

NATIONAL CONFERENCE
SCIENCE & TECHNOLOGY in
Out-of-School Time

SEPTEMBER 17-19, 2008 | NAVY PIER, CHICAGO, IL



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in the support of the
growing movement for
science & technology
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NATIONAL CONFERENCE
SCIENCE & TECHNOLOGY in
Out-of-School Time



Welcome to Chicago! Thank you for attending the first national conference of the Coalition for Science After School, organized in partnership with Project Exploration.

Science, technology, engineering, and mathematics (STEM) are the currency of the 21st century. They are central to success in education and careers, advancement of innovation, protection of the environment, preservation of economic competitiveness, and participation in a democratic society. More than that, science offers a unique perspective on the world and gives students a chance to experience the wonder of discovery first hand.

Research shows that when it comes to predicting future career decisions, early interest in science is more important than test scores. Gender and ethnic differences in the science workplace persist, not because of academic performance, but because fewer girls and minorities are exposed to science as an engaging career option.

This conference builds on a growing body of research and experiences that are the foundation of a new field of science and technology in out-of-school time. We have organized three plenary sessions and 21 workshop sessions as a snapshot of the national landscape. We also invite you to organize your own session during the unscheduled block.

We hope this conference gives you a chance to explore the past, present, and future of our emerging field; we hope you have a chance to get to know your colleagues and partners in this work; we hope you leave this conference inspired, energized and concerned about the work that lies ahead.

We look forward to working with you to ensure young people from all backgrounds have access to high quality STEM learning experiences during out-of-school hours and to partnering with you on purposeful, coordinated, strategic efforts across the country.

We want to thank our funders, the National Partnership for Quality Afterschool Learning, U.S. Department of Education, the Motorola Foundation, and Science Chicago. *And, thank you for being part of this historic gathering.*

Sincerely,



Jason Freeman
 Jason Freeman
 Executive Director
 Coalition for Science Afterschool



Gabrielle Lyon
 Gabrielle Lyon
 Cofounder, Executive Director
 Project Exploration

Schedule At-A-Glance

Wednesday



6:00 pm
 National Conference for Science & Technology in Out-of-School

Time Evening Reception at Adler Planetarium.

Presentation by Edward W. "Rocky" Kolb. Biography on page 9.

Thursday

8:00 am Registration
 Continental Breakfast
 9:00 am Plenary Session
 10:45 am Session I
 12:00 pm Lunch
 1:00 pm Session II
 2:15 pm Breakout Session - Open Schedule
 3:30 pm Plenary Session
 4:45 pm Wrap Up
 6:30 pm Hosted Dinners

Friday

8:00 am Continental Breakfast
 9:00 am Plenary Session
 10:45 am Session III
 12:00 pm Lunch
 1:00 pm Big Idea Session
 3:00 pm Adjournment

9:00 AM | PLENARY SESSION | 301/302/303/304



Welcome Maggie Daley, First Lady of the City of Chicago

Maggie Daley, First Lady of the City of Chicago and one of the city's leading advocates for children and youth, is Chair of After School Matters, whose goal is to engage Chicago's teens in purposeful and meaningful activities after school and in the summer. Starting in 1991 with 220 teens in the Gallery37 summer program, it's grown to include over 28,000 high schoolers this academic year. This increase is a result of an active and resourceful board of civic and corporate leaders; partnering with community-based organizations, non-profit groups, the Chicago Public Schools, Parks and Libraries.

Mapping the Landscape: Science in Out-of-School Time

Eric Jolly, Science Museum of Minnesota

Eric Jolly will frame key issues our field is attempting to address, will highlight lessons learned during the research for Engagement, Capacity, Continuity, and offer a blueprint for action.

Eric Jolly, Ph.D., President, Science Museum of Minnesota, is known for his contributions to mathematics and science education; he has published many scholarly articles and lectured throughout the world. Most recently, he published "Engagement, Capacity and Continuity: A Trilogy For Student Success", which analyzes why successful individual reform efforts have not led to broader increases in students achieving at high levels nor entering science and math oriented careers. He is also the author of numerous books, articles, and curricula for students and teachers across the educational spectrum, including "Bridging Homes and Schools," (a comprehensive resource for teachers of Limited English Proficiency students). Prior to joining the Science Museum of Minnesota, Dr. Jolly served as senior scientist and vice president for Education Development Center in Newton, Massachusetts. He is also a life member of the Society for Advancement of Chicanos and Native Americans in Science.



