NEW YORK HALL OF SCIENCE 2012 ANNUAL REPORT
President’s Letter

America’s leadership — educational, corporate and political — is confident that the country will remain competitive as a global economic power for another generation, but, without a serious investment in better teaching for science, technology, engineering and math (STEM), the outlook becomes much less promising. This is something that should concern every American.

At NYSCI, we are investing in a more science-literate future. We are working harder and more imaginatively to improve science learning and teaching in partnership with schools, where NYSCI operates as a “learning laboratory” from which fresh approaches are arising. Our love of collaboration moves us toward creative partnerships, which enhance the power of our work and the experiences we can offer.

As you will read in this report, we are making exciting advances to position NYSCI at the center of an innovative movement, to be a driver of educational change, and to improve our visitors’ experiences. Looking toward our 50th anniversary in 2014, when we will open a renovated Great Hall and two major new exhibitions, we are deeply grateful for the generous investment of all of our supporters who have helped to bring us this far.

I hope that our story inspires you.

Margaret Honey, President & CEO
Design Lab

All my kids are excited about designing solar ovens that boil and purify water. The special-needs students are coming in during their breaks and after school to work on their ovens. That engagement is carrying over into their other classwork. We all want to do even more design work now! — Design Fellow

Design Lab, a new NYSCI initiative, is currently being prototyped and will open in 2014. Its purpose is twofold: to introduce the visiting public to the design process and to serve as an innovation laboratory to develop classroom practices for teachers. Design is an iterative, purposeful process that solves problems by improving old designs or addressing new issues. NYSCI visitors will be invited to address open-ended design challenges facilitated by Explainers (e.g., make something that moves using air power, or build a large structure with dowels and rubber bands). In the classroom, design-based learning can invigorate formal science teaching by making students active participants who conduct STEM experiments to solve a problem. They will discover that flexible iteration is the key to success, experiment with the affordances and limitations of various materials, and share their findings with others. NYSCI works with Design Lab fellows, specially selected middle and high school science teachers, to co-design activities to take back to their classrooms. Lessons that have been developed include creating a solar oven from ordinary household materials and building a paper structure that supports your weight.
The Science Career Ladder

As Explainers, we practice our demonstrations before performing them in front of visitors. This training has taught me to communicate clearly and passionately about science. Now I’m studying to become a doctor and will use the skills I learned at NYSCI to teach my patients how to live healthy lives.

The Science Career Ladder (SCL), NYSCI’s signature program, offers local high school and college students graduated opportunities to learn and teach science. SCL first trains participants to become Explainers on the exhibition floor, where they give demonstrations and explain basic principles of chemistry, physics, biology and ecology to NYSCI visitors. In 2011, SCL expanded to prepare participants for careers in STEM by providing further training and resources to increase their expertise in science as well as develop their professional skills. The SCL Institute, piloted in 2012, offers participants more intensive support, such as Education Residencies, in which Explainers work with STEM professionals at NYSCI to gain real-world work experience.

In 2012, SCL trained 156 students, of whom 63 percent were female, 84 percent were of color, and who collectively spoke 24 languages. This diversity makes NYSCI accessible and inviting to a broad range of audiences. SCL was selected as an exemplary program by Change the Equation, a White House initiative that mobilizes top business CEOs to help improve the quality of STEM learning in the United States through philanthropy, inspiring youth, and advocating policy change.
**Maker Space**

*During a papermaking workshop, a four-year-old sticks his finger into some paper pulp and runs off screaming. A Maker Space resident devises a strategy to engage him, giving him tools to make paper without touching any pulp.*

In March 2012, NYSCI launched Maker Space, 1,200 square feet dedicated to programs on making. This do-it-yourself culture supports building or adapting objects for the simple pleasure of figuring out how things work. At Maker Space, young people and their families, inventors, artists, students and local makers can try out new ideas and learn from peers and others. Maker Space offers tools, materials and resources that facilitate both physical and digital making so that visitors can tinker, play, invent, make and share, while learning science in the process. Maker Space offers activities designed to appeal to a span of skill levels, fostering opportunities for cooperation, sharing and family conversation. These activities include making musical instruments from everyday materials, predicting and testing whether various materials sink or float, and creating handmade paper. This new venue gives NYSCI visitors, especially young children, tools to nurture their innate human propensity to be creative and to see the world differently.
Preschool Place

Parents and children were creating tent-size structures using only long dowels and rubber bands. An autistic boy worked intently on his and crawled inside when it was large enough to hold him. His parents, who said he was virtually never engaged by any activity, were astonished and thrilled.

