

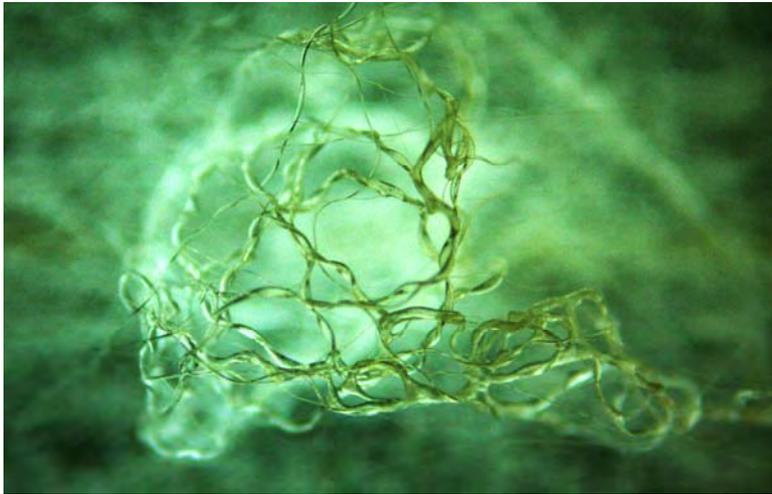


THE FUTURE IS ...

N.E.A.R.

NANOTECHNOLOGY EDUCATION AND RESEARCH

www.thefutureisnear.org



The Future is N.E.A.R. program offers the students of the North Penn High School Engineering Academy an opportunity to gain 21st century Science, Technology, Engineering and Mathematics skills that will help prepare them to become successful leaders in an ever-advancing technological society. The program introduces the fundamentals of nanotechnology, engineering research, and the application of knowledge to high school students while cultivating their interest in engineering, problem solving, and life-long learning.

This year, their research has offered the senior students many opportunities to design solutions to global issues by capitalizing from the benefits of nanotechnology.

WEDNESDAY, JUNE 1ST, 2016

NORTH PENN HIGH SCHOOL AUDITORIUM

SEVEN O'CLOCK P.M.

2015-2016 RESEARCH TEAMS

2015 - 2016 Engineering Design and Development Nanotechnology & Engineering Research Teams

Welcome to the 11th annual North Penn High School Engineering Academy Nanotechnology and Engineering Symposium!

The evening will begin at 7:00pm in the audion with introductions from each of the teams listed below. The students will bring you up to date with the research endeavors they have been performing throughout this school year.

Following their presentations, the evening will continue in the auxiliary gymnasium. The students will offer poster presentations, interactive demonstrations of their research, live electrospinning demonstrations, a live demonstration of a Hitachi TM3030 Scanning Electron Microscope, characterization equipment that was acquired from extremely generous grants from the Dow Chemical Company and the North Penn Educational Foundation and demonstrations from students in the other engineering academy courses.



DeltaPhase Enterprises Jonathan Hollenbach
Nicholas Seiberlich
Mark Wallace



KT Technologies, Inc. Keith Earle
Tyler Gillett



MT Bioscience Mash Pramanik
Tommy Novia



NanoMedical Solutions Tom Gerhart
Brian Lawn



PiezoTech Dominic DiBerardino
Thomas Dickson
TJ O'Hagan



PPA Sound Science Shovon Akter
Grant Pietrzykoski
Jeremy Pulver



ThermoTech Bailey Harp
Nate McWilliams
Abdullah Al Nahean



EPICS Club @ NPHS Anthony Brigidi
Engineering Projects in Community Service
Engy Khoshit
TJ Schmidt

Cover Image:

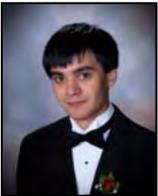
Student research team: NanoMedical
Zeiss Primo Star Analysis
PCL, 10% Electrospun nanofibers

STUDENT BIOGRAPHIES
FUTURE PLANS AND GOALS



Shovon Akter PPA Sound Science

Shovon will be attending Montgomery County Community college for a year and then will transfer to Lynchburg College where he will continue to pursue an engineering degree. In his free time he enjoys spending time with friends and family and hopes to have a career one day where he can travel the world.



Dominic Matthew DiBerardino PiezoTech

Dominic DiBerardino has pursued an engineering education since 9th grade. He was on the Odyssey of the Mind team in Geneva Switzerland. He attended North Montco Technical Career Center. In 10th grade, he entered the engineering academy and completed all 5 courses. After graduation, Dominic will be attending Penn State Abington for Material Science and Engineering.



Thomas Michael Dickson Piezotech

Thomas Dickson has been interested in engineering for as long as he can remember. Completing all five engineering academy courses throughout high school has furthered his passion to pursue a degree in engineering. Thomas Dickson will be attending Stevens Institute of Technology for Mechanical or Computer Engineering.



