

Special thanks to all of our presenters:

- ♦ Dr. Leemor Joshua-Tor, Dr. Johathan Ipsaro, Chris Hammell, Lital Chartarifsky, Caroine Hernandez and Shaina Lu., Cold Spring Harbor Laboratories
- ♦ Jessica Kuhn, Stony Brook University
- ♦ Kevin Hershfield, Cradle of Aviation Museum
- ♦ Amanda Lavery, Farmingdale State College
- ♦ Patti Woods, Grassroots Environmental Education
- ♦ Local Makers, John Suozi,
- ♦ Glenn DeVeau, Water Purification
- ♦ Huntington Robotic Students
- ♦ Dom Spada, Huntington Fire Department
- ♦ SMARTS, Huntington High School Research Students
- ♦ David Fanning and Arman Haque, New York Institute of Technology



Welcome to

Jack Abrams STEM Magnet School

Technology Night

October 25, 2017

LEARN

DISCOVER

IMAGINE

TECHNOLOGY
NIGHT

YOU'VE GOT QUESTIONS.
WE'VE GOT ANSWERS.





Cold
Spring
Harbor
Laboratory



Leemor Joshua-Tor, Ph.D. is a Howard Hughes Medical Institute Investigator and Professor at Cold Spring Harbor Laboratory. She is perhaps best known for her work revealing the inner workings of components of the gene-silencing mechanisms of RNA interference (RNAi). Using a technology called x-ray crystallography, whereby one can visualize molecules, she discovered the role of an enigmatic protein called Argonaute at the heart of the RNAi machinery.

Jonathan Ipsaro, Ph.D. As a structural biologist, Jon is particularly keen to explore the very tiny, sub-microscopic workