

THINK, CREATE, INNOVATE



The Ingenuity Project
Baltimore Polytechnic Institute
1400 West Cold Spring Lane
Baltimore, MD 21209
t. 410-662-8665
f. 410-662-8674
www.ingenuityproject.org



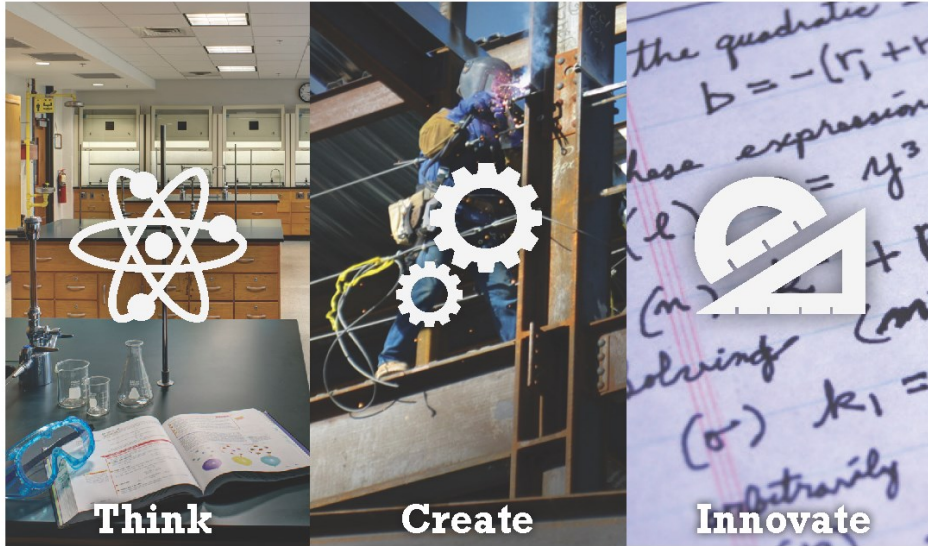
1st ANNUAL INGENUITY IDEA SUMMIT

Thursday, April 23, 2015
The Vollmer Center at Clyburn Arboretum



THINK, CREATE & INNOVATE
TED-style talks by Ingenuity students and alumni.
Designed to foster learning, inspiration and wonder –
and promote conversations that matter





BOARD OF DIRECTORS

- Gary Pasternack**, M.D. Ph.D., Chair
CEO, Asklepiion Pharmaceuticals, LLC.
- Steven Farber**, Ph.D., Vice Chair
Carnegie Institution for Science
Department of Embryology
- Martin Lee**, MS, MBA, Treasurer
Head of FI Quantitative Research at T. Rowe Price
- Bonnie Legro**, MAT, Secretary
Program Officer, The Abell Foundation
- Andrea Bowden**, Ph.D.
Assistant Principal, Digital Harbor High School
- Jeffrey J. Gray**, Ph.D.
Professor, Chemical and Biomolecular Engineering
Johns Hopkins University
- Nakia Hardy**, Ph.D.
Executive Director, Teaching and Learning
Baltimore City Public Schools
- Stephanie Miller**, MAT
- Raghu Raghavan**, Ph.D.
Owner, Therataxis, LLC
- Ben Yuhas**, Ph.D.
Yuhas Consulting Group, LLC
- James E. West**
Research Professor, Johns Hopkins University
Departments of Electrical and Computer Engineering,
Mechanical Engineering
National Inventors Hall of Fame
- Harris W. Eisenstein**
Creditors' Rights and Litigation Associate
Rosenberg Martin Greenberg, LLP



is proud to sponsor the
1st Annual Ingenuity Idea Summit

And congratulates the Ingenuity Project
in celebrating 20 years of advanced
Math and Science education in Baltimore City.

www.whiting-turner.com

MISSION

To prepare and launch the next generation of diverse, nationally competitive STEM* leaders from Baltimore City Public Schools.

(*Science, Technology, Engineering and Mathematics)



RECEPTION COMMITTEE

Chair: Lisette Morris
Executive Director

Vernise Bolden
Admissions Coordinator

Gale Fletcher
Dean of Students

Shani Ortiz
College Advisor

Keyha Royster
Administrative Assistant

Sergei Zverev, Ph.D.
Associate Director

Dear guests and supporters,

Ingenuity students are Baltimore's STEM leaders of tomorrow. Our students are being prepared to solve problems in our community and world that don't yet exist. This Idea Summit is an invitation to see our student's ideas as important to the world. We are excited to give them this stage to share what they are able to think, create and innovate.