*Preschool Place* offers a variety of imaginative learning experiences that introduce young children (ages 6 and younger) and their accompanying parents, grandparents and caregivers, to the science of sound, color, light, measurement and simple machines. Annually, about 85,000 visitors experience this unique exhibition. Visitors turn cranks, push pedals, and use cranes to hoist and transport foam bricks around the building area. They connect blocks in different ways to construct arches or fantastic designs of their own. They use magnifiers to examine fossils, magnets, musical sounds and instruments. An interactive bone and X-ray exhibit encourages children to explore mammalian and human hands, manipulate a hand skeleton, and then trace their own hands and draw in the bones inferred from information provided through the X-rays and skeleton. At *Preschool Place* and throughout the entire museum space, our youngest visitors are using materials in unexpected ways and making objects that go beyond what would be possible with more traditional and prescriptive science activities.
SciGames

This is fun. It’s not like the science we do in school. We get to understand what science words mean by actually experiencing them. — Middle School Student

SciGames begins with everyday objects on the playground and uses technology to increase students’ science interest and learning. Using a distributed technology platform, which includes sensors and digital input devices that measure and capture playground activities, computer games that challenge students to conduct multiple experiments, and simulations that enable them to manipulate concepts and investigate scientific phenomena, SciGames creates a bridge between the playground and the classroom. The key is to increase learning without diminishing the “fun.” By turning an ordinary playground slide into a game by adding motion sensors, sliding mats in a variety of materials, and a scoring system that rewards the fastest sliding speed, the fun of repeatedly sliding down to win the game motivates a series of experiments exploring frictional force. The model further incorporates a small-scale computer application (a digital app that runs on desktop, laptop or portable computing devices) that allows students back in the classroom to explore data logged during earlier game play. Supporting students’ classroom inquiry to formalize principles of science through the use of technology and data collected by playing engaging games is the heart of the SciGames model.

SciGames is a program of the Sara Lee Schupf Family Center for Play, Science, and Technology Learning.
Björk

Björk chose NYSCI as the venue to premiere her Biophilia tour to U.S. audiences. Her performances included a multimedia exploration of music, nature and technology and featured invented musical instruments. Björk also collaborated with NYSCI on a three-week residency for middle-school students. These interactive science and music workshops focused on scientific concepts at the core of Biophilia’s songs. Themes included crystalline structures, lunar phases and viruses. Students also used the Biophilia apps for music composition and studied how music expresses and reveals nature.

Design, Make, Play

In January 2012, NYSCI hosted Design-Make-Play: Growing the Next Generation of Science Innovators, in collaboration with both the White House Office of Science Technology Policy and Maker Faire. This two-day conference brought together thought leaders from schools, community-based programs, research and development organizations, funders, universities, government and business. Design-make-play are interrelated learning methodologies that can leverage children’s curiosity about the world around them to motivate their learning and achievement in STEM subjects. The conference developed a framework for assessing learning in design-make-play activities, a first step toward meeting the need for a larger, more diverse STEM workforce.
Exhibitions
In FY2012, NYSCI hosted several new traveling exhibitions appealing to a broad and diverse audience. These included *Circus! Science Under the Big Top*, which connected the high wire and trapeze with underlying scientific concepts; *Charlie and Kiwi’s Evolutionary Adventure*, a NYSCI-created exhibition that examined the basics of evolution through the ancestry of kiwi birds; and *Animation!*, which explored animation techniques such as storyboarding, character design, drawing, filming and sound.

The Mayor and the Astronauts
The four astronauts of the crew who flew NASA’s 135th and final space shuttle mission were honored by New York City Mayor Michael Bloomberg at NYSCI. The mayor presented them with a plaque and officially declared August 17 to be “STS-135 Atlantis Crew Day.” The four astronauts and the Mayor then played a few rounds on NYSCI’s miniature golf course. Designed around the principles of space flight, the course has holes exploring propulsion, gravity and escape velocity.
ReMake the Holidays
NYSCI celebrated the holiday season with *ReMake the Holidays*, a winter carnival of do-it-yourself creativity. Families participated in a multitude of workshops, creating holiday cards and decorations, constructing musical instruments with microcontrollers, sensors and everyday objects, and decorating artwork with LED lights. A master ice sculptor and his carved-on-the-spot artworks contributed to the festivities.

Virtual Visits
Virtual Visits, NYSCI’s web-enabled distance learning initiative, uses online videoconferencing to engage students who are hospitalized or homebound. The interactive education courses focus on STEM subjects such as nanoscience, math, microbiology, chemistry and system science. In FY2012, Virtual Visits served 500 students, an increase of 43 percent over the previous year. To further its reach, NYSCI is developing a new middle school virtual club and camp series, as well as a social networking site to allow students with chronic health conditions to interact and learn with others.
**Wild Minds**
The research-based traveling exhibition, *Wild Minds: What Animals Really Think*, explores evolutionary and cognitive links between animals and humans. NYSCI spent over two years developing this exhibition, which opened in FY2012. Looking closely at animals’ ability to think suggests that humans are not alone in our ability to invent, plan or empathize. *Wild Minds* premiered at NYSCI and the Staten Island Zoo, and then traveled to Oregon. It is currently touring the country with stops planned in California, Indiana and Ohio.