Keith Anthony Earle, Jr. KT Technologies, Inc.

In the fall, Keith plans to attend Lafayette College to major in civil engineering. He also plans on playing for the school's football team to continue his athletic career. He has learned a lot through North Penn High School's Engineering Academy and hopes to apply that knowledge towards his future endeavors.



Thomas Philip Gerhart NanoMedical Solutions

Thomas will be attending The Pennsylvania State University at University Park to pursue a degree in Biomedical Engineering where he hopes to continue research. Thomas was the E.P.I.C.S. Club Secretary and President of the Italian Club for two years. He hopes to one day attend Dental School, own his own practice, and combine his interests in health and improving the lives of others.



Tyler M. Gilett KT Technologies, Inc.

In the fall, Tyler plans on attending King's College where he will major in computer science. He also plans to continue his athletic career by playing football for King's. Through the years in North Penn's Engineering Academy he has learned a lot from the 5 courses taken and believes that many of the different concepts learned will come in handy in the future.

STUDENT BIOGRAPHIES

FUTURE PLANS AND GOALS



Bailey Matthew Harp ThermoTech

Bailey has taken and completed all five North Penn Engineering Academy courses and will leave with six credits from Rochester Institute of Technology. In the fall, Bailey will attend Drexel University for a five year program to obtain a Mechanical Engineering degree.



Jonathan Daniel Hollenbach DeltaPhase Enterprises

Jon will be attending Drexel University majoring in Materials Engineering. He was accepted into the Drexel S.T.A.R. (Students Tackling Advanced Research) Program for undergraduate research. Jon is the Treasurer for the E.P.I.C.S. Club and the Secretary of the North Penn Ski and Snowboard Club. Jon plans to pursue a Masters or PhD in MSE and work in Research and Development.



Brian Patrick Lawn, Jr. NanoMedical Solutions

Brian plans to attend Montgomery County Community College where he intends to transfer and pursue an engineering degree. He would not only like to pursue a career in engineering but also hopes to assist in the implementation of the academy's teaching structure into other education systems.



Nathan McWilliams ThermoTech

Nate has completed all five of the Engineering Academy courses at North Penn. In the fall, Nate will be attending Montgomery County Community College and then transferring to a four year school. He is planning to major and graduate with a degree in Civil engineering.



Abdullah Al Nahean ThermoTech

Nahean has taken and completed all the Engineering Academy classes offered at North Penn High School. In the fall, he is planning to attend Penn State Abington for two years and then transfer to Main Campus. He is planning to major and graduate with a degree in Aerospace Engineering .



Thomas Joseph Novia, Jr. MT Bioscience

Tommy has completed all five Engineering courses offered at North Penn High School. He will now attend Drexel University for the next five years to pursue a degree in engineering. He does not know what kind of engineering he will go into yet, but he is looking forward to Drexel's co-op program and the opportunities he will have in the future.

STUDENT BIOGRAPHIES

FUTURE PLANS AND GOALS



Thomas John O'Hagan *Piezotech*

TJ O'Hagan has been interested in becoming an engineer since ninth grade when he was informed about the engineering academy at North Penn. He has completed all five of the engineering academy courses and has played on North Penn's lacrosse team since his freshmen year. TJ will be attending Penn State Abington in the fall to study Environmental Engineering.



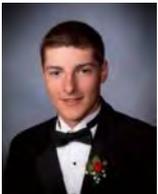
Grant Pietrzykoski *PPA Sound Science*

Grant Pietrzykoski plans to furthering his education next year at Penn State, Altoona. He will be majoring in Mechanical Engineering in hopes of moving on to the engineering school at University Park. Grant plans to acquire a degree in mechanical engineering, become a full time member of the engineering community and later, specialize in Aerospace Engineering.



Md Mashfiqul Haque Pramanik *MT Bioscience*

Mash plans to attend Montgomery County Community College and transfer to Penn State University to earn a degree in Material Science. Motivated by his desire to help other, he wants to develop an invention that will save lives. In his free time, he likes to go to foreign, unique places both in and outside of America



Jeremy John Pulver *PPA Sound Science*

Jeremy will be attending West Chester University next year to pursue a degree in business economics. Jeremy enjoys working with others. He completed all five North Penn engineering academy courses. In his free time Jeremy enjoys hanging out with friends, fishing, mountain biking, skiing, and hunting. Jeremy hopes to one day own his own business.



Nicholas Steven Seiberlich *DeltaPhase Enterprises*

Nicholas plans to attend Montgomery County Community College until transferring to Temple University to earn a degree in Mechanical Engineering. Motivated by his own interest to learn, Nicholas is often running experiments at 6am on the weekdays and always tries to apply his knowledge for improvement and understanding of his and his peers research.