Over the next few years, Ingenuity plans to:

- Provide opportunities for more middle school students.
- With the support of the Jack Kent Cooke Foundation, design advanced STEM Challenges to promote achievement, innovation, and complex problem solving among middle school students.
- Expand research practicum options so that every high school student can pursue their interests in current and changing STEM fields

I want to thank Baltimore City Public Schools and the foundations who support our program: the Abell Foundation, T. Rowe Price Foundation, Lockhart Vaughan Foundation, Joseph & Harvey Meyerhof Family, Thomas Wilson Sanitarium for the Children of Baltimore City, and Goldsmith Family Foundations. These supporters maintain Ingenuity as the longest standing advanced STEM program in Baltimore City. I also want to give a special thanks to tonight's Idea Summit sponsors: Whiting Turner, Johns Hopkins University, Stevenson University, University of Maryland Baltimore County (UMBC), Towson University, Baltimore Polytechnic Institute Foundation, T. Rowe Price, and the Johns Hopkins Center for Talented Youth (CTY).

Lisette Morris
Executive Director
The Ingenuity Project

Johns Hopkins University's Office of the Provost and Whiting School of Engineering

are proud partners of the
Ingenuity Project, a leader
in STEM education, and
congratulate its students on
their achievements.



Britni Lonesome, an Ingenuity Project graduate, was also a Baltimore Scholar at Johns Hopkins University, where she earned a bachelor's degree in chemical and biomolecular engineering and a master's degree in engineering management.



THINK, CREATE, INNOVATE

Special thanks to our sponsors:

Big Bang Sponsor
Whiting Turner

Quasar Sponsors
Johns Hopkins University
Stevenson University

Supernova Sponsors
Baltimore Polytechnic Institute
Center for Talented Youth
Towson University
T. Rowe Price
University of Maryland Baltimore County



Ingenuity in 2014- 2015 school year

6 perfect 800 scores on SAT and SAT 2 exams.

12 Ingenuity students were inducted to the William R. King Chapter of the **National Honor Society**.

Approximately 400 students from Baltimore City public and private schools competed at the **Baltimore City History Day**. 4 Ingenuity middle school students won medals at the competition.

For the fifth year in a row, an Ingenuity student won a grand prize award at the **Baltimore Science Fair**. Phoebe Sandhaus was named this year's Grand Prize winner in the biological sciences category. Phoebe will go to Pittsburgh, PA in May to compete at the 2015 Intel International Science and Engineering Fair (ISEF). Many Ingenuity students received awards and honorable mentions.

Aaron Fink is a Baltimore City winner of the 2014 **University of Maryland College Park High School Mathematics Competition**.

Lane Easterling, Ingenuity senior, wins \$10,000 Nordstrom Scholarship and MacBook Air. Lane was 1 out of 80 students who won the Nordstrom Scholarship Program.

Lily DeBell, an eighth grade Ingenuity Project student at Roland Park, is a First place winner of the **National Youth Entrepreneurship Challenge**. More than 50 semifinalists chosen from a field of over 20,000 traveled to Silicon Valley to meet with top business leaders and compete for a grand prize worth \$25,000. President Obama marked National Entrepreneurs' Day by congratulating three student winners in the Oval Office. L. to R.: *President Obama, runner up Jesse Horine, first place winner Lily DeBell, and Runner up Ambar Romero.*



Stelios Mastoras received a **2014 Maryland STEM Scholars Award**. Each year, Northrop Grumman selects 24 winners from more than 300 applicants based on academic achievement, extracurricular and volunteer activities, recommendations from teachers and principals and an essay. Stelios received a scholarship and the opportunity to be considered for a summer internship at Northrop Grumman.

Darius Johnson won a 3rd place **Grand Award** in the category *Cellular and Molecular Biology* at the **Intel Science and Engineering Fair (ISEF)**. The 2014 Intel ISEF was a forum for approximately 1,700 high school students from 77 countries, regions, and territories to showcase their independent research. ISEF is the premier global science competition for students in grades 9–12.

