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FOR IMMEDIATE RELEASE

Students Win Gold at 2018 Collegiate Inventors Competition

NORTH CANTON, Ohio — Nov. 16, 2018 — A glimpse into the future of American innovation and emerging technological trends from the nation's brightest young inventors — from a steerable microcatheter to a reusable UV-radiation-measuring sensor — were recognized and honored today at the 2018 Collegiate Inventors Competition®, an annual Competition for college and university students and their faculty advisors.

"We stand on the cusp of truly historic times for science and technology," said Andrei Iancu, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office (USPTO). "The USPTO is proud to host this Competition. The research and innovations of our greatest collegiate inventors will lead our nation to ever higher achievements."

Finalist teams (five Undergraduate and six Graduate), consisting of 29 students from 11 colleges and universities across the United States, received an all-expenses-paid trip to the final round of the Competition held at the USPTO's Madison Building in Alexandria, Virginia. The teams presented their inventions to an esteemed panel of final-round judges composed of the most influential inventors and innovation experts in the nation — National Inventors Hall of Fame® Inductees and USPTO officials.

"The Collegiate Inventors Competition, held at the United States Patent and Trademark Office, showcases the process of invention in our nation's greatest young innovators — leading through creative thinking, problem solving and determination," said National Inventors Hall of Fame CEO Michael Oister. "These teams had the opportunity to compete against the most cutting-edge collegiate inventors, and they also were inspired and mentored by the greatest minds and innovation game-changers in the world — the Inductees of the National Inventors Hall of Fame."

Established in 1990, the Collegiate Inventors Competition is a program of the National Inventors Hall of Fame. The Competition is sponsored by the USPTO, Arrow Electronics, LYCRA®, Wilson Sonsini Goodrich & Rosati, and Bridgestone Americas Inc.

2018 GOLD WINNERS

Undergraduate: Rhino, Massachusetts Institute of Technology

Team Members: Elizabeth Bianchini, Kyler Kocher, Ann McInroy, Sam Resnick; Advisor: Warren Seering
Less Mortar Mess: Removing decaying, crumbling mortar from between bricks to subsequently replace it with new mortar is a messy, tedious and time-consuming job in the construction field. This process, joint raking, generates so much silica dust that workers must wear respirators and goggles for safety. Rhino is a masonry tool attachment that can be used with any traditional rotary hammer. It improves accuracy and safety of joint raking, allowing masons to cover 50 percent more area during a given time.

Graduate: PionEar, Harvard University

Team Members: Nicole Black, Michael J. Kreder; Advisors: Joanna Aizenberg and Jennifer Lewis
Clearing Your Hearing: Ear infections are a leading cause of healthcare visits worldwide, affecting more than 700 million people annually. Ear tubes, used to treat chronic ear infections, have several limitations. As many as 40 percent fail due to issues including clogging, bacterial adhesion, premature extrusion and the inability to

effectively transport fluids out of the middle ear space. PionEar uses a bioinspired combination of novel 3-D printed designs and a liquid-infused material to combat these issues with the goal of reducing unnecessary revision surgeries to replace failed ear tubes.

2018 SILVER WINNERS

Undergraduate: Radiex, Johns Hopkins University

Team Members: Jody Mou, Linh Tran, Kevin Tu; Advisor: Amir Manbachi

Extending Brain Surgery's Reach: During brain surgery, a retractor with metal blades holds brain tissue apart to maintain a working channel. Existing retractors hinder tumor removal and can cause further injury from pressure on brain tissue. Radiex's cylindrical, compact design allows surgeons to access the brain through the smallest point of entry. Once in place, Radiex has the flexibility to gradually expand, increasing the surgeon's area of visibility without added pressure to tissue.

Graduate: Neurotendo, University of California at San Diego

Team Member: Gopesh Tilvawala; Advisor: James Friend

A Brainier Approach: Unruptured aneurysms in the brain are found in one in 50 people in the United States. They potentially can be treated by minimally invasive surgery, but existing surgical methods are often ineffective. Neurotendo addresses the need for a controlled approach to navigation of brain arteries and treatment of cerebral aneurysms with a steerable microcatheter that translates a neurosurgeon's command into the motion of the catheter tip. This micro surgical medical device enables precise navigation, reduction of procedure times and a safer technique.

Neurotendo also was the winner of the 2018 Collegiate Inventors Competition People's Choice Award.

2018 BRONZE WINNERS

Undergraduate: CropDoc, Brown University

Team Members: Abigail Kohler, Jack Roswell, Eli Silvert, Alex Zhuk; Advisor: Chandra Madramootoo

Sensing Sick Crops: Pests and crop diseases kill 20 percent of all crops before harvest, causing an annual \$990 billion loss in farm income. No current technology can identify specific diseases on farms. Using advanced optics and novel processing techniques, CropDoc provides farmers with actionable insights regarding the location and projected progression of pests and specific crop diseases — weeks before visual symptoms manifest.

Graduate: OSPRI, Case Western Reserve University

Team Members: Sanjit Datta, David Pfau, Eric Salomon, Charit Tippareddy; Advisor: Daniel Lacks

Color Your Water Clean: An inadequate supply of clean water accounts for 3.4 million deaths each year. Optimized Solar Purification with a Reusable Indicator, or OSPRI, was developed to address the need of low-cost clean water in the developing world. Used with solar disinfection techniques, OSPRI is a reusable UV-radiation-measuring sensor that changes color to notify a user that the treated water is safe to drink. OSPRI could increase access to clean drinking water worldwide, drastically reducing waterborne illnesses.

About the Collegiate Inventors Competition

The Collegiate Inventors Competition encourages and drives innovation and entrepreneurship at the collegiate level. A program of the National Inventors Hall of Fame, this Competition recognizes and rewards the research, innovations and discoveries by college students and their advisors for projects leading to inventions that have the potential of receiving patent protection. Introduced in 1990, the Competition has awarded more than \$1 million to students for their innovative work and scientific achievement through the help of its sponsors. For more information, visit invent.org/challenge.