the home for the Science Fair and ensure its success; the numerous individual and corporate sponsors such as BP, ComEd and Motorola who provide the necessary funds to the Science Fair and its programs; and the many individuals, universi-



ties and colleges who provide scholarships for our students in order to encourage them to pursue their education.

The Science Fair would not be possible without the large number of volunteer judges, the legions of Chicago Public School teachers and administrative staff, both current and retired, who donate their time and expertise at the school, area, citywide, state and international fairs, and who directly provide vital learning experiences to the students. We owe them a great debt of gratitude.

And finally, the Science Fair would not be possible without the commitment of the many Area Science Fair Chairs and their committees. Year after year these individuals work extremely hard to ensure the Fair is always a success! The Board and I want to send a personal, heartfelt thank you to CPS Student Science Fair Executive Director, Pamela D. Sherley and CPS Student Science Fair Chairperson, Edward Scanlon. The commitment of these two individuals exceeds expectations and exemplifies their passion for science education.

William E. Meyer, Jr.

Willing E. Meyr, Jr.

Partner, Schiff Hardin LLP President of the Board CPS Student Science Fair, Inc.



# **Greetings from BP America Inc., Corporate Sponsor**

#### **Greetings and Congratulations!**

On behalf of BP, I congratulate you on your participation in the 59th Annual Chicago Public Schools Student Science Fair. As the world's future scientists and mathematicians, thank you for sharing your imagination, passion, and pursuit of scientific excellence with us. It is truly inspiring!

BP and our employees who work and live in Chicago are pleased to support your participation in the 2008 Science Fair. Your entries in exhibits, the symposium, and essay contests have put this year's theme – Shaping our Future Through Science and Mathematics – into action. As aspiring scientists, mathematicians, and engineers, you displayed projects throughout the Museum of Science of Industry this week that illustrate numerous hours spent designing, executing, and analyzing authentic scientific investigations. We recognize that your entry represents a significant investment in your time and resources. Moreover, we appreciate the teachers, mentors, family members, and friends who have supported you in your scientific endeavor.

BP is committed to discovering, producing, and distributing energy for today and tomorrow. BP is one of the world's largest energy companies, providing its customers with fuel for transportation, energy for heat and light, retail services, and petrochemical products for everyday items. We believe that education and research are critical to creating a sustainable future for our planet.

We are proud of your many accomplishments. May your Science Fair experience be one step in a lifetime journey filled with innovation and creativity.

Catherine Zimmerman

Wishing you continued success,

Catherine M Zimmerman, Ph.D.

BP America Inc.





#### Greetings,

Congratulations to Chicago's future scientists, mathematicians, and inventors on your participation in the 59th Annual Student Science Fair.

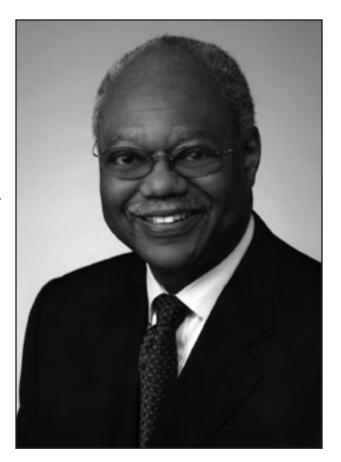
ComEd is a strong supporter of education, in particular math and science. Every day, ComEd engineers and crews are working to keep the lights on and ensure our customers have the electricity they need to support their daily lives at home and at work. It is a great responsibility and we are proud to meet the needs of our customers, now and in the future.

The hundreds of scientists and engineers employed by ComEd were all once students like you. We hope this experience sparks a lifetime of learning, and perhaps even a future career in math or science!

Best wishes for an exciting science fair.

Frank M Clark

Frank M. Clark Chairman and Chief Executive Officer ComEd







# Greetings from Motorola, Corporate Sponsor

#### Hello Science Fair Participants,

Congratulations! Your entry in the Chicago Public Schools' 2009 Student Science Fair already shows that you're a winner. You have demonstrated the courage to conceive an idea and put it to the test. Putting action behind our curiosity is how we change the world.

Motorola shares your passion for innovation and has been turning new ideas into real-life products here in Chicago for 80 years. Today, Motorola's global team of scientists, engineers and technicians use the scientific process you're demonstrating today to discover and develop new materials, technologies, architectures and algorithms for products that make mobile experiences possible, keep first responders connected and help businesses move data efficiently.

Many of these women and men developed their passion for learning through student projects just like yours. That's why all of us at Motorola are so proud to support you and the 2009 Science Fair.

We extend our thanks to your teachers, parents and volunteers who have helped you reach for the best and spent countless hours making this Science Fair a reality.

And we challenge you to continue dreaming of what can be – and acting on it like you are today.

Best wishes,

Greg Brown

President & Co-CEO

Dr. Saiyay Tha

Motorola, Inc.

Dr. Sanjay Jha Co-CEO Motorola







# Greetings from the Museum of Science and Industry's President and CEO

Welcome to the 59th Annual Chicago Public Schools Student Science Fair at the world-famous Museum of Science and Industry. I congratulate all of you for your hard work in creating impressive science projects. Your efforts truly reflect the Museum's mission to inspire the inventive genius in everyone.

Science and technology are critically important to our well-being, our nation's economic growth, and our world's environment. Climate change, energy, health, security and hunger are just a few of the issues we're facing, and scientific breakthroughs will play an increasing role in overcoming these challenges. The theme of this year's Science Fair, Shaping Our Future Through Science and Mathematics, reflects what lies ahead for you, our new generation of scientists, engineers, explorers and thinkers. I look forward to seeing the concepts and innovations yet to come from all of you.

At the Museum of Science and Industry, our vision is to encourage and motivate our children to reach their full potential in the fields of science, technology, medicine and engineering. We are working to achieve this vision by engaging the community, empowering teachers, and exciting students.

We're creating spectacular, transformative exhibitions that will be sure to spark your imagination. This fall, a new exhibit on the beauty and complexity of the human body called YOU! The Experience will invite you to participate in activities that teach you about your anatomy, physical fitness, and the connections between mind and body. Next year, Science Storms will teach physics and chemistry by featuring one-of-a-kind learning experiences like measuring wind speed while standing inside a 40-foot tornado. And from April 30 to Sept. 7, 2009, the world premiere of Harry Potter: The Exhibition will captivate your imagination.



Good luck to all the participants in this year's Science Fair. Your projects are an inspiration to all of us. We hope you come back to the Museum and find more inspiration, and that you go on to reach your full potential and achieve your dreams.

Best wishes.

David R. Mosena President and CEO

Museum of Science and Industry

Jan Moseua



# Greetings from the Chicago Public Schools Chief Executive Officer

#### **Greetings!**

It is my great pleasure to welcome you to the 59th Annual Chicago Public Schools (CPS) Student Science Fair. This year's theme - Shaping Our Future through Science and Mathematics has inspired thousands of students of all ages to conduct their own research and perform their own experiments. Some are taking their first steps as researchers, while others are building on years of focused effort. All, however, follow in the footsteps of scientists and engineers that have developed and continue to work on innovative solutions to serious problems we face today. Every project on display holds a unique promise of future academic achievement. Each submission reflects student's creative thinking, guided by dedicated teachers and encouraging parents.

We invite you to join us in recognizing our talented students. By entering the Science Fair, they have chosen to compete for scholarships and prizes and to try to advance to state and national finals. They have shown commendable hard work, commitment and the willingness to test themselves against their peers.

Through the Chicago Math and Science Initiative, Science in the Schools Day and events like today's fair, we are committed to broadening our students' exposure to and expertise in the field of science. As science and mathematics are part of daily life, it is vital that we continue to provide and support opportunities for our students to learn and excel in both disciplines.

The CPS Student Science Fair has benefited from the generous support of BP America, Inc., ComEd, an Exelon Company and Motorola. With your support and the support of these companies, our students are well on their way to master the analytic tools they need to explore the frontiers of science and mathematics.



Thank you to all of our students for their submissions. I look forward to learning from their work.

Sincerely,

Pon Huberna

Ron Huberman Chief Executive Officer Chicago Public Schools



# Greetings from the Chicago Public Schools Chief Education Officer

The Chicago Public Schools (CPS) is pleased to host the 59th Student Science Fair – Shaping Our Future through Science and Mathematics. Each year, the CPS Student Science Fair provides an exciting opportunity for CPS students to engage in long-term science projects with the guidance and support of their teachers and parents. This year's fair continues that tradition.

Participation in this unique experience provides students with an authentic vision of how science works through the process of testing a hypothesis, researching a topic, and applying and synthesizing data to form a conclusion. The independent research that they conduct over the months preparing for their projects, combined with what has been taught in the classroom, not only promotes concept comprehension, but also the ability to articulate what has been learned through demonstration. CPS Student Science Fair allows students to observe, experience and communicate how technology and science work together to change and potentially improve the way we live.

CPS is emphasizing science and mathematics instruction with the same intensity we have for literacy. The Chicago Math and Science Initiative (CMSI) was created to ensure that high-quality, standards-based mathematics and science are available to all of our students. Activities such as this fair, exhibit how we continue to increase the number and enhance the quality of these opportunities.

I congratulate all students for the effort put into conceptualizing, researching, developing and perfecting the presentations displayed here today. Your dedication serves as a great example to all CPS students. Your presence today demonstrates that you have already achieved great success and are a winner. I also salute teachers and parents for their committed involvement through the development of these projects.

I extend a special thank you for the ongoing support from our corporate sponsors. My sincere gratitude



goes to the Motorola Foundation, BP America Inc. and ComEd, an Exelon Company. Your generous contributions have provided many valuable resources that support the success of this event.

Again, congratulations to all participants and those who have contributed to the success of our students in the 59th Student Science Fair - Shaping Our Future through Science and Mathematics. You have experienced some of the excitement that accompanies careers in mathematics and science and I encourage you to continue exploring this path. These experiences will serve as building blocks that form the foundation for your generation to become leaders in this world, trailblazing new methods of researching and synthesizing data to improve the quality of life. CPS applauds your achievement.

Barbara Easin-Wathers

Barbara Eason-Watkins, Ed.D. Chief Education Officer Chicago Public Schools



# Greetings from the Office of Mathematics and Science Director

# Welcome to the 59th Annual Student Science Fair

In thinking about this year's theme: Shaping our Future through Science and Mathematics, it occurred to me that we don't have to look beyond the challenges we face today as a society to appreciate how science, engineering, and mathematics have the potential to profoundly shape our future.

Today, the economic crisis, the environmental crisis and the energy crisis are getting a lot of attention because of the impact they have on our lives. President Barack Obama believes - and many scientists and economists agree - that these crises can be positively addressed if we apply science, engineering, and mathematics to solving them. A thriving U.S. economy can grow out of alternative energy solutions, which in turn will make a difference in environmental quality. When science, engineering, and mathematics are applied to solving contemporary challenges, their impact resonates across our society and into the future. Many of these challenges will not be solved quickly. The work of making new discoveries and applying new solutions to these challenges will be done by scientists, engineers, and mathematicians who are students right now, whose careers in these fields still lie ahead of them.

The Chicago Student Science Fair has been helping shape CPS students' futures for 59 years. Its ongoing success is the result of many — particularly teachers, parents, volunteers, and mentors — who spend untold hours nurturing the minds and guiding the thinking of these students. The return on this investment is scientific literacy. This is invaluable to all of us, whether or not these students go on to careers in science, engineering, or mathematics. The future of our society requires a scientifically literate workforce, as well as a populace that appreciates the importance of science education.

As you review the science projects on display here this week, imagine where they might lead. It is quite possible that one or more of tomorrow's leading scientists will emerge from this year's CPS Science Fair and that a future scientific or engineering breakthrough may have its roots in a project you see at the Science Fair today. Also consider how the skills and experiences represented collectively by this group of young people demonstrate the potential to tackle scientific challenges. Because of the success they have achieved with their science project, over 300 CPS students are better prepared to think analytically about



scientific questions and how science, engineering, and mathematics can help address the challenges our society faces – now and in the future.

To every student participant in this year's Citywide Student Science Fair, please know that we are so proud of the effort – the time, energy, thoughtfulness, creativity, organization, and patience – you have invested in your project, as it culminates here at the Museum of Science and Industry. Your participation in Science Fair recognizes your significant academic achievement, and we are pleased to celebrate it with you. All of us involved with Science Fair hope your experience this week is a satisfying conclusion to the journey that you started so many months ago.

To the many adults who generously shared their time as mentors, judges, organizers, donors, and volunteers, thank you for helping make the CPS Citywide Science Fair a vibrant and valuable experience for Chicago's students. I am grateful to have your support as we work together to help shape the future.

randra James

Sincerely,

Chandra James

Director, Office of Mathematics and Science

Chicago Public Schools



## Greetings from the Chicago Public Schools Chief Officer for High Schools and High School Programs!

This year's Chicago Public Schools (CPS) Science Fair theme *Shaping Our Future Through Science and Mathematics* provides a venue for CPS students to hypothesize about ways in which science may continue to transform society from the smokestack industry of old to one more dynamic and technologically-advanced, able to compete in today's global economy by creating additional jobs and opportunities for its citizens.

Perhaps even more importantly, however, students involved in the science fair are encouraged to envision a world in which the quality of life is vastly improved for future generations, a critical first step towards "changing the world"—traditionally the province of visionaries, geniuses, and the very young. As one such visionary, English poet William Blake once said, "What is now proved was only once imagined."

Further, by committing time and effort to their research projects, students not only learn firsthand the importance of designing a scientific experiment, collecting and analyzing data, and reaching a conclusion, they also learn other important virtues like diligence, patience, thoroughness and attention to detail—all prized in today's academic and work world and essential to the development of sound character. Also, the collaboration, cooperation, and camaraderie engendered by the participants as they look towards each other to inspire and look deeper is incalculable—essential to developing the critical ability to work together towards a common goal, a hallmark of any successful endeavor.

As you wander through the exhibits this weekend, be sure to engage the young scientists you meet. Have them tell you what their projects mean to them, and listen intently. Ask them questions. Not just for them, but for you as well. Their enthusiasm will elevate you. The future begins with an idea, and it unfolds before you.

Thanks to all the parents, teachers, friends, and community volunteers who encouraged these young people to dream about what might be and helped



guide them through the creative process by sharing their own vision and expertise and giving their time and energy to ensure their success.

I would also like to thank Motorola, BP, and ComEd, our major corporate sponsors, for their generous contributions to the success of the Chicago Public Schools Student Science Fair. Thanks for investing in our country's future by believing in and supporting our students.



David G. Gilligan Chief Officer Office of High Schools and High School Programs Chicago Public Schools



# Greetings from the CPS Office of High School Teaching and Learning

This year's science fair theme, Shaping Our Future Through Science and Mathematics, is particularly apt and appropriate for 2009. These are tough times for our country, with the news filled every evening with dire stories about wars, recessions, and tragedy. But tough times call for big ideas, and it's clear that science and mathematics will be the tools to shape those ideas. Without doubt, the bedrock of our nation's economy and well-being is scientific and mathematical. From the medicines that keep us healthy, the innovations that create products that drive our markets, to the technologies of Hollywood that inspire and awe us, we are a society based on science and mathematics. With Thomas Friedman writing about how The World Is Flat, the internet connecting people from different cultures and regions in remarkable new ways, and the president speaking about competitiveness as a national strategy, now more than ever the general public has realized that science and mathematics are at the heart of America's past and America's future.

With that perspective, it's particularly exciting to welcome students this year to the 59th annual Chicago Public Schools Student Science Fair. To shape our future, look no further than the young men and women who have been chosen by judges to represent their school and instructional area in the citywide science fair. They represent the most accomplished young scientists of Chicago, and in all likelihood, will be the ones making the discoveries and driving the innovation in our country in the years to come. You will see them here first.

As you review the different projects on display, I expect you will marvel at the inventiveness and diversity of the topics that were studied. Think about all the decisions and tradeoffs that were made by students as they took an initial idea and evolved it into a testable question. Consider the many hours that were spent designing and carrying out the investigations, and analyzing the results. Make note of how the students' scientific understanding was advanced by participating in the practice of science. And congratulate the students on completing a serious piece of academic work.

Each of the students in the Science Fair was guided by a mentor. In the most advanced projects, the mentor was likely a research scientist who has taken a talented student under his or her wing and inducted the student



into the world of science and scientists. For most of the projects, the mentor was a parent, teacher, or adult friend, who helped the student think through the investigation, carry out the experiment, and examine the results. The time spent by those adults interacting with the student about his or her Science Fair project may be as valuable as the project itself. In spending this time with the students, the adult mentors have communicated the importance of being scientifically literate and have shown their confidence that the students can and should be successful with science. Also to be commended are the principals, school leaders, and department chairpersons who have made participation in science fair a key component of their overall science education strategy, and use it as an engaging after-school activity for students interested in research.

Each science fair participant deserves congratulations. The many adults who have offered their time - as mentors, judges, organizers, donors, and volunteers-are owed a debt of gratitude, for helping to keep the CPS Citywide Science Fair a vibrant and valuable experience for Chicago's students.

Michael Lack

Michael Lach

Officer

Office of High School Teaching and Learning



# Greetings from Student Science Fair, Inc. Executive Chairperson

With our world facing changes almost daily, this year's theme of "Shaping Our Future through Science and Mathematics" takes on a whole new meaning. Our world's current methods of water usage, energy production and waste disposal must be revamped to protect our environment.

This science fair is the vehicle our students use to explore, expand and test new ideas.

Our students are intuitive, insightful and always willing to try new things. Our future, their future will be determined by those that have the courage to see a project through to completion. Our science fair students have done just that. They have overcome many obstacles that got in their way in seeking out the answers for change. Their projects will show you how hard they have worked, despite many challenges. Together with their teachers to guide them they are learning to be successful young adults. Any young person who works hard to find new and better answers will truly prove to be an intelligent, competent and successful member of society.

I want to thank all the people that have helped make the science fair such a great success. To the parents and teachers who work directly with the students, to all the people on the various committees, to the Board of Directors, and to the major corporate sponsors – Motorola Foundation, Commonwealth Edison, and BP Foundation I can not say thank you enough. A special thanks to the Museum of Science and Industry for being such a gracious host to our fair for so long. I must also say thanks to all the judges that give of their time to evaluate the projects and are such great inspirations for our students.



Congratulations to all of the students who endeavored to take on the challenges of a science fair project.

Edward J Scanlon

Edward Scanlon Executive Chairperson Chicago Public Schools Student Science Fair, Inc.



# Greetings from Student Science Fair, Inc. Executive Director

Welcome to the 59<sup>th</sup> Annual Chicago Public Schools Student Science Fair. We are excited to be a part of *Shaping Our Future through Science and Mathematics*.

Each year students participate in various competitions, which allow them to demonstrate some of their intellectual interests reflective of the world in which they live. Students engage in conversations and discussions as well as respond to questions pertaining to their scientific investigations. As a result of their findings and discussions, constructive feedback is provided to the students in an effort to assist to them in taking their projects to the "next level". Some students may decide to follow through on their findings and continue on to patent a new innovative way to fuel conservation, or even a more effective method of medical treatment. The possibilities are endless!

The Chicago Public School Student Science Fair is an extension of the investigation conducted as a result of classroom instruction. Students are taking an important "next step" by applying their educational observations, experience and creativity to make their own scientific conclusions and discoveries. These results may very well be the solutions for tomorrow.

I would like to thank all of the teachers, parents, and mentors for taking the time to invest in the future of our students. You have provided them with a structured learning environment and the necessary situations to become scientific thinkers. Your support has given them the opportunity to let their lights shine and their imaginations come to life.

Congratulations to all of the student participants. Achieving this level of competition is a tremendous accomplishment. I would like you to take the comments and remarks from the judges as the stepping-stones necessary to take your project to the



next level of exploration. Knowledge is power, and as long as you push beyond the visible boundaries, the power you create for yourself can be limitless.

Sincerely

Pamela D. Sherley Executive Director

CPS Student Science Fair, Inc.



# **Corporate Sponsors**

Beginning in 1958, the scope and complexity of the Science Fair outgrew the ability of the Chicago Board of Education and the teacher volunteers to continue without financial support from the business community. Illinois Bell Telephone was the first to recognize the importance of this premier academic event to the students of this city and participated as a corporate sponsor.

We are particularly grateful to those at Motorola Foundation, BP America Inc., and ComEd, An Exelon Company whose leadership was essential in helping us obtain the necessary support of local business and industry, and whose generous financial contributions made this year's Science Fair possible.

Over the years, the involvement, responsibilities, and obligations of the corporate sponsor have evolved. Currently, Science Fair asks the following of the corporate sponsor:

- Provide a substantial contribution of up to \$50,000 for operating capital.
- Provide assistance in soliciting additional funds for the balance of the costs incurred. These costs include goods and services, publications, scholarships and grants, support to area fairs and the city fair at the Museum of Science and Industry, and participation at the Illinois Junior Academy of Science State Science Fair and the International Science and Engineering Fair.
- Provide help in securing a corporate sponsor for the next year's Science Fair.

For further information about becoming a corporate sponsor please contact Pamela Sherley at CPS Student Science Fair, Inc., P.O. Box 803945, Chicago, IL 60680-3945. Electronic messages can be sent to pdsherley@cps.k12.il.us

#### We would greatly appreciate your partnership.

006-09	BP America, Inc	1983	Peoples Gas
	ComEd, An Exelon Company	1982	Illinois Bell Telephone
	The Motorola Foundation	1981	Sears, Roebuck and Company
004-05	BP America Inc.	1980	International Harvester
	ComEd, An Exelon Company	1979	Morton Norwich
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202	BP America Inc.	1977	Zenith Radio Corporation
003	Kraft Foods	1976	Standard Oil (Indiana)
	The Motorola Foundation	1975	U.S. Steel
000-02	Kraft Foods	1974	Commonwealth Edison
	The Motorola Foundation	1973	Harris Bank
999	The Motorola Foundation	1972	Peoples Gas
998	Kraft Foods	1971	Motorola, Inc.
	The Motorola Foundation	1970	Illinois Bell Telephone
996-97	The Motorola Foundation	1969	Borg-Warner
994–95	Argonne National Laboratory	1968	Western Electric
	With support from The University of	1967	Sears, Roebuck and Company
	Chicago Board of Governors	1966	Inland Steel
993	Chicago Sun- Times	1965	Montgomery Ward
990-92	Motorola, Inc.	1964	Standard Oil (Indiana)
989	Sara Lee Corporation	1963	Swift & Co.
988	AMOCO Corporation	1962	Commonwealth Edison
987	Acme Steel Company	1961	International Harvester
986	Interlake Corporation, Inc.	1960	Peoples Gas
985	Chicago Sun-Times	1959	U.S. Steel
984	First National Bank of Chicago	1958	Illinois Bell Telephone



## **Contributors**

To all of those who contributed to the operating and scholarship funds, we offer a very special THANK YOU for helping to make the 2009 Science Fair a success.

