



The Ingenuity Spotlight

Ingenuity Rocks the National Stage

Two competitions are the focus of Ingenuity's junior year Research Practicum: the Junior Sciences and Humanities Symposium (JSHS) and the Baltimore Science Fair (BSF), which is part of the Intel International Science and Engineering Fair (ISEF). Seniors are also encouraged to enter these competitions. This has been Ingenuity's year, winning both the regional JSHS and BSF competitions to move on to the national stage. In addition, Ingenuity freshmen made a strong appearance at the International Bridge-Building Contest. Follow Ingenuity's trail of victory in these pages.

Part 1: Sweeping JSHS



Taking on a total of 40 students from Maryland in the PowerPoint presentations in March, Ingenuity bagged three of the four spots which would move on to the national competition: Anna Manalad's research on using mesenchymal stem cells to enhance blood vessel growth nabbed the coveted 1st place, Michael Tontchev's computer program to automatically find the subject of a sentence won 3rd place, and Elias Weston-Farber's work with yeast transposons received 4th place. The top four places received an all-expense paid trip to the national competition in San Diego, with the top two winners presenting and the other two observing.

"The national event was an eye-opener," says Elias. "There were just so many smart people, so much great research that inspires and motivates you. It was a great experience!" Michael agrees, adding that "the national event shows you just how difficult it is to win the very first place in these high-level competitions. We had favorites in the races (besides the students from Maryland, obviously) who had amazing projects yet did not even win third place in their field." The students had the chance to meet with many other bright minds during meals, "table-hopping" (as Anna calls it) from state delegation to state delegation to meet other young re-

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Symposium Draws Crowds

On Thursday, May 26th, Ingenuity hosted its 9th annual Mathematics and Science Symposium, showcasing Ingenuity's research accomplishments in the fields of science, engineering, and mathematics.

Posters lined the halls of Poly that night as a public eager to see what this year's bright minds had cooked up for them flocked into Poly. The poster presentations of junior and senior research projects and sophomore research interests covered a variety of topics, from stem cell research



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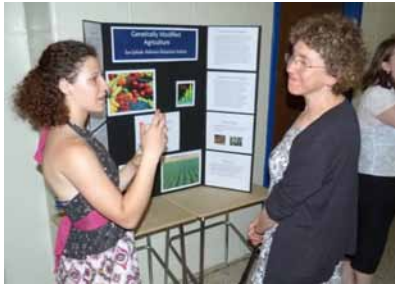
Top: The research group at JSHS

Middle: Elias, Michael, and Anna with awards and event sponsors

Bottom: The Maryland group at the national JSHS

Symposium (contd.)

to solar panel design to research on chicken muscle (with live chickens present at the symposium, which caused a stir). Next came the Power-Point presentations, where Seniors presented their research and some conducted presentations on special math projects they had worked on for Dr. Goldenberg's math class. Freshmen also had the opportunity to present interesting proofs they had learned in Dr. VanNetta's geometry class.



The evening began with opening remarks by Dr. Carol Greider, a Nobel Laureate and Ingenuity parent. She described the scientific process she went through in winning the Nobel Prize and



stressed the importance of motivation and determination. Then came the awards ceremony, the part of the evening students had eagerly been waiting for. After all the awards were presented, the senior class exhibited a slideshow of their fondest memories they would keep as they spread their wings and took off into their bright future.

Part 2: Success at BSF and ISEF

Elated by their success in the JSHS competition, Ingenuity's juniors' next target for the year was the BSF, the regional chapter of the Intel ISEF competition. This time, the pool of competitors was larger, with 50 high school students in the Physics division and 50 in the Biology division. After a grueling day of presentations to many judges, the results were in: Michael Tontchev won the Grand Prize in Physics and Elias Weston-Farber received First Place in Biology. Michael Tontchev and the Grand Prize winner in Biology advanced on to the international competition in Los Angeles, chaperoned by Mr. David Nelson, Ingenuity's Research coordinator. Along with the placement awards, Ingenuity received many awards by special institutions, including the NSA and the Army.

There were more than 1500 students from over 56 different countries at the international event. Determined to prove his worth, Michael won a \$60,000 scholarship to attend the Florida Institute of Technology. He says he had a lot of fun and learned much. "The experience was similar to JSHS. A lot of smart people. Even more than at JSHS. I would say that the level of projects here was even higher. It gives you pause, because you've done well so far, and then you see all of these other projects which are just as amazing, if not more!"



The competition lasted nine hours, with scheduled slots for each judge. The special awards judges from different institutions (such as the Florida Institute of Technology judge) squeezed in interviews between the times already scheduled for Grand Awards judges. The next day, projects were opened for public visitation.

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JSHS (contd.)

searchers.

Besides the competition itself, the students agreed that the location was fantastic. Mild-weathered San Diego offered a perfect mix of brain-stimulating science talks and a chance to see some of the city.



The last night of the event there was a dance in a large ballroom, with some students opting instead to start up a sizeable soccer game on the roomy terrace outside.

The worst part of the competition? "Sleeeeeeeeeeep," says Elias. "We had only one hour of sleep after the dance, and then had to get up and pack our bags for Baltimore." Indeed, tired JSHS attendees were strewn all across the San Diego airport that morning.

More Awards!

Ingenuity students continue to shine both inside of school and outside! Muhammad Hamza this year was one of the thousand students nationwide to win the Gates Millennium Scholarship. This includes a full academic scholarship for college all through the end of their graduate education.



Anna Manalad won Poly's Medal of Honor as "the graduate who has excelled scholastically and demonstrated service and leadership in extracurricular activities.

If this was not enough, to top it off, Dana Katzenelson was the valedictorian of the Class of 2011.

Ingenuity wishes these excellent students even greater success in the future!