2014 college acceptances include: Columbia University, Cornell University, Dartmouth College, Duke University, George Washington University, Georgia Institute of Technology, Grinnell College, Hampton University, Harvard College, Johns Hopkins University, Princeton University, Rice University, Stanford University, Tulane University, United States Naval Academy, University of Chicago, University of Pennsylvania, University of Virginia, Washington University in St. Louis, Yale University. **More than 9 million dollars in scholarships.**

2014 college acceptances include:

Columbia University, Cornell University, Dartmouth College, Duke University, George Washington University, Georgia Institute of Technology, Grinnell College, Hampton University, Harvard College, Johns Hopkins University, Princeton University, Rice University, Stanford University, Tulane University, United States Naval Academy, University of Chicago, University of Pennsylvania, University of Virginia, Washington University in St. Louis, Yale University. **More than 9 million dollars in scholarships.**

3 Ingenuity students got their first publications in scientific magazines (total 16 Ingenuity publications since 2001).

THINK, CREATE, INNOVATE

PROGRAM

5:30 PM Cocktails & Appetizers

6:30 PM Welcome

Lisette Morris, Executive Director
The Ingenuity Project

Christy Wyskiel, Master of Ceremonies
JHU President Adviser for Enterprise
Development

6:45 PM Idea Summit Talks

STEVENSON UNIVERSITY

school of the sciences

Congratulations **INGENUITY PROJECT** students!
Stevenson University's School of the Sciences
welcomes you to explore the many ways
in which we can help you accelerate
your trajectory to success.

Inquiry-based Curriculum

Active, Hands-on Learning

Research & Internships

Career Planning

Job Placement

BACHELOR OF SCIENCE

Applied Mathematics

Biochemistry

Biology

Biotechnology

Chemistry

Environmental Science

Medical Technology

Nursing

MASTER OF SCIENCE

Forensic Science

MASTER OF ARTS IN TEACHING

Biology

Chemistry

Mathematics

www.stevenson.edu

SCHOOL of the SCIENCES
STEVENSON
UNIVERSITY

Imagine your future. Design your career.®

1525 Greenspring Valley Road, Stevenson, MD, 21153-0641



THINK, CREATE, INNOVATE



Taylor Beckham
Alumnus, Class of 2007
*The Value of the Ingenuity Project to
a Non-STEM Career*

As an Ingenuity Alumnus, and current law school student, Taylor believes that her talk is important because her decision to not pursue a STEM career highlights other skills that the program developed. .

She enjoyed Ingenuity for providing an opportunity to learn with students who wanted to succeed as much as she did.

In Taylor's words...

Upon graduation from the University of Baltimore School of Law next year, I plan on pursuing corporate litigation with an interest in intellectual property litigation or government relations, specifically the realm of lobbying.



FELLS POINT, MARYLAND

THINK, CREATE, INNOVATE

CHRISTY WYSKIEL MASTER OF CEREMONIES



Christy Wyskiel is the senior adviser to Ron Daniels, President of Johns Hopkins University. She is his advisor for enterprise development, responsible for university commercialization of faculty discoveries and inventions and for cultivating the Johns Hopkins University's growing relationships with entrepreneurs and the business community. She succeeded to the position in January 2014 after joining the university in a transitional role the previous year.

As an entrepreneur and investor, Wyskiel started, supported and analyzed businesses in health care and the life sciences for nearly 20 years before joining Johns Hopkins. She co-founded two Baltimore-based companies with Johns Hopkins faculty members, serving as an executive of both, and served as a formal and informal advisor to many other start-ups.

Previously, Wyskiel was a managing director at Maverick Capital Ltd., a long-short equity hedge fund with more than \$12 billion under management. She established there a record of successful investing in public and private health care companies. She also has worked as a health care and medical technology stock analyst at T. Rowe Price.

Wyskiel earned an MBA from New York University in 1996 after graduating from Williams College in 1994.

We're focused on building partnerships with K-12 schools and other community-based organizations and making commitments to work together in new and innovative ways. I believe in breaking down barriers, challenging assumptions and working instead to leverage the strengths of children and families in urban communities.

That's how I drive education forward.

JOSHUA S. SMITH, PH.D.
Dean, School of Education

Loyola University Maryland's School of Education is proud to support the Ingenuity Project. Together, we will prepare highly capable and motivated students in Baltimore City and drive education forward.