GETTING THE MOST FROM YOUR CONFERENCE EXPERIENCE

We hope that the next two days will allow for learning, discussion, and idea-generating about the past, present, and future of our emerging field. When you checked in, you should have received a CD containing much of the most relevant research and resources that help define science and technology in out-of-school time. Building from this research, we have organized three plenary sessions and 20 workshop sessions that represent the current knowledge and activities in the field. Using the knowledge that you gain from the research and the sessions, we hope you will plan the future of the field.

By focusing this conference on the future, we are asking you to do some work for us. Specifically, we ask you to contribute in two ways:

1. Participate in the **unscheduled block**: There are boards where you can sign up for the unscheduled block. This time is for sharing ideas, finding partners, and seeking feedback on future projects. You may join a discussion on an existing topic or post your own discussion topic. We will assign space to those sessions based on demand, so please sign up as soon as possible.
2. Join us in **promoting science and technology in out-of-school time**: During the conference, we will share with you tools for promoting our topic to the media and policymakers. Please use our press release and fact sheet as a resource in promoting your work and participation in this conference.

REGISTRATION AREA

3rd Floor Foyer, Festival Hall, Navy Pier.

Thursday – 8:00 am - 5:00 pm

Friday – 8:00 am - 3:00 pm

Here you can

- Pick up your badge and conference materials
- Lost and found; messages
- Open schedule sign up
- Sign up for Hosted Dinners

CELL PHONES

PLEASE - Don't let it ring, sing, ding, talk, or chant during a session.

THURSDAY

Conference Themes

P Programs, Curricula, and Activities

S Staff Development

A Assessment and Evaluation

I Infrastructure and Systemic Change

10:45 AM | SESSION I

STEM in the Summer

Johns Hopkins University: Ron Fairchild (National Center for Summer Learning); Barry Aprison (School of Education); Museum of Science and Industry (Chicago): Latasha Battie, Jennifer Martin, Elizabeth Igoe

P Join colleagues for a rich exploration of strategies and models designed to engage young people in hands-on, inquiry-based learning during the summer months. Participate in an interactive demonstration, discuss partnership ideas, and think critically about your efforts to integrate STEM content in summer programming. **308**

Scaling Up from Grassroots

Eda Davis-Lowe, SMILE Program, Oregon State University; Manuel Hernandez, Community Science Workshops; Curt Gabrielson, Community Science Workshops

P This session is designed for participants who want to expand their out-of-school time programs to serve more youth. The session is framed around two programs that have successfully scaled their efforts. Participants will learn about each program and the strategies used to expand its footprint. Those attending this session will discuss which strategies may be useful in scaling their own programs and begin to identify specific elements of their expansion plans. **309**

Science Learning in OST Settings: What is Possible? What is Practical?

Bronwyn Bevan, Exploratorium

A Together we'll discuss types of science learning that are possible and practical in OST settings, how they connect to school science, and how they develop students' capacities to go further in school and in lifelong learning. The session's goal is to practically and productively lay the conceptual groundwork that can guide design, assessment, and advocacy of OST science programs. **311**

Staff Development: Finding the Balance

Pam Garza, National 4-H Council

S Afterschool programs are determining each day the balance they provide between science content and the context of positive youth development for out-of-school time purpose and approach. As we prepare our staff and volunteers, we need to be clear on what is critical to our organizations. Join us for a dialogue around these staff development issues and think together about how we can best meet the needs of our youth (and the staff who work with them). **310**

Selecting or Developing Appropriate Curriculum

Kathleen Jamison, National 4-H Council; Maryann Stimmer, Educational Equity Center at AED and The After-School Corporation

