New Horizons:  
NASA’s New Horizons space probe to Pluto launched from Florida on Jan. 19, 2006. Equipped with seven instruments gathering scientific data, the probe is now set to capture the highest resolution images to date of the dwarf planet, before continuing on to explore the further frozen reaches of the solar system. The big news: After nine years of hurtling through space, on July 14, 2015 New Horizons finally reaches Pluto. For science lovers, or even curious backyard stargazers, the official Pluto “flyby” in just a few weeks is becoming an anticipated event all around the world. The story has already graced the cover of countless tech magazines, as well as National Geographic.

Ties to The Ohio State University:  
A little-known fact about the New Horizons’ space mission story is the probe’s most prominent feature was partially designed, constructed and tested at The Ohio State University’s ElectroScience Laboratory (ESL), which is a part of the university’s Department of Electrical and Computer Engineering (ECE). ECE alumni, Ron Schulze and Willie Theunissen, now distinguished engineers with the Johns Hopkins Applied Physics Laboratory (JHAPL) and Lockheed Martin Space Systems, respectively, both played an integral part in the New Horizons mission. As JHAPL Lead Engineer for the high gain antenna dish project, Schulze coordinated its design and worked for months with Theunissen, as well as staff and faculty at ESL’s anechoic chamber - considered the largest academic chamber of size 60’x40’x20’ and the finest compact range in the world, operating from 400 MHz up to 100 GHz, which is located on Kinnear Road in Columbus, OH. Schulze’s engineering on the project remains a source of pride to many Ohio State ECE faculty members.

High Gain Dish  
High gain dish antennas provide focused and narrow radio wave beam widths, allowing for more precise targeting of radio signals. The antenna, created and designed in a partnership between the Johns Hopkins Applied Physics Laboratory and Ohio State, remains one of seven instruments on the probe currently gathering scientific information being transmitted back to Earth. Without the dish, NASA could not communicate or receive signals from New Horizons. The probe is currently traveling 31,000 miles per hour, going distances of nearly one million miles a day. It is the fastest probe ever launched from Earth.

ESL research scientist, Dr. Teh-Hong Lee, put the project in some perspective. “Because a spacecraft is spinning while it is traveling, they need to maintain the accuracy of pointing the antenna to the Earth. I was told they required the accuracy of pointing to the Earth at .001 degrees. It’s amazing that they can achieve that,” Lee said. “We were also very excited that our antenna facility could accommodate their need.”

As Schulze explained in his high gain dish research paper, “At a Pluto-like distance of 3 billion miles, the HGA boresight mispointed by 0.2 degrees, would miss Earth by over 10 million miles. The antenna beam width makes up for it, however.”
Our mission:
Help us honor the Columbus Ohio-based engineers who helped bring this historic mission from concept into reality. Any increased attention given to the role of Ohio State’s Department of Electrical and Computer Engineering, its ElectroScience Laboratory and anechoic chamber, or our distinguished faculty and alumni involved in the project, could help inspire young engineering students to explore electrical engineering, the space industry or even remind Ohioans about the great scientific minds coming out of their own hometown. Anything we can provide to facilitate this attention, or contact the people involved, just ask.

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Upon request:
• Numerous high-quality photographs are available of all researchers mentioned, as well as images of the New Horizons Space Probe high gain dish being worked on inside the Anechoic Lab back in 2006.
• Recent HD video footage and B-roll of the ESL and the Anechoic Lab, as well as interviews with several researchers listed above.

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