HOW WILL YOU DRIVE EDUCATION **FORWARD?**

LEARN MORE ABOUT OUR GRADUATE PROGRAMS IN EDUCATION
LOYOLA.EDU/FORWARD · 410-617-5020

 **LOYOLA**
UNIVERSITY MARYLAND School of Education

Better Byte Computers
Supports the Ingenuity Project

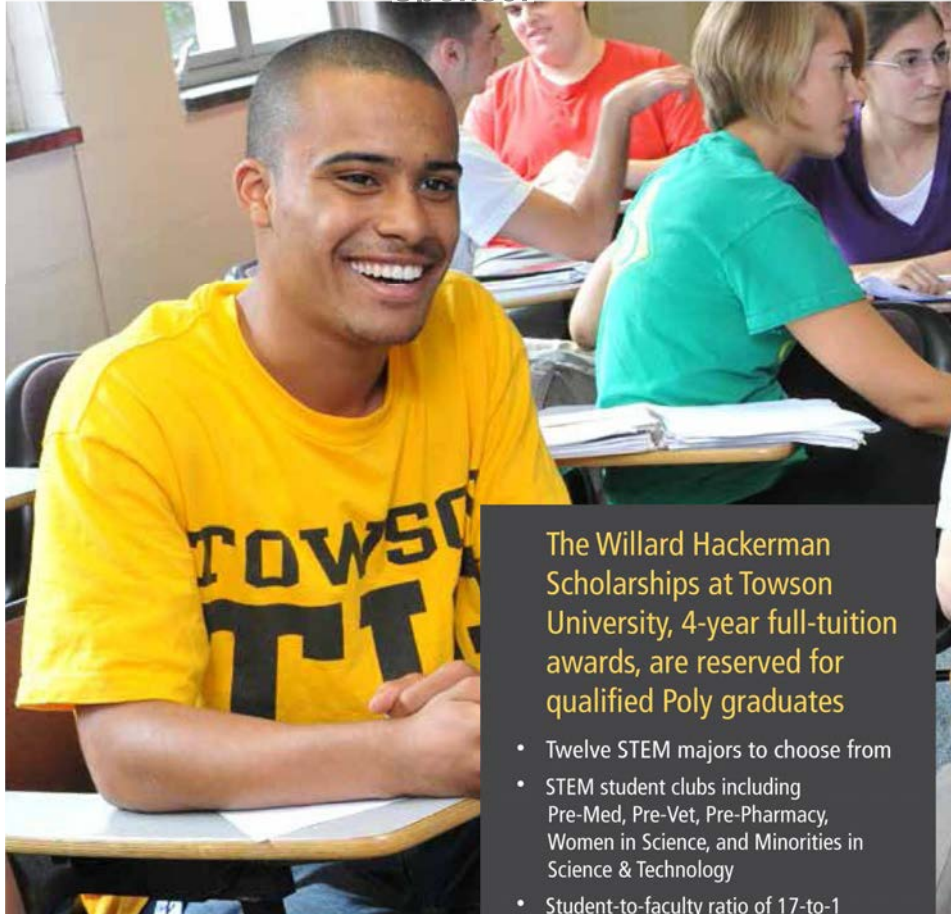
Computer hardware, software and networking,
internet access, computer repair and support.

7407 Harford Rd. ~ Baltimore, Maryland 21234 ~ 410.444.3730



Nurturing the next generation of leaders at Towson University

Sponsor



The Willard Hackerman Scholarships at Towson University, 4-year full-tuition awards, are reserved for qualified Poly graduates

- Twelve STEM majors to choose from
- STEM student clubs including Pre-Med, Pre-Vet, Pre-Pharmacy, Women in Science, and Minorities in Science & Technology
- Student-to-faculty ratio of 17-to-1
- STEM Teacher Preparation

More information is available from high school guidance counselors.

www.towson.edu/FCSM/WillardHackermanScholarship/

0314.028



THINK, CREATE, INNOVATE



Harry Huntley
11th Grade
Cover It Up!

Harry believes what is important to agriculture is important to humanity, because without agriculture modern society could not exist. Even though a “City Boy,” Harry has gardened with his father since he was a little boy. His Ingenuity Research Practicum revolves around sustainable agriculture and he works for one of Maryland’s largest organic farms selling produce at the Waverly Farmers’ Market.