P Out-of-school time setting and staff offer unique benefits, and challenges, for informal science education. This unique situation needs curriculum that can be used by science immigrants to effectively engage children and youth while maintaining the integrity of science content and supporting 21st Century skills. Often curriculum used in OST learning settings either belongs in K-12 formal classes or is a mere collection of activities without a conceptual framework, a youth development context, or an inquiry focus. They often don't provide support to facilitators that enables them to take diverse youth down an experiential path of learning. Join us for active thinking and dialogue around the issues of creating ideal OST curriculum. **307**

After School Programs as a Path to Advanced Coursework:

Evidence from the 2007 Coalition Project

Alberto Rodriguez, San Diego State University; Lynn Dierking, Oregon State University

I Afterschool programs may become the great equalizer for at least providing some students with a pathway to advanced course work and enriched opportunities to learn. Findings from a comprehensive review of the literature on out-of-school time programs indicate that these programs may very well be providing students with the hands-on and minds-on curriculum that under funded and poorly staffed schools cannot. Similarly, out-of-school programs are a significant resource for guidance and tutoring that parents are often not able to provide due to their current socioeconomic status. In this interactive session, we will present highlights from this literature review and engage audience members in a discussion. **312**

Evaluating Out-of-School Science Projects

Jennifer Borland, Rockman, et al.

A More and more attention is being paid to evaluation both by program facilitators and program funders. This session will provide a brief overview of evaluation strategies and benefits, with a focus on after-school science programming. We'll call on session attendees to help provide examples of evaluation efforts and/or concerns, as well as offer scenarios for commentary and discussion. There will be practical take-aways for anyone doing, or thinking about doing, evaluation—whether you are a diehard believer in the value of evaluation or a recent, or soon-to-be, convert thanks to initiatives like NSF's Framework for Evaluating Informal Science Education Projects. **305**

12:00 PM | BUFFET LUNCH

1:00 PM | SESSION II

Evaluating for Both STEM and Positive Youth Development Outcomes

Faedra Lazar Weiss, Girls Incorporated®; Jill Walahoski, National 4-H Council

- A** Informal STEM education provides opportunities for both subject area expertise and personal growth. Explore tools and activities, many hands-on and minds-on, that will help you assess and document changes in young people's knowledge, skills, attitudes, and behaviors without being intrusive or "too much like school". **307**

Train the Trainers: Lessons from NPASS

Charlie Hutchison, Education Development Center, Inc.

- S** The National Partnerships for AfterSchool Science (NPASS) is working with partners in 15 states to promote in-depth science experiences for children in out-of-school programs. NPASS aims to establish networks of well-prepared trainers in each state to provide ongoing professional development for afterschool staff and administrators in STEM project learning. **309**

Electronic Tools for Staff Development

Marilyn Heath, SEDL; Cassandra Byrd, Exploratorium

- S** Electronic tools are cost and time-effective and can meet the professional development needs of your afterschool staff. In this session, you will discover free electronic tools - such as the Afterschool Activities from the Exploratorium and the Online Training Toolkit from the National Partnership for Quality Afterschool Learning. Share additional ideas with your colleagues in an open discussion. **310**

Creating High Quality Curriculum

Maxie Hollingsworth Latimer, Liberty Science Center; Susan Buckey, WGBH; David Goldstein, Lawrence Hall of Science at UC Berkeley; Bob Hirshon, American Association for the Advancement of Science; Anita Krishnamurthi, NASA Goddard Space Flight Center; Maryann Stimmer, Educational Equity Center at AED; Bernie Zubrowski, Education Development Center, Inc.; John Zuman, Intercultural Center for Research in Education

- P** There are many high quality curriculum resources available for afterschool staff to use in leading science activities. The Consumers Guide for Afterschool Science Resources now features fifty curricula. Join the developers of several of these resources for a roundtable discussion about development and distribution. **306**

Building the Ladder: Working with Older Youth

Kristin Atman, Project Exploration; Sylvia Perez, New York Hall of Science; Roxana Torrico, The Finance Project

- P** Research suggests that high-caliber K-12 science programs during school hours are necessary but not sufficient for effectively recruiting students to stick with science. This session will provide examples of science programs designed to address the needs of older youth during out of school time settings and look at what research is saying about what it takes financially to ensure these kinds of programs are effective and sustainable. **312**

