

Victorious Homecoming for Chester County Teen

Ben Hylak wins Silver Medal and \$10,000 award in the WDC Broadcom MASTERS National Science Competition, MIT names a Minor Planet in his honor

October 17, 2011, West Grove, PA -- In a virtual grand slam homerun among inspirational teenage success stories, Pennsylvania 9th grader Benjamin Hylak, who almost died last fall due to complications from an e-coli type exposure, snabbed the Silver Medal and \$10,000 in the Broadcom MASTERS National Science Fair (<http://www.broadcomfoundation.org/masters/>), right after demo-ing his invention at September's World Maker Faire held at the New York Hall of Science (<http://www.nysci.org/>).

Hylak, who quickly advanced through local, county and tristate science fairs last spring with his original, custom-built invention of a low-budget telepresence robot he named MAYA ("Me And You Anywhere"), was named Silver Medalist by Broadcom's CEO Scott McGregor at an Awards Gala held at the Carnegie Institute in Washington, D.C. on October 4th.

As a secondary though no lesser honor, MIT professor Jennifer Evans announced that all 30 Broadcom MASTERS Finalists would have a Minor Planet named after them, an honor bestowed by Dr. Grant H. Stokes, PhD., Chief and Principal Investigator of the LINEAR Program of the MIT Lincoln Laboratory.

The teen mentioned jokingly that he is hoping that his "Minor Planet (27433) Hooker Hylak" is somewhere near "Minor Planet Einstein".

Both honors were the culmination of a week's activities and science challenges held among 30 national finalists chosen by **Broadcom** and **the Society for Science & the Public** (<http://www.societyforscience.org/>). The SSP is a non-profit organization based in Washington which has partnered with Broadcom to create the Broadcom MASTERS initiative for students in 6th to 8th grade.

As a finalist, Hylak's complicated yet practical engineering and computer science project was scrutinized by a renowned international panel of scientists chosen by Broadcom at an elite science fair held on October 1st at the National Geographic Society in Washington DC. Hylak was then required to participate in a battery of scientific and interpersonal challenges along with the other 29 national finalists, all of whom received an all-expenses paid trip to WDC with one parent.

These 30 talented young scientists hailed from 14 states and Puerto Rico, and were honored at various events in Washington, DC and Baltimore, MD from September 30th through October 4th. They were privileged to meet President Obama's Advisor for Science and Technology, Dr. John Paul Holdren at the White House on October 4th. Many of the students also met their representatives, senators and other elected officials on Capitol Hill prior to the "Awards Night" dinner and ceremony of October 4th.

Hylak was the only finalist chosen from among several states on the east coast, including Pennsylvania, Delaware, New Jersey, New York, New Hampshire, Virginia and others. He progressed through the Chester County Science and Research Competition and the Delaware Valley Science Fairs and a few more rounds of competition to eventually be invited to compete at the Broadcom MASTERS National Fair in Washington, DC.

"I can't believe I'm a National Silver Medalist!" beamed the teenager after the exhilarating yet grueling week's activities. Hylak, a recent graduate of Sacred Heart School in Oxford, PA who is now a freshman at Salesianum High School in Wilmington, Delaware, is an avid computer and engineering guru who proudly refers to himself as a "geek." He resides in West Grove, PA with his parents, Bridget Hylak and Joseph Lee Hooker and two siblings, and has been an Apple Developer since the 4th grade.

"It was such an amazing experience to meet so many kids who were serious about science," Hylak added. "It's like finding a group of kids you just fit with – who just love the whole process of experimenting and researching and creating things. The challenges were really fun – and I made so many new friends, it was incredible!"

Hylak's project, a homemade, custom-programmed telepresence robot which replicates the same technology used in models costing \$50,000 to \$100,000, was built with recycled components, used parts from ebay, and a lot of ingenuity "on my Christmas money budget of about \$300," states Hylak. His main goal was to design MAYA to be used with the elderly, in nursing homes, senior residences and hospitals.

His goals were very personal. "I know so many seniors who live at my grandmom's, who have so much to teach but no audience, and people like my mom who is always working and wants to visit her own mom – she just can't always get there when she wants to, and it's even worse for people who are long-distance. So I thought about how to use telepresence technology to enrich their lives, kind of to bridge generations – and from my research, I thought it would be possible to make a telepresence robot on my own."

He was right.

Hylak's user-friendly robot, which features a robotic arm, a "pan and tilt" camera, a lightweight and portable body, object recognition ("to identify things like pills or tools"), and a vacuum base, combines all components of President Obama's National STEM Initiative: Science, Technology, Engineering and Math. "I couldn't have built, or even conceived, MAYA without all four components," Hylak explained, adding, "I particularly loved the engineering aspects of this project, and how building it required combining my computer knowledge with electronics and engineering – it has really made me interested in a career as an electrical engineer. My dream school is MIT," he adds. "I've wanted to go there since kindergarten."

Hylak credits his passion for science especially to his former science teacher Mr. Kevin Bloh. His parents enthusiastically second that opinion, adding, "Ben's whole opinion of himself and science changed because of Mr. Bloh. It's incredible what just one teacher can do to motivate a child."

Since beginning his trajectory of science fair successes, Hylak has been invited to speak and demo the robot at local venues and churches, with the ultimate invitations coming from MIT and the World Maker Faire (<http://makerfaire.com/newyork/2011/>) held last September at the New York Hall of Science (<http://www.nysci.org/>). "I went to the Maker Faire for the first time last year," states the teen. "It was my get-well present after I spent two weeks in the hospital," he stated.

Hylak quickly recounted the story of a bout with an e-coli type organism last fall that developed into a fatal condition known as HUS, hemolytic uremic syndrome, which begins to shut down the kidneys and other vital organs. During his illness, he mentioned that he "always wanted" to go to the Maker Faire in New York City. His mother bought tickets online from his hospital room, and kept reminding him how much fun they would have when he was better and they could make the trip to New York.

He left the hospital in a wheelchair about a week later, and slowly regained just enough strength to make the trip to NYC.

"It was my dream come true, and it was incredible! I learned to solder there, and just in time, because MAYA required a lot of soldering. I can't believe that this year I was one of the exhibitors!"

The Maker Faire is an international event that generally draws tens of thousands of do-it-yourselfers, crafters, inventors and corporate representatives into a huge, dynamic and intellectually charged "geek-fest" of sorts. "It's kind of like a tradeshow for inventors – or 'makers' – because inventions can also be simpler, things you put together or craft from other things," the teen explained.

What are this resourceful teenager's future plans? "Right now, I'm training for my second degree blackbelt in Tang Soo Do," stated the teenager, who trains at the Korean Martial Arts Institute in Kennett Square. "I think karate really helps my brain work better," he says introspectively. "Too much screen time burns you out.

"I'm also trying to get used to my first year in high school," he says, referring to Salesianum High School in Wilmington, DE, "and I'm a new member to MOE, a FIRST Robotics team sponsored by DuPont – that has been just an awesome experience... working on that team is incredible, it's so fun and I'm learning so much."

"I've also started my research and work on my next science fair project, which is an Artificial Intelligence Robot. The chassis will be made from an electronic wheel chair," Hylak explained enthusiastically. "I just can't wait to get that working!"