## **Operating Fund**

Donations to the Operating Fund help produce the City Science Fair, the Area Science Fairs and many programs supporting students' independent research for science fair.

#### **Academic Sponsor**

• Chicago Public Schools

#### **Site Sponsor**

Museum of Science and Industry

#### Corporate Sponsor – up to \$50,000

- BP America Inc.
- ComEd, An Exelon Company
- Motorola Foundation

#### **Executive Circle - \$5,000** Minimum

- Baxter International Inc.
- Peoples Gas

#### Angels - \$1,000 Minimum

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#### Patrons - \$500 Minimum

• S & C Foundation

#### **Donor - \$200 Minimum**

- Ethelene Hare
- Francis & Barbara Kennedy
- Naylor Pipe Company
- Rita Nelson
- Underwriters Laboratories
- Catherine Zimmerman

## Scholarship Fund

Donations to the Scholarship Fund go to qualified high school seniors who have presented a project at an Area Science Fair and will major in science in college.

#### **Benefactors of Academic Scholarships**

- DePaul University
- Illinois Institute of Technology
- Lovola University

Minimum

• Roy Coleman

• Mary Nalbandian

• Philippe A. Hans

- Northeastern Illinois University
- Roosevelt University
- University of Chicago
- University of Illinois at Chicago

Executive Circle - \$5,000

Angels - \$1,000 Minimum

• Donald A. & Helen T. Edwards

• Blum-Kovler Foundation

• CPS Combined Charities

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- Kenneth Zdunek & Mary Memhardt

#### Patrons - \$500 Minimum

- Rita Nelson
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#### Donor - \$200 Minimum

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- RyAnn Nelson-Jaiyesimi
- Anne Marie Sherry
- Lewis & Deonne Wright

#### **Supporters - \$25 Minimum**

- Mary L. Burgeson
- Yolanda Del Rio
- Marie Ann Donovan
- Diane L. Fagan
- Shirlee Hollander
- Luba Johnson
- John McNicholas
- Walter M. Pilditch
- Barbara J. Reynolds
- Karen S. Strabel
- Clay A. Tillack
- · Nancy Toomey
- Mary G. Zawila

If you are interested in supporting the Science Fair or becoming a sponsor, additional information can be obtained by contacting Pamela Sherley at pdsherley@cps.k12.il.us or by sending an inquiry to P.O. Box 803945 Chicago, IL, 60680-3945.

# Today, some of Chicago's greatest innovators will be students.

Chicago students explore to develop innovations for tomorrow.
That's why we're proud to support the 59th Annual Chicago Public Schools Students Science Fair and its participants' commitment to take the world beyond.



beyond petroleum®



# **Symposium and Essay Contests**Symposium Information

Symposium is an integral and popular feature of the Chicago Public Schools Student Science Fair. This event, held on Thursday, March 26, 2009, takes place at the Museum of Science and Industry. Student presenters from Grades 9–12, through their teacher sponsor, first submitted a scientific research paper. In January, a committee of volunteer readers evaluated these papers and thirty-three research papers were chosen to be presented on March 26th. Each student must have performed the primary research described in their paper, must defend the scientific merit of the research, and display written and oral communication skills. During the Symposium competition, a panel of judges from the scientific, academic, and business communities listen to, question, and evaluate each presentation. Twenty-five finalists are selected to participate at the Illinois Junior Academy of Science (IJAS) State Science Fair at the University of Illinois in Champaign-Urbana, on May 8 and 9, 2009.

## **Essay Contests**

#### **IJAS Essay Contest**

Also evaluated by volunteer readers at the January Symposium Reading Session are the essay papers submitted by students from Grades 7–12. As an ancillary activity of the State Science Fair, the IJAS sponsors an essay contest for students who conduct library research and prepare a 1500-word essay on one of the following topics:

- IJAS Student Essay Some Like it Hot! Some Like it Cold!
- Nuclear Essay Nuclear Energy in Agriculture and Food Supply

The Nuclear Essay is submitted directly to the sponsoring organization for evaluation. Ten of the IJAS student essays are selected as outstanding and the top scoring essay will be forwarded to IJAS for evaluation at the state level.

#### **Chicago BP Essay Competition**

BP America Inc. sponsors this essay contest in two grade divisions: 7–8, and 9–12. Students follow the same guidelines established for the IJAS Student essay contest. The top 14 students in both grade categories will win cash awards from \$25 to \$250. This year's topic is *Some Like it Hot! Some Like it Cold!* 





# **Symposium Schedule**

#### Thursday, March 26, 2009

#### **AM Presentation Schedule**

AM Presentation	Sch	nedule			
Room 1 - Sessio	n A	9:00 a.m. to 11:30 p.m.			
Exh Student Name Gr	ade	Project Title	Category	School	Area
601 Cohen, Ashley	10	Effect of Caffeine on Frogs	Behavioral Science	Lincoln Park	19
602 Puralewski, Rachel	10	Environment Size & Crayfish Aggression	Behavioral Science	Lincoln Park	19
603 Quiroz, Salvador	10	Testing Ant Repellents	Behavioral Science	Curie	23
604 Rangel, Yesmany	10	Effect of Cell Conversation on Reaction Time	Behavioral Science	Curie	23
605 Wu, Jimmy	10	Effects of Ethanol on Brine Shrimp	Behavioral Science	Lincoln Park	19
606 Zhou, Linda	11	Neuropsychological Imbalance	Behavioral Science	Lake View	19
Room 2 - Sessio	n B	9:00 a.m. to 11:30 p.m.			
607 Andrzejczak, Sylwia	10	Effects of Temperature on Fuel's Density	Environmental Science	Lincoln Park	19
608 Block, Molly	10	Chemical vs Organic Fertilizers	Environmental Science	Whitney Young	21
609 He, Brian	10	Selenium Exposure to Brine Shrimp	Environmental Science	Curie	23
610 Leeds, Zoe	09	Packaged for Life	Environmental Science	Whitney Young	21
611 Salinas, Elizabeth	10	Filter Water vs. Tap Water	Environmental Science	Curie	23
Room 3 - Sessio	n C	9:00 a.m. to 11:30 p.m.			
612 Enriquez, Selene	11	Factors Affecting Soil Transfer	Earth Science	Curie	23
613 Herrera, Eric	10	Which Type of Wood is Stronger?	Engineering Science	Lincoln Park	19
614 Chiu, Jeffrey	10	Effect of Jello on Light Refraction	Physics	Lincoln Park	19
615 Gomez-Doyle, Sofia	09	Which Bridge Design Sustains the Most Weight?	Physics	Lincoln Park	19
616 Vasilyeva, Irina	12	Effect of Blade Angle on Efficiency	Physics	Lincoln Park	19



#### Thursday, March 26, 2009

#### **PM Presentation Schedule**

626 Deiss-Yehiely, Elad

627 Kuhn, Rebecca

09

12

Room 1 - Session	n D	1:00 p.m. to 3:30 p.m.			
617 Chlenski, Philippe	09	Effects of Chemicals on Bioassay Results	Biochemistry	Lincoln Park	19
618 George, Terrence	12	Imaging Mitochondrial Ca <sup>2+</sup> in Beta Cells	Biochemistry	Lincoln Park	19
619 Lyubashevsky, Davi	d 10	Effect of Temperature on pH	Chemistry	Lincoln Park	19
620 Reymatias, Mark	10	Power of Plastics	Chemistry	Lincoln Park	19
621 Tsang, Chi	12	Acids and Metal Corrosion	Chemistry	Lincoln Park	19
Room 2 - Sessio	n E	1:00 p.m. to 3:30 p.m.			
622 Ivery, Alecia	12	Lifestyle and Asthma	Health Science	Bogan	24
623 Xu, Mengyi	11	Micro RNA Expression and Leukemogenesis	Health Science	Lincoln Park	19
624 Carey, Shane	09	Effect of Electricity on E. coli	Microbiology	Lincoln Park	19
625 Cernek, Nicholas	11	Proliferation of Annihilation	Microbiology	Lincoln Park	19

Room 3 - Sessio	n F	1:00 p.m. to 3:30 p.m.			
		•			
628 Arteaga, Jennifer	10	Effect of Caffene on Bean Plants	Botany	Lincoln Park	19
629 Baig, Momina	10	Effects of Wavelengths on Plants	Botany	Curie	23
630 Su, Liang	12	Effect of Water vs. Soil on Green Beans	Botany	Lincoln Park	12
631 Gilmore, Kirsti	12	Expression of HMOX-1 on METH Induced Rats	Zoology	Morgan Park	24
632 Nimnark, Primrose	10	Effect of Ultraviolet Rays on Fruit Flies	Zoology	Lincoln Park	12
633 Pirpiris, Juliette	12	Daphnia: Water Cleanliness Police	Zoology	Taft	12

Effect of Allium Plants on Microbacteria

Effect of Antibiotics on E. coli





Microbiology

Microbiology

Lincoln Park

Lincoln Park

19

19



# **Symposium Luncheon Schedule**

Thursday, March 26, 2009

Columbian Room - 11:30 a.m.

Welcome	Pamela Sherley Executive Director CPS Student Science Fair, Inc.
Remarks	Michael Lach Officer of Teaching and Learning John Loehr, Ph.D. Science Manager Office of High School Programs
Introduction of Special Guests	Hortense Brice Symposium Committee Chairperson
Symposium Sponsor Remarks	Catherine Zimmerman, Ph.D. Analyst, BP America Inc.
Recognition of Essay and Symposium Semifinalists	Catherine Zimmerman, Ph.D. Hortense Brice Pamela Sherley Michael Lach John Loehr, Ph.D.
Judges' Plaques for Years of Service	Hortense Brice Pamela Sherley



Hortense Brice, Symposium Committee Chairperson



Catherine Zimmerman represents BP America Inc., sponsor of the Symposium and BP Essay Contest





## **Exhibit Information**

The 59th Annual CPS Student Science Fair offers academically and scientifically talented young people an opportunity to showcase their accomplishments. The projects on display represent the most outstanding scientific endeavors of students in Grades 7–12.

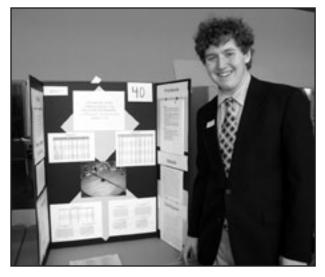
The exhibitors at this year's CPS Student Science Fair were selected from approximately 12,000 students who competed in school and area science fairs throughout the city during December 2008 and January 2009. These winners were chosen on the basis of their scientific approach, thoroughness, creativity, and presentation.

On Friday, March 27, 2009, over 300 judges from the scientific, academic, and business communities will observe, listen to, question, and evaluate the exhibitors. Winners are selected based on established criteria as indicated in the 2009 Science Fair Handbook.

The top 50 winners will participate at the Illinois Junior Academy of Science (IJAS) State Science Fair, held May 8 and 9, 2009, on the campus of the University of Illinois, Champaign-Urbana. Students will compete with other students from around the state.

On Saturday, March 28, 2009, the top 35 outstanding high school projects will be evaluated by a special panel of judges. Four finalists will be invited to compete at the International Science and Engineering Fair (ISEF), which is being held May 10 – 15, 2009 in Reno, Nevada.

Some of the judges also function as Special Awards judges for the companies that have graciously sent them to evaluate the exhibitors. Each company may have one or more special criteria, in addition to the established criteria, by which to determine the recipient of its special award.



All CPS Student Science Fair participants will be recognized with certificates and souvenirs at the Awards Convocation on Sunday, March 29, 2009, at 1:00 p.m., in the main auditorium of the Museum of Science and Industry. Approximately 100 students will be individually recognized with cash prizes, awards, and other special gifts. In addition, all CPS Student Science Fair participants are eligible to apply for financial support grants and college scholarships in their senior year of high school.

## All CPS Student Science Fair participants are WINNERS!

If you would like to serve as a judge, please contact Yolanda Del Rio at 708-599-3421 or yolanda\_delrio@comcast.net to have your name added to the database. At a minimum, judges must have a degree in science, mathematics, computer science, or engineering. They may not be a current employee of the Chicago Public Schools.









## **Exhibit Schedule**

Friday, March 27, 2009

## **Science Fair Exhibit Judging**

7:30 a.m 8:30 a.m.	Judges Briefing and Breakfast	Main Auditorium
8:30 a.m 11:00 a.m.	Judging of Exhibits	West Pavilion
11:00 a.m 11:30 a.m.	Opening Ceremony	West Pavilion Main Entrance
11:30 a.m. – 12:00 noon	Ribbon Cutting and Exhibit Tour	West Pavilion
11:30 р.м. – 1:30 р.м.	Judges Buffet Luncheon	Great Train Story
12:00 NOON - 1:30 P.M.	Recognition Luncheon - by invitation only	Columbian Room
12:00 noon – 1:00 p.m.	Judging Continues	West Pavilion
1:00 p.m 3:15 p.m.	Fair Opens to the Public	West Pavilion











Exh	Student Name	Grade	Title	Area	School
Aero	Space Science				
1	Jarr, Kevin	8	How Does Wing Curvature Affect Lift?	1	Palmer
2	Crawford, Amanda	11	Coronal Mass Ejections	23	Норе
Beha	vioral Science				
3	Lopez, Sarah	7	Find the Target	4	Mitchell
4	Meraz, Jocelyn	7	Sensitive To Touch	4	Yates
5	Dima, Raluca Medina, Grisel	7	A Picture Perfect Memory	4	Chopin
6	Tucker, Jaylon	7	Optical Illusions and the Five Senses	23	Lindblom
7	Auger, Claire	8	Memory: Brain Bytes and Stereotypes	1	Farnsworth
8	Barnes, Marilyn	8	Warped Words	8	Irving
9	Espino, Starsky	8	Is Colored Text More Easily Remembered?	1	Albany Park Acad
10	Espinoza, Gissel	8	The Effect of Music	4	Goethe
11	Mendoza, Lidia	8	Afecta El Color?	11	Sawyer
12	Pongsiririt, Ariya	8	Smart Art	4	Mitchell
13	Rios, Arely	8	Stroop Effect	6	Burr
14	Rodarte, Korina	8	The Stroop Effect	11	Fairfield
15	Spears, Karen	8	Cell Phone Text Messaging on Reaction Time	16	Bennett
16	Tran, Elizabeth	8	Purple, Green, Blue, What?	1	Garvy
17	Zamora, Gabriela	8	Does Warping Words Block the Stroop Effect?	1	Sauganash
18	Jones, Debra	9	Feeling Blue?	23	Dyett
19	Lauletta, Thomas	9	Seeing Red	19	Lane
20	Ortiz, Alexandro	9	Effects of Music on Study Habits	19	Lane
21	Gauthier, Jennie	10	You're Guilty! Bias in a Photo Lineup	23	Hyde Park
22	McKinnie, Micheal	10	Music on Your Mind	23	Hyde Park
23	Pietrasienska, Roksana	10	To Talk or Not to Talk	21	Payton
24	Vargas, Arely	10	Shaping Your Thoughts	23	Richards
25	Aranda, Karina	11	Does Age Affect the Ability to Remember?	21	Juarez
26	Flores, Janet	11	Age vs. Memory	24	Washington
27	Mills, Kyia	11	How Do Mealworms Behave in the Environment?	23	Hirsch
28	Steve, Shantell	11	Is Singulair the Loneliest Pill?	24	Julian
29	Thigpen, Denika	11	Age and Memory: How Do They Relate?	25	Bronzeville
30	Thomas, Tonika	11	The Stroop Effect!	25	School of Leadership
31	Zhou, Linda	11	Are You Neuropsychologically Imbalanced?	19	Lake View
32	Sharp, Iesha	12	Sugar Blues	21	Collins
Bioc	hemistry				
33	Ahsan, Najah	7	Denaturation and Coagulation of Protein	2	Disney
34	Bennett, Ayanna	8	Does Gasoline Affect Plant Growth?	15	Ariel
35	Davis, Dara	8	What's Got You Casein?	2	Budlong
36	Lopez, Marvin	8	Burning Calories	1	Monroe
	F 1		O THE TE		



(Biochemistry cont'd)

` _	mistry cont'd)				
Exh	Student Name	Grade	Title	Area	School
37	McClendone, Brittney	8	Nut Case	18	Metcalfe
38	Soler, Natalia	8	Does Aging Affect the Amount of DNA? Part II	25	Hale
39	Sowa, Samantha	8	Solving the "Gas" Crisis	3	Locke
40	Spence, Shelby	8	Protein-Based Stains and Enzymes	14	Lenart
41	Alford, Christiane	9	RiNeuronsA	21	W. Young
42	Holt, Kelsey	9	At What Temperature Will Bromelain Denature?	24	Harlan
43	Howard, Demara	9	How Living Tissues React to Changes in pH	21	Crane
44	Khan, Saad	9	Role of FoxO1 & Atrogin-1 on MyHC2 & MyHC4	19	Lane
45	Robinson, Richard	9	How Does CO <sub>2</sub> Affect Photosynthesis?	23	Dyett
46	Howard, Jourdan	10	The Effects of Sweeteners on Cell Growth	23	Lindblom
47	Sheng, Yutian	10	Eggshell = Filter	21	W. Young
48	Harper, Naomi	11	ECG Cytotoxicity Assay in BV2 Cell Line	24	Chicago Ag.
49	Miles, Che	11	Hell-O Good-Bye Jell-O	24	Bogan
50	Ahmad, Aisha	12	Effect of Vitamin D in Prostate Cancer	19	Northside
51	George, Terrence	12	Imaging Mitochondrial Ca $^2+$ Dynamics in $\beta$ Cells	19	Lincoln Park
52	Patel, Bhumi	12	Phytochemicals and Rat Prostate Cancer Cells	19	Northside
Bota	ny				
53	Aguilar, Jennifer	7	Competition Between Plant Growth	10	Whitney
54	Arrocha, Yasser	7	Light Color and Plants	12	Carson
55	Delgado, Bibiana	7	Pumpkin: Hot Water or Cold?	4	Northwest
56	Hassan, Sarah	7	Effects of Primary Light Colors on Plants	2	Boone
57	Linares, Itzel Stover, Rebecca	7	Growing Roots	4	Chopin
58	Ahmed, Talha	8	In Which Chemical Does Wheat Grass Grow Best?	2	Boone
59	Perez, Abril	8	Effects of Roses	18	Bright
60	Vega, Benjamin	8	Effects of Water Temperature on Plant Growth	3	Sayre
61	Ali, Arzeena	9	Salt and Germination	52	Chicago Math & Science
62	Drozd, Derek	9	Effect of Freezing on Cat Grass Seed Growth	21	W. Young
63	Lin, Melissa	9	That's The Way to Grow!	21	W. Young
64	Reyes, Kiara	9	The Longevity of Cut Flowers	25	World Language
65	Sikorski, Mark	9	The Effects of Acid Rain on Bean Plants	25	Williams
66	Bolton, Nicole	10	Effect of Gibberellic Acid on Palm Plants	24	Morgan Park
67	Fernandez, Daniela	10	Colored Light Changing Lima Bean Growth	19	Lincoln Park
68	Herrera, Alexandra	10	Does Elevated CO <sub>2</sub> Affect Plant Growth?	23	Gage Park
69	Medina, Victor	10	Is Change Good?	21	Juarez
70	Tucker, Salena	10	Hydrogen Peroxide and Seed Germination	23	Hyde Park
71	Valle, Manuel	10	Radiation Effects	21	Jones
72	Villa, Giselle	10	How Does Salt Affect Plants?	23	Gage Park
73	Voytanovych, Nadiya	10	The Effects of Allelochemicals on Zinnia	19	Lane
74	Gong, Muyuan	11	Isolating Plant DNA Without Liquid Nitrogen	23	Tilden



Exh	Student Name	Grade	Title	Area	School
75	Guerrero, Jessica	11	Do Plants Grow Better in Hydroponics or Soil?	23	Curie
76	Sanders, Andrea	11	Does Water Quality Affect Elodea Plants?	23	Gage Park
Cher	nistry				
77	Decker, Ted	7	The Effects of Acid Rain on Building Material	2	Bell
78	Diaz, Nickolas	7	Foamy Juices	17	Mireles
79	Jenkins, Stevon	7	To Burst or Not to Burst?	16	Morgan
80	Kavouras, Christian	7	Get Your OJ!	2	Coonley
81	Olmos, Rigoberto	7	Does Metal in Chemicals Affect Flame Color?	3	Lyon
82	Paukstys, Lukas	7	Batteries and Robot Performance	11	Byrne
83	Amayo, Ralph	8	Determine Amount of Zinc on Galvanized Steel	6	Alcott
84	Avery, Chloee	8	The Dissolution Rate of Ibuprofen Pills	7	Herbert
85	Bennett, Jamesha	8	Which Orange Juice Has the Most Vitamin C?	2	Jordan
86	Chavez, Romualdo	8	Which Soda Can Will Sink or Float?	10	Kanoon Magnet
87	Davies, Dekonti	8	Dye Hard to Live Green	23	Kenwood
88	Goodman, Maurice	8	The Metal Reaction	9	Sheridan
89	Griffin, Michael	8	What Solution Removes CD Scratches Best?	16	Clissold
90	Helton, Norton	8	Kitchen Chemistry: Iodine in Salt	15	Pershing West
91	Iturralde, Rebecca	8	How Heavy Is Hot?	9	A. Jackson
92	Jimenez, Andrea	8	Comparison of Aspirin Tablets	12	Seward
93	Kucharzak, Charles	8	Electroplating: Optimum Shape Effectiveness	10	Gunsaulus
94	Lyang, Charles	8	Lots of Vitamin C	21	W. Young
95	Paredes, Maria	8	The Secret Formula	12	Hamline
96	Phillips, Jalissa	8	Which Carrot Has the Most Carbon Dioxide Gas?	14	Harvard
97	Phillips, Lindsay	8	Permanent Problems	1	Norwood Park
98	Pirpiris, Deanna	8	Crystal Creations	1	Taft
99	Spencer, Akele	8	Does Temperature Affect Vitamin C Content?	9	Skinner
100	Taylor-Jackson, Ravin	8	Which Orange Juice Has the Most Vitamin C?	13	Beasley
101	Andersson, Evan	9	The Effects of Chlorine on Activated Carbon	19	Lane
102	Chung, Adrienne	9	Cake-Mania	21	W. Young
103	Collier, Tashaina	9	The Power of Biodiesel and Peanuts	24	Simeon
104	Decker, Matthew	9	Wood n't It Be Ice	21	W. Young
105	Diaz, Erika	9	Lifting Prints	25	Infinity
106	Dickerson, Diamond	9	Spice Me Up	24	Julian
107	Gename, Kevin	9	Enzyme Time	23	Kennedy
108	Hill, Latavia	9	Dissolution Time	23	Hyde Park
109	Hopps IV, Porter	9	A Burst of Refreshment	23	King
110	Miller, LaDonna	9	Sweet Sugar	23	King
111	Tran, Margaret	9	Flammability of Fabric Softener	19	Lane
112	Zagorski, Jimmy	9	Mentos and Diet Coke Eruption	19	Lake View
113	Arteaga, Martha	10	Rates of Reactions	23	Hubbard