Harry enjoys the academic climate of the Ingenuity Project and being surrounded by people with diverse, but similarly-rigorous interests. His proudest accomplishment in school to date is being twice selected as the recipient of Ingenuity’s leadership award.

In Harry’s words...

I want to go to school for business and agriculture and eventually start my own organic farm.



Chikaodi Nwanegwo
12th Grade
All Lives Matter

Eight million people die annually from mostly curable diseases in third world countries. Chikaodi envisions that individuals in third world countries have the healthcare necessary for curable diseases.

Chikaodi appreciates opportunities from the Ingenuity Project ranging from internships at Johns Hopkins Medical Institute to extracurricular activities such as MERIT (Medical Education Resources Initiative for Teens). Participating in MERIT is her greatest accomplishment. MERIT aims to eliminate health care disparities by transforming under-represented high school students into health care leaders.

In Chikaodi’s words...

I plan to major in Chemistry in college then enroll in an MD/PhD program after graduating.

Rosenberg Martin Greenberg

proudly supports the

Ingenuity Project Idea Summit

Think | Create | Innovate



Rosenberg Martin Greenberg, LLP
25 South Charles Street, 21st Floor
Baltimore, Maryland 21201-3305
P: (410) 727-6600 F: (410) 727-1115
www.rosenbergmartin.com

THINK, CREATE, INNOVATE

“The Office of Teaching & Learning wishes to extend its congratulations to the speakers and organizers on the occasion of this inaugural Ingenuity Idea Summit. The diverse topics, ranging from Youth Voices Matter to Don’t Be Afraid of Microbes, reflect the limitless possibilities of students who have been given permission and support to think independently while remaining globally connected.”

Dr. Nakia Hardy
Executive Director
Office of Teaching and Learning
Baltimore City Public Schools

Dennis Jutras
Coordinator
Gifted and Advanced Learning
Baltimore City Public Schools

Ingenuity Idea Summit Speakers



Jacques Thompson
8th Grade
A Difference in Opinion: The Importance of Youth Voices

Jacques chose this topic because he had many occasions in which his opinion was not respected. He thinks youth can make contributions to society just like adults do. He is a naturally competitive person and being in Ingenuity provides many intellectual rivals. Ingenuity has prepared him for high school, giving him the knowledge required to excel. His proudest accomplishment in school was being congratulated by the principal for speaking at North Avenue for a non-school event.

In Jacques Words...

My goals for the future include finishing college with degrees in either engineering, graphic design and computer programming, or a degree in acting. I hope that the career that I choose will help me become moderately wealthy and able to give back to my family.

Investing in our youth
means investing in the future



Supporting STEM education
in Baltimore's Ingenuity Project.



THINK, CREATE, INNOVATE



Tula Raghavan
12th Grade
**Glioblastoma Multiforme:
Tackling the Deadliest Primary Brain Cancer**

Tula believes that her research can have an impact on the lives of people that are suffering. She's always been interested in the brain and the afflictions that affect it.

Tula appreciates all of the research opportunities Ingenuity provides. She's most proud of her current research with Dr. Brem's Hunterian Laboratory at The Johns Hopkins University.

In Tula's Words...

I plan to see the Acriflavine Study through and have fun in college.



Zachary Byrd
12th Grade
Living Your Life to the Fullest

Zachary has a lot of ideas and would love to see some of them implemented in the world! He knows he's not the only person in the world with good ideas! Everyone has something good to add to the world and everyone has something to say.

Zachary enjoys that The Ingenuity Project provides an environment where rigorous learning is encouraged and facilitated. His proudest accomplishment is adjusting and maintaining his work ethic even though the courses continuously become harder.

In Zachary's words...

I intend to achieve a 4.0 GPA my first two semesters at Johns Hopkins University. Then, I hope to get a summer internship at Northrop Grumman or Google. Hopefully by my sophomore or junior year some of the ideas I have can be patented!.



CTY

The Johns Hopkins Center for Talented Youth, with programs around the United States and the globe—from Washington, D.C., to Hong Kong—is dedicated to developing the world's brightest K-12 learners.



cty.jhu.edu

THINK, CREATE, INNOVATE



Jasmine Drummond
7th Grade
Misconceptions of STEM Education

Jasmine loves math and science and wants to be a Veterinarian. She believes this topic should matter to others because the U.S. is not performing as well as other countries in STEM Education. She enjoys the hands-on activities in science that the Ingenuity Project provides. Her proudest academic accomplishment is going from a transfer student into Baltimore City Public Schools and to

getting accepted into the Ingenuity Project, within one year of enrollment.