**World Maker Faire**
NYSCI again hosted *World Maker Faire*, a two-day, family-friendly extravaganza celebrating the do-it-yourself (DIY) movement. This broad-based community encompasses scientists, engineers, students, welders, software developers, hackers, circus performers, circuit benders, musicians and crafters of all stripes. Individuals and communities are drawn together by a shared delight in the magic of tinkering, hacking, creating and reusing materials and technology. With an international reach and a deliberately local feel, *World Maker Faire* honors the best of human imagination and creativity, where makers share their process and product. Over 35,000 people attended the 2012 event.
## Summary of Support

**Fiscal Year 2012 (July 1, 2011 to June 30, 2012) grants and gifts including multi-year awards**

*Major operating and capital support is provided by New York City through the Department of Cultural Affairs, New York City Council, and Office of the Queens Borough President.*

### $500,000+

- Institute of Museum and Library Services
- National Institutes of Health
- National Science Foundation
- United States Department of Education
- Bloomberg Philanthropies
- Deutsche Asset and Wealth Management
- JPB Foundation
- The Liu Foundation
- Office of Naval Research
- Phyllis and Ivan G. Seidenberg
- Target

### $100,000 – $499,999

- New York State Council of the Arts
- Dormitory Authority
- Education Department
- Bloomberg Philanthropies
- Deutsche Asset and Wealth Management
- JPB Foundation
- The Liu Foundation
- Office of Naval Research
- Phyllis and Ivan G. Seidenberg
- Target

### $50,000 – $90,000

- Consolidated Edison Company of New York
- FJC
- The Kupferberg Foundation
- May and Samuel Rudin Family Foundation
- New York Community Trust
- The Pinkerton Foundation
- Verizon Communications and the Verizon Foundation

### $20,000 – $49,000

- Bank of America
- Bank of New York Mellon
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- Edith Glick Shoolman
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- Golden Family Foundation
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- The Walt Disney Company
- Alcatel-Lucent Technologies
- American Express
- Tony and Regan Asnes
- Deloitte & Touche LLP
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- McGuire Woods, LLP
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- Morgan Stanley
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- Proskauer Rose, LLP
- Q-Brige, Inc.
- Samsung Telecommunications Americas
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- Satterlee Stephens Burke & Burke
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- Bert Wells and Laura Walker
- Xerox Corporation

### $5,000 – $9,999

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- Francisco D’Souza
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- EMC Corporation
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- Hewlett-Packard
- Jean and Louis Dreyfus Foundation, Inc.
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- Liberty Mutual Group
- Meridiam Infrastructure
- MetLife Foundation
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- Paul, Weiss, Rifkind, Wharton & Garrison LLP
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- Stonewall Contracting Corp.
- The Bay and Paul Foundations
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### $1,000 – $4,999

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Campaign for NYSCI

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- Beth and Ravenel Curry
- Golden Family Foundation
- Google
- Sara Lee and Axel Schupf and the Lubin Family Foundation
- Phyllis and Ivan G. Seidenberg
- Verizon Communications and the Verizon Foundation

**$500,000 – $999,999**
- Carson Family Charitable Trust
- The Hebrew Technical Institute
- The Kupferberg Foundation

**$100,000 – $499,999**
- Bank of New York Mellon
- Camille and Henry Dreyfus Foundation
- Cognizant Technology Solutions
- Nicholas M. Donofrio
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- The John D. and Catherine T. MacArthur Foundation
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- Gordon and Betty Moore Foundation
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- New York Community Trust
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- Alfred P. Sloan Foundation
- The Walt Disney Company
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- Xerox Corporation

**$50,000 – $90,000**
- The Altman Foundation
- Tony and Regan Asnes
- Peter and Carmen Lucia
- Buck Foundation
- Carnegie Corporation of New York
- Countess Moira Charitable Foundation
- Seth H. Dubin

**$5,000 – $19,000**
- Dr. George Campbell, Jr.
- The Cioffi Family
- The Edward John and Patricia Rosenwald Foundation
- Lehmann Family Fund
- L’Oreal USA
- Marilyn and Jim Simons
- Singer Sewing Company†
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† in-kind support

All gifts as of June 30, 2012.
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New York Hall of Science Statement of Activities  Year Ended June 30, 2012

<table>
<thead>
<tr>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>2012 Total</th>
<th>2011 Total</th>
</tr>
</thead>
</table>