(Chemistry cont'd)

Chemis	ary com a)				
Exh	Student Name	Grade	Title	Area	School
114	Billups, Anniky	10	What's The Point of Boiling?	23	Dunbar
115	Erickson, Elin	10	Electrolysis	19	Von Steuben
116	Garcia, Jesus	10	Surface Tension	23	Richards
117	Martin, Nepresha	10	Do Oranges Have the Same Amount of Water?	23	Hirsch
118	Meeks, Shatrice	10	Molecule Motion	23	Richards
119	Vulic, Emir	10	The Effect of Acid on Limestone	19	Lincoln Park
120	Wilson, Janea	10	Aspirin Tummy Test	24	Brooks
121	Ahmed, Sana	11	Dissolution of Medicine with HCI	19	Lake View
122	Branch, Reginald	11	Flame Test	25	School of Leadership
123	Budzikowska, Marta	11	Effect of Oils' Temp. on Falling Ball's Speed	19	Von Steuben
124	Cotton, Dantrell	11	Converting Food Into Science	24	Chicago Ag.
125	Gibbs, LeAnder	11	Biodiesel Solid Acid Catalyst Pathway	23	Curie
126	Gonzalez, Elizabeth	11	How Many Times Does It Take to Neutralize?	24	Washington
127	Hernandez, Victoria	11	Stained Teeth	21	Juarez
128	Moore, Cierra	11	Density of Different Varieties of Apples	23	Hirsch
129	Phung, Eunice	11	Water Quality of the Chicago River	23	Curie
130	Robles, Ramon	11	CO <sub>2</sub> and You	19	Mather
131	Zuniga, Erik	12	Band Gap	23	Curie
Com	puter Science				
132	Clemmons, Maleke	7	Super Computer: Processor Speed	23	Lindblom
133	Carnowell, Michael	8	Java Variables: The Fastest Computations?	14	Lenart
134	Aird, Jonathan	10	Success of Genetic Programming vs. # of Inputs	21	Payton
135	Balay-Wilson, Leah	10	Fractal Complexity of Irradiated Tissues	19	Lincoln Park
136	Maliszewski, Austin	10	Mathematical Compression of High Entropy Data	21	Payton
137	Price, Stevlan	10	Which Antivirus Works Best?	23	Hyde Park
138	Tines, Antonio	11	You Got Me Going in Circles!	25	Bronzeville
Eartl	h Science				
139	James, Anissa	7	Growing Crystals	23	Lindblom
140	Leonard, Jamar	7	Best Way to Predict the Weather	8	Kellman
141	Pauer, Alexander	7	Soils' Affect on Flooding	1	Canty
142	Smith, Christopher	8	Soil Type and Water Retention	18	Schmid
143	Maberry, Raven	9	Do Landforms Affect Tornado Intensity?	24	Harlan
144	Swartz, Kyle	10	Tornado Genesis	19	Von Steuben
145	Tsarev, Slavi	12	Permeability and Groundwater Movement	19	Amundsen
Elect	tronics				
146	Branch, Jaeda	7	Suntricity	24	Morgan Park
147	Esman, Pauline	7	The Sound of Music: Science Edition	1	Edison
148	Washington, Marcel	7	The Power of Copper	3	Lovett
149	Meza, Jesse	8	Solar Panel: Hoax or Reality?	10	Gary
	•		<u> </u>		<del>-</del>



Exh	Student Name	Grade	Title	Area	School
150	Rainey, Brianna	8	Single Slide Projector	52	Longwood Charter
151	Santamaria, Margarita	8	Foil's Efficiency on a Solar Cell	11	Morrill
152	Smith, Karon	9	Which Smoke Detector Works Best?	23	King
153	Blaxton, David	11	Can You Hear Me Now?	23	Curie
Engi	neering Science				
154	Castro, David	7	Steady Study	9	A. Jackson
155	Hehn, Dennis	8	Wind Power	1	Taft
156	Kneip, David	8	Which Beam Design Supports the Most Weight?	2	Chappell
157	McCabe, John	8	Parachuting To Victory	16	Cassell
158	Nelson, Matthew	8	Energy: Which Form Will Work for You?	16	Cassell
159	Olguin, Jacqueline	8	Supporters	12	Hamline
160	Banik, Mark	9	Which Liquids Produce the Most hho Gas?	24	Chicago Ag.
161	Gomez-Doyle, Sofia	9	What Bridge Design Sustains the Most Weight?	19	Lincoln Park
162	Izui, Jason	9	Blades of Glory	19	Von Steuben
163	Mack, Tatiana	9	How Much Weight Can Constructed Bridges Hold?	23	King
164	Kotlarek, Bart	10	Golf Club Technology Analysis	19	Taft
165	Sawyer, Jordan	10	Tension and Frequency in Guitar Strings	21	Payton
166	Nelson, Melissa	11	Energy? The Answer is Still Blowing in Wind!	24	Chicago Ag.
167	Robbins, Alexander	11	Which Support is Strongest?	19	Von Steuben
Envi	ronmental Science				
168	Cannon, Shahzaade	7	Purity and Salinity	2	Rogers
169	Pacholski, Brian	7	Filtered Water: Clean or Contaminated?	11	Dore
170	Abarca, Ricardo	8	The Attack of the Pollutants	12	Shields
171	Asimow, Noah	8	Natural vs. Artificial Surfaces	6	Hawthorne
172	Cinaj, Christina	8	$H_2O$	3	Locke
173	Curtin, Ellen	8	Solar Cell Efficiency	10	Gunsaulus
174	Dzialek, Brigette	8	Leave Your Metals Out of My Drink	11	Peck
175	Martin, Raquita	8	How Does Soil Affect the pH of Water?	17	Revere
176	Moreno, Nia	8	Water Around The World: Is It Safe?	24	Morgan Park
177	Price, Victoria	8	Purest Water North or South: The Final Phase	17	Tanner
178	Santiago, Stephanie	8	Wind Power	4	Casals
179	Taylor, Charles	8	How Safe Is Our Water Supply?	17	Powell
180	Terry, Johnathan	8	Natural Substances in Our Ecosystem	13	Beasley
181	Walker, Vernell	8	Testing the Waters	13	Beethoven
182	Wells, Trivon	8	Which Absorbs More Heat?	16	Green
183	Durr, Brandon	9	The Effect of Ceiling Shape on Heat Usage	23	King
184	Prichett, Gary	9	Effects of Cigarette Waste on Flora and Fauna	24	Brooks
185	Zermeno, Daniela	9	Can Greywater Be Used to Grow Wheatgrass?	19	Lane
186	Banda, Barbara	10	Is Ground-Level Ozone a Problem in Winter?	23	Curie



( $Environmental\ Science\ cont'd$ )

Exh	Student Name	Grade	Title	Area	School
187	Bryant, Antwon	10	Does Cigarette Smoke Affect Plant Growth?	23	Gage Park
188	Coronel, Juan	10	Worms and Plants	23	Curie
189	Halon, Piotr	10	Breathing the Air of Life	19	Lane
190	Iqbal, Sana	10	Effects of N, P, and K Fertilizer on Soybeans	19	Senn
191	Perez, Karen	10	Using Daphnia & Hydra to Monitor H <sub>2</sub> O Toxicity	19	Lane
192	Sanchez, Alexandra	10	Wind Power	23	Hubbard
193	Sulaiman, Faiza	10	Investigating Various Water Pollutants	19	Lane
194	Zekthi, Enxhi	10	The Effect of Chlorine on Soybean Germination	19	Taft
195	Aguilar, Nancy	11	Fuel of Tomorrow	19	Von Steuben
196	Estrada, Miguel	11	Does Garlic Discourage Aphids?	26	Phoenix M. A.
197	Schultz, Michael	11	Temperature and Oil Spills	21	Payton
198	Ramirez, Karen	12	Contaminated Water?	24	Washington
Heal	th Science			Ва	exter International Inc.
199	Bullocks, Kiara	7	Fingerprint Patterns	8	Kellman
200	Lee, Robbie	7	Neutralizing Antacids	18	West Pullman
201	McDermott, Katherine	8	Cracking A Smile	1	Farnsworth
202	Moore, Racquel	8	Fresher for Longer	14	Yale
203	Rodriguez, John	8	Which Lunchmeat Contains the Most Fat?	11	Pasteur
204	Alvarez, Kenny	9	Are All Potato Chips Equally Greasy?	26	Phoenix M. A.
205	Jackson, Jhanae	9	Liver Damage	25	School of Leadershi
206	Kaminski-Morris, Audrey	9	The Lung Capacity of a Swimmer vs. Non-Swimmer	19	Lake View
207	Knox, Erica	9	Variables Affecting Peripheral Vision	21	W. Young
208	Askia, Fatimah	10	Studying Insulin Secreting Cells in Zebrafish	25	Williams
209	Lara, Yesica	10	Which Orange Juice Contains More Vitamin C?	23	Curie
210	Manghi, Maria	10	Effect of Cigarette Smoke on Wound Healing	21	Payton
211	Mei, Sally	10	How Are Fingerprint Patterns Inherited?	23	Curie
212	Womack, Deonte	10	Heart Rate Recovery Times	23	Hyde Park
213	Cadiz, Michael	11	Collagen in the Supraspinatus Tendon	21	Payton
214	Perez, Esteban	11	Do Liquid Supplements Affect Running?	21	Juarez
215	Xu, Mengyi	11	MicroRNAs and Their Expression in Leukemia	19	Lincoln Park
216	Buenaventura, Maria Andrea	12	Diet or Die-Yet?	19	Amundsen
217	Cencieros, Gabriel	12	Dissolution Time of Pain Relievers	24	Carver Military
218	Goodwin, Lauren	12	Soy Protein & Exercise Reduce Lesions in Mice	24	Chicago Ag.
219	Ivery, Alecia	12	Lifestyles and Asthma	24	Bogan
220	Nolan, Margaret	12	Shut Up and Drive	19	Taft
Mate	rials Science				
221	Flores, Lucero	7	How Permanent Are Permanent Markers?	11	Twain
222	Haygood, Alexa	7	Do Color Candles Burn Faster?	18	Burnham
223	Rivera, Anthony Smith, Jonathan	7	More Bounce	3	Spencer



# **Exhibits by Category**

224         Barraza, Alexandra         8         Does Material Color Affect Heat Absorption?         17         Sullivan Specialty           225         Earnitez, Brian         8         Color Effect on Temperature         10         Burroughs           226         Virrueta, Stephany         8         Heat Conductors         12         Shiolds           227         Lona, Bernadetre         10         Fabrics and Fire         23         Kemedy           228         Shine, Delmario         10         Flammability of Infant Sleepwear         23         Gage Park           229         Diaz, Maria         11         Schurz vs. Lane         19         Schurz           230         Rdwards, Brandon         11         Mega-Absorbers: A Comparative Study         25         World Language           231         Guzman, Tania         11         Does a Material's Nature Affect Resistance?         23         Richards           232         Sunbrez, Jesus         10         Play Ball!         19         Lanc           Microbiology           Wicrobiology           235         Hurner, Tyehimba         7         An Aerobic Exercise: Yeast Metabolism Part II         22         Lindblom           236         Gaston, Jonathan	Exh	Student Name	Grade	Title	Area	School
226         Virrueta, Stephany         8         Heat Conductors         12         Shields           227         Lona, Bernadette         10         Fabries and Fire         23         Kennedy           228         Shine, Delmario         10         Flammability of Infant Sleepwear         23         Gage Park           229         Diaz, Maria         11         Schurz vs. Lane         19         Schurz           230         Edwards, Brandon         11         Mega-Absorbers: A Comparative Study         25         World Language           231         Evans, Christopher         11         Which Diaper Absorbs the Best?         23         Tidlen           232         Cuzman, Tania         11         Does a Material's Nature Affect Resistance?         23         Richards           233         Smith, Rhonda         11         I Don't Know My Own Strength!         25         Brozere!           234         Sanchez, Jesus         0         Play Ball!         19         Lane           Mathematics           234         Sanchez, Jesus         10         Play Ball!         21         Lindblom           235         Turner, Tychinha         7         An Aerobic Exercise: Yeast Metabolism Part II         23         Lindblom	224	Barraza, Alexandra	8	Does Material Color Affect Heat Absorption?	17	Sullivan Specialty
227         Lona, Bernadette         10         Fabrics and Fire         23         Kennedy           228         Shine, Delmario         10         Flammability of Infant Sleepwear         23         Gage Park           229         Diaz, Maria         11         Schurz vs. Lane         19         Schurz           230         Edwards, Brandon         11         Mega-Absorbers: A Comparative Study         25         World Language           231         Evans, Christopher         11         Which Diaper Absorbs the Best?         23         Richards           232         Guzman, Tania         11         Does a Material's Nature Affect Resistance?         23         Richards           233         Smith, Rhonda         11         I Dort Know My Own Strength!         25         Bronzeville           Mathematics           234         Sanchez, Jesus         10         Play Ball!         19         Lane           Microbiology           235         Turner, Tychiniba         7         An Aerobic Exercise: Yeast Metabolism Part II         23         Lindblom           236         Gaston, Jonathan         8         Wash Your Mouth         12         Claremont           237         Ortiz, Omar         8	225	Ramirez, Brian	8	Color Effect on Temperature 10 Burroug		Burroughs
228         Shine, Delmario         10         Flammability of Infant Sleepwear         23         Gage Park           229         Diaz, Maria         11         Schurz vs. Lane         19         Schurz           230         Edwards, Brandon         11         Mega-Absorbers: A Comparative Study         25         World Language           231         Evans, Christopher         11         Which Diaper Absorbers the Best?         23         Tilden           232         Guzman, Tania         11         Does a Material's Nature Affect Resistance?         23         Richards           233         Smith, Rhonda         11         I Don't Know My Own Strength!         25         Bronzeville           Material Span Agrange Resistance?         23         Richards           Microbiology           235         Turner, Tyehimba         7         An Aerobic Exercise: Yeast Metabolism Part II         23         Lindblom           236         Gaston, Jonathan         8         Wash Your Mouth         12         Claremont           236         Gaston, Jonathan         8         Wash Your Mouth         12         Claremont           237         Ortiz, Omar         8         Does One Bad Apple Spoil the Bunch?         11         Durne	226	Virrueta, Stephany	8	Heat Conductors	12	Shields
229   Diaz, Maria	227	Lona, Bernadette	10	Fabrics and Fire	23	Kennedy
230Edwards, Brandon11Mega-Absorbers: A Comparative Study25World Language231Evans, Christopher11Which Diaper Absorbs the Best?23Tilden232Guzman, Tania11Does a Material's Nature Affect Resistance?23Richards233Smith, Rhonda11I Don't Know My Own Strength!25BronzevilleMathematics234Sanchez, Jesus10Play Ball!19LaneMicrobiologyWister Typinimba7An Acrobic Exercise: Yeast Metabolism Part II23Lindblom235Gaston, Jonathan8Wash Your Mouth12Claremont237Ortiz, Omar8Does One Bad Apple Spoil the Bunch?11Durkin Park238Rosas, Martin8The Effect of Chemicals on Apple Blue Mold2Inter-American239Steigerwald, Kaitlyn8Bye, Bye E col*1Beaubien240Tate, Cecilia8The Effect of Antibacterial Soaps18Schmid241Tong, David8Antibacterial Effects of Chemicals6Ogden242Zhuo, Lucy8Organic Sanitizers vs. Chemical Sanitizers21W. Young243Deiss-Pehiely, Elad9Antimicrobial Activity of Allium Plants19Lincoln Park244Moy, Belinda9The Natural Pharmacy21W. Young245Buksa, Joanna10Antibiotic Resistance on Escherichia coli1	228	Shine, Delmario	10	Flammability of Infant Sleepwear	23	Gage Park
231 Evans, Christopher   11 Which Diaper Absorbs the Best?   23 Tilden	229	Diaz, Maria	11	Schurz vs. Lane	19	Schurz
232 Guzman, Tania 11 Does a Material's Nature Affect Resistance? 23 Richards 233 Smith, Rhonda 11 I Don't Know My Own Strength! 25 Bronzeville  Mathematics 234 Sanchez, Jesus 10 Play Ball! 19 Lane  Microbiology 235 Turner, Tyehimba 7 An Aerobic Exercise: Yeast Metabolism Part II 23 Lindblom 236 Gaston, Jonathan 8 Wash Your Mouth 12 Claremont 237 Ortiz, Omar 8 Does One Bad Apple Spoil the Bunch? 11 Durkin Park 238 Rosas, Martin 8 The Effect of Chemicals on Apple Blue Mold 2 Inter-American 239 Steigerwald, Kaitlyn 8 Bye, Bye E.coli 1 Beaubien 240 Tate, Cecilia 8 The Effect of Antibacterial Soaps 18 Schmid 241 Tong, David 8 Antibacterial Effects of Chemicals 6 Ogden 242 Zhuo, Lucy 8 Organic Sanitizers vs. Chemical Sanitizers 21 W. Young 243 Deiss-Yehiely, Elad 9 Antimicrobial Activity of Allium Plants 19 Lincoln Park 244 Moy, Belinda 9 The Natural Pharmacy 21 W. Young 245 Buksa, Joanna 10 Antibiotic Resistance on Escherichia coli 19 Lane 246 Garcia, Anthony 10 DNA Extraction 25 Infinity 247 Kim, Yoonjeong 10 The Antimicrobial Effect of Tea on E.coli 19 Lincoln Park 248 Rodriguez, Agustin 10 The Science of Molding Bread 23 Richards 249 Cernek, Nicholas 11 The Role of Integrins in Prostate Cancer 19 Lincoln Park 250 Khuu, Julie 12 *Dirty Hands? Clean Them Up With* 23 King 251 Kwateng, William 12 Effect of UVC on the Rate of Cell Respiration 19 Senn 252 Robateau, Angela 12 Attack of the Germs 23 King 253 Salehitazangi, Marzieh 12 Stem Cell Presence in Prostate Epithelium 19 Mather 254 Shropshire, Brittany 12 Zap That Zirl 255 Tran, Thuy 12 Epha2 Gene Mutations in Various Lung Cancers 19 Northside  Physics 256 Collins, Rachel 7 How Much Height to Loop the Loop? 13 Beasley 257 Diaz, Fabian 7 Now You See Them, Now You Don't 6 De Diego 258 Johnson, Ronisha 7 Strength of Magnets and Temperature 7 Brown	230	Edwards, Brandon	11	Mega-Absorbers: A Comparative Study	25	World Language
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236 Gaston, Jonathan 8 Wash Your Mouth 12 Claremont 237 Ortiz, Omar 8 Does One Bad Apple Spoil the Bunch? 11 Durkin Park 238 Rosas, Martin 8 The Effect of Chemicals on Apple Blue Mold 2 Inter-American 239 Steigerwald, Kaitlyn 8 Bye, Bye E.coli 1 Beaubien 240 Tate, Cecilia 8 The Effect of Antibacterial Soaps 18 Schmid 241 Tong, David 8 Antibacterial Effects of Chemicals 6 Ogden 242 Zhuo, Lucy 8 Organic Sanitizers vs. Chemical Sanitizers 21 W. Young 243 Deiss-Yehiely, Elad 9 Antimicrobial Activity of Allium Plants 19 Lincoln Park 244 Moy, Belinda 9 The Natural Pharmacy 21 W. Young 245 Buksa, Joanna 10 Antibiotic Resistance on Escherichia coli 19 Lane 246 Garcia, Anthony 10 DNA Extraction 25 Infinity 247 Kim, Yoonjeong 10 The Antimicrobial Effect of Tea on E.coli 19 Lincoln Park 248 Rodriguez, Agustin 10 The Science of Molding Bread 23 Richards 249 Cernek, Nicholas 11 The Role of Integrins in Prostate Cancer 19 Lincoln Park 250 Khuu, Julie 12 "Dirty Hands? Clean Them Up With" 23 King 251 Kwateng, William 12 Effect of UVC on the Rate of Cell Respiration 19 Senn 252 Robateau, Angela 12 Attack of the Germs 23 King 253 Salehitazangi, Marzieh 12 Stem Cell Presence in Prostate Epithelium 19 Mather 254 Shropshire, Brittany 12 Zap That Zit! 23 King 255 Tran, Thuy 12 EphA2 Gene Mutations in Various Lung Cancers 19 Northside  Physics 256 Collins, Rachel 7 How Much Height to Loop the Loop? 13 Beasley 257 Diaz, Fabian 7 Now You See Them, Now You Don't 6 De Diego 258 Johnson, Ronisha 7 Strength of Magnets and Temperature 7 Brown	Micr	obiology				
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238Rosas, Martin8The Effect of Chemicals on Apple Blue Mold2Inter-American239Steigerwald, Kaitlyn8Bye, Bye E.coli1Beaubien240Tate, Cecilia8The Effect of Antibacterial Soaps18Schmid241Tong, David8Antibacterial Effects of Chemicals6Ogden242Zhuo, Lucy8Organic Sanitizers vs. Chemical Sanitizers21W. Young243Deiss-Yehiely, Elad9Antimicrobial Activity of Allium Plants19Lincoln Park244Moy, Belinda9The Natural Pharmacy21W. Young245Buksa, Joanna10Antibiotic Resistance on Escherichia coli19Lane246Garcia, Anthony10DNA Extraction25Infinity247Kim, Yoonjeong10The Antimicrobial Effect of Tea on E coli19Lincoln Park248Rodriguez, Agustin10The Science of Molding Bread23Richards249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brit	236	Gaston, Jonathan	8	Wash Your Mouth	12	Claremont
239 Steigerwald, Kaitlyn 8 Bye, Bye E.coli 1 Beaubien 240 Tate, Cecilia 8 The Effect of Antibacterial Soaps 18 Schmid 241 Tong, David 8 Antibacterial Effects of Chemicals 6 Ogden 242 Zhuo, Lucy 8 Organic Sanitizers vs. Chemical Sanitizers 21 W. Young 243 Deiss-Yehiely, Elad 9 Antimicrobial Activity of Allium Plants 19 Lincoln Park 244 Moy, Belinda 9 The Natural Pharmacy 21 W. Young 245 Buksa, Joanna 10 Antibiotic Resistance on Escherichia coli 19 Lane 246 Garcia, Anthony 10 DNA Extraction 25 Infinity 247 Kim, Yoonjeong 10 The Antimicrobial Effect of Tea on E.coli 19 Lincoln Park 248 Rodriguez, Agustin 10 The Science of Molding Bread 23 Richards 249 Cernek, Nicholas 11 The Role of Integrins in Prostate Cancer 19 Lincoln Park 250 Khuu, Julie 12 "Dirty Hands? Clean Them Up With" 23 King 251 Kwateng, William 12 Effect of UVC on the Rate of Cell Respiration 19 Senn 252 Robateau, Angela 12 Attack of the Germs 23 King 253 Salehitazangi, Marzieh 12 Stem Cell Presence in Prostate Epithelium 19 Mather 254 Shropshire, Brittany 12 Zap That Zit! 23 King 255 Tran, Thuy 12 EphA2 Gene Mutations in Various Lung Cancers 19 Northside  256 Collins, Rachel 7 How Much Height to Loop the Loop? 13 Beasley 257 Diaz, Fabian 7 Now You See Them, Now You Don't 6 De Diego 258 Johnson, Ronisha 7 Strength of Magnets and Temperature 7 Brown	237	Ortiz, Omar	8	Does One Bad Apple Spoil the Bunch?	11	Durkin Park
240 Tate, Cecilia 8 The Effect of Antibacterial Soaps 18 Schmid  241 Tong, David 8 Antibacterial Effects of Chemicals 6 Ogden  242 Zhuo, Lucy 8 Organic Sanitizers vs. Chemical Sanitizers 21 W. Young  243 Deiss-Yehiely, Elad 9 Antimicrobial Activity of Allium Plants 19 Lincoln Park  244 Moy, Belinda 9 The Natural Pharmacy 21 W. Young  245 Buksa, Joanna 10 Antibiotic Resistance on Escherichia coli 19 Lane  246 Garcia, Anthony 10 DNA Extraction 25 Infinity  247 Kim, Yoonjeong 10 The Antimicrobial Effect of Tea on E.coli 19 Lincoln Park  248 Rodriguez, Agustin 10 The Science of Molding Bread 23 Richards  249 Cernek, Nicholas 11 The Role of Integrins in Prostate Cancer 19 Lincoln Park  250 Khuu, Julie 12 "Dirty Hands? Clean Them Up With" 23 King  251 Kwateng, William 12 Effect of UVC on the Rate of Cell Respiration 19 Senn  252 Robateau, Angela 12 Attack of the Germs 23 King  253 Salehitazangi, Marzieh 12 Stem Cell Presence in Prostate Epithelium 19 Mather  254 Shropshire, Brittany 12 Zap That Zit! 23 King  255 Tran, Thuy 12 EphA2 Gene Mutations in Various Lung Cancers 19 Northside  256 Collins, Rachel 7 How Much Height to Loop the Loop? 13 Beasley  257 Diaz, Fabian 7 Now You See Them, Now You Don't 6 De Diego  258 Johnson, Ronisha 7 Strength of Magnets and Temperature 7 Brown	238	Rosas, Martin	8	The Effect of Chemicals on Apple Blue Mold	2	Inter-American
241Tong, David8Antibacterial Effects of Chemicals6Ogden242Zhuo, Lucy8Organic Sanitizers vs. Chemical Sanitizers21W. Young243Deiss-Yehiely, Elad9Antimicrobial Activity of Allium Plants19Lincoln Park244Moy, Belinda9The Natural Pharmacy21W. Young245Buksa, Joanna10Antibiotic Resistance on Escherichia coli19Lane246Garcia, Anthony10DNA Extraction25Infinity247Kim, Yoonjeong10The Antimicrobial Effect of Tea on E.coli19Lincoln Park248Rodriguez, Agustin10The Science of Molding Bread23Richards249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley	239	Steigerwald, Kaitlyn	8	Bye, Bye E.coli	1	Beaubien
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243Deiss-Yehiely, Elad9Antimicrobial Activity of Allium Plants19Lincoln Park244Moy, Belinda9The Natural Pharmacy21W. Young245Buksa, Joanna10Antibiotic Resistance on Escherichia coli19Lane246Garcia, Anthony10DNA Extraction25Infinity247Kim, Yoonjeong10The Antimicrobial Effect of Tea on E.coli19Lincoln Park248Rodriguez, Agustin10The Science of Molding Bread23Richards249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	241	Tong, David	8	Antibacterial Effects of Chemicals	6	Ogden
244Moy, Belinda9The Natural Pharmacy21W. Young245Buksa, Joanna10Antibiotic Resistance on Escherichia coli19Lane246Garcia, Anthony10DNA Extraction25Infinity247Kim, Yoonjeong10The Antimicrobial Effect of Tea on E.coli19Lincoln Park248Rodriguez, Agustin10The Science of Molding Bread23Richards249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	242	Zhuo, Lucy	8	Organic Sanitizers vs. Chemical Sanitizers	21	W. Young
245Buksa, Joanna10Antibiotic Resistance on Escherichia coli19Lane246Garcia, Anthony10DNA Extraction25Infinity247Kim, Yoonjeong10The Antimicrobial Effect of Tea on E.coli19Lincoln Park248Rodriguez, Agustin10The Science of Molding Bread23Richards249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	243	Deiss-Yehiely, Elad	9	Antimicrobial Activity of Allium Plants	19	Lincoln Park
246Garcia, Anthony10DNA Extraction25Infinity247Kim, Yoonjeong10The Antimicrobial Effect of Tea on E.coli19Lincoln Park248Rodriguez, Agustin10The Science of Molding Bread23Richards249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	244	Moy, Belinda	9	The Natural Pharmacy	21	W. Young
247Kim, Yoonjeong10The Antimicrobial Effect of Tea on E.coli19Lincoln Park248Rodriguez, Agustin10The Science of Molding Bread23Richards249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	245	Buksa, Joanna	10	Antibiotic Resistance on Escherichia coli	19	Lane
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249Cernek, Nicholas11The Role of Integrins in Prostate Cancer19Lincoln Park250Khuu, Julie12"Dirty Hands? Clean Them Up With"23King251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	247	Kim, Yoonjeong	10	The Antimicrobial Effect of Tea on <i>E.coli</i>	19	Lincoln Park
250 Khuu, Julie 12 "Dirty Hands? Clean Them Up With" 23 King 251 Kwateng, William 12 Effect of UVC on the Rate of Cell Respiration 19 Senn 252 Robateau, Angela 12 Attack of the Germs 23 King 253 Salehitazangi, Marzieh 12 Stem Cell Presence in Prostate Epithelium 19 Mather 254 Shropshire, Brittany 12 Zap That Zit! 23 King 255 Tran, Thuy 12 EphA2 Gene Mutations in Various Lung Cancers 19 Northside  256 Collins, Rachel 7 How Much Height to Loop the Loop? 13 Beasley 257 Diaz, Fabian 7 Now You See Them, Now You Don't 6 De Diego 258 Johnson, Ronisha 7 Strength of Magnets and Temperature 7 Brown	248	Rodriguez, Agustin	10	The Science of Molding Bread	23	Richards
251Kwateng, William12Effect of UVC on the Rate of Cell Respiration19Senn252Robateau, Angela12Attack of the Germs23King253Salehitazangi, Marzieh12Stem Cell Presence in Prostate Epithelium19Mather254Shropshire, Brittany12Zap That Zit!23King255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	249	Cernek, Nicholas	11	The Role of Integrins in Prostate Cancer	19	Lincoln Park
252 Robateau, Angela 12 Attack of the Germs 23 King 253 Salehitazangi, Marzieh 12 Stem Cell Presence in Prostate Epithelium 19 Mather 254 Shropshire, Brittany 12 Zap That Zit! 23 King 255 Tran, Thuy 12 EphA2 Gene Mutations in Various Lung Cancers 19 Northside  Physics 256 Collins, Rachel 7 How Much Height to Loop the Loop? 13 Beasley 257 Diaz, Fabian 7 Now You See Them, Now You Don't 6 De Diego 258 Johnson, Ronisha 7 Strength of Magnets and Temperature 7 Brown	250	Khuu, Julie	12	"Dirty Hands? Clean Them Up With"	23	King
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255Tran, Thuy12EphA2 Gene Mutations in Various Lung Cancers19NorthsidePhysics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	253	Salehitazangi, Marzieh	12	Stem Cell Presence in Prostate Epithelium	19	Mather
Physics256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	254	Shropshire, Brittany	12	Zap That Zit!	23	King
256Collins, Rachel7How Much Height to Loop the Loop?13Beasley257Diaz, Fabian7Now You See Them, Now You Don't6De Diego258Johnson, Ronisha7Strength of Magnets and Temperature7Brown	255	Tran, Thuy	12	EphA2 Gene Mutations in Various Lung Cancers	19	Northside
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	257	Diaz, Fabian	7	Now You See Them, Now You Don't	6	De Diego
259 Khan, Ameena 7 Hazy Daze 1 Edison	258	Johnson, Ronisha	7	Strength of Magnets and Temperature	7	Brown
	259	Khan, Ameena	7	Hazy Daze	1	Edison



