Public Relations Contacts:

Alison Duffy
Associate Director of
Public Relations
Phone: +1-508-831-6656
amduffy@wpi.edu

Andy Baron
Senior Manager of
Trade Communications
Phone: +1-508-831-5916
ajbaron@wpi.edu

Colleen Wamback
Public Relations Specialist
Phone: +1-508-831-6775
cbwamback@wpi.edu

Eileen Brangan Mell
Director of Public Relations
Phone: +1-508-831-6785
ebmell@wpi.edu

About WPI Robotics Engineering

Through its ongoing research, WPI is at the forefront of robotics advances. Areas of focus include human-robot interaction, medical robotics, kinematics and control systems, sensors, manipulation and navigation, and more.

WPI was the first university in the nation to offer a bachelor's degree program in robotics engineering, and first to offer a bachelor's as well as master's and PhD degrees.

Because no single discipline provides the scope and range of knowledge demanded of robotics engineers, WPI's Robotics Engineering program employs an interdisciplinary approach, providing hands-on, practical education, with the Computer Science, Mechanical Engineering, and Electrical and Computer Engineering departments playing key roles. The engineering components teach students how to build the body of a robot, while computer science focuses on how to control its behavior.

WPI's innovative robotics curriculum is based on an integrated five-course sequence of Introduction to Robotics, followed by Unified Robotics 1-4. Each course presents increasingly sophisticated concepts from Computer Science, Electrical and Computer Engineering, and Mechanical Engineering arranged around actuation, sensing, manipulation and navigation. The highlight of the curriculum is a capstone design project. Recent examples include a Mars rover, assistive glove, tool-changing robot, and an amphibious search-and-rescue robot.

WPI's expertise and facilities are called upon to host and support a range of robotics events, from FIRST Robotics to NASA Centennial Challenge competitions.

- In 2012, WPI was the first university selected as host and manager for a NASA Centennial Challenge event. The Centennial Challenge program was created in 2005 by the space agency to engage citizens, students, and small businesses in the development of new technological solutions for NASA and the nation.

The NASA Sample Return Robot Challenge program -- held in 2015 for the third time at WPI—had three objectives:

- Discover innovative new technologies to advance robot navigation and sample collection without human control.

- Demonstrate robotic transportation over varied terrain without the aid of GPS or other Earth-based systems.

Public Relations Contacts:

Alison Duffy
Associate Director of
Public Relations
Phone: +1-508-831-6656
amduffy@wpi.edu

Andy Baron
Senior Manager of
Trade Communications
Phone: +1-508-831-5916
ajbaron@wpi.edu

Colleen Wamback
Public Relations Specialist
Phone: +1-508-831-6775
cawamback@wpi.edu

Eileen Brangan Mell
Director of Public Relations
Phone: +1-508-831-6785
ebmell@wpi.edu

- Empower educators and people of all ages, by introducing robotics and how they work, where they work, and real-world applications of how robots will be used the future.

- WPI is a member of the Smart Emergency Response System (SERS) team that is demonstrating a concept to use different types of smart technology to empower first responders and other emergency personnel with information needed in locating disaster victims. The team, which includes human first responders, ground and aerial autonomous vehicles, human-operated tele-robots, and trained search-and-rescue dogs, will demonstrate its SERS solution.

- Through a collaboration between the university's Robotics Engineering Program and Social Sciences and Policy Studies Department, a WPI research team has received a five-year, $125,000 award from the NSF for a project that seeks to provide personal assistant robots to elderly people suffering with age-related disabilities.

- WPI's Automaton and Interventional Medicine (AIM) Lab is engaged in research in various areas of biomedical robotics, including robot-assisted surgery, image-guided interventions, MRI-compatible mechatronics, haptics, and teleoperation; robotic rehabilitation; and assistive robotics.

Using a five-year, $3 million award from the National Institutes of Health, through the National Cancer Institute, a team of researchers will test a new, minimally invasive approach to treating brain tumors that will accurately destroy malignant tissue while leaving surrounding tissue unaffected. The system will use a robot designed to work within the bore of an MRI (magnetic resonance imaging) scanner to precisely guide a probe through a dime-sized opening in the cranium to the tumor with the aid of real-time MRI images. The probe will destroy the tumor by heating it with interstitial high-intensity focused ultrasound.

- FIRST (For Inspiration and Recognition of Science and Technology), was created by WPI alumnus Dean Kamen. WPI and FIRST have worked together to make it easier for teams to connect, share, and receive information to improve upon their teams' successes. WPI and FIRST have received a National Science Foundation grant to continue this collaboration. FIRST LEGO League (FLL) is an international program for children ages 9 to 14, created in a partnership between FIRST and the LEGO Company. Each August, FLL announces the annual Challenge, which engages the teams in hands-on robotics design and authentic scientific research. After eight intense weeks, the FLL season culminates at high-energy, sports-like tournaments, such as RoboNautica.

Public Relations Contacts:

Alison Duffy
Associate Director of
Public Relations
Phone: +1-508-831-6656
amduffy@wpi.edu

Andy Baron
Senior Manager of
Trade Communications
Phone: +1-508-831-5916
ajbaron@wpi.edu

Colleen Wamback
Public Relations Specialist
Phone: +1-508-831-6775
cawamback@wpi.edu

Eileen Brangan Mell
Director of Public Relations
Phone: +1-508-831-6785
ebmell@wpi.edu

- WPI has demonstrated its humanoid robot technology as part of a nine-member team comprising academia and industry aimed at showing effective uses of smart technology to locate and assist victims in disaster situations. The university's Atlas robot WARNER (WPI's Atlas Robot for Nonconventional Emergency Response) can demonstrate various mobility and manipulation tasks, such as clearing debris and turning a valve. In May the Atlas team advanced to the finals and placed in the top third of 24 teams at the international DARPA Robotics Challenge (DRC) held in Pomona, Calif.

- WPI received Rapid Response Research awards from the National Science Foundation (NSF) to develop new technologies to help protect workers caring for patients with Ebola and other infectious diseases.

Responding to the Ebola crisis in West Africa, WPI in November 2014 hosted medical leaders, robotics industry officials, and other experts from the region for a Symposium on Advancement of Field Robots for Ebola Response (SAFER). SAFER is aimed at providing an open platform to explore the feasibility of utilizing robots for preventing, detecting, and responding to current and future Ebola or similar outbreaks. WPI participated in a separate invitation-only Safety Robotics for Ebola Workers workshop in collaboration with the White House Office of Science and Technology Policy, Texas A&M University, and University of California, Berkeley.