In Jasmine's words...

My goals for the future are to first continue making Honor Roll, then be accepted into a college that has a great science curriculum and pursue my career as a Veterinarian.



William Povell
11th Grade
Security and Privacy in the Information Age

William chose this topic because he's fascinated by the cryptography and math that goes into keeping information private. It's important to everyone in order to keep sensitive information safe!

William enjoys the rigorous, college-level classes he takes in the Ingenuity Project. He believes research practicum and doing actual scientific research at Johns Hopkins is an amazing opportunity. One of his proudest academic accomplishment is taking all AP classes this year, with a research practicum and getting straight As, all while playing a sport every season.

In Willam's Words...

I hope to go to college and study computer science, as well as possibly double major in math. From there, I hope to create some sort of tech-startup and change the world for the better.



**BALTIMORE
POLYTECHNIC
INSTITUTE**
A Blue Ribbon School of Excellence



The Baltimore Polytechnic Institute Foundation

The BPI Foundation is a non-profit organization with the sole purpose of raising funds for Poly to support the mission and goals of the school.

This school year, the Foundation was proud to fund new technology, provide scholarships, support two school-wide STEM Competitions, facilitate gifts for a Fab Lab in the Engineering Department, raise funds for the Robotics Team, and provide needed financial support to the school's central budget for textbooks, classroom supplies and other needed materials.

The BPI Foundation is honored to support the Ingenuity Project.

1400 West Cold Spring Lane / Baltimore, MD 21209 / 410-889-7659 / alumni@bpi.edu

THINK, CREATE, INNOVATE



Lola Stevenson
8th Grade
Solar Roadways

Lola believes that once solar roadways are installed, people won't have to shovel driveways, worry about delays and injuries, or even be scared of hitting a deer!

Lola enjoys the learning environment in The Ingenuity Project, being surrounded by people who also think critically and with the same motivation and work ethic. Her biggest accomplishment was getting into the Ingenuity program.

In Lola's words...

My goal is to take the classes I want to take, not plan or stress over the future but instead enjoy my high school (and not to mention learning) experience.



Nina Mendez
12th Grade
Limitations?

Nina chose her topic because she wants to encourage others to see their own full potential by removing blinders of societal norms and pressures for conformity.

Nina appreciates the close, supportive community fostered by the Ingenuity Project. This provides a group of friends who understand that learning can be, and often is, fun! Her biggest accomplishment was getting accepted into the University of Chicago!

In Nina's words...

My biggest goal for the future is to someday develop a theory so grand that it will make its way into textbooks. I also wish to become a professor so that I may give back and encourage the academic flourishing and enthusiasm of youth.



UMBC is proud to support the Ingenuity Project and students in the fields of **SCIENCE, TECHNOLOGY, ENGINEERING & MATH.**

UMBC invites you to learn more about our programs and to visit our campus.

admissions.umbc.edu

UMBC

AN HONORS UNIVERSITY IN MARYLAND

THINK, CREATE, INNOVATE



Keimonte Mims
12 Grade
The Power of Persistence

Keimonte believes everyone should understand that persistence is important and that one should never give up!

Keimonte likes the people he's met by being part of The Ingenuity Project. He appreciates that he gets to understand other cultures and ways of living different from his own. Keimonte is proud of

successfully making it through school and being accepted to Widener University for next year.

In Keimonte's Words...

I plan to go to college then attend law school, hopefully become a supreme court justice one day



Da'Kuawn Johnson
Alumnus, Class of 2013
It's a Microbes World

Da'Kuawn worries that people only know the bad things that bacteria do, not the good! Researchers like Da'Kuawn are taking advantage of bacteria's natural ability to make our world a cleaner and better place.

Da'Kuawn enjoyed the support and empathy he had from fellow ingenuity classmates/friends. He also really enjoyed the opportunity to participate in a real research environment, which made what he learned in science class tangible. Last September, Da'Kuawn had his research from high school published in the Journal of Diabetes.

In Da'Kuawn's words...

After graduation from UMBC as a Meyerhoff Scholar, I plan to pursue an MD/PhD and then move on to get a faculty position at a research hospital or school of medicine and conduct clinical trials on treatments for diabetes and other metabolic disorders.