# **Exhibits by Category**

(Physics cont'd)

260         McRoy, Lauren         7         Which Kite Shape Flies the Best?         11         Byrne           261         Adejimni, David         8         Surface Tension         8         Henson           262         Amexua, Christopher         8         Making It Ship-Shape         10         McKinley Park           263         Carbajal, Fabian         8         Science of Spin: A Baseball Pendulum         10         De La Cruz           264         Cephas, Tajdore         8         COR-*?? Bounce, Bounce, Bounce         17         Turner-Drew           265         Chrobak-Prince, Benjamin         8         Let the Sun Shine In         14         Lenart           266         Dickson, Alundra         8         Colors Absorbing Heat         17         Gillespie           267         Douglas, Tiajuanna         8         Holding the Heat         8         Lathrop           268         Flax, Daniela         8         Absorbed Peltier Heat Dependence on Current         6         Lincoln           269         Flax, Daniela         8         Absorbed Peltier Heat Dependence on Current         6         Lincoln           270         Guy, Malik         8         We Cracked Up         15         Canter           271	Exh	Student Name	Grade	Title	Area	School
Adejinmi, Samuel  7 Adejinmi, Samuel  7 Amezcua, Christopher  8 Making It Ship-Shape  10 McKinley Park  8 Corbaja, Tabian  8 Science of Spin: A Baseball Pendulum  10 De La Cruz  264 Cephas, Taylore  8 COR-??? Bounce, Bounce  17 Turner-Drew  265 Chrobak-Prince, Benjamin  8 Let the Sun Shine In  14 Lenart  266 Dickson, Alundra  8 Colors Absorbing Heat  17 Gillespie  267 Douglas, Tajuanna  8 Holding the Heat  8 Lathrop  268 Flanagan, Anton  8 Faraday's Law: Electromagnetic Fields  8 Lathrop  269 Flax, Daniela  8 Absorbed Pettier Heat Dependence on Current  6 Lincoln  270 Guy, Malik  8 We Cracked Up  15 Canter  271 He, Terence  8 Does Temperature Affect Magnetism?  9 Haines  272 Lopez, Victor  8 Chilly Magnets  11 Sawyer  273 Agunloye, Oluwamide  9 'Lights, Color, Action!!!'  19 Lane  274 Blackwood, Hannah  9 Magnet Muscle: Cold is Bold, Hot is Not  21 W. Young  275 Grose, Victoria  9 Thermocouple: It's Electric  21 W. Young  276 Lodsky, Clara  9 Shining on Through Trinck and Thin  277 Marquez, Denisse  9 The Effect of Tires' Air Pressure on Friction  278 Allen, Corey  10 How Does Heat Affect a Magnet's Strength?  279 Gausevic, Suad  10 Keep It Cool  10 How Par Can Sparks Jump?  281 Donaldson, Marie  10 Frequency, Tension and Length Relationships  21 Payton  282 Flores, Edith  10 Calorimetry and Light Bulbs  23 Hyde Park  283 Garcia, Carlos  10 Effects of Electromagnetism on Plant Growth  19 Lane  286 Mercurio, Maggie  10 Could Wood Be Understood?  21 W. Young  287 Koberts, Omari  10 The Mpemba Effect  11 Bridges Under Stress & Strain  288 Araujo, Fernando  11 Bridges Under Stress & Strain  29 Avila, Abigail  11 Fine Turning: Amplifying Sound  24 Bogan  250 Guerrero, Alfredo  12 Wich Flane  261 Chicago Ma.  262 Chicago Ma.  263 Hondagon, Diana  16 Fifects of Electromagnetism on Rocket Car Speed  17 Wolnth Grand  27 Welenth, Amaury  18 Effect of Puncture Size on Rocket Car Speed  19 North Grand	260	McRoy, Lauren	7	Which Kite Shape Flies the Best?	11	Byrne
263         Carbajal, Fabian         8         Science of Spin: A Baseball Pendulum         10         De La Cruz           264         Cephas, Taylore         8         COR=??? Bounce, Bounce, Bounce         17         Turner-Drew           265         Chrobak-Prince, Benjamin         8         Let the Sun Shine In         14         Lenart           266         Dickson, Alundra         8         Colors Absorbing Heat         17         Gilespie           267         Douglas, Tajuanna         8         Holding the Heat         8         Lathrop           268         Flanagan, Anton         8         Faraday's Law: Electromagnetic Fields         52         Longwood Charter           269         Flax, Daniela         8         Absorbed Peltier Heat Dependence on Current         6         Lincoln           270         Guy, Malik         8         We Cracked Up         15         Canter           271         He, Terence         8         Does Temperature Affect Magnetism?         9         Haines           271         He, Errence         8         Does Temperature Affect Magnetism?         9         Haines           272         Agunloye, Oluwamide         9         "Lingths, Color, Action!!"         19         Lane	261			Surface Tension	8	Henson
264Cephas, Taylore8COR=??? Bounce, Bounce, Bounce17Turner-Drew265Chrobak-Prince, Benjamin8Let the Sun Shine In14Lenart266Dickson, Alundra8Colors Absorbing Heat17Gillespie267Douglas, Tiajuanna8Holding the Heat8Lathrop268Flansgan, Anton8Faraday's Law: Electromagnetic Fields52Longwood Charter269Flax, Daniela8Absorbed Peltier Heat Dependence on Current6Lincoln270Guy, Malik8We Cracked Up15Canter271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Savyer273Agunloye, Oluwamide9"Lights, Color, Action!!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park </td <td>262</td> <td>Amezcua, Christopher</td> <td>8</td> <td>Making It Ship-Shape</td> <td>10</td> <td>McKinley Park</td>	262	Amezcua, Christopher	8	Making It Ship-Shape	10	McKinley Park
265Chrobak-Prince, Benjamin8Let the Sun Shine In14Lenart266Dickson, Alundra8Colors Absorbing Heat17Gillespie267Douglas, Tiajuanna8Holding the Heat8Lathrop268Flanagan, Anton8Faraday's Law: Electromagnetic Fields52Longwood Charter269Flax, Daniela8Absorbed Peltier Heat Dependence on Current6Lincoln270Guy, Malik8We Cracked Up15Canter271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluwamide9"Lights, Color, Action!!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Lodsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Pay	263	Carbajal, Fabian	8	Science of Spin: A Baseball Pendulum	10	De La Cruz
266Dickson, Alundra8Colors Absorbing Heat17Gillespie267Douglas, Tiajuanna8Holding the Heat8Lathrop268Flanagan, Anton8Faraday's Law: Electromagnetic Fields52Longwood Charter269Flax, Daniela8Absorbed Poltier Heat Dependence on Current6Lincoln270Guy, Malik8We Gracked Up15Canter271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluwamide9"Lights, Color, Action!!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbar	264	Cephas, Taylore	8	COR = ??? Bounce, Bounce	17	Turner-Drew
267Douglas, Tiajuanna8Holding the Heat8Lathrop268Flanagan, Anton8Faraday's Law: Electromagnetic Fields52Longwood Charter269Flax, Daniela8Absorbed Peltier Heat Dependence on Current6Lincoln270Guy, Malik8We Cracked Up15Canter271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluwamide9"Lights, Color, Action!!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park <td>265</td> <td>Chrobak-Prince, Benjamin</td> <td>8</td> <td>Let the Sun Shine In</td> <td>14</td> <td>Lenart</td>	265	Chrobak-Prince, Benjamin	8	Let the Sun Shine In	14	Lenart
268Flanagan, Anton8Faraday's Law: Electromagnetic Fields52Longwood Charter269Flax, Daniela8Absorbed Peltier Heat Dependence on Current6Lincoln270Guy, Malik8We Cracked Up15Canter271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluwamide9"Lights, Color, Action!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben<	266	Dickson, Alundra	8	Colors Absorbing Heat	17	Gillespie
269Flax, Daniela8Absorbed Peltier Heat Dependence on Current6Lincoln270Guy, Malik8We Cracked Up15Canter271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluvamide9"Lights, Color, Action!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane	267	Douglas, Tiajuanna	8	Holding the Heat	8	Lathrop
270Guy, Malik8We Cracked Up15Canter271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluwamide9"Lights, Color, Action!!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287 <td>268</td> <td>Flanagan, Anton</td> <td>8</td> <td>Faraday's Law: Electromagnetic Fields</td> <td>52</td> <td>Longwood Charter</td>	268	Flanagan, Anton	8	Faraday's Law: Electromagnetic Fields	52	Longwood Charter
271He, Terence8Does Temperature Affect Magnetism?9Haines272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluwamide9"Lights, Color, Action!!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Will	269	Flax, Daniela	8	Absorbed Peltier Heat Dependence on Current	6	Lincoln
272Lopez, Victor8Chilly Magnets11Sawyer273Agunloye, Oluwamide9"Lights, Color, Action!!!"19Lane274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Flira, Sana10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez	270	Guy, Malik	8	We Cracked Up	15	Canter
Agunloye, Oluwamide 9 "Lights, Color, Action!!!" 19 Lane 274 Blackwood, Hannah 9 Magnet Muscle: Cold is Bold, Hot is Not 21 W. Young 275 Grose, Victoria 9 Thermocouple: It's Electric 21 W. Young 276 Ledsky, Clara 9 Shining on Through Thick and Thin 21 W. Young 277 Marquez, Denisse 9 The Effect of Tires' Air Pressure on Friction 24 Chicago Ag. 278 Allen, Corey 10 How Does Heat Affect a Magnet's Strength? 23 Hyde Park 279 Causevic, Suad 10 Keep It Cool 19 Lane 280 Daniels, Chohnice 10 How Far Can Sparks Jump? 23 Hyde Park 281 Donaldson, Marie 10 Frequency, Tension and Length Relationships 21 Payton 282 Flores, Edith 10 Calorimetry and Light Bulbs 23 Hubbard 283 Garcia, Carlos 10 Batter Up! 24 Morgan Park 284 Hira, Sana 10 The Mpemba Effect 19 Von Steuben 285 Kuklinski, Nicole 10 Effects of Electromagnetism on Plant Growth 19 Lane 286 Mercurio, Maggie 10 Could Wood Be Understood? 21 W. Young 287 Roberts, Omari 10 Telescopes: Real vs. Virtual Images 25 Williams 288 Araujo, Fernando 11 Magnetic Gun 21 Juarez 289 Avila, Abigail 11 Fine Tuning: Amplifying Sound 26 Chicago M. A. 290 Brown, Benita 11 Bridges Under Stress & Strain 23 Lindblom 291 Holt, Sharmaine 11 Buoyant Force and Density = Viscosity? 24 Bogan 292 Guerrero, Alfredo 12 Which Plane Flies the Farthest? 23 Tilden 293 Mondragon, Diana 12 Fire Rainbow 24 Bogan 294 Thomas, Meghan 12 Trebuchet Mechanics 24 Morgan Park 295 Valentin, Amaury 12 Effect of Puncture Size on Rocket Car Speed 19 North Grand	271	He, Terence	8	Does Temperature Affect Magnetism?	9	Haines
274Blackwood, Hannah9Magnet Muscle: Cold is Bold, Hot is Not21W. Young275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23 </td <td>272</td> <td>Lopez, Victor</td> <td>8</td> <td>Chilly Magnets</td> <td>11</td> <td>Sawyer</td>	272	Lopez, Victor	8	Chilly Magnets	11	Sawyer
275Grose, Victoria9Thermocouple: It's Electric21W. Young276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24 <td>273</td> <td>Agunloye, Oluwamide</td> <td>9</td> <td>"Lights, Color, Action!!!"</td> <td>19</td> <td>Lane</td>	273	Agunloye, Oluwamide	9	"Lights, Color, Action!!!"	19	Lane
276Ledsky, Clara9Shining on Through Thick and Thin21W. Young277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23	274	Blackwood, Hannah	9	Magnet Muscle: Cold is Bold, Hot is Not	21	W. Young
277Marquez, Denisse9The Effect of Tires' Air Pressure on Friction24Chicago Ag.278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Morgan Par	275	Grose, Victoria	9	Thermocouple: It's Electric	21	W. Young
278Allen, Corey10How Does Heat Affect a Magnet's Strength?23Hyde Park279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Va	276	Ledsky, Clara	9	Shining on Through Thick and Thin	21	W. Young
279Causevic, Suad10Keep It Cool19Lane280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand <td>277</td> <td>Marquez, Denisse</td> <td>9</td> <td>The Effect of Tires' Air Pressure on Friction</td> <td>24</td> <td>Chicago Ag.</td>	277	Marquez, Denisse	9	The Effect of Tires' Air Pressure on Friction	24	Chicago Ag.
280Daniels, Chohnice10How Far Can Sparks Jump?23Hyde Park281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	278	Allen, Corey	10	How Does Heat Affect a Magnet's Strength?	23	Hyde Park
281Donaldson, Marie10Frequency, Tension and Length Relationships21Payton282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	279	Causevic, Suad	10	Keep It Cool	19	Lane
282Flores, Edith10Calorimetry and Light Bulbs23Hubbard283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	280	Daniels, Chohnice	10	How Far Can Sparks Jump?	23	Hyde Park
283Garcia, Carlos10Batter Up!24Morgan Park284Hira, Sana10The Mpemba Effect19Von Steuben285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	281	Donaldson, Marie	10	Frequency, Tension and Length Relationships	21	Payton
Hira, Sana 10 The Mpemba Effect 19 Von Steuben 285 Kuklinski, Nicole 10 Effects of Electromagnetism on Plant Growth 19 Lane 286 Mercurio, Maggie 10 Could Wood Be Understood? 21 W. Young 287 Roberts, Omari 10 Telescopes: Real vs. Virtual Images 25 Williams 288 Araujo, Fernando 11 Magnetic Gun 21 Juarez 289 Avila, Abigail 11 Fine Tuning: Amplifying Sound 26 Chicago M. A. 290 Brown, Benita 11 Bridges Under Stress & Strain 23 Lindblom 291 Holt, Sharmaine 11 Buoyant Force and Density = Viscosity? 24 Bogan 292 Guerrero, Alfredo 12 Which Plane Flies the Farthest? 23 Tilden 293 Mondragon, Diana 12 Fire Rainbow 24 Bogan 294 Thomas, Meghan 12 Trebuchet Mechanics 24 Morgan Park 295 Valentin, Amaury 12 Effect of Puncture Size on Rocket Car Speed 19 North Grand	282	Flores, Edith	10	Calorimetry and Light Bulbs	23	Hubbard
285Kuklinski, Nicole10Effects of Electromagnetism on Plant Growth19Lane286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	283	Garcia, Carlos	10	Batter Up!	24	Morgan Park
286Mercurio, Maggie10Could Wood Be Understood?21W. Young287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	284	Hira, Sana	10	The Mpemba Effect	19	Von Steuben
287Roberts, Omari10Telescopes: Real vs. Virtual Images25Williams288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	285	Kuklinski, Nicole	10	Effects of Electromagnetism on Plant Growth	19	Lane
288Araujo, Fernando11Magnetic Gun21Juarez289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	286	Mercurio, Maggie	10	Could Wood Be Understood?	21	W. Young
289Avila, Abigail11Fine Tuning: Amplifying Sound26Chicago M. A.290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	287	Roberts, Omari	10	Telescopes: Real vs. Virtual Images	25	Williams
290Brown, Benita11Bridges Under Stress & Strain23Lindblom291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	288	Araujo, Fernando	11	Magnetic Gun	21	Juarez
291Holt, Sharmaine11Buoyant Force and Density = Viscosity?24Bogan292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	289	Avila, Abigail	11	Fine Tuning: Amplifying Sound	26	Chicago M. A.
292Guerrero, Alfredo12Which Plane Flies the Farthest?23Tilden293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	290	Brown, Benita	11	Bridges Under Stress & Strain	23	Lindblom
293Mondragon, Diana12Fire Rainbow24Bogan294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	291	Holt, Sharmaine	11	Buoyant Force and Density = Viscosity?	24	Bogan
294Thomas, Meghan12Trebuchet Mechanics24Morgan Park295Valentin, Amaury12Effect of Puncture Size on Rocket Car Speed19North Grand	292	Guerrero, Alfredo	12	Which Plane Flies the Farthest?	23	Tilden
295 Valentin, Amaury 12 Effect of Puncture Size on Rocket Car Speed 19 North Grand	293	Mondragon, Diana	12	Fire Rainbow	24	Bogan
295 Valentin, Amaury 12 Effect of Puncture Size on Rocket Car Speed 19 North Grand	294		12	Trebuchet Mechanics	24	Morgan Park
296 Watkins, Danielle 12 Surface Tension of Various Liquids 19 Schurz	295	Valentin, Amaury	12	Effect of Puncture Size on Rocket Car Speed	19	North Grand
	296	Watkins, Danielle	12	Surface Tension of Various Liquids	19	Schurz



