



museum of  
**science+industry**  
chicago

## About the Center for the Advancement of Science Education

The Museum's Center for the Advancement of Science Education (CASE) was created to help realize our vision: to inspire and motivate all children to achieve their full potential in the fields of science, technology, medicine and engineering.

Science and technology are critically important to our well-being, our nation's economic growth and our environment. But education and engagement in science is on the decline:

- By eighth grade, American students have fallen behind the leading ten nations in science. By age 15, they are behind 27 other nations in math skills.
- Nearly two-thirds of Chicago fourth graders failed to display even the most basic level of science knowledge on the National Assessment of Educational Progress.

CASE's programs are designed to extend the content of the Museum's exhibits through strategies that empower teachers, engage the community, and excite students and Museum guests. We work with local school systems – especially Chicago Public Schools—and collaborate with some of the best minds in science and education to develop and evaluate programs.

Our approach is multifaceted and targets students, teachers, community organizations, and families at a community-wide level. Programming aims to raise interest and participation in science by students during their middle- and high-school years; influence youth to choose careers in science, technology, engineering and medicine; sustain a supportive community climate for science engagement; and facilitate high-quality science teaching and learning in schools.

CASE programs target four areas:

### **Science Teacher Education**

Coursework offered through our Institute for Quality Science Teaching and Learning provides middle-school teachers with science content and teaching strategies directly relevant to their curriculum. Participants in our academic year and summer courses are eligible to earn a Master of Science Education degree, a middle-school science endorsement, or graduate credit through a partnership with the Illinois Institute of Technology. Our focus is on enabling teachers who are in the classroom today and creating a pipeline of quality teachers who can inspire passion and excitement about science. We also offer half- and full-day workshops on a variety of science topics. About 1,000 teachers participate in our programs each year.

### **Community Initiatives**

The Science Minors series of programs allows children from diverse backgrounds to discover new interests and skills, prepare for college, and learn about science careers. Science Minors Clubs partner with over 65 Chicago-area schools and community organizations to extend science learning into places where younger students already spend their time after school. The Science Minors program teaches teens about science before they volunteer to provide hands-on experiments for Museum guests. Teens who choose to continue on to our Science Achievers youth development program pursue more rigorous science topics, prepare for college and careers, and participate in paid internships. These programs reach about 5,000 students each year.

### **Student Experiences**

Over 320,000 students visit the Museum on field trips every year. Programs for school groups use our captivating spaces to investigate the science behind everyday life. Learning Labs provide facilitated, engaging educational experiences that are aligned with Illinois Learning Standards in science. Labs have pre- and post-visit activities and additional resources to enhance what students learn once they return to their classroom. Over 20,000 students in grades 3 through 12 participate in Learning Labs annually. *Live ... from the Heart*, our premiere videoconferencing program, lets students interact with a surgical team during live open heart surgery. Students also can dive deeper into science content and learn from working science experts by participating in special daylong programs like Forensic Field Day.

### **Guest Experiences**

Each of the Museum's 1.4 million annual guests are invited to participate in science like never before. Museum staff help create "a-ha!" moments through a variety of interactive experiences tailored to meet different learning styles. State-of-the-art laboratories allow guests to participate in more complex experiments, such as dissecting an eyeball to learn about vision. Our Science Theater makes guests the stars in a funny play about the digestive system. Guests can feel the floor shake in a large-scale chemistry show, engage in discussions about current science news like climate change, and much more. Our new, permanent exhibits are designed to foster engagement through guided exploration and facilitated hands-on activities.

**Learn more about CASE at [www.msichicago.org/CASE](http://www.msichicago.org/CASE)**