

SEEK update 2012



NSBE's **Summer Engineering Experience for Kids (SEEK)** program is rolling toward its sixth year, with additional sites and sponsors, new curricula provided by SAE International, and a long track record of success in getting elementary and middle school kids excited about STEM — science, technology, engineering and math.

Last December, the excitement about SEEK 2012 began early, when a new group called the SEEK Parent Volunteer Organization held its first annual “NSBE Kids Winter Festival” at NSBE World Headquarters in Alexandria, Va. More than 250 children and adults attended. The program featured hands-on engineering projects, food, playtime, and presentations — by civil engineer Terry Fortune of Monument Realty in Washington, D.C.; by cyber security expert Markus Shelton; and by “Brother E.D.,” NSBE Executive Director Carl B. Mack, among other activities.

“Our parent group strives to support NSBE so that it is known as a one-stop shop for anything you need to steer your child towards a lifelong love of STEM,” says T. Chandler, who is an

attorney, science writer, and vice president of the SEEK Parent Volunteer Organization. Chandler is a graduate of Carnegie Mellon University, where she was an electrical and computer engineering major before she switched to technical and science writing. Her son Michael, aged 9, attended the 2011 SEEK camp in Washington, D.C.

“When I was in college, anything I needed — such as mentoring to get ahead of the curve, or tutoring in chemistry or physics — I could ask of a NSBE peer or upperclassman,” she says. “That’s what our goal is, as well as to (give our kids) a unique social experience, so that as they grow up, they form a bond that’s unbreakable. We all win together!”

SEEK Director Franklin O. Moore reports that six locations are scheduled for the SEEK program in 2012: Washington, D.C.; Columbus, Ohio; San Diego and Oakland, Calif.; Detroit, Mich.; and New Orleans, La. With a \$196,000 grant from the Office of Naval Research and \$50,000 from the United States Coast Guard, the camp in Washington, D.C., is fully funded, Moore reports. Another major sponsor this year is Northrop Grumman Foundation, which has donated \$100,000 to SEEK. The foundation is also in talks with NSBE to sponsor an all-girls SEEK camp in 2013.

“I believe last year was the actual tipping point for us as far as funding is concerned, because this is the first year that we’ve had



More than 250 children and adults attended the SEEK Parent Volunteer Organization’s first annual NSBE Kids Winter Festival, at NSBE World Headquarters in Alexandria, Va. (Dec. 3, 2011)



(left to right) T. Chandler, Vice President of the SEEK Parent Volunteer Organization, and Yolanda Anglin, Principal Advisor of the NOVA NSBE Jr. Chapter in Stafford, Va.

full funding for one of our programs this early in the fiscal year,” Moore says. “Now we can focus on the retention model for the program. We’re able to promote it earlier and (recruit) the students who participated last year.”

Chris Ciuca is program manager of *A World in Motion* at SAE

International, NSBE’s partner in the SEEK program. *A World in Motion* is the hands-on engineering design curriculum used in SEEK. The elementary school and middle school students who attend the SEEK camps are guided through the curriculum by SEEK mentors, collegiate member of NSBE from across the U.S.

“SAE International is pleased to enter our sixth year of partnership with NSBE in delivering the Summer Engineering Experience for Kids,” says Ciuca. “We are excited to not only continue to expand to new locations across the country but also to grow in number of students reached at existing locations.”

“Another exciting part of the NSBE/SAE SEEK partnership is the curriculum expansion taking place,” he adds. “In the summer of 2012, we will introduce new, exciting projects to SEEK that are part of the *A World In Motion* experience.”

For more information about the 2012 SEEK program, or to sign up as a SEEK mentor, contact NSBE’s Programs Team by e-mail at seek@nsbe.org, or visit www.nsbe.org. To get involved in the SEEK Parent Volunteer Organization, contact T. Chandler at seekparentstrinette@gmail.com. ■



SEEK CURRICULUM PREVIEW

Gravity Cruiser (Grades 3–5)

Student teams design and construct a vehicle that is powered by gravity. A weighted lever connected to an axle by string rotates on its fulcrum. As the weight descends, it causes the axle attached to the string to rotate, propelling the cruiser forward. Concepts explored include potential and kinetic energy, friction, inertia, momentum, diameter, circumference, measurement, graphing and constructing a prototype.

Glider (Grades 3–5)

Students explore the relationship between force and motion, and the effects of weight and lift on a glider. Students learn the relationships between data analysis and variable manipulations, and the importance of understanding consumer demands. The glider activity culminates in a book-signing event in which each design team presents its prototype and the class presents its manuscripts to Mobility Press “representatives” and members of the local community.

Can Crusher (Grades 3–5 and 6–8)

In the interest of maintaining a healthy environment, students working in engineering design teams receive a request to design and build a can crusher for eC2 Inc., (Environmental Can Crushers, Inc.): a fictitious toy company looking to optimize the business of shipping cans to recycling centers. Engineering design teams investigate and explore the workings of a can crusher, using simple machines such as levers, wheels and axles, pulleys,

incline planes and screws. Final student products must meet design specifications outlined throughout the challenge.

Jet Toy (Grades 6–8)

Students make balloon-powered toy cars that meet specific performance criteria, such as: travels far, carries weight or goes fast. Jet propulsion, friction, air resistance and design are the core scientific concepts students explore in this challenge.

Electricity & Electronics (Grades 6–8)

SEEK mentors guide student teams through experiments involving series and parallel circuits, magnetism and an introduction to electronics.