The Lay of the Land: Science Learning in Afterschool Settings

Rena Dorph, Lawrence Hall of Science at UC Berkeley

- I** When and how do typical afterschool programs include science? What does this science look like? What supports and sustains inclusion of science in these settings? Dr. Dorph will present findings from the NSF-funded Informal Learning of Science in Afterschool (ILSA) project as a representative of the project's research team (Dr. Gil Noam, Carolyn Dahlgren, David Goldstein, and Jim Larson). She will share findings from the study to date and facilitate discussion of policy and dissemination possibilities for study results. **305**

Building Coalitions of Support that Promote Equity and Science Learning

Brenda Britsch, National Girls Collaborative Project; Bob Russell, Self-Reliance Foundation; Jason Freeman, Coalition for Science After School

- I** Building effective coalitions to support OST science programs is critical for sharing best practices, challenges, and lessons learned throughout the field. This session will highlight current efforts to support OST programs on a national level, focusing specifically on promoting equity to increase science opportunities for underrepresented youth. **308**

A Roadmap for Successful Youth Technology Programs

Maureen MacCarthy, MGS Consulting Inc.

- P** MGS Consulting conducted a multiyear evaluation of the impact of the Bill & Melinda Gates Foundation's Community Access to Technology Program, which produced robust results confirming that youth technology programs yield significant short and long-term benefits. This session will provide a planning roadmap, so you can design effective technology programs that encourage youth academic success, both today and in the future. **311**

2:15 PM | OPEN SCHEDULE

Participate in the unscheduled block: there are boards, in the Registration Area, where you can sign up for the unscheduled block.

You may choose to join a discussion on an existing topic led by another conference participant, or you may want to post your own discussion topic and invite others to join you.

We will assign space to those sessions based on demand, so please sign up as soon as possible.

THURSDAY

3:30 PM | PLENARY SESSION | 301/302/303/304

Equity and Access: A Systemic Perspective

Panelists Diane Miller, Saint Louis Science Center and Harold Asturias, Director, Center for Mathematics Excellence and Equity, Lawrence Hall of Science at UC Berkeley
Moderator Jane Quinn, The Children's Aid Society

Minorities and females continue to be underrepresented in science. Research demonstrates that after school settings are places where we can reach kids, sometimes in ways we are simply unable to in formal school settings. Given this opportunity, how do we recruit and retain underrepresented populations? What does it take to find and increase the diversity out of school time science program participants? What should we spend time on with them once they're engaged?

4:45 PM | WRAP UP | 301/302/303/304

6:30 PM | DINNER ON THE TOWN WITH A CHICAGO HOST

You need to eat! Now all you have to do is sign up. We've organized a fantastic host committee of folks who are in the thick of working in science and technology in out-of-school time in Chicago. Some amazing restaurants in some of Chicago's most interesting neighborhoods have been selected.

How It works

Sign up Thursday in the Registration Area for a dinner of your choice.

Get yourself to the restaurant (directions will be provided). All dinners start at 6:30 pm.

Order some food. Have a great time talking with new friends.

You pay for your transportation to and from the restaurant; you pay for your own food and drink.

All dinners start at 6:30pm. When they end is up to you!

Dinner Hosts

- **Diana Baldi**, Illinois Destination ImagiNation Inc, Director for the Far North Region
- **Matthew Blakely**, Motorola Foundation, Manager
- **Mark Hammergren, PhD**, Adler Planetarium, Astronomer and Director of the Astro Science Workshop
- **Chandra James**, Chicago Public Schools, Director of the Office of Mathematics and Science
- **Randall Landsberg**, Department of Astronomy and Astrophysics at the University of Chicago, Director of Public Outreach and Director of Education and Outreach, Kavli Institute for Cosmological Physics
- **Gabrielle Lyon**, Executive Director and Cofounder of Project Exploration
- **Nicole Patel**, Chicago Botanic Garden, Coordinator of Secondary Education & Career Programs
- **Sarah Shirk**, Women in Science and Engineering program at the University of Illinois at Chicago, Outreach Director for GEM-SET
- **Melissa Williams**, Shedd Aquarium, Assistant Director of Education

Restaurants

- The Evergreen Restaurant in Chicago's Chinatown
- Wishbone in the West Loop
- Kamehachi in Streeterville
- Tuscany in Little Italy
- Park Grill in Chicago's Millennium Park
- We've even got a dinner set up at Chicago's Thinkubator!