### OPERATING REVENUE

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions</td>
<td>$1,593,414</td>
<td>$10,421,929</td>
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<tr>
<td>Appropriations from the City of New York</td>
<td>$1,347,455</td>
<td>$1,860,960</td>
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<tr>
<td>Admissions, workshops, memberships and exhibit fees</td>
<td>$3,376,849</td>
<td>$3,277,849</td>
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<tr>
<td>Use of facilities and other income</td>
<td>$476,571</td>
<td>$422,834</td>
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<tr>
<td>Investment return, net</td>
<td>$275,317</td>
<td>$334,468</td>
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<tr>
<td>Auxiliary activities</td>
<td>$292,383</td>
<td>$289,919</td>
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<tr>
<td>In-kind contributions</td>
<td>$1,485,288</td>
<td>$1,144,525</td>
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</table>

Total Operating Revenue: $19,012,698

### OPERATING EXPENSES

#### Program Services

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
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</thead>
<tbody>
<tr>
<td>Exhibits</td>
<td>$4,714,029</td>
<td>$5,155,944</td>
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<tr>
<td>Education</td>
<td>$3,699,024</td>
<td>$3,547,554</td>
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<tr>
<td>Science</td>
<td>$4,482,401</td>
<td>$1,763,844</td>
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<td>Public programs</td>
<td>$1,005,123</td>
<td>$1,222,583</td>
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<tr>
<td>Program planning</td>
<td>$247,420</td>
<td>$247,420</td>
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Total Program Services: $14,147,997

#### Supporting Services

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management and general</td>
<td>$2,259,197</td>
<td>$1,605,253</td>
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<tr>
<td>Fundraising</td>
<td>$2,933,954</td>
<td>$2,585,337</td>
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<tr>
<td>Marketing and communications</td>
<td>$275,757</td>
<td>$256,767</td>
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</table>

Total Supporting Services: $5,410,724

Total Operating Expenses: $19,558,721

Excess of Operating Revenue Over Operating Expenses: $(546,023)

### NON-OPERATING INCOME

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment return</td>
<td>$342,668</td>
<td>$241,115</td>
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<tr>
<td>Contributions</td>
<td>$3,590</td>
<td>$360</td>
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Change in Net Assets: $47,477

### NET ASSETS

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of year</td>
<td>$4,872,236</td>
<td>$64,585,939</td>
</tr>
<tr>
<td>End of year</td>
<td>$4,672,471</td>
<td>$64,333,416</td>
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</table>

(with summarized totals for the year ended June 30, 2011)

### ASSETS

**Current assets**

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
<td>$ 1,557,429</td>
<td>$ 2,232,177</td>
</tr>
<tr>
<td>Grants, contributions and pledges receivable, net</td>
<td>7,481,474</td>
<td>4,713,547</td>
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<tr>
<td>Investments</td>
<td>3,547,476</td>
<td>3,538,711</td>
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<tr>
<td>Prepaid expenses and other assets</td>
<td>513,723</td>
<td>396,284</td>
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</tbody>
</table>

**Total Current Assets**

| 2012: 13,100,102 | 2011: 10,880,719 |

**Grants, contributions and pledges receivable, net**

| 2012: 3,378,231 | 2011: 3,735,479 |

**Investments — board designated**

| 2012: 1,523,813 | 2011: 1,197,527 |

**Investments — restricted**

| 2012: 514,386  | 2011: 536,826  |

**Property and equipment, net**

| 2012: 1,339,682 | 2011: 1,077,187 |

**Contribution value of the use of land, building and building improvements, net**


**Total Assets**


### LIABILITIES AND NET ASSETS

**Liabilities**

- Accounts payable and accrued expenses
  
  | 2012: $1,239,981 | 2011: $1,261,084 |

- Deferred revenue
  
  | 2012: 231,452   | 2011: 248,342   |

**Total Current Liabilities**

| 2012: 1,471,433 | 2011: 1,509,426 |

**Net Assets**

- **Unrestricted**
  
  - Undesignated
    
    | 2012: 1,808,976 | 2011: 2,597,520 |
  
  - Board designated for special programs
    
    | 2012: 1,523,813 | 2011: 1,197,529 |
  
  - Net investment in plant
    
    | 2012: 1,339,682 | 2011: 1,077,187 |

**Total Unrestricted**

| 2012: 4,672,471 | 2011: 4,872,236 |

- **Temporarily Restricted**
  
  - Programs and projects
    
    | 2012: 4,321,494 | 2011: 3,092,646 |
  
  - IT Infrastructure and other
    
    | 2012: 357,586  | 2011: 471,171  |
  
  - Campaign for NYSCI
    
    | 2012: 8,698,230 | 2011: 7,147,259 |
  
  - Capital appropriations from the City of New York
    

**Total Temporarily Restricted**

| 2012: 59,625,945 | 2011: 59,378,703 |

- **Permanently Restricted**
  
  | 2012: 335,000 | 2011: 335,000 |

**Total Net Assets**

| 2012: 64,633,416 | 2011: 64,585,939 |

**Total Liabilities and Net Assets**