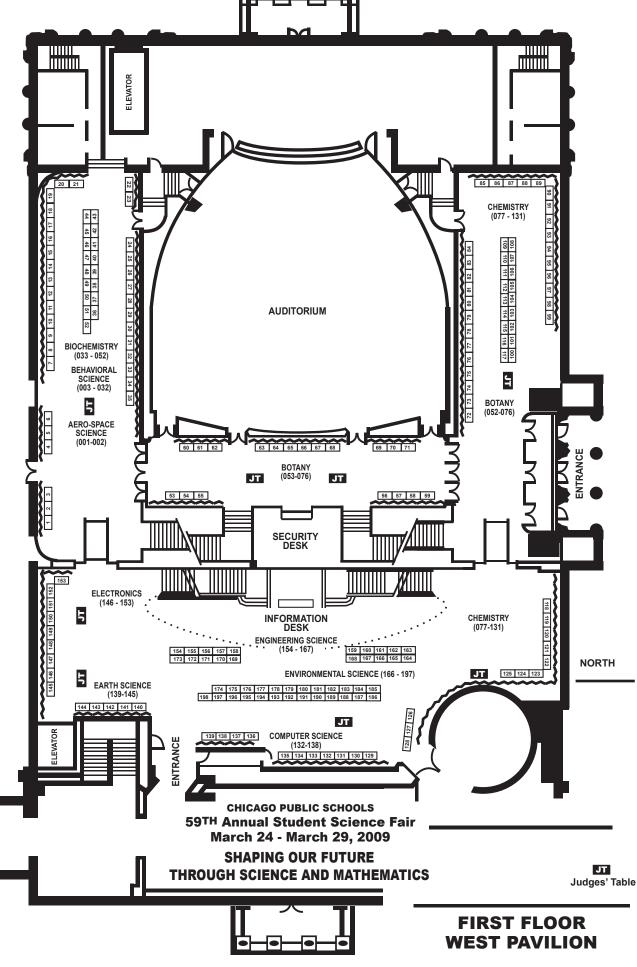
# **Exhibits by Category**

Exh	Student Name	Grade	Title	Area	School
Zool	ogy				
297	Bell, April Villegas, Lorenzo	8	A Mouse of a Different Color II	6	Lincoln
298	Bennett, Erin	9	The Effect of Pesticides on Redworms	19	Lincoln Park
299	Khan, Afra	10	Effect of Garlic on Planarian Regeneration	19	Lane
300	Pirpiris, Juliette	11	Daphnia: Water-Cleanliness Police	19	Taft
301	Castro, Brian	12	Voluntary Feed Intake Daily Gain of Horses	24	Chicago Ag.
302	Gilmore, Kirsti	12	Expression of HMOX-1 on METH Induced Rats	24	Morgan Park

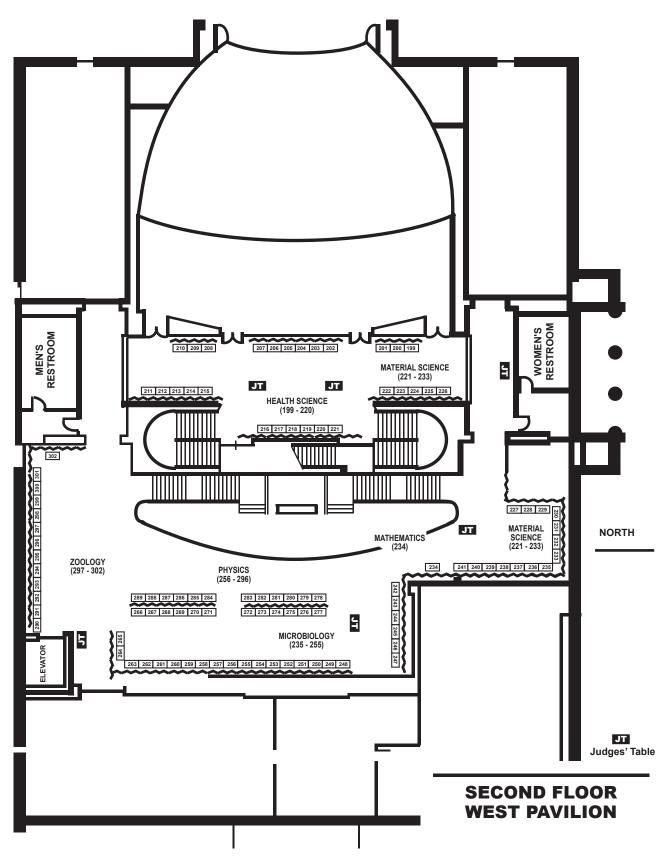
### **Exhibit Summary**

	E	lementa	ry	:	Seconda	ry		Total		Team
Category	Male	Female	Total	Male	Female	Total	Male	Female	Total	Projects
Aero Space Science	1	0	1	0	1	1	1	1	2	0
Behavioral Science	2	14	16	3	12	15	5	26	31	1
Biochemistry	2	6	8	5	7	12	7	13	20	0
Botany	3	6	9	5	11	16	8	17	25	1
Chemistry	14	10	24	12	19	31	26	29	55	0
Computer Science	2	0	2	4	1	5	6	1	7	0
Earth Science	3	1	4	2	1	3	5	2	7	0
Electronics	2	4	6	2	0	2	4	4	8	0
Engineering Science	5	1	6	5	3	8	10	4	14	0
Environmental Science	6	9	15	7	9	16	13	18	31	0
Health Science	1	4	5	5	12	17	6	16	22	0
Materials Science	3	4	7	3	4	7	6	8	14	1
Mathematics	0	0	0	1	0	1	1	0	1	0
Microbiology	5	3	8	5	8	13	10	11	21	0
Physics	10	8	18	8	16	24	18	24	42	1
Zoology	1	1	2	1	4	5	2	5	7	1
TOTAL >	60	71	131	68	108	176	128	179	307	5







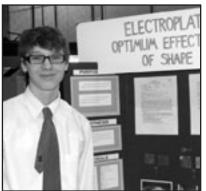


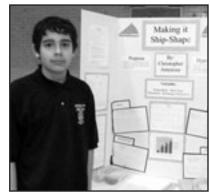










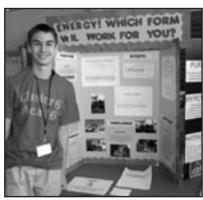








































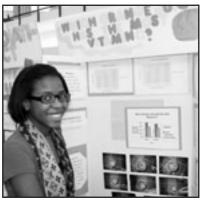






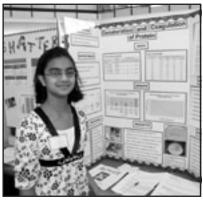


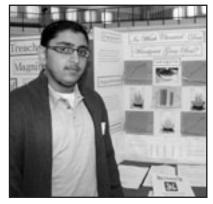






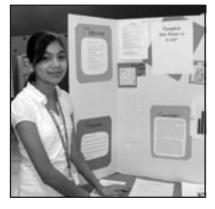


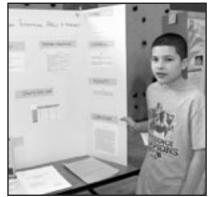




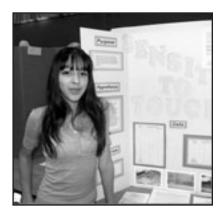














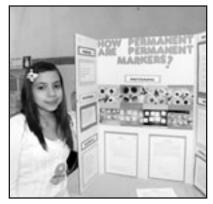






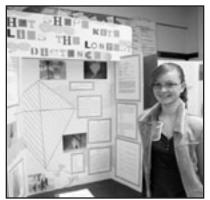
















### **Sixth-Grade Area Winners Recognition Luncheon**

#### Saturday, March 28, 2009

11:45 A.M. - Columbian Room

Welcome **Edward Scanlon** 

Chairperson,

CPS Student Science Fair, Inc.

**Comments** Linda A. Carter

Chairperson Elect,

CPS Student Science Fair, Inc.

Jeanette Bartley

Elementary Science Manager

Dr. John Loehr, Ph.D.

High School Science Manager

Presentation of Awards **Edward Scanlon** 

Linda A. Carter

Pamela D. Sherley

Executive Director,

CPS Student Science Fair, Inc.

**Group Photo Allan Reisberg** 

Chairperson, Digital Imaging

CPS Student Science Fair, Inc.

**Chemistry Show** Bangs, Flashes and Fire

(Auditorium, 2:00 p.m.)













### **Sixth-Grade Area Winners**

#### **List of 2008 Sixth-Grade Area Winners**

Area	Student	School
1	Luis Ramirez	Thorp
	Ian Steigerwald	Beaubien
2	Anja Schulz	Blaine
	Zoe Schanks	Decatur
3	Sierra Wilson	May
4	Alberto Collazo	Lafayette
	Karina Gonzalez	Piccolo
6	Madeleine Moderhack	Franklin
	Peter Williamson	Lincoln
7	Mohoganee Owens	Sumner
	Asia Burtley	Herbert
8	Keante Pendleton	Lawndale
	Ivy Maina	Irving
9	Angeles Gonzalez	Pilsen
	Nina Chehade	Galileo
10	Kevin Li	Gunsaulus
	Carmina Reyes	Saucedo
11	Maria Jaronczyk	Grimes
	Crystal Ibarra	Hale
12	Jesus Diaz	Evergreen
	Jennifer Campos	Hamline
13		Graham
	Elizabeth Woods	Mollison
14	Matthew Patrick	Lenart
15	Nija Bradford	Murray
	Esme Kline	Murray
16	Robert Tichy	Clissold
	Alaya Johnson	Jackson
17	George Hall	Earhart
	Mekah Jordon	Pirie
18	Tyrone Ferguson	Metcalfe
	Taylor Pilarczyk	Washington













### **Awards Convocation**

#### Sunday, March 29, 2009 1:00 P.M. – Auditorium

Pledge of Allegiance

**National Anthem** 

Greetings ...... Edward Scanlon

Chairperson, CPS Student Science Fair, Inc

Welcome...... Bryan Wunar

Director of Education

Museum of Science and Industry

Remarks...... William E. Meyer

President, Board of Directors, CPS Student Science Fair, Inc.

David Gilligan

Chief Officer, CPS Office of High Schools and High School

Programs

**Chandra James** 

Director, CPS Office of Mathematics and Science

Awards Presentation...... Linda A. Carter

Chairperson, Special Awards and Tours Committee

- Special Awards
- Military Awards
- Special Tour Awards

Winners Recognized by ..... David Gilligan

Bryan Wunar William E. Meyer Chandra James Edward Scanlon

Recognition of BP America, Inc.

Symposium Winners ...... Hortense Brice

Chairperson, Symposium Committee

Illinois Junior Academy

of Science (IJAS) Awards ..... Anne Marie Sherry

Chairperson, IJAS Committee

**International Science and** 

Engineering Fair (ISEF) Awards ..... Edward Scanlon

Chairperson, CPS Student Science Fair, Inc

Closing Remarks ..... Edward Scanlon

Chairperson, CPS Student Science Fair, Inc



A variety of awards are provided by individuals, industry, educational organizations, and professional societies. The contributors listed below provide cash awards, bonds, medals, scientific equipment, tour and convention trips, certificates of merit, and subscriptions to professional journals, as indicated. The judges who represented these contributors are also listed below.

At the Awards Convocation on Sunday, March 29, 2009, students whose projects are selected by Special Awards Judges will be the direct recipients of these awards.

If you are interested in becoming a Special Awards contributor, please contact Linda Carter, Medill TPDC, 1326 W. 14th Place, Chicago, IL 60608; (773) 553-6248.

On behalf of all the young scientists, a special THANK YOU is extended to the contributors of Special Awards.

#### Special recognition to the following five contributors for providing an award to every exhibitor!

#### **Delta Education**

Science Fair totes to all exhibitors and Science Fair committee members

· Rick Brost

#### **Grace Education-Heineman/Newbridge-Sundance**

Souvenir Science Fair caps to all exhibitors

- Iim Burnette
- Bert Crossland

#### **MARS Snackfood US**

A bag of candy to all exhibitors

• Nick Kessler

• Jennifer Yezak

### University of Illinois at Chicago - Department of Engineering

400 puzzle pens to exhibitors

#### World Book Encyclopedia Inc.

A copy of World Book Science Year 2009 to all exhibitors

• Mark Willy

• Victor Mazzeo

#### **Abdoulmawla Almiladi Memorial Award**

One \$50 cash award for outstanding effort

•Falak Almiladi

#### **Achievement Award**

Two \$50.00 cash awards to a first time high school and elementary City Science Fair exhibitor

•Rita Nelson

•RyAnn Nelson Jaiyesimi

#### **Adler Planetarium**

Five family passes to the Adler Planetarium

•Michael Mott

#### Aimee W. Strawn Excellence in Math Award

One \$50 cash award to an exemplary math related middle school exhibit

●Mary Jo Tavormina

#### Alpha Kappa Alpha Sorority

One \$50 savings bond (at maturity) for a 7th grade female exhibitor

•Linda W. Carter

#### Amanda Brown & Ken Hunt Award

Four \$100 cash awards to two Biochemistry exhibitors and two Biochemistry Symposium presenters

•Ken Hunt

#### **Amazing Edibles**

One \$100 cash award to a female exhibitor demonstrating outstanding use of science process skills

• Andrea Herrera

#### **American Electroplaters and Surface Finishers**

One \$1000, one \$500, and one \$200 savings bond (at maturity) presented at the American Electroplaters and Surface Finishers dinner meeting

- Andrew Gruda
- Louise Corbeil
- Robert AlleyBrian Kane
- Gerry Stutz Dennis Chiovarie

#### **American Meteorological Society**

Two certificates to Meteorology exhibitors

#### **American Nuclear Society-Chicago Section**

One \$100 cash award, one \$50 cash award, and one \$25 cash award with recognition books with certificates for each school to exhibitors promoting peaceful uses of nuclear energy.

• Roger W. Tilbrook

#### **American Psychological Association**

One certificate to an outstanding psychology exhibitor in Behavioral Science

#### American Science & Surplus

One \$75 American Science and Surplus gift-certificate for the most original and creative exhibit.

- Joseph Town
- Luke LaVecchia

#### American Society for Clinical Laboratory Science-Illinois

One \$50 cash award to an exhibitor in health care science

#### **Anthony's Futuristic Science Award**

Two \$50 savings bonds (at maturity) to the most inventive science projects

- Anthony Bartley
- Jeanette Bartley



#### **Anti-Cruelty Society**

One \$50 cash award to project that best demonstrates exemplary consideration for animals.

• Tatiana Garrett

#### **Area 14 Science Recognition Award**

A \$50 savings bond (at maturity) to Area 14 exhibitor

- Jennifer McDonnell
- Donna Thigpen
- Chris Vega
- Peggy Smith
- · Adrian Willis
- Laura Buzelli

#### **Area 9 Instruction Office**

One \$50.00 cash award to an Area 9 exhibitor

• Falak Almiladi

#### **Area 16 Academic Achievement Aard**

Four \$50.00 cash awards to outstanding exhibitors

• Monica Morrow

#### **ASM Education Foundation**

A certificate and medallion to an outstanding exhibitor in Materials Science

#### **Association for Women Geoscientists**

One certificate to an exemplary female exhibitor in Earth or Planetary Science

#### Association of Women in Science (Chicago)

Four \$50 cash awards to promising young female exhibitors

- Joy Ramos
- ullet Eileen Sheu
- Marcella Schmidt
- Nicole Grynaviski
- Maryam Hanif
- Bethany Brown
- Lissette RuberteMelanie Patterson
- Susan Meschel

#### **Baker Family Merit Award**

One \$50 savings bond (at maturity) to an outstanding exhibitor

- Gynette Baker
- Will Baker, Jr.
- Gianna Baker
- Myles Baker

#### Bill and Nading Thompson Award

One \$100 cash award to an 8th grade Area 13 exhibitor

• Kitty Thompson

#### **BP Products North America, Inc.**

Five \$200 cash awards to exemplary students

- David Fashimpaur
- Gary Kizior
- Heather Mikkelson

#### **BP Symposium Award**

One first place cash award of \$250, one second place cash award of \$125, one third place cash award of \$75, and twenty-two participation cash awards of \$25 to Symposium presenters

#### **BP/IJAS Essay Finalists**

Elementary Division - One \$250, one \$125, and one \$75 cash award to elementary writers; High School Division - one \$250, one \$125, one \$75, and one \$50 cash award to high school writers

#### **Camacho Math and Science Award**

Five \$25 Target gift cards to minority female middle grades exhibitors

- Lena Camacho
- Alex Camacho
- Marco Aguillon
- Rosalinda Ramirez
- Crystal Valladares

#### **Carolina Biological Supply Company**

Six \$25 cash awards to elementary exhibitors

• Darin Christianson

#### **CETMC (Chicago Elementary Teachers of Math Club)**

Three \$100 cash awards to outstanding exhibitors

- Carol Miller
- Jim Oehler

#### Charles Braxton Brown Jr. Award of Excellence

Two \$50 cash awards to minority students exhibiting excellent use of technology.

- Janice L Brown
- Vincent C. Brown

#### Charles Braxton Brown Jr. Award of Igenuity

Two \$50 cash awards to minority students exhibiting ingenuity in experimentation.