7:30 AM | FUNDER BREAKFAST INVITATION ONLY

Hosted by the Brinson, Motorola, and Noyce Foundations.

8:00 AM | CONTINENTAL BREAKFAST 3RD FLOOR FOYER | NAVY PIER

9:00 AM | PLENARY SESSION | 301/302/303/304

Scientists in Action

Panelists Leon M. Lederman, Ph.D., Fermilab; Paul Sereno, Ph.D., University of Chicago; and Lisa Egbuonu-Davis, MD, MPH, MBA
Moderator Laura S. Washington, DePaul University/Chicago Sun Times

What's so special about science? Three high profile research scientists – Nobel Prize winning Physicist Dr. Leon Lederman, University of Chicago paleontologist Dr. Paul Sereno, and former Pfizer VP Lisa Egbuonu-Davis, MD, will talk about their commitment to public outreach and describe what they think matters most for inspiring and training the next generation of scientists. This panel is moderated by nationally-acclaimed *Sun Times* journalist Laura Washington.

About the Hosting Organizations



www.ScienceAfterschool.org

The Coalition for Science After School envisions the day when young people from all backgrounds have access to high quality science, technology, engineering, and math (STEM) learning experiences during out of school hours. The Coalition is a strategic alliance among individuals and organizations from STEM education, youth development, and out-of-school time programs. The Coalition's mission is to coordinate and mobilize community stakeholders to strengthen and expand opportunities for young people to do and learn science in after-school settings.



www.projectexploration.org

Project Exploration is nonprofit science education organization dedicated to making science accessible to the public – especially minority youth and girls – through personalized experiences with science and scientists. Founded by University of Chicago paleontologist Paul Sereno and educator Gabrielle Lyon, Project Exploration provides youth programs, services for schools and teachers, and public programs including travelling exhibits and website initiatives designed to GET youth interested in science, KEEP youth interested in science and EQUIP youth to pursue science.

Conference Themes

P Programs, Curricula, and Activities

S Staff Development

A Assessment and Evaluation

I Infrastructure and Systemic Change

10:45 AM | SESSION III

Exemplary Programs and Program Evaluation

Carolyn Dahlgren, Program in Education, Afterschool and Resiliency, Harvard University; Gloria Jackson, Ewing Marion Kauffman Foundation; Margo Quiriconi, Ewing Marion Kauffman Foundation

A Evaluation and its role in facilitating reflective practice and ensuring high quality programming are essential to fully utilizing the transformative potential of out-of-school time. Drawing on afterschool science evaluation and research experience, the Program in Education, Afterschool, & Resiliency (PEAR), created Dimensions of Success for STEM Learning (DOS), an observation tool for assessing science, technology, engineering, and mathematics (STEM) learning in out-of-school time settings. PEAR used this and other tools to evaluate the Kansas City Summer METS program, a metropolitan-wide initiative to promote out-of-school time science and math, funded by the Ewing Marion Kauffman Foundation. This session will describe observation-based assessment tools for afterschool STEM programming and discuss the implementation of these tools using the Kansas City program as an example. **305**

Lessons from ITEST:

Exemplary Technology Programming

Tony Streit, Education Development Center, Inc.

P Since 2003, the National Science Foundation has invested more than \$115 million in a program to develop strategies that encourage K-12 students to consider and to be intellectually prepared for careers in STEM fields. ITEST projects involve hands-on, real-world STEM experiences that weave formal and non-formal learning approaches to engage and motivate young people. Presenters will share lessons learned from this initiative with an emphasis on innovative ways to integrate STEM learning in out-of-school time. **310**

Principles of Equitable Programming: Science and Math Activities for Every Student

Merle Froschl, Educational Equity Center

P This session will explore strategies for encouraging the equal participation of girls and boys, linking to the diverse cultures of students, and ensuring the involvement of students with a broad range of disabilities. **311**

Girls – and Scientists – at the Center

Jameela Jafri, Project Exploration; Veronica Arreola, University of Illinois at Chicago; Linda Kekelis, Techbridge, Chabot Space & Science Center; Lesley Kennedy, Chicago Girls' Coalition