ISEF (contd. from page 2)

This meant another 4 hours of presenting.

But LA wasn't all study and no play. "Intel was a great host. They scheduled a lot of fun for us." One of the nights, Intel rented out Club Nokia, Conga Room, ESPN Zone, and Lucky Strike: LA Live complex exclusively for the ISEF participants. Michael opted for the Nokia Club event. "Some friends I met and I decided to go to the club. I am not really much of a dancing guy, yet we decided to just go in the middle of the crowd and go crazy. Naturally," he laughs, "we left behind no photo evidence."

Another of the nights Intel rented Universal Studios for its budding scientists. "The tour of the studios was amazing. Plus, we later got free rides and food. To all prospective nerds out there: nerds have fun too!"

Will Michael study in Florida Institute of Technology? "Well, even these \$60,000 leave \$120,000 more if I choose to go there. But I will definitely keep it in consideration."



Future Scholars

Johns Hopkins gives high school students the opportunity to take math classes at the Homewood Campus through the Future Scholars Program. The program selects five to seven students to participate each year, chosen through an entrance test. This year, four students from Ingenuity were accepted: Michael Tontchev, Matthew Ekey, Joseph Cleary (all juniors), and Stephen Timmel (sophomore). Congratulations to these bright minds showing that Ingenuity is competitive not only at the middle and high school levels, but also at our nation's top universities!



Part 3: Building Bridges

Every year Mr. Nelson's ninth graders build bridges for the Science and Technology class he helps to teach. He encourages students to submit their bridge designs to the Maryland Wood Bridge Challenge. The object of the contest is to see who can design, construct and test the most efficient bridge (determined by the ratio of the mass supported divided by the mass of the structure itself) that meets all the given specifications.

This year, his students showed him they are serious. Trey Huff finished first in Maryland with a bridge efficiency of 2730 and a team of Shavonte Brandon and Nadine Benavides came in second with a bridge efficiency of 2650.

After refining their designs, they took their bridges to the next level: internationals at the Illinois Institute of Technology (IIT) in Chicago. Shavonte and Nadine won second place internationally with an efficiency of 3855 and Trey won 11th place with an efficiency of 2851.

Congratulations to our students for their success at solving this challenge in structural engineering!



NHD and Science Olympiads

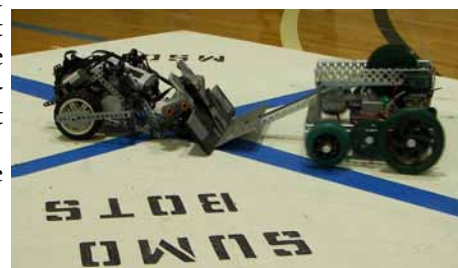
Ingenuity once again made a strong showing in the National History Day (NHD) competition, the Biology Olympiad, and the Science Olympiad.

Caryn Carson won second place in the regional NHD competition and received the Award for Excellence in Civic Action and Engagement at the state level, showing once again that Ingenuity also excels in social sciences.

Stepping away from the humanities and into science, Caryn Carson, Ilenna Jones, Dana Katzenelson, and Lawrence Wang competed in the national Biology Olympiad, coming in as semifinalists.

Widening the scientific scope, Ingenuity also had success in the Science Olympiad competition. The team won first place in regionals, sweeping away all the first place medals for the more than ten different competitions. The team then advanced to the state competition at Hopkins, where they met with valiant opposition but also did well.

Keep up the great work!



2011-2012 Spotlight Staff

Editor: Michael Tontchev
Asst. Editor: Harrison Lee

Senior College Acceptances

Jaime Arribas Starkey-EL
Morgan State University

Camaree Barr
Carnegie Mellon

Anne Blonder
Will study in Germany; received 2010-2011 Congress Bundestag Scholarship

Dan Borgnia
Massachusetts Institute of Technology (MIT)

Terrell Buckson
Xavier University of Louisiana

Caryn Carson
Johns Hopkins University

Emily Frias
University of Maryland, Baltimore County

James Fulwiler
Temple University

Selena Guerrero-Martin
Johns Hopkins University

Muhammad Hamza
Johns Hopkins University

Justus Jackson
Auburn University

Daniel Jalova
Johns Hopkins University

Peter Jennings
U.S. Naval Academy

Brandon Johnson
Temple University

Lashaunda Johnson
Temple University

Ilena Jones
Dartmouth College

Mary Kamos
Loyola University

Alexander Katona
University of Miami

Dana Katzenelson
Harvard College

Michael Leung
University of Maryland, Baltimore County

Anna Manalad
College of Notre Dame

Jonathan McKenzie
Johns Hopkins University

Kerra McKnight
Coppin State University

Nyrole Mindley
Morgan State University

Charlotte Mountain
California Polytechnic State University

Derek Riley
Morgan State University

Edward Samson
Johns Hopkins University

Candice Simmons
University of Maryland, Baltimore County

Marie Stelmack
University of Maryland, Baltimore County

Paul Taylor
Bryant University

Lawrence Wang
University of Chicago



Good Luck to the Senior Class of 2011!

"Do not go where the path may lead; go instead where there is no path and leave a trail"
- Ralph Waldo Emerson



Class of 2011 Scholarships:
over \$5,000,000!!

Pance: Partying it up

On May 27th, Ingenuity continued the tradition started last year and hosted the second annual "Ingenuity Party/Dance," which students affectionately call "Pance" (or "Pants," spelling varies in different circles). The attendees were interviewed and the consensus seemed unanimous: the Pance this year even more fun than last year! "Epic night. Ingenuity rocks!" exclaims Muhammad Hamza. Anna Manalad agrees: "Ingenuity, I love you guys ... Juniors, you are now in charge!"



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