- Janice L Brown
- · Vincent C. Brown

#### Cheryl Deese Science Award

Three \$50 cash awards to exemplary exhibitors

Cheryl Deese

#### Chicago Intellectual Property Alliance (CIPA)

Three "Most Inventive" awards: First place - assistance with filing a patent application, a \$500 cash award, and a plaque; Second place - a \$300 cash award and a plaque; Third place - a \$200 cash award and a plaque

- Mike Harlin, Esq.
- Chicago Area CIPA Members
- Gina Bicknell
- Steve Parmelee

#### • Sarah Kofflin

#### **Chicago Principals and Administrators Association**

Six \$200 savings bonds (at maturity) to high school exhibitors and six \$100 savings bonds (at maturity) to elementary exhibitors in Behavioral Science, Biochemistry, Chemistry, Environmental Science, Mathematics, or Microbiology

• Clarice Berry

• Walter Pilditch

#### **Chicago Zoological Sociey - Brookfield Zoo**

One, one year family membership to an exhibitor focusing on conservation issues

• JoElle Mogerman

#### **Christine M. Krupa Award**

One \$250 cash award to an outstanding Mathematics exhibitor

• Christine Krupa



#### Citywide Math/Science Specialist Award

One \$100, one \$75 and six \$50 cash awards to outstanding middle school exhibitors

- Hallie Askuvich
- Katherine Campbell
- Kathurn Cihak
- Andrew Friesema
- Fenesha Hubbard
- Suzanne Mazenis-Luzzi
- William Pass
- Leslie Swain-Store
- Erin Washington

- Veronica Borjas
- Tashena Chumrley
- Thomas Ellew
- Danusia Gerlach
- Sarah Kostelac
- Ketesha Melendez
- Kathryn Rupe
- Kareen Tunstall
- · Leon Williams

#### **David A. Page Exemplary Math Award**

One \$50 cash award to an exemplary exhibitor with a math related project

• Mary Jo Tavormina

#### Delta Sigma Theta Sorority Inc.

Four \$100 savings bonds (at maturity) to outstanding exhibitors

- Iudy Walter
- Dorothy Wilson-Davis
- · Willie Gray

#### Discovery Channel Young Scientist Challenge

Twelve lapel pins and invitations to participate in the Discovery Channel Young Scientist Challenge to elementary exhibitors

#### **Dr. Janice M. Buckley Perseverance Award**

Two \$25 cash awards to 7th grade exhibitors who overcame obstacles to compete

• Linda Carter

#### Dusty's, Kenny's Ribs & Harambee House Award

Two \$50 cash awards to articulate exhibitors

- Kenneth Lewis. Sr.
- · Deborah Lewis

#### E. Thaddeus Nix Memorial Science Award

Two \$100 savings bonds (at maturity) to outstanding exhibitors

- Iudy Walter
- DeLores Nix
- Dorothy Wilson-Davis

#### **Elementary Mathematics Facilitator Award**

Three \$50 cash awards to an elementary project that best demonstrates the use of data representation and analysis

- Karen Holly • Barbara Crum
- Jesch Reyes
- Colin Murphy
- Anne Breen
- Alison Whittington
- Soundarya Radhakrishnan
- Iulio Alvarez
- Edie Clark
- Mila Kell
- Faylesha Porter
- Mary Jo Tavormina
- Katrena Washington

#### **Environmental Sustainability Award**

Two \$50 cash awards to exhibitors whose exhibits are focused on sustainable development

• Angela Dumas

#### **Ezell Smith Award**

Two \$50 cash awards for a "Food" project in Health Science

- Michael Smith
- Edna Smith

#### **FBC Memorial Foundation for Assisted Living Award**

Two \$50 savings bonds (at maturity) to exhibitors working on wellness

- Velma Chiles
- Mildred Heyward
- Steve Fobs • Jesse M. Brown
- Lola Fobs
- Tishika Townsend

• Shirley McAlpin

#### Frey Scientific

Ten \$100 Frey gift certificates for items from the on-line catalog to outstanding middle school exhibitors and recognition to their Teacher Sponsor

Vince Zaccardi

#### Gerald Rudnick Technology Award

One \$50 cash award to an exhibitor that best demonstrates the most innovative use of technology

• Gerald Rudnick

#### **Gordon Family Chiropractic**

Two \$100 Savings Bond (at maturity) to an excellent Health Science Exhibitor

- · Ayo H. Gordon
- Grace Rawell
- Judy Walter

#### **Greer Family Award**

One Apple iPod to an outstanding exhibitor in Computer Science, Mathematics, or Physics

• Christian Greer

#### **Herbert Hoover Young Engineer Award**

One certificate and medallion to an exhibitor showing a grasp of engineering fundamentals

#### **Hollander Storage and Moving**

One \$100 cash award to an outstanding Physics exhibitor

• Joseph & Shirlee Hollander

#### **IJAS**

Accommodations for 75 students to attend the IJAS state

#### Illinois Speech-Language-Hearing Association

Two \$100 cash awards to projects related to communication disorders and sciences

• Denise Prohaska

• Mary Leson

#### **International Union of Operating Engineers**

Twenty \$100 cash awards to outstanding exhibitors

- William Iacullo · Robert Hellberg
- Jose Ramos

Trip for four delegates to International Science and Engineering Fair and recognition to two alternates



#### Jahn Phillips Exemplary Data Analysis Award

One \$50 cash award and two \$25 cash awards with certificates to exhibitors with exemplary use of data analysis in their projects and two certificates to exhibitors promising use of data analysis in their projects

• Jahn Phillips

#### **Janel James Sports Award**

Two \$50 savings bonds (at maturity) to exhibitors with outstanding sports related exhibits

• Chandra James

#### John G. Shedd Aquarium

Two Behind-the-Scenes Tour packages, three Family "All Access" passes, and one Trainer for a Day session to an outstanding exhibitor in Biology, Zoology, or Environmental Science

• Christian Greer

Amy Christiansen

• Joy Kubarek-Sandor

#### **Kathryn Peecher Memorial Award**

Three \$25.00 cash award to deserving elementary exhibitors

- Vickie Jackson
- Linda Carter
- Marie Clouston

#### **Keeayla S. Jones Mathematics Excellence Award**

Two \$125 cash awards to outstanding exhibitors in the category of Mathematics

- Lanada Jones-Avinger
- Keeayla Jones

#### **Kendall Hunt Publishing Company**

A Book to exhibitor who utilizes the most household materials

• LaJanneice A. Sylvester

#### **Kimberly Simon Area 12 Award**

Two \$50 savings bonds (at maturity) to exemplary Area 12 exhibitors

Kimberly Simon

### Lakeside Community Center Barbara J. Green Memorial

Two \$100 savings bonds (at maturity) to outstanding exhibitors

- Judy Walter
- Willie Gray

#### **Lincoln Park Zoo**

One \$50 cash award to an exhibitor whose project demonstrates a creative approach to scientific research

- Sue Margulis
- Steven Solomon

#### L'Oreal USA Sponsor

One \$100 cash award to an outstanding exhibitor in the area of chemistry

• Nikisha Hunter

#### **Luba Johnson Science Award**

Two \$50 cash awards to outstanding exhibitors

• Luba Johnson

#### **Lucretia Hills Creativity Award**

Two \$50 cash awards to exhibitors who creatively display findings

• Ruby Everage

#### Luis Alvarez Capilla Award

Two \$50 cash awards to outstanding exhibitors in the area of agriculture

• Elizabeth Alvarez

#### Marie Curie Sklodowska Award

Four \$50 savings bonds (at maturity) to outstanding projects in physics and chemistry

- Stephanie Dubielak
- Barbara Dubielak-Wood

#### **MARS Snackfood US**

Eight \$100 savings bonds (at maturity) to Chemistry exhibitors involving food or nutrition

- Nick Kessler
- Jennifer Yezak

#### **Mary J. McKinney Award**

One \$50 cash award to an outstanding female middle school exhibitor

• Gina Grant

#### Metropolitan Board of the Chicago Urban League

One \$50 cash award to an elementary exhibitor and one \$100 cash award to a high school male high achieving exhibitor

- Dana Kyles
- William Alston

#### **Metropolitan Cluster**

Four \$100 savings bonds (at maturity) to exemplary African American Female exhibitors

- Betty Robertson
- Willie Gray
- Mary Goosby
- Doreen Barrett
- Delia Gray Yamiton Brown
- Judy Walter
- Dorothy Wilson-Davis
- Sandra Givens
- Louisea Storey
- Jacqueline Craig
- Aretha Collins
- Areina Comins

#### **Metropolitan Water Reclamation District**

 $25\ \mathrm{invitations}$  to a boat tour of the Chicago River and Lake Michigan with lunch on board

- Mary Carroll
- George Richardson

#### Mu Alpha Theta

One certificate to a high school exhibitor creatively using modern mathematics

#### **Murff Mathematical Merit Award**

Two \$50 cash awards to outstanding exhibitors

- Ricky Murff
- Vivian Murff



#### **Museum of Science and Industry**

An MSI family membership to exhibitors (and their families) chosen to go to IJAS and 5 \$100 cash Inventive Genius Awards to exhibitors who exemplify the Museum's mission To Inspire the Genius in Everyone.

- Pam Barry
- Julie Parente

#### **National Green Museum**

A Hero of Planet Earth certificate to all Environmental Science exhibitors and an opportunity to be inducted into the Chicago/ILLINOIS Environmental Hall of Fame

- Catherine Corbin
- Allen Rubin

#### **National Oceanic & Atmospheric Administration**

One certificate and medallion to an exhibitor in earth conservation

#### **National Society of Professional Engineers**

One certificate and lapel pin to an exhibitor demonstrating innovative engineering

#### **National Technical Association**

One \$50 cash award to an outstanding exhibitor

- Cynthia Slater
- Melvin Slater

#### **Nelson Strategy Memorial Award**

Ten \$50 cash awards to outstanding exhibitors

- Susan Nelson
- Christine Chowanski-Doty
- Neil Faculty and Staff
- Yolanda Del Rio
- Linda Carter

#### Omega Psi Phi Fraternity Inc.

Two \$50 cash awards to outstanding exhibitors

- Melvin Slater
- Melvin Hargrett
- Ron Wright
- Eddie Greenleaf

#### **Optical Society of America**

One first place \$250 cash award, one second place \$150 cash award, and one third place \$100 cash award to best exhibitors involving optics

- George Magerl
- Howard Lange
- John M. Madigan, Jr.

#### **Optical Society of Chicago**

One \$100 cash award to the best project on optics or optics related technology

- George E. Magerl
- Howard Lange
- John M. Madigan, Jr.

#### **Pearson-Prentice Hall**

One computer microscope for an outstanding 7th or 8th grade exhibitor

• Alex Gomez

#### Peña Mathematical Excellence Award

Two \$65 cash awards to one middle grade and one high school exhibitor exhibiting the best use of collecting, analyzing and reporting data

- Iorge Peña
- Natasha Buckner-Peña

#### Phi Lambda Upsilon at Northwestern University

One \$100 cash award to an award to an outstanding exhibitor

• Daniel Wells

#### **Radvila Physical Science Award**

One \$50 cash award to a Physical Science exhibitor

· Nijole Mackevicius

#### **Ricoh Sustainable Development Award**

One certificate and eligibility to win a Ricoh digital camera

#### **Robert H. Tucker Award**

Two \$50.00 cash awards to outstanding exhibitors

- Maureen Tucker
- · Robert Tucker

#### Rochelle Hawes Bolton - Award of Excellence

Three \$50 cash awards to exemplary exhibitors in the area of Health Science and one \$50 cash award to an exemplary exhibitor in the area of Behavioral Science

- Pamela Hawes-Green
- Deborah Hawes

#### Science Chicago

Eight Flip Mini Camcorder for projects that reflect the "Life's A Lab" concept showcasing how science impacts our lives.

- Cheryl Hughes
- Rabiah Mayas
- Heather Selby

#### **Science Enterpise Award**

Eleven \$100 cash award to unique exhibitors

- Gary Morrissey
- Shirley Morrissey

### Scientific American Award for Outstanding Achievement

Five certificates and five one-year subscriptions to Scientific American to outstanding exhibitors

#### Scientific Merit Award

Two \$50 cash award to exemplary high school exhibitor in botany, biochemistry or microbiology

- RyAnn Nelson Jaiyesimi
- Rita Nelson

#### Scope Shoppe Inc.

One field microscope with case for exhibitor in Biology or Environmental Science

#### **Slater Association**

One \$50 cash award to an outstanding exhibitor

- Cynthia Slater
- Melvin Slater



#### Society for Science & The Public

Fifteen nominations to outstanding middle school exhibitors to compete in the SSP Middle School Program competition

• Michelle C. Glidden

### Society for Technical Communication Chicago Chapter

One \$100 (at maturity) Savings Bond and one \$50 (at maturity) Savings Bond to recognize outstanding written and displayed technical communication.

- Francis Bao
- · Chris Hester
- Douglas Florzak

#### **Society of Tribologists and Lubricating Engineers**

Special recognition to exhibitors with projects related to friction, wear, or lubrication

• Dick Clark

#### **SPIE-- The Intl Society for Optical Engineering**

One first place \$250 cash award, one second place \$150 cash award, and one third place \$100 cash award for projects relating to optics or imaging

- · George Magerl
- Howard Lange
- John M. Madigan, Jr.

#### **Stockholm Junior Water Prize**

Three certificates to exemplary high school water related exhibits and eligibity to participate in the Stockholm Junior Water State Competition

#### **Susan Engel Award of Excellence**

One \$50 cash award to a high school exhibitor in Health or Medical Sciences

• Susan Engel

#### Teachers' Supply Box, Inc.

Two \$50 cash awards to an Area 14 exhibitor for outstanding research

• Cliftena Kirkling

#### **Teresa Huggins Math/Science Award**

Four \$50 savings bonds (at maturity) to two female and two male outstanding middle grade exhibitors

• Teresa Huggins

#### The Chicago Infectious Disease Research Institute

Two awards for outstanding effort in the field of microbiology, bacteriology or infectious diseases

Diane Patton

#### **United States Air Force**

Four PadFolios with electronic Rolodex organizers, USB flash drives, PDAs, pens and pencils, and certificates

#### **United States Army**

A bronze medallion and certificate to an outstanding high school exhibitor; two certificates of merit to high school exhibitors; and three certificates of merit to elementary exhibitors

• SGM Steven A. Edwards

#### United States Department of Health and Human Services

One certificate signed by the United States Surgeon General to an exhibitor in Health Science

#### **United States Metric Association Inc.**

A certificate to an elementary exhibitor and one certificate to a high school exhibitor for best use of the SI metric system

• Mark Henschel

#### **United States Navy**

Special recognition certificates to three high school exhibitors and three elementary exhibitors

#### University of Illinois at Chicago - Computer Science Department

One Video iPod to an exhibitor who best exemplifies research in Computer Science

• Dale Reed

### University of Illinois at Chicago - Department of Engineering

Five \$200 cash awards to exhibitors who best exemplify research in the disciplines of Bioengineering, Chemical Engineering, Civil and Materials Engineering, Computer Science, Electrical and Computer Engineering, and Mechanical and Industrial Engineering

- Dale Reed
- Denise Hayman

#### **UOP-Des Plaines Research Facility**

Five cash awards: One Gold award of \$150; one Silver award of \$100; and three Bronze awards of \$50 each to be awarded in the areas of chemistry, physics and environmental sciences and portfolios

- Ron Gatan
- Willie Morrissette
- Anna Parr

#### **Upton Special Science Award**

One \$200 cash award, two \$150 cash awards, and one \$50 cash award presented to exhibitors from Area 17

- Tommie Gathings
- Jill Kittinger
- Frankie Pierce
- Tracey Kidd
- Lawanda Mahomes
- Valerie Hardy
- Lorraine Wilson
- Delena Little
- Meredith Brown

- Willie Williamson
- Rona Watkins
- Monica Rozell
- Francesca Little
- Dehlia Mendoza Linda Johnson McClinton
- Michelle Kilby
- Michelle Kliby
- Janaya Ross-Shaw Joy Dillard

#### Wangari Maathai Award

Two \$100 savings bonds (at maturity) for exemplary projects with potential for positive environmental impact

• Wendy Jackson

#### **Wojo Award**

One \$200 cash award to an exemplary elementary exhibitor

• Melanie Wojtulewicz



#### **Yale Science & Engineering Association**

One certificate and medallion to an outstanding 11th grade exhibitor in Computer Science, Engineering, Physics, or Chemistry

#### **Young Scientist Award**

One \$50 cash award to an elementary student and three \$50 cash awards to high school students for their scientific research endeavors.

- RyAnn Nelson Jaiyesimi
- Rita Nelson

#### **YTB Travel**

Two \$50 cash awards to articulate exhibitors

- Kenneth Lewis, Sr.
- Deborah Lewis

#### **Zaner Bloser Educational Publishers**

Two \$50 cash awards to exemplary exhibitors

• Bernard Turner

















### **CPS Student Science Fair Special Programs**

# Research Grants – money for student research

Mini-grants are available to students in Grades 7 through 12 for the purpose of providing financial aid while conducting research projects. Students may apply for renewable grants of up to \$100 per semester. These funds may be used for the purchase of materials and equipment not available in their schools, but which are needed to complete the student's experimental research. Students may apply to the Research Grants Committee of CPS Student Science Fair, Inc.

Maxi-grants are awarded to students in Grades 9 through 12 and provide financial support in amounts of \$101-\$500. This grant is available to students who have already demonstrated excellence in science projects and are in need of more expensive materials and equipment in order to continue their research. Students must apply to the Research Grants Committee of CPS Student Science Fair, Inc. and, if accepted, must present their work at an interview with members of this committee. An application can be found in the current 2009 Student Handbook and on the Internet at: www.chicagostudentsciencefair.org.

# Advise-A-Student – professional advice for student research

The Advise-A-Student program is designed to provide technical advice to students in Grades 7 through 12 who are working on a research project. Advice is available only after students exhaust school resources and have thoroughly researched their topic in the library. In order to discuss and obtain assistance in improving their projects, students must apply for a research advisor by submitting an application to the Advise-A-Student Committee of CPS Student Science Fair, Inc. An application can be found in the current 2009 Student Handbook and on the Internet at: www.chicagostudentsciencefair.org.

# Science Fair Central – workshops for student research

Northeastern Illinois University and Chicago State University will open labs in their science buildings on Saturday mornings next September and October, and invite high school and elementary school students, teachers, parents, and mentors to the campus. NIU will provide professional advisors; lab set-up space and materials; and photocopy, computer, and library access. In addition, some modest start-up funds for poster boards, markers, and general display materials may be available. More details will follow in a mailing to teachers at the beginning of the fall 2009 semester. Please contact Paul Dolan, Professor of Physics, Northeastern Illinois University at P-Dolan@neiu. edu or 773-442-5785, or Robert LeSuer, Chicago State University, at rlesuer@csu.edu or 773-995-2321.

# Science Clubs – after school help from teachers for student research

ComEd, An Exelon Company has provided funding for over 30 high school science clubs each year for more than 5 years. The primary objective was to compensate teacher-sponsors for guiding students as they developed science fair projects. Club sponsors receive money to purchase supplies, materials, and/or equipment for conducting club activities. Peoples Gas began funding for one middle school science club in each of the 17 CPS Instructional Areas this year. In addition to stipends and equipment grants, these clubs also have the help of a Peoples Gas engineer who volunteers to advise club members on their science research.

#### Scholarships – college funds for science fair alumni

In order to support the CPS Student Science Fair and to encourage students to consider careers in science, several local universities have provided renewable tuition waiver scholarships. In addition, monetary contributions from various sources in the business community have been volunteered as well as solicited to provide additional scholarships. Any prospective Chicago public high school graduate who has participated in at least one science fair (during Grades 7-12) at either the area or city level and/or the symposium is eligible to apply for a scholarship. The Scholarship Committee, comprising Science Fair representatives, business and education, selects scholarship recipients on the basis of participation in the Chicago Public Schools Science Fair, scholastic achievement, future goals, and personal interviews. Since 1956, CPS Student Science Fair Inc. has awarded 1,857 scholarships valued at \$2,406,302 to students from 66 Chicago public high schools.



# 2008 Scholarship Winners

Any prospective June CPS high school graduate who has participated in at least one CPS science fair (during grades 7-12) at an area or the city level and/or the symposium/essay competition; and who is planning to major in science, mathematics, engineering, or computer science is eligible to apply for a scholarship. The Scholarship Committee, representing business and education, selects scholarship recipients on the basis of participation in the Chicago Public Schools Science Fair, scholastic achievement, future goals, and personal interviews.

The June 2008 high school graduates listed below were selected to receive financial awards by the Chicago Public Schools Student Science Fair, Inc. Scholarship Committee.

Since 1956, Student Science Fair, Inc. has awarded 1,857 scholarships, valued at \$2,406,302 to students from 66 Chicago public high schools.

Student High School	College Destination <i>Major</i>	Sponsor Amount
<b>Hedaiah Abuobeid</b> Bogan	University of Illinois at Chicago Biological Sciences/Pre-Med	University of Illinois at Chicago Full-Tuition Waiver/ \$9,000Yr 4-Yr/Renewable
<b>Rebecca Cholst</b> Payton	Yale University Chemistry	Donald & Helen Edwards \$1,500
<b>Lenora Cravens</b>	Robert Morris College	Computer Technology
Dyett	CDW Corporation	\$1,000
<b>Elsa Culler</b>	Olin College	Engineering
Lincoln Park	Harold Kiehm Memorial	\$2,500
<b>Barbara Davenport</b>	Loyola University	Forensics Science
Tilden	Barbara McCormick Memorial	\$1,000
Jasmin Francisco	Michigan Technological University	Biomedical Engineering
Senn	Blum-Kovler Foundation	\$1,000
<b>Michael Daly</b>	Wright College	Mechanical Engineering
Kelvyn Park	Praxair Foundation, Inc.	\$1,000
<b>Eva Feldman</b>	Vassar University	Environmental Studies
Lincoln Park	Mary Nalbandian	\$5,000
<b>Gahan Furlane</b>	Georgetown University	International Health
Lincoln Park	BP America Inc.	\$3,000
<b>Kirby Gibson</b>	University of Wisconsin - Madison	Chemical Engineering
<i>Brook</i> s	Harold Kiehm Memorial	\$2,500
<b>Nicole Hok</b> Amundsen	University of Illinois at Chicago University of Illinois at Chicago	Pharmacy Full-Tuition Waiver/\$9,000 Yr 4-Yr Renewable
<b>Alyssa Joiner</b>	University of Illinois at Chicago	Biology
Chicago Ag	Ray Readus Memorial	\$1,000
<b>Leigh Hamp</b>	University of Wisconsin - Madison	Biology
Lincoln Park	ComEd, An Exelon Co.	\$3,000
Rachel Hurt	Elmhurst College	Nursing
Kelvyn Park	Chicago Teachers Union	\$500



Student High School	College Destination <i>Major</i>	Sponsor Amount
Hedaiah Abuobeid	University of Illinois at Chicago	University of Illinois at Chicago
<b>Rachel Hurt</b>	Elmhurst College	Nursing
Kelvyn Park	Chicago Teachers Union	\$500
Alexiaa Jordan	University of Illinois	Biochemistry
Hope	Combined Charities	\$1,500
Faraz Khan Northside CP	University of Chicago	Microbiology University of Chicago Tuitition Waiver \$2,000 Yr/4-Yr Renewable
Veronica Magdaleno	University of Illinois at Chicago	Computer Science/Math
Gage Park	CDW Corporation	\$1,000
<b>John Mussman</b>	Harvard University	Physics
Northside CP	Tom Maloney Memorial	\$1,000
Steven Kirk	Illinois Wesleyan	Biology
Hyde Park	Sargent & Lundy	\$2,000
Henry Mattingly	Brown University	Engineering
Lincoln Park	Alumni Association	\$1,0000
Julian Otis	Temple University P	Biochemistry
Payton	Praxair Foundation, Inc.	\$3,000
<b>Derrick Rhodes</b>	University of Illinois	Human Nutrition
Chicago Ag	Geri Blakley Memorial	\$1,500
Emmanuel Serna	University of Illinois at Chicago	Biology
Kelvyn Park	Praxair Foundation, Inc.	\$1,000
Theodore Zajler	University of Evansville	Biology
Lane	Motorola Foundation	\$3,000
Saajidha Rizvydeen	Lake Forest College	Biology
Senn	Kenneth Zdunek and Mary Memhardt	\$1,000/ Motorola Matching Gift/\$1,000
Stephen Welty	University of Illinois	Aerospace Engineering
Northside CP	CDW Corporation	\$3,000
Jing Zhao	Loyola University	Dietetics
Tilden	Loyola University	Tuition Waiver/\$2,000 4-Yr Renewable



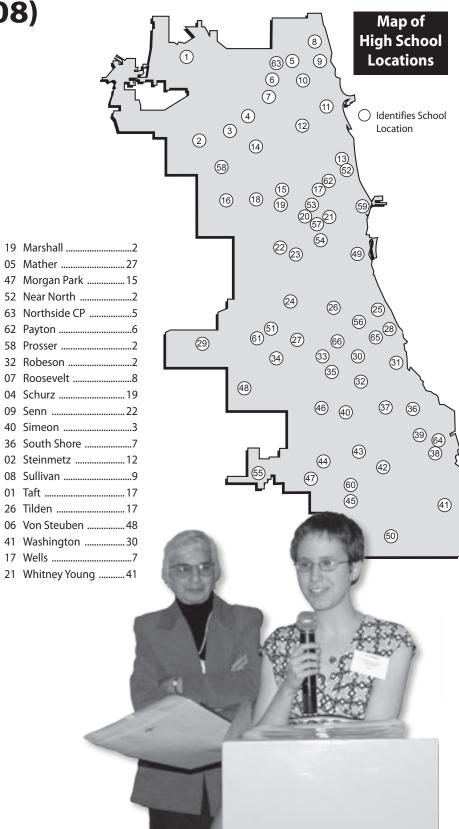


**Number of Scholarships Awarded** 

(1956 - 2008)

Ma	p no. School	Scholarships
10	Amundsen	19
16	Austin	8
64	BEST	1
57	Best Practice	1
48	Bogan	27
38	Bowen	15
60	Brooks	3
46	Calumet	
50	Carver	
55	Chicago Ag	
39	Chicago Voc.	7
15	Clemente	1
42	Corliss	11
20	Crane	1
53	Cregier	2
51	Curie	11
49	Dunbar	
56	DuSable	3
65	Dyett	
30	Englewood	
22	Farragut	4
45	Fenger	14
18	Flower	1
03	Foreman	24
27	Gage Park	4
61	Hancock	4
43	Harlan	
35	Harper	4
23	Harrison	4
37	Hirsch	
66	Hope	1
34	Hubbard	15
31	Hyde Park	16
59	Jones	4
54	Juarez	3
44	Julian	3
24	Kelly	11
14	Kelvyn Park	11
29	Kennedy	14
28	Kenwood	14
25	King	
11	Lake View	7
12	Lane	
13	Lincoln Park .	108

33 Lindblom .....20





### **ComEd High School Science Club Program**

The following high schools have approved after-school science clubs sponsored by ComEd, An Exelon Company. Each club is provided with a stipend for the club sponsor (or shared among two or more club cosponsors) and funds for instructional materials and supplies. The primary objective of the ComEd Science Club Program is to provide guidance to students interested in developing science fair projects.