P Despite increases in the proportion of women in science and engineering over the past 20 years, females remain under-represented. "Science for girls" needs to mean more than just "no boys allowed." This session will look at how and why model programs have designed girl-only learning environments and what it takes to effectively incorporate authentic experiences with female scientists as role models. We'll also look at how these programs fit into a context of what we know about strategies for encouraging girls not only to try science, but to pursue science. **308**

PBS STEM Programs – On Air, Online and On the Ground

Susan Buckey, WGBH; Laura Gallagher, Cyberchase; Margaret Duden, Dragonfly TV

P Join PBS station educational outreach representatives to learn more about their award winning, STEM based television programs, Web sites and outreach. Discussion will focus on PBS' multi-platform approach to STEM, successful partnerships, sustainable impact and free resources available for bringing STEM to life in afterschool programs nationwide. **309**

The Buck Starts Here: Funding the Field

Eileen Sweeney, The Motorola Foundation; Sylvia James, National Science Foundation; Ron Ottinger, The Noyce Foundation

I Why support out of school time science and technology programs? What questions do funders face as they consider making grants to programs operating in out of school time settings? What concerns and ideas do funders have about the future of this movement? Three funders - representing a government, a corporate, and a family foundation - will talk about strategies they are working to implement and the challenges they experience funding out-of-school time science and technology programs. **307**

12:00 PM | BUFFET LUNCH

1:00 PM | PLENARY SESSION | 301/302/303/304

Big Ideas: Science and Youth Development

Panelists Dr. Alan Friedman, Lucy Friedman, The After-School Corporation, and Bob Horton, Ohio State University

Moderator Gabrielle Lyon, Project Exploration

Science in out-of-school time straddles science learning and youth development best practices. What should matter most as we develop and deliver our programs? What should we think about as we lay plans for the future of our programs –and our field? In this culminating session we'll have a conversation about "big issues" that have emerged during the conference and in our programs - and discuss next steps.

3:00 PM | WRAP-UP & ADJOURNMENT | 301/302/303/304

POST-CONFERENCE EVALUATIONS

The Post-Conference Evaluation will be sent via email. Please ensure that your correct email is on record.

WERE YOU ABLE TO HEAR ROCKY SPEAK WEDNESDAY?

The National Conference for Science & Technology in Out-of-School Time Evening Reception was held at the Adler Planetarium on Wednesday evening.

Thank you to the Adler Planetarium, Adaptive Curriculum, and Project Exploration



Edward W. Kolb (known to most as Rocky) is the Arthur Holly Compton Distinguished Service Professor of Astronomy & Astrophysics and the College and Chair of the Department of Astronomy & Astrophysics at the University of Chicago, as well as a member of the Enrico Fermi Institute and Kavli Institute for Cosmological Physics. In 1983 he was the founding head of the Theoretical Astrophysics Group and in 2004 the founding Director of the Particle Astrophysics Center at Fermi National Accelerator Laboratory in Batavia, IL.

Rocky's research is the application of elementary-particle physics to the very early Universe. In addition to over 200 scientific papers, he coauthored *The Early Universe*, the standard textbook on particle physics and cosmology.

Rocky has appeared in several TV productions, most recently interviewing Stephen Hawking for the Discovery Channel, and can be seen in the IMAX film *The Cosmic Voyage*.

Featured Presenters



Harold Asturias is Director of the Center for Mathematics Excellence and Equity at the Lawrence Hall of Science, University of California, Berkeley. Earlier, he was Deputy Director of Mathematics

and Science Professional Development in the UC Office of the President. He provided oversight to the English Language Development Professional Development Institutes and the CA Subject Matter Projects. He was also Director of the New Standards Portfolio Assessment Project and the Mathematics Unit for New Standards. He led the development team of experts and over a thousand teachers nationwide to the successful production of two assessment systems: the New Standards Portfolio and the Reference Examination; was part of the team that produced the “New Standards Performance Standards”; and was one of the writers for the National Council of Teachers of Mathematics “Assessment Standards for School Mathematics”.