Mark Ryan Wallace *DeltaPhase Enterprises*

Mark will attend Pennsylvania State University to major in Security and Risk Analysis in the college of Information and Science Technology. His goal is to become an information security analyst for government agencies such as the NSA or CIA. Mark is vice-president of the Engineering Projects In Community Service club (EPICS) and the secretary of the Computer Programming club.

ACKNOWLEDGEMENTS

THE FUTURE IS N.E.A.R.

ACKNOWLEDGEMENTS

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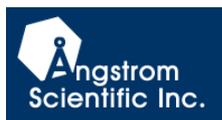
Montgomery County Community College

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“A vision without resources is just a hallucination...”

Dr. Joseph DeSimone, 2008 Lemelson –MIT Prize Recipient



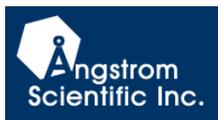
The Dow Chemical Company

Justin Land, *Spring House Community Advisory Council*

Thank you so much to the Dow Chemical Company for providing the funding through their Community Advisory Council STEM grant! Their very generous donation has given vision to the students of the North Penn High School Engineering Academy and has made their endeavors come to life with the ability to characterize their findings with true research grade laboratory equipment!!

HITACHI
Inspire the Next

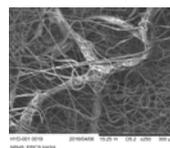
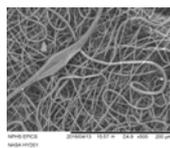
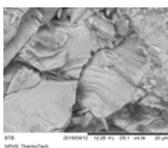
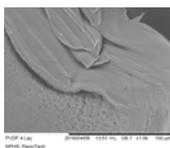
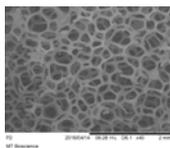
Robert Gordon,
Hitachi High Technologies
America



**Evan Slow, Roberto
Caroza, Justin Rack**
Angstrom Scientific



We would like to give a special thank you to Robert Gordon of Hitachi High Technologies and Evan Slow, Roberto Caroza and Justin Rack of Angstrom Scientific for their continued support! Much of our success is only possible because of the generous loan of the Hitachi TM3030 Scanning Electron Microscope! Please check out their demonstration in the auxiliary gymnasium!



PENNSYLVANIA
SPACE GRANT
CONSORTIUM



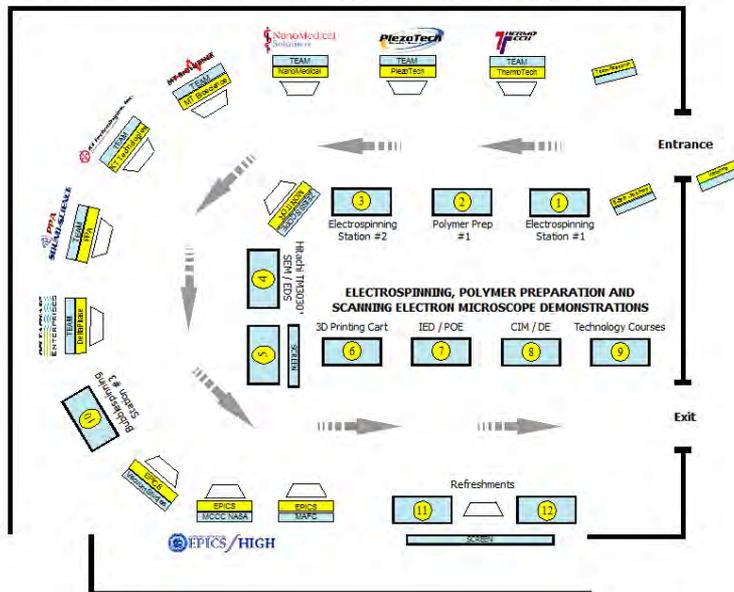
**Montgomery County
Community College**



A special thank you to Jean-Jacques Raymond at Montgomery County Community College for the invitation to participate in the Pennsylvania Space Grant Consortium.

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2015-2016 Nanotechnology and Engineering Symposium



Please join us in the auxiliary gymnasium following the audion presentations for light refreshments, poster presentations, interactive demonstrations of the students' research, demonstrations of the electrospinning and polymer preparation processes, experimental characterization equipment that was acquired from an extremely generous STEM grant from the Dow Chemical Company and research performed by members of the Engineering Projects in Community Service Club.

Be sure to also check out the Hitachi TM3030 Scanning Electron Microscope that Angstrom Scientific has set up in the gymnasium!



North Penn High School
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