**Amundsen** *Eman Sarhan* 

**Austin Business** *Elaine Khoong Bethany MacCarter* 

BEST HS Tammara Hill

**Bogan** Stephen Farr Margaret Farr

**Brooks** Aurora Tyagi

**Clemente** Sophia Kim

Corliss Jamiu Sokoya

Curie Donald Price Latoyia Shadd

**Dyett** Linda Thomas

**Fenger** Susany Satish

Carrie Kessinger Nicholas Roumpakis

**Hyde Park** Maya Raja

**Juarez** Mary Norris Andrea Momchilov

Monique Murray Thomas Idicula

**Kelvyn Park** Thomas Unger Amelia Cote

**Kennedy**Christine Segina

King Alicia Choi





Lake View RyAnn Nelson-Jaiyesimi

**Lane** Jassen Lanfair

**Mather** *Marjorie MacLean* 

Morgan Park
F. Gebrehiwot
Eddie Marie Gonzalzles

New Millennium Paula Dell

**Payton** Walter Kinderman Gloria Ma

**Phoenix**Beatrice Jaji
Dennis Carroll

**Prosser**Daniel Gawne





Richards Gurpreet Juneja

**School of Leadership** *Eulette Arrington-Harris* 

Simeon Alberta Lawrence-Smith Austin Prater

**Taft** Brenda McGeever

Wells George Hill James Townsley

Whitney Young
Lynne El-Amin Waheed

**World Language** Ruquiyah Rahman-Aquil



### **Peoples Gas Middle School Science Club Program**

The following elementary schools have approved after-school science clubs sponsored by Peoples Gas. Each club was provided with a stipend for the club sponsor and a kit of materials to inspire ideas for independent research projects. Peoples Gas engineers volunteered to lend their expertise to club members on their projects. The primary objective of the Peoples Gas Science Club Program is to provide guidance to students interested in developing science fair projects.

**Bennett Elementary** *Laura Wallace* 

**Brunson Elementary** *Mary Capra* 

Chicago Academy Elementary Oscar Newman

Claremont Academy Joy Reeves

**Dixon Elementary** *Joy Dillard* 

**Graham Elementary** *Wanda Power* 

Gunsaulus Scholastic Academy

Rosario Canizales

Haines Elementary Bridget Dziedzic

**Herbert Elementary** Vinita Kapoor

Kellman Corporate Community School Maureen Callahan

Parker Elementary
Karen Harris

Peck Elementary Amanda Scampini

**Sabin Magnet School** *Conor Klaus* 

**Shoop Elementary** Michelle Smith

**Swift Elementary** Carlos Irizarry

Till Elementary
Thomas Ziencina

Yates Elementary Amber Richard















### **Science Fair Volunteers**

On the following pages are the names of almost 1300 people who give of their own time and of themselves to make the CPS Student Science Fair possible. **THANK YOU!** 























### **Faces of the Student Science Fair**





















### **Faces of the Student Science Fair**

























Each year approximately 300 judges from the scientific, academic, and business communities generously donate their time, effort, and expertise in order to objectively and professionally evaluate the most scientifically talented students from the Chicago Public Schools. Science Fair honors judges who have served for a minimum of five years and on every fifth anniversary. Judges receiving a plaque for service are invited to a special Recognition Luncheon which will be held after judging is completed.

Science Fair salutes ALL the Exhibit Judges participating in the 59th Annual CPS Student Science Fair.

#### Thank you and congratulations for a job well done!

Janice Ableman

Illinois Department of Children and Family Services

Paula Adams

AT&T

James Aderhold

Gas Technology Institute

**Robert Todd Agosto** 

Jose L. Agraz

Northwestern University

Larry Alofs

Anushka Anand

University of Illinois at Chicago

Michael Ander

URS Corporation

Mike Anderson

Peoples Gas

Peter Austin, DDS

Oak View Dental Group

Alaina Avery

Shedd Aquarium

Rebecca Babowice

BP America Inc.

John Bagley

Independent Productions

Rosette M. Bagley, R.N., BSN

**Shawn Bairstow** 

Baxter Healthcare Corporation

John Baker

Ameritech Services

Christine Baldwin R.D. L.D.N.

Baldwin Nutrition Services

Richard E. Barr

Chicago State University

**Kelly Bartlett** 

Nalco Company

Xheni Basko

Northwestern University

James Belcastro

Pepsico

Thomas G. Benjamin

Argonne National Laboratory

**Carole Bernett** 

DePaul University

**Larry Bernett** 

IJAS

Paul D Bierbauer

DeVry University

Pat Billing-Medel

Abbott Laboratories

Alexis Billingslea

Illinois Department of Transportation

Barbara Binns

AT&T

Jerry Blake

Power of 3 Strategies, Inc.

Marissa Blank

University of Chicago

Irene Bogdan

Richard Bogdan

R. B. Engineering

Leticia Bombino

Peoples Gas

Malcolm F. Boyle

Illinois Sustainable Technology Center

Donna S. Bracey

United States Gypsum

Paul Bredael

Peoples Gas

**Pat Bridges** 

Peoples Gas

Alexis Brown

Illinois Department of Transportation

Carol Burck

Loyola University

Kenneth Burke

Knowles Electronics

**Douglas Burman** 

Institute for Scientific Research &

Education

Carolyn Cain

University of Chicago

Brenda B Calfin

Abbott Laboratories

John Cannon

Peoples Gas

**Amy Carpenter** 

Baxter Healthcare Corporation

Barbara A. Carr

U S Environmental Protection Agency

**Mary Carroll** 

Metropolitan Water Reclamation

District

**Chantel Carson** 

Underwriters Laboratories Inc.

Susan Castellanos

U S Environmental Protection Agency

Lolita Caster

Harvey Public School District 152

Lisa Chavel

U S Department of Energy

Lynette Cheatem, MSPH

Northwestern University

Ezra Cohen

National University of Health Sciences



**Charles Cole** 

Loyola University

Brenda Coleman

Floristic Arts

CyntKaille Coleman

WGN

Mona L. Collymore

BP America Inc.

Paul Colombo

Peter Coologeorgen

EDS

**Catherine Corbin** 

National Green Museum

Claire Adrienne Cornelius, DVM

University of Chicago

Constanza Cortes

University of Chicago

**Debbie Cotton** 

Baxter International

James Covello

Colleen Cowan

University of Illinois at Chicago

**Danette Cox** 

Metropolitan Water Reclamation

District

Carolyn Cyriaque

Chicago State University

Ralph Daehn

R.C. Daehn & Associates P. C.

Lynn Danford

Rehabilitation Institute of Chicago

**Chastity Daniels** 

Peoples Gas

**Edward Davis** 

Alcatel-Lucent

Michael E. Davis

U S Environmental Protection Agency

Elva Dawson

Swedish American Health System

**James Deiters** 

Richard Delzenero

Northeastern Illinois University

**Charles Dobrovolny** 

Alcatel-Lucent

Paul J. Dolan Jr.

Granular Materials Award

Arlene Doppelt

P. D. Consultant Inc.

Paul Doppelt

P. D. Consultant Inc.

**Darlene Douglas** 

University of Chicago

John Dworak

Patricia Ebelt

Supervalu (Osco)

Harold Edwards

Takeda Pharmaceuticals

Gilbert Elenbogen

Antonio A Evans

Olivia D Evans

Alcatel-Lucent

Jasmine Fernandez Coglianese

Gene Wize, Inc.

**August Fiebig** 

Alberto-Culver Company

Mary Ann Fiebig

Daley College

Jason L. Fields

Exelon Nuclear/Clinton Power Station

Barry Finkel

Argonne National Laboratory

Dolores P. Fischer

Baxter Healthcare Corporation

Jason Folkerts

Peoples Gas

Peter Fong

J. P. Morgan Chase

Curtis B. Frank P.E.

Frank Professional Electrical Engineers

Cassie Freeman

University of Chicago

James Friel

SmithBucklin

Vincent Gaeto

Peoples Gas

Lila Gallogly

University of Illinois at Chicago

**Ahmed Gathing** 

Hines VA Hospital

Hannah Geraldoy Fernandez

Pfizer, Inc.

Paulette Geraldoy Fernandez

Hines VA Hospital

**Demetrius Gibson** 

Corn Products International

Paulette Glass

US EPA

Damien Glynn

Abbott Laboratories

Scott Goedert

Northeastern Illinois University

Kenneth Gray

Paul Gregoire

Illinois Department of Transportation

William Gross

DeVry University

John Hall

Alcatel-Lucent

Arthur Hannah

John Hauska

Peoples Gas

**Kurt Hedlund** 

ARRIS/CADANT

Gordon Henderson

Electro-Motive Diesel

Julie Henning

U S Environmental Protection Agency

Burnetta Herron

Advocate Trinity Hospital

Leo Herzenberg

Kate Higginbotham

University of Chicago

Stephen Hile CNH Global

Alicia Hill

Kim Hodges

University of Illinois at Chicago



Daniel Hoshowski

Met-Life Insurance

Myra Hoshowski

Jeannie Houchins, RD

Institute of Food Technologists

Foundation

Thomas Hull

Motorola Inc.

Richard Hungsberg

Office of the Special Deputy Receiver

Ben Hunt

Shedd Aquarium

Ken Hunt

Nikisha Hunter

L'oreal USA

Minerva Huston

Peoples Gas

Lou Jacob

DVRupgrade, Inc.

**Orrin James** 

Illinois Department of Transportation

Don Jarrett

Padma Gonpo, Inc.

Tony Jedlinski

Konoso LLC

Corinne Jembrzycki

Letitia Jenkins

Peoples Gas

Paul Richard Johnson

Kroll & Associates

Yolanda M. Jordan

Chicago State University

Jim Julion

South Water Filtration Plant

Joseph Kaczmarski

Peoples Gas

Karen Kaikaris

Hospira, Inc.

Paul Kasudia

Analytical Solutions International

Michael Kemp

Agilent Technologies, Inc.

Robert Kerfin

ΒP

Ilya Khramtsov

University of Illinois at Chicago

Ekaterina Khramtsova

University of Illinois at Chicago

Patrick Kindelin

Baxter Healthcare Corporation

William King

Abbott Laboratories

Ronald L. Kirschner

Kirschner and Associates

**Sharon Kobak** 

Jack A. Koefoot

Lauren Kolodziej

University of Chicago

R. Nelson Koopman

Engineering Systems Inc.

John P. Koposz

Argonne National Laboratory

**Ed Kritzer** 

**Gerald Labedz** 

Motorola Incorporated

James Lamb

Peoples Gas

**Keith Lamont** 

Webwalla Inc.

Carl Landahl

Gas Services

Virginia Landahl

Charles Lange

Loyola University Medical Center

E. F. Lebryk

**Derek Wilson Leggitt** 

Peoples Gas

George A. Lekas

Irwin R Levinson

IRL Consultants

Leia Levy

Swedish American Health System

Bessie R. Lipscomb

Gwendolyn Brooks Middle School-

Harvey

Elizabeth Litzinger

Rakolzy, Molino, Mazzochi, Siwik LLP

Luis Llanes

Alcatel-Lucent

**DeDee Ludwig** 

Adler Planetarium

Bruce R. MacCallum

Mayo Clinic/Mayo Medical

Laboratories

Ruth MacCallum

Ingenix Consulting

Gayle Mann

El Hogar Del Nino

Oni Mapp

University of Chicago

Sue Margulis

University of Chicago

Akilah Martin

DePaul University

Steven H. Mason MIC LLC

Mark K. Mathyer
Museum of Science and Industry

Brian D. McCallister

Baxter Healthcare Corporation

**Stacy McCance** 

URS Corporation

James McCracken

University of Chicago

Laura W. McFall

DePaul University

**Bridget McKay** 

Northwestern University

Steve McVeigh

John Metz

Neuroimaging Science Associates, LLC

Sandra Mikel

AT&T

Edward J Mikel Jr

Arctophile Group Ltd.

Dave Miller

Alcatel-Lucent

Jacqueline Miller

University of Chicago Medical Center



Natalie Mills

U. S. Army Corps of Engineers

Kamran Mirza

University of Illinois at Chicago

**Christopher Lee Moffatt** 

Fortis Clearing Americas

Melanie Moore

Environmental Design International

Jeremy Morgan

Abbott Laboratories

Deborah A. Murphy

Aplix Corporation

Devkumar Mustafi

University of Chicago

Zahra Naheed

John Stroger Hospital

**Kyle Nash** 

George A. Nelson

Peoples Gas

Rosetta Newsome, Ph.D

Institute of Food Technologists

Foundation

Sam Niu

Baxter Healthcare Corporation

Joseph Okoth Oyugi

Wright College

Juanita Olmos

Peoples Gas

Chidi C Osuji

Motorola Incorporated

Athma Pai

University of Chicago

F. Parsi

Peoples Gas

**Chris Parson** 

Dennis H Passe

Scout Consulting, LLC

Chetan U Patel

**Denise Patrick** 

Chicago State University

Ron Patten

Quest Diagnostics

Dorothy E. Patton

Peter O. Peretti

Wright College

Thomas A. Perez

Peoples Gas

**Bethany Perez White** 

University of Illinois at Chicago

Oliver Pergams

University of Illinois at Chicago

**Cindy Phillips** 

HLB, Inc.

Jack Philpot

AT&T

Michael Pickard

Micro Paraphernalia

Rheta Pickard

**Dominick Piscione** 

Underwriters Laboratories Inc.

Janice L Podolski

Rush University Medical Center

Walter F Podolski

Argonne National Laboratory

Craig R Prudian

Electro-Motive Diesel

Hina Qureshi

Abbott Laboratories

John Raffetto

Garfield Park Conservatory

Moriam Raji

Underwriters Laboratories Inc.

Jamison Rappeport

Exelon

Helen Rarick

Wright College

Leonard B Rink

Leora Rink

Erick G. Rodriguez Ramos

Exelon Nuclear/Clinton Power Station

Allen Rubin

National Green Museum

Mollie Rudnick

University of Chicago

Grace Rzepecki-Lund

Erin Sackett-Hermann

Pritzker Lab, FMNH

Stephen Schade

John Schaller

Viscosity Oil

Anna Schiavone

Rupley School

**Dominic Schiavone** 

Baxter Healthcare Corporation

Eric Schmiedl

Shedd Aquarium

William C Schu

Joseph Schuler

Motorola Incorporated

MaryAnne Schuster

Underwriters Laboratories Inc.

Jonathan J. Schweizer

U S Environmental Protection Agency

**Dorie Schwertz** 

University of Illinois at Chicago

**Heather Selby** 

Science Chicago

Arti B. Shadid

Peoples Gas

Danielle Sharp

National Louis University

**Charlie Shaw** 

University of Chicago

Thalia D. Sipple D.O. Ph.D

Col. USAF MC Ret

F. Lee Slick

Angela Smith

Baxter Healthcare Corporation

Anna Lisa Somera

Illinois Ventures, LLC

Jack A Soucheck

Dutch-American Foods

Ronald Spatzek

Harold Spinka

Argonne National Laboratory

Kathleen St. Louis

The Chicago Public Education Fund



Nancy Stach

Northeastern Illinois University

Charles A Steele

Keystone Aniline Corp

**Darolyn Striley** 

The Field Museum

Maryam Sultana

Peoples Gas

Earl Szymanski

Automated System Inc.

Steven Szymanski

S & C Electric Company

Stephen K. Tahir

Abbott Laboratories

Chuen C. Tam

Staples

Linda Tam

Neo Pharm, Inc.

Joseph Tassone

Peoples Gas

Stephen L Thompson

National Louis University

James Tomochek

Motorola Incorporated

Kim Tracy

Northeastern Illinois University

Danny Tran

Exelon Nuclear/Clinton Power Station

Paul Turturillo

Focal Point

Jodie M. Ulaszek

University of Chicago

**David Vaillancourt** 

University of Illinois at Chicago

Paul W. Valaitis

Baxter Healthcare Corporation

**Frances Vandervoort** 

Dallas A. Vanorny

Northwestern University

James Vey

Robert A. Vitas

Institute of Food Technologists Foundation

**Greg Vlacich** 

University of Chicago

Clowana Walker

Peoples Gas

Jennifer J. Walling

Advanced Materials Center

Ronald L. Walling

Advanced Materials Center

**Noah Walton** 

University of Chicago

**Robert Wamsley** 

Wamsley Enterprises, LLC

Mary Ware

University of Illinois at Chicago

Andrew Weflen

University of Illinois at Chicago

Corin White

Padma Gonpo, Inc.

Eileen Wild

Chicago Public Schools

Jim Witthoff

Salvation Army

Patricia Wontroba

National Weather Service

Mary Woolsey

Alberto-Culver Company

Julia P. Wozniak

Midwest Generation EME LLC

Michael Wyrick

Peoples Gas

Norman Yale

AT&T

Douglas Yau

University of Chicago

Oscar Yau

Northrop Grumman Corporation

**Howard Zar** 

Senior Service America/EPA

Mike Zochowski

Peoples Gas











# **Symposium Readers and Judges**

#### **Symposium Readers**

The following individuals, in addition to the Symposium Committee, generously volunteered their time and expertise on Saturday, January 25<sup>th</sup>, 2009 to read research and essay papers submitted for evaluation. *Thank you, Symposium Readers!* 

Michael Bentley Nina Hike-Teague Dorothy E. Patton **Hortense Brice** Joel Hofslund Patricia Riley Jeremiah Campion Beatrice Jaji Steven Rooney **Roy Coleman** Kevin Krakovsky **Emily Russell** Claire A. Cornelius John McDermott **Ed Scanlon** Angela Dumas Steve McVeigh **Anne Marie Sherry** Steve Farr Rita Nelson Dianna Uchida **Ethelene Hare** Patricia A. Parsons Fran Vandervoort

#### Symposium Judges

The following scientists and engineers volunteered their time and expertise on Thursday, March 26, 2009 to act on a panel of judges to select the finalists who will participate in the Illinois Junior Academy of Science Symposium.

Charmagne Ackerman U.S. EPA Reza Baherian

U.S. EPA

Shelia DeSai
U.S. EPA

Mirna DiPano
Abbott Laboratories

**Newton Ellens** *U.S. EPA* 

**Curtis Frank** Frank Professional Engineers

**Dr. Helene S. Gabelnick** *Harold Washington College (Retired)* 

**Xenia Guerrero** Abbott Laboratories

Joel Hofslund CPS Physics Teacher (Retired)

**Jimmie Julion** Chicago Department of Water Management

Joseph Kerke
CPS Chemistry Teacher (Retired)

**Sharon Kiddon** *U.S. EPA* 

Fred Korty
Lucent Technologies (Retired)

**Sharon Korty** *Retired* 

Danny Marcus
U.S. EPA
Inlie Morris

Julie Morris U.S. EPA

Bernie Orenstein U.S. EPA

**Terri Rancher** *U.S. EPA* 

**Lynne Roberts** *U.S. EPA* 

**Rae Trine** *U.S. EPA* 

Fran Vandervoort CPS, retired

**Noel Vargas** U.S. EPA

Mary Villarreal *U.S. EPA* 

Joseph Welk
Abbott Laboratories

**Felicia Williams** U.S. EPA

**Jason Wu** *Abbott Laboratories* 







# MEMORIAL TRIBUTE TO ALLEN G. NELSON

1948-2008





During his 34 years of dedicated service to students and teachers of the Chicago Public School system, Allen G. Nelson was a k-8 science educator for 23 years and he assisted with the Under the Umbrella and the End of Year Science Event. For four years Allen had been a citywide science facilitator in the Office of Mathematics and Science where he worked as a team member with three other science specialists; and he was a professional development provider of science fair workshops.

In the late 90's Allen served on the District (8 and 13) then Regional 4 Science Fair committee while working as a teacher at Altgeld and Hampton schools; he was a member of NSTA and ISTA; he worked with Delta Education (after retirement from CPS) introducing the reform, inquiry-based science instructional materials to other school districts.

From 1992 to 2003 he was a member of the CPS SSF Exhibits committee; since August 2003 he served as Chairperson of the Exhibits Committee assisting in the design and set-up of the Citywide Science Fair. From 2004 to June 2008 he served as a member of the SSF Board of Directors where he assisted in the development of elementary summer science camps and after-school science clubs; and he was an advocate for the Special Awards committee where he insisted on acknowledging the underrepresented student.