He has extensive experience providing professional development the standards and assessment in math for teachers. Recently he has focused on designing and implementing professional development for K-12 California math teachers who teach English Language Learners.

(MD, Universidad de San Carlos de Guatemala; Elementary School Teaching credentials, UCLA)



Dr. Lisa Egbuonu-Davis is a senior executive with extensive experience in public health, academic and pharmaceutical sectors. As a Pfizer sponsored visiting faculty member at Spelman College, she taught undergraduates about health disparities, contributed to a women’s health initiative to reduce health disparities and piloted a peer to peer program in which undergraduate science students mentored middle school students. As VP, Pfizer US Medical Operations, she oversaw a staff of over 600 medical professionals and directed clinical, outcomes and economic research for marketed and late stage pharmaceutical products and services. As VP, Pfizer Global Outcomes Research and Medical Services she led a multinational health economic and outcomes research function. She is currently engaged in programs to reduce health and educational disparities faced by minority and disadvantaged youth. She has served on the boards of Johns Hopkins University and the National Council of Economic Education.

(B.S. in Biology, M.I.T.; MBA in health care management, Wharton; M.D. and M.P.H., Johns Hopkins; and is board certified in pediatrics.)



Dr. Alan Friedman is renowned for his innovative and creative leadership, and his advocacy and work on behalf of informal science education. From 1984 to 2006, Friedman was the Director and CEO of the New York Hall

of Science. He has received many national and international awards including being named a Fellow of the American Association for the Advancement of Science and of the New York Academy of Sciences, AAAS Award for Public Understanding of Science and Technology for 1996–97, ASTC Fellow Award in 2003, and in 2006 the American Association of Museums named him to its Centennial Honor Roll. He is Immediate Past President of the Visitor Studies Association Board of Directors and a trustee of the Noyce Foundation.

In 2006, Friedman was appointed to the National Assessment Governing Board, which sets policy for the National Assessment of Educational Progress (the “The Nation’s Report Card”). He has consulted in the areas of museum development and science communication for over 60 institutions around the world. He is a trained physicist and coauthor of the book, *Einstein as Myth and Muse*.



Lucy N. Friedman is president of The After-School Corporation (TASC), a not-for-profit organization established to enhance the quality and availability of in-school after-school programs. TASC’s goal is to

promote universal after-school programming as a public responsibility throughout the US.

Prior to joining TASC, Dr. Friedman was the founder and Executive Director of Victim Services (now: Safe Horizon) for 20 years, the leading and largest national crime victim assistance and advocacy organization. In 1989, she led a study group for Mayor David Dinkins, which recommended the creation of beacon programs in NYC. She serves on the boards of Afterschool Alliance, Leadership Enterprise for a Diverse America, Center for Family Life Policy, New Destiny Housing Corporation, and Bryn Mawr College.

(Ph.D., Columbia University)



Robert L. Horton, Ph.D., is Professor of Educational Design at The Ohio State University. He provides direction for the development Ohio’s 4-H Youth Development curriculum materials

in cooperation with OSU Extension faculty and county Extension professionals. He also provides leadership for the research, development and evaluation of non-formal teaching materials for use in community clubs, afterschool settings and classrooms. Additional responsibilities include research into the integration of non-formal science instruction within elementary grade classroom settings. Bob has also served for 8 years as an elected official on the Worthington Board of Education.

Featured Presenters



Leon M. Lederman, Ph.D., internationally renowned high-energy physicist, is Director Emeritus of Fermilab in Batavia, IL. He holds an appointment as Pritzker Professor of Science at the Illinois Institute of Technology, Chicago.

He has served as President and Chairman of the American Association for the Advancement of Science, is a member of the National Academy of Science, and has received numerous awards, including the National Medal of Science, the Elliot Cresson Medal of the Franklin Institute, the Wolf Prize in Physics, the Nobel Prize in Physics, the Enrico Fermi Prize given by President Clinton in 1993, the Abelson Prize of the AAAS, and the AIP Compton Medal for leadership in physics. Lederman has also worked tirelessly to improve science education. He is a founder and the inaugural Resident Scholar at the Illinois Mathematics and Science Academy, a 3-year residential public high school for the gifted. He recently served as co-chair of the NSB Commission on 21st Century Education in Science, Technology, Engineering, and Mathematics.



