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For Immediate Release

TOSHIBA AND NATIONAL SCIENCE TEACHERS ASSOCIATION ANNOUNCE 2014 NATIONAL WINNERS OF EXPLORAVISION COMPETITION

Eight Winning Teams Offer Glimpse into Next Generation's Vision for the Future

ARLINGTON, Va., April 23, 2014—From an implantable medical device powered by the body's thermal energy to an environmentally friendly de-icing solution for planes inspired by the lotus leaf, the young winners of the 22nd annual ExploraVision program have dreamed up a wide array of innovative technologies that could help build a better future. Today, Toshiba and the National Science Teachers Association (NSTA) announced the national winners of the world's largest K-12 science and technology competition, which is designed to build problem-solving, critical thinking and collaboration skills that are central to the Next Generation Science Standards.

Inspiring a Lifelong Passion for Science, Technology and Innovation

A valuable educational experience that helps children expand their imagination and have fun while developing an interest in science, technology, engineering, and math (STEM) education at an early age, ExploraVision challenges participants to imagine what technology might be like in 20 years. Students work in teams to propose ideas for innovative future technology based on a challenge of what already exists, simulate real scientific research to outline how they plan to test their idea and build websites to further illustrate and communicate their concepts.

Since its inception in 1992, more than 330,000 students have participated in the ExploraVision program. This year, 4,954 team projects were entered in the competition representing 15,282 students from across the United States and Canada.

"Our company was founded over 130 years ago with a strong commitment to technological innovation, and the ExploraVision program is the cornerstone of Toshiba's Corporate Social Responsibility initiative in North America," said Mr. Masaaki Osumi, Toshiba America Inc.'s Chairman and CEO, and Toshiba's Corporate Representative for the Americas. "We are extremely proud of the success that this program has had over the past 22 years in inspiring so many youth to explore and develop a passion for the STEM subjects that are vital for our future."

"This incredible program has proven to be an invaluable experience year after year for all of the talented students and teachers who participate," said Bill Badders, NSTA President. "The

Toshiba/NSTA ExploraVision program not only helps to envision a more technologically advanced and life-changing future, but it also gives us a glimpse into the amazing student talent present in STEM education today."

Evolving Healthcare with Medical Innovations

Teachers and mentors provide student teams with guidance as they examine current issues or challenges in the world and develop ideas for breakthrough technology that could potentially solve them. This year, several winning student teams focused on disease prevention and treatment. Ninth grade students from Duluth, Ga. developed the **Kidney Microfilter Regulation Device**, an artificial silicone kidney that helps treat kidney failure without dialysis. Once surgically implanted, the device will have most functions of a healthy kidney, such as releasing hormones, balancing particles and checking substance levels in the blood, alongside medical report and emergency features.

A team of seventh grade students from Marlboro, N.J. designed an invention called **iGlasses**. These special glasses will automatically adjust its lenses in real time based on the viewers' needs. It will eliminate the need for changing prescriptions, bifocals, and eye/neck strain from computer and smartphone use.

Twelfth grade students from Salem, Ore. created **Quantum Dot Energy Harvesters for Powering Implantable Medical Devices** that allow biomedical devices like pacemakers to use the thermal energy of the human body for power. This innovation eliminates the need for batteries, which require frequent surgical replacement.

Improving Safety on Land and Sea

Some national winners focused their projects on helping people live safer lives. Third grade students from Merion Station, Pa. developed the **S.A.F.E.R.** system that is designed to save people stuck in rip currents with an inflatable belt that stores pressures and velocity sensors, and GPS technology to help swimmers stay away from dangerous water.

Created by second grade students from Edmond, Okla., the **Hot Car Safety System** is designed to help save lives of babies, toddlers and animals accidentally left in a car. The system turns on automatically when weight is detected by a plate placed under the back seat and sounds an alarm when the car gets too hot.

Tackling Environmental Issues with Cutting Edge Technology

Finding ways to make current technologies more environmentally friendly was the motivation behind several ExploraVision projects. Fifth grade students from Locust Valley, N.Y. created an innovative **Plant Power** de-icing system for planes that is safer for the environment and more effective than current chemicals used. The innovation helps prevent the buildup of ice and snow by nano-printing the water repellant lotus leaf on airplane exteriors.

A team of fourth and fifth grade students from Land O' Lakes, Fla. developed the **WateRenew** solution that combines clean and green electricity from the ocean to create clean drinking water. WateRenew combines wave wings that harness eco-friendly energy with a cutting-edge desalination plant featuring a new reverse osmosis membrane.

Tenth grade students from Toronto, On. created a new technology that uses light signals to boost optical computing. The **Low Transistor Count High-Density Turing Machine (LTCHDTM) using Photonic-Saturation Optical Transistors (P-SOT)**, will be lighter, smaller, faster and more energy efficient than current computers, since less power is required to transmit signals over long distances.

ExploraVision Prizes

Members of the four first place ExploraVision national winning teams will each receive a $10,000 U.S. Series EE Savings Bond (at maturity). Members of second place national winning teams will each receive a $5,000 U.S. Series EE Savings Bond (at maturity). Canadian winners receive Canada bonds purchased for the equivalent issue price in Canadian dollars.

All students from the eight first and second place teams will receive an expenses-paid trip with their families, mentor and coach to Washington for a gala awards weekend June 4 – 7, 2014. Activities will include a visit to Capitol Hill to meet with members of Congress and a Science Showcase during which the students will display and demonstrate their winning ideas. The highlight of the Toshiba/NSTA ExploraVision weekend will be a gala awards banquet and ceremony where students will be formally recognized for their creativity and accomplishments.

For more information or an application for the 2014/2015 program, visit www.exploravision.org or e-mail exploravision@nsta.org. Follow ExploraVision on Twitter at @ToshibaInnovate or join the ExploraVision Facebook Fan Page at www.Facebook.com/ToshibaInnovation.

Toshiba/NSTA ExploraVision 2014 National Winners

2014 First Place Winners

Grade K–3: *Hot Car Safety System*
John Ross Elementary, Edmond, Okla.
Website: http://dev.nsta.org/evwebs/2014k5/

Grade 4–6: *Plant Power - Super-hydrophobic Lotus Leaf*
Locust Valley Intermediate School, Locust Valley, N.Y.
Website: http://dev.nsta.org/evwebs/201441/

Grade 7–9: *iGlasses - The Eyeglasses of the Future?*
Marlboro Middle School, Marlboro, N.J.
Website: http://dev.nsta.org/evwebs/201472/

Grade 10–12: *Quantum Dot Energy Harvesters for Powering Implantable Medical Devices*
West Salem High School, Salem, Ore.
Website: http://dev.nsta.org/evwebs/2014106/

2014 Second Place Winners

Grade K–3: *S.A.F.E.R. (Saving All Friends Escaping Rip currents)*
Waldron Mercy Academy, Merion Station, Pa.
Website: http://dev.nsta.org/evwebs/2014k2

Grade 4–6: *WateRenew: Wave Power for Clean Water*
Countryside Montessori Charter, Land O' Lakes, Fla.
Website: http://dev.nsta.org/evwebs/201443/

Grade 7–9: *Kidney Microfilter Regulation Device (K.M.R.D.)*
Northview High School, Duluth, Ga.
Website: http://dev.nsta.org/evwebs/201473/

Grade 10–12: *Low Transistor Count High-Density Turing Machine (LTCHDTM) using Photonic-Saturation Optical Transistors (P-SOT)*
W. L. Mackenzie C. I., Toronto, On.
Website: http://dev.nsta.org/evwebs/2014104/

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About Toshiba

Toshiba is a world-leading diversified manufacturer, solutions provider and marketer of advanced electronic and electrical products and systems. Toshiba Group brings innovation and imagination to a wide range of businesses: digital products, including tablets, LCD TVs, notebook PCs, retail solutions and MFPs; electronic devices, including semiconductors, storage products and materials; industrial and social infrastructure systems, including power generation systems, smart community solutions, medical systems and escalators & elevators; and home appliances. Toshiba was founded in 1875, and employs over 20,000 people in North America and Toshiba America, Inc., is the holding company for five Toshiba operating companies in the United States.

Toshiba's North-America based companies and some of their chief products are as follows: Toshiba America Electronic Components, Inc. (Semiconductors, Flash Memory-Based Storage Solutions, LCD, custom chips, and Hard Disk Drives); Toshiba America Information Systems, Inc. (Tablets, Laptop Computers, Telephony Products, Flat Panel LCD TVs, and portable products); Toshiba America Business Solutions, Inc. (Copiers, Facsimiles, Printers and Digital Signage); Toshiba International Corporation (Motors, Motor Controls, Power Electronics, Power Generation Equipment, Automation); Toshiba America Medical Systems, Inc. (Computed Tomography, Magnetic Resonance, X-ray and Ultrasound); Toshiba America Nuclear Energy Corporation (Advanced Boiling Water Nuclear Reactors); Toshiba America Foundation (Supports science and mathematics education across the United States) and Toshiba of Canada, Ltd. (Made up of four operating divisions).

About NSTA

The Arlington, VA-based National Science Teachers Association (NSTA) is the largest professional organization in the world promoting excellence and innovation in science teaching and learning for all. NSTA's current membership includes approximately 55,000 science teachers, science supervisors, administrators, scientists, business and industry representatives, and others involved in science education.