Allen served as a chaperone to the International Science and Engineering Fair, held in Phoenix, Arizona, May 2005, where he provided guidance and assistance to the four CPS SSF finalists during the weeklong competition.

On behalf of the CPS Student Science Fair, Inc. Board of Directors, Roy Coleman proposed and initially funded the establishment of the Allen G. Nelson Memorial Scholarship. The CPS SSF, Inc. is deeply appreciative of the many contributors to this scholarship. This scholarship will be awarded annually to a deserving CPS graduating senior beginning in May 2009.



The City Science Fair would not be possible were it not for the effort of the dedicated CPS employees and retirees who give days and weeks of their time and have done so for years. They invest their time behind the scenes preparing an event and supporting programs for the purpose of fostering science education, encouraging students to engage in independent research and providing those students a public forum to present their work.

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Many thanks go to the Area Science Fair Committees, who contribute their time and effort to create the events at which the best of the projects from the school science fairs are presented and judged. Though the focus of the event is on students' projects, these events succeed due to the care and attention to detail of those people working on arrangements, credentials, exhibits, judging and safety committees.

#### **Elementary Areas**

Elementary Area Science Fair Committees are chaired by the Area Math/Science Coaches. The committees may include the lead science teachers from participating schools and the chairpersons' Area Office colleagues. Their effort, often extending beyond the limit of the work day is greatly appreciated.

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Bouchet

LaWanda Mahomes

O'Keeffe

**James Martin** 

Caldwell

Eboni McDonald

Coles

Dehlia Mendoza

Mireles

**Antoinette Norrell** 

Area 17

Frankie Pierce

Powel1

Kimberly Rosa

Pirie

Mary Rosen

Area 17

Monica Rozell

Gillespie

Sandra Sanford

Area 17

**Rona Simmons** 

Ninos Heroes

Janet Sled

Area 17

**Doretha Stewart** 

Area 17

Patricia Tate

Ashe

Willie Williamson

Bradwell

Lorraine Wilson

Area 17 Math/Science Coach

Georgetta Wraggs

Burnside

Area 18

Tabitha Peebles

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Coach

**Tracey Hayes** 

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Coach

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Dr. Linda Moore

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Tisha Arnold

Gallistel

Marie Bonamino

Burnham

**Bud Bryant** 

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**Denise Carter** 

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Thorp

Warren Fischer

Marsh

Victoria Gavin

Carver

Vanessa Hamilton

Burnham

**Christine Harnedy** 

Grissom

**Sharice Horton** 

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Rocenetta Jacobs

Colemon

Kim Jacobsen

Clay

LaShanda Lewis

DuBois

**Deborah Lewis** 

West Pullman

Andrea Little

Poe

**Marie Miromontes** 

Addams

Felicia Narcisse

Schmid

James Oyler

Haley

**Konstantinos Patsiopoulos** 

Aldridge

Erica Proffit

Metcalfe

Belinda Rawls

Songhai

Rosemary Reddice

Pullman

Marcia Schapendonk

Gompers

Monte Sier

Higgins

Kaaron Singleton

Brown

Michelle Smith

Shoop

Darryl Strong

White

Elinor Sullivan

Taylor

**Maceo Taylor** 

Smith

Lillian West

Whistler

Laura White

Washington



### **High School Areas**

High School Area Science Fair Committees are led by volunteer high school teachers. They give their free time and much effort to organize and coordinate the various committees manned largely by science teachers from participating schools. Without their contribution of hours and manpower the HS Area Fairs would not be possible.

#### Area 19

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**Thomas Unger** 

Co-chairperson - Kelvyn Park

Charmaine Danguilan

Mather

Paul Dolan

NEIU

Cheryl Heitzman

North Grand

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Lane tech

Serdar Kartal

**CMSA** 

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Northside Learning Center

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Lane Tech

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Von Steuben

Brenda McGeever

Taft

Sandra Michalek

Lincoln Park

Syed Qadri

Schurz

Pat Riley

Lincoln Park

**Tony San Agustin** 

Senn

Marilynn Stone

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Uplift

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Manley

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Collins

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Hubbard

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Lindblom

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Harper

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Hubbard

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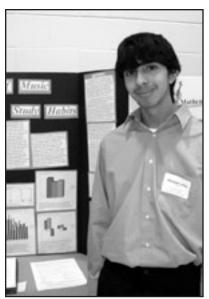
Marine

Leah Spee

Bronzeville









The teachers who sponsor student projects are more than just those students' science teachers. They go beyond classroom instruction to launch students into learning and doing science for themselves, in their own independent research experiment. Additionally, they make sure their students follow safety rules, write a solid research paper and complete the necessary paperwork to produce a science project.

School  The selver / Street ager	Ctudont	School  The selective (Stromoor)	Student
Teacher/Sponsor	Student	Teacher/Sponsor	Student
Albany Park	0. 1	Burnham	A1 II
Ana Retamal	Starsky Espino	Vanessa Hamilton	Alexa Haygoo
Alcott	-11.	Burr	A1 D:
David White	Ralph Amayo	Katie Dasso	Arely Rios
Amundsen		Burroughs	Duian Damina
Eman Sarhan	Slavi Tsarev	John Piegari	Brian Ramire
Peter Voss	Maria Andrea Buenaventura	Byrne	, M.D.
<b>Ariel</b> Virag Nanavati	Ayanna Bennett	Michael Albro	Lauren McRo Lukas Paukst
Beasley		Canter	
Eugene Clark	Ravin Taylor-Jackson	Rebecca Collins	Malik Guy
	Johnathan Terry	Canty	
O. Pollard	Rachel Collins	Wilma McNelis	Alexander Pa
Beaubien		Carson	
Amy Jeffers	Kaitlyn Steigerwald	Nekia King	Yasser Arrock
Beethoven		Carver	
Judy Walter	Vernell Walker	Savita Padmanabhan	Gabriel Cenc
Bell		Casals	
Mark Klein	Ted Decker	Kimberly Marinac	Stephanie Sai
Bennett		Cassell	
Laura Wallace	Karen Spears	Elaine Cloney	John McCabe
Bogan	T. T.		Matthew Nels
Stephen Farr	Sharmaine Holt	Chappell	
Stop tion 1 cm .	Alecia Ivery	Nancy Solayman	David Kneip
	Che Miles	Chgo Ag School	
	Diana Mondragon	Daniel Martin	Mark Banik
Boone			Brian Castro
Erin Finlay	Talha Ahmed		Dantrell Cott
	Sarah Hassan		Lauren Good
Bright			Naomi Harpe Denisse Marc
Denise Carter	Abril Perez		MelissaNelso
Bronzeville		Chgo Military HS	
Cynthia Smith	Rhonda Smith	Leah Spee	Abigail Avila
	Denika Thigpen	Chicago Math & Science	e Charter
	Antonio Tines	Serdar Kartal	Arzeena Ali
Brooks		Chopin	
Pauline Lampkin	Gary Pritchett	Liliana Caraba	Raluca Dima
Aurora Tyagi	Janea Wilson		Itzel Linares
Brown, W.	5 11 71		Grisel Medina
Regina Garrity	Ronisha Johnson		Rebecca Stove
Budlong		CICS - Longwood	
Samantha Germino	Dara Davis	Cristal Boisseau	Anton Flanag Brianna Rain

School Transfer of Comments	01
Teacher/Sponsor	Student
Burnham	
Vanessa Hamilton	Alexa Haygood
Burr	
Katie Dasso	Arely Rios
Burroughs	
John Piegari	Brian Ramirez
Byrne	
Michael Albro	Lauren McRoy
	Lukas Paukstys
Canter	
Rebecca Collins	Malik Guy
Canty	
Wilma McNelis	Alexander Pauer
Carson	
Nekia King	Yasser Arrocha
Carver	-30001 111100110
Carver Savita Padmanabhan	Gabriel Cencieros
	Gabilei Geneleius
Casals	Cuarla aria Carria
Kimberly Marinac	Stephanie Santiago
Cassell	
Elaine Cloney	John McCabe
	Matthew Nelson
Chappell	
Nancy Solayman	David Kneip
Chgo Ag School	
Daniel Martin	Mark Banik
	Brian Castro
	Dantrell Cotton
	Lauren Goodwin Naomi Harper
	Denisse Marquez
	MelissaNelson
Chgo Military HS	
Leah Spee	Abigail Avila
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Chicago Math & Science Serdar Kartal	Arzeena Ali
	AIZEEIIA AII
Chopin	n 1 - n'
Liliana Caraba	Raluca Dima
	Itzel Linares Grisel Medina
	Rebecca Stover
	1050000 000 101
CICS Language	
CICS - Longwood  Cristal Boisseau	Anton Flanagan



<b>School</b> <i>Teacher/Sponsor</i>	Student	School  Teacher/Sponsor	Student
Claremont Joy Reeves	Jonathan Gaston	<b>Garvy, J.</b> <i>Terri Hehn</i>	Elizabeth Tran
Clissold		Gary	
Dan Taff	Michael Griffin	Michael Chen	Jesse Meza
Collins		Gillespie	
Carol Giles	Iesha Sharp	Monica Rozelle	Alundra Dickson
Coonley		Goethe	
Jennifer Schultz	Christian Kavouras	Ann Yost	Gissel Espinoza
Crane		Green, W.	
Anita Misra	Demara Howard	Marva Anyanwu	Trivon Wells
Curie		Gunsaulus	
Nina Hike-Teague	Barbara Banda Juan Coronel	Rosario Canizales	Ellen Curtin Charles Kucharzak
	LeAnder Gibbs Jessica Guerrero	Haines Bridget Dziedzic	Terence He
	Yesica Lara	Hale	-0.0100 110
	Sally Mei Eunice Phung	Laura Gray	Soler Natalia
	Erik Zuniga	Hamline	
Don Price	David Blaxton	Michelle Maldonado	Jacqueline Olguin
De Diego			Maria Paredes
Maraliz Salgado	Fabian Diaz	Harlan	
De La Cruz		Shanna Barkume	Kelsey Holt
Angela Lewis	Fabian Carbajal	Tammy Butler	Raven Maberry
Disney		Harvard	
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Dore		Hawthorne	
Elizabeth Alvarez	Brian Pacholski	Sonja Oliveri	Noah Asimow
Dunbar		Henson	
Myrna Alvarez	Anniky Billups	Je'Nest Murry	David Adejinmi
Durkin Park			Samuel Adejinmi
Diane Esquibel	Omar Ortiz	Herbert	01.1
Dyett		Vinita Kapoor	Chloee Avery
Linda Thomas	Debra Jones	Hirsch	Verio Millo
	Richard Robinson Jr.	Lacy Grigsby  Abdul Muztar	Kyia Mills Nepresha Martin
Edison	D 1' F	110000111102101	Cierra Moore
Mia Clementz	Pauline Esman Ameena Khan	Hope	
Fairfield	Annocha Khan	Carrie Kaestner	Amanda Crawford
Kristin Beyer	Korina Rodarte	Hubbard	
Farnsworth		Leeann Finley	Martha Arteaga
Kristin Schienhein	Claire Auger		Alexandra Sanchez
10 totti oontonbon	Katherine McDermott	Deborah Kim	Edith Flores
		Hyde Park	
Gage Park		Daniel Mullens	Latavia Hill
Gage Park Patricia Parsons	Antwon Bryant		
_	Antwon Bryant Alexandra Herrera	Eddy Pierre	Stevlan Price
_	Alexandra Herrera Andrea Sanders	Eddy Pierre Maya Raja	Stevlan Price Corey Allen
_	Alexandra Herrera	9	Stevlan Price



School Teacher (Snonsor	Student	School Tracher/Sponsor	Student
Teacher/Sponsor		Teacher/Sponsor	Student
Maya Raja (cont'd)	Salena Tucker Deonte Womack	Lane Kathryn Beck	Oluwamide Agunloye
1.6.4	Dedited Wollidge		Evan Andersson
Infinity	n 1 n		Afra Khan
Beatrize Santin Vazquez	Erika Diaz		Thomas Lauletta
	Anthony Garcia		Alexandro Ortiz
Inter-American		James Keating	Nadiya Voytanovych
Maritza Soto	Martin Rosas	Kevin Kopack	Joanna Buksa
Irving			Suad Causevic
Nonilon Urgel	Marilyn Barnes		Piotr Halon
	J		Nicole Kuklinski
Jackson, A.	David Castro	Ellen Kulick	Karen Perez
Amy Koonce	David Castro Rebecca Iturralde	Lane (continued)	
	Nebecca Ituliaide	Jassen Lanfair	Saad Khan
Jones		jacoon Banjan	Margaret Tran
Alexis Kovacs	Manuel Valle		Daniela Zermeno
Jordan		Dianne Lebryk	Faiza Sulaiman
Rochelle Cueto	Jamesha Bennett	Marilynn Stone	Jesus Sanchez
Juarez			
Mary Norris	Karina Aranda	Lathrop Jill Sweet	Tiajuanna Douglas
1.1201 g 11011 to	Fernando Araujo		11aJuaiiiia Dougias
	Victoria Hernandez	Leadership	
	Victor Medina	Eulette Arrington-Harris	Jhanae Jackson
	Esteban Perez	Glennie King	Tonika Thomas
Julian		Sheree Parnell-Booth	Reginald Branch
Doris Agbefe	Diamond Dickerson	Lenart	
Monique Murray	Shantell Steve	Kathleen Doyle	Michael Carnowell
	Shanten Steve		Benjamin Chrobak-Prince
Kanoon			Shelby Spence
Katrina Corcoran	Romualdo Chavez	Lincoln	
Kellman		Sue Nutter	April Bell
Maureen Callahan	Kiara Bullocks	Sue muiter	Daniela Flax
	Jamar Leonard		Lorenzo Villegas
Kennedy		Lincoln Doub	Dolondo + mogao
Keitel Thelemaque	Kevin Gename	Lincoln Park	Томиом од О
1000 110011040	Bernadette Lona	Michael Bentley	Terrence George
	Zornadetto Dona	Rebecca Corrigan	Sofia Gomez-Doyle
Kenwood	D.1. (CD.)	James Galinski	Yoonjeong Kim
Daniel Greenwald	Dekonti Davies	Riley Patricia	Mengyi Xu
King		Scott Payne	Leah Balay-Wilson
Alicia Choi	Brandon Durr	Patricia Riley	Nicholas Cernek
	Porter Hopps IV	Steven Rooney	Daniela Fernandez
	Julie Khuu	Emile Ber 11	Emir Vulic
	Tatiana Mack	Emily Russell	Erin Bennett
	LaDonna Miller		Elad Deiss-Yehiely
	Angela Robateau	Lindblom	
	Brittany Shropshire	Hortense Brice	Jourdan Howard
	Karon Smith	Alex Brown	Maleke Clemmons
Lake View			Anissa James
Mahesh Alur	Sana Ahmed		Jaylon Tucker
RyAnn Nelson-Jaiyesimi	Audrey Kaminski-Morris	Sandra Joy Casad	Tyehimba Turner
	Jimmy Zagorski	Ed Hershey	Benita Brown
	Linda Zhou		



<b>School</b> <i>Teacher/Sponsor</i>	Student	School Teacher/Sponsor	Student
<b>Locke</b> Milja Lazarevic	Christina Cinaj Samantha Sowa	Pasteur Joanne Bujak-Dominiak	John Rodriguez
<b>Lovett</b> Sharron Crowder	Marcel Washington	Payton Walt Kinderman	Jonathan Aird Michael Cadiz
<b>Lyon</b> Marianne Galassini	Rigoberto Olmos		Marie Donaldson Austin Maliszewski
<b>Mather</b> Charmaine Danguilan	Marzieh Salehitazangi		Maria Manghi Roksana Pietrasienska Jordan Sawyer
Theresa Kotthoff	Ramon Robles	William Lyons	Michael Schultz
McKinley Park Gretchen Anderson	Christopher Amezcua	<b>Peck</b> Amanda Scampini	Brigette Dzialek
Metcalfe Erica Proffit	Brittney McClendone	Pershing West  Eve Ewing	Norton Helton
Mireles		Phoenix	
Lajuana Jackson  Mitchell	Nickolas Diaz	Beatrice Jaji	Kenny Alvarez Miguel Estrada
Donna Wipf	Sarah Lopez Ariya Pongsiririt	<b>Powell</b> Stacy Stewart	Charles Taylor
Monroe Anne Horton	Marvin Lopez	Revere  Valerie Docks	Raquita Martin
<b>Morgan</b> Janice Coleman-Mathus	Stevon Jenkins	Richards Gurpreet Juneja	Jesus Garcia
Morgan Park Emily Berna Frehiwot Gebrehiwot EddieMarie Gonzalzles	Carlos Garcia Jaeda Branch Nicole Bolton	Tesfaye Telila	Shatrice Meeks Arely Vargas Tania Guzman Agustin Rodriguez
Paul Kerns	Kirsti Gilmore Meghan Thomas	Rogers Michael Chon	Shahzaade Cannon
Theresa Marshall  Morrill	Nia Moreno	Sauganash Meghann O'Mara	Gabriela Zamora
Rachel Eddington  New Sullivan	Margarita Santamaria	Sawyer  Doris Hansbrough	Victor Lopez
Robin Bates North Grand	Alexandra Barraza	Grace Olmos Sayre	Lidia Mendoza
Cheryl Heitzman	Amaury Valentin	Eric Porte	Benjamin Vega
Northside Lidia Ortiz	Aisha Ahmad Bhumi Patel	Schmid Corina Rodriguez	Christopher Smith Cecilia Tate
Novéhwast Middla	Thuy Tran	Schurz	Maria Dias
Northwest Middle Marquita Archie	Bibiana Delgado	Concepcion Millet-Rivera Syed Qadri	Maria Diaz Danielle Watkins
Norwood Park Alanna Mertens	Lindsay Phillips	Senn Eleanor Flanagin	William Kwateng
<b>Ogden</b> Carol Scafide	David Tong	Antonio San Agustin Seward	Sana Iqbal
Palmer Janet Ruff	Kevin Jarr	Lorel Madden	Andrea Jimenez
janoi rajj	120 / 111 0 (111		



School		School	
Teacher/Sponsor	Student	Teacher/Sponsor	Student
Sheridan		Washington, G.	
MaryPat Pardo	Maurice Goodman	Eva Aseves	Janet Flores
Shields			Elizabeth Gonzalez
Shelia Lane	Ricardo Abarca		Karen Ramirez
опони дино	Stephany Virrueta	West Pullman	
Simeon	1	Deborah Lewis	Robbie Lee
Alberta Lawrence-Smith	Tashaina Collier	Whitney	
Skinner	1001011111 0011101	Kerri Scanlan	Jennifer Aguilar
Cheryl Pope	Akele Spencer	Williams Prep	
	ARCIC Spericer	Aaron Weiss	Omari Roberts
Spencer		Titiron Wolds	Mark Sikorski
Deborah Bradley	Anthony Rivera	Anna West	Fatimah Askia
	Jonathan Smith	World Language	
Taft	D	Mrs. Rahman-Aquil	Brandon Edwards
Michael Bakula	Dennis Hehn		Kiara Reyes
Ewa Dudek	Deanna Pirpiris Bart Kotlarek	Yale	
Susan Groziak	Margaret Nolan	Susan McDonald	Racquel Moore
Susan Grozian	Juliette Pirpiris		racquer moore
Brenda McGeever	Enxhi Zekthi	Yates  Amber Richard	Jacobyn Maraz
Tanner			Jocelyn Meraz
Jacquelyn Cohen	Victoria Price	Young	01 1 1
Tilden	11000110111100	Emily Benz	Charles Lyang
Parul Modha	Muruan Cong	Luma El Amin	Lucy Zhuo Christiane Alford
Parui Moana Anuradha Sood	Muyuan Gong Alfredo Guerrero	Lynne El-Amin	Hannah Blackwood
Anuraana Sooa Edward Talbot			Adrienne Chung
	Christopher Evans		Matthew Decker
Turner-Drew	- 1 - :		Derek Drozd
Kristel White	Taylore Cephas		Victoria Grose
Twain			Clara Ledsky
Mary Carole Moss	Lucero Flores	Jason Lopez	Melissa Lin
Von Steuben			Belinda Moy
Mary Jo Arnashus	Nancy Aguilar	Ryan Neris	Yutian Sheng
<u>,</u>	Marta Budzikowska	Katherine Rehak	Erica Knox
	Alexander Robbins		Maggie Mercurio
Seung Cha	Elin Erickson		
	Sana Hira		
David Kaplan	Jason Izui		
Carmen Marquez	Kyle Swartz		







# Acknowledgments

The Annual Chicago Public Schools Student Science Fair represents one of the best syntheses of the city's business and educational communities. The not-for-profit CPS Student Science Fair, Inc. is a coalition of public school teachers and administrators. They coordinate this yearly showcase with the aid of the aforementioned Chicago Public Schools, the Museum of Science and Industry, and this year's corporate sponsors, The Motorola Foundation, BP America Inc, and ComEd, An Exelon Company as well as many others.

In addition to our corporate, academic and site sponsors, contributors, committees and judges there are many others whose support must be acknowledged. We wish to express our sincere appreciation to the following individuals and organizations for their invaluable contributions to the 2009 CPS Student Science Fair.

- The students who worked so diligently to develop the outstanding research and displays presented at this event
- The parents, teachers, and other adults who inspired the young people in various aspects of their projects
- The engineers, scientists, and mathematicians who volunteered their services to help students develop their research
- Faculty and administrative personnel who organized the school science fairs which give students their first opportunity to present their research to judges
- Dr. Barbara Eason-Watkins, CPS Chief Education Officer, who daily challenges us to raise the bar and to continually challenge students to do their best work.
   Her continued support is greatly appreciated.
- Chandra James, CPS Director of Mathematics and Science, for providing staff and resource support to all levels of the Science Fair Program

- Michael Lach and John Loehr, CPS Office of High Schools and High School Programs for their support
- Chris Robling of Jayne Thompson Associates and Tim Tuten in the CPS Office of High School Programs for publicizing the work of Science Fair exhibitors and the CPS Student Science Fair
- IKON Office Solutions for the delivery and donation of a copying machine to use during the week of Science Fair
- Dr. Paul Dolan, Northeastern Illinois University professor whose contributions on our Board of Directors, with Science Fair Central workshops and with Areas 1 and 19 Science Fairs far exceed our expectations
- Pam Barry, Museum of Science and Industry Education Coordinator for seeking additional ways the
  Museum can help improve the fair ranging from science demonstrations, museum tours, and personnel assistance including volunteers to help on committees and special projects. Special thanks to MSI volunteer Ofelia Geralds for inputting Area Science Fair survey data

Your support will ensure the continuation of the CPS Student Science Fair in its exemplary form.





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