Gabrielle Lyon, Co-founder and Executive Director, Project Exploration, combines social justice activism with a passion for informal science education. She was a Fellow at the Southern Poverty Law Center and

directed the School Change Institute at the Small Schools Workshop at the University of Illinois at Chicago. Lyon has participated in eight international expeditions to Africa, China, and South America, and, in 1995, discovered the predatory dinosaur *Deltadromeus*.

Lyon cofounded Project Exploration, a nonprofit science education organization, in 1999 to make science accessible to the public, especially minority youth and girls, through personalized experiences with science and scientists. Project Exploration's programs are designed to GET students interested in science, KEEP students interested in science, and EQUIP students to pursue science. The organization offers youth programs, services to teachers and schools, and public programs (including travelling exhibits and a free website) that provides access to science in action.



Diane Miller is the Senior Vice President of School and Community Programs and Partnerships at the Saint Louis Science Center. Her responsibilities include initiating, developing, coordinating, and implementing STEM programs and collaborative projects

with schools community-based organizations, under served audiences, interns, and youth. Working with schools and community-based organizations, she is responsible to develop strategies that increase the involvement of audiences not usually reached by the Saint Louis Science Center.

Miller was the project director and program developer for two YouthALIVE! grants, one for the California Science Center (formerly the California Museum of Science and Industry) and one for the Saint Louis Science Center. She was a member of the YouthALIVE! steering committee and responsible for co-planning and co-facilitating national network meeting. Currently she is PI on two NSF grants and Co-PI on two additional NSF grants. A main focus of her job is to design and management of programs that utilize the environment and galleries of the Saint Louis Science Center, and development of comprehensive inviting curriculum that nurtures and interest in science, technology, engineering, and math. (BA in English, California State University at Chico and is currently pursuing a Masters in Museum Studies, University of Missouri - St Louis.)

Jane Quinn is a social worker and youth worker with more than 35 years experience, including direct service with children and families, program development, fundraising, grantmaking, research and advocacy. She is the Assistant Executive Director for Community Schools at The Children's Aid Society (CAS), where she leads and oversees local and national work to forge effective long-term partnerships between public schools and other community resources. Jane came to CAS from the Wallace-Reader's Digest Funds, where she served as Program Director for seven years. Prior to that, she directed a national study of community-based youth organizations for the Carnegie Corporation of New York, which resulted in the publication of a book entitled *A Matter of Time: Risk and Opportunity in the Nonschool Hours*. Together with Joy Dryfoos, Jane recently co-edited a book entitled *Community Schools in Action: Lessons from a Decade of Practice* (Oxford University Press, 2005).



Paul Sereno, Ph.D. is a professor at the University of Chicago, an Explorer-in-Residence at National Geographic, and cofounder and President of Project Exploration. He is at the forefront of evolutionary biology and

paleontology and leads expeditions in far-flung places such as China's Gobi region, the Andes foothills in Argentina, and Africa's Sahara Desert.

Having discovered dinosaurs on five continents, Sereno has been called a modern-day Indiana Jones. He has earned the *Chicago Tribune's* Teacher of the Year Award (1996) and the Boston Museum of Science's Walker Prize for extraordinary contributions in paleontology (1997). *Esquire* magazine named him one of the hundred "Best People in the World," and *People Weekly* deemed him one of its "50 Most Beautiful People" in 1997.

Paul has a lifelong commitment to inspiring students with the wonders of science, via youth programs, dynamic presentations and innovative exhibits.



Laura S. Washington is the Ida B. Wells-Barnett University Professor at DePaul University in Chicago, a columnist for the *Chicago Sun-Times* and a senior editor at *In These Times*. This multi-media journalist

specializes in media-related issues, African-American affairs, local and national politics, race and racism, and social justice.

Washington brings more than two decades of diverse experiences in print and broadcast journalism, urban affairs and social justice issues. She has been widely featured in reports and programs on politics and racial and urban issues in the national media, including *Time* and *Newsweek* magazines, *The New York Times*, NBC Nightly News and The Lehrer News Hour. She speaks frequently to local and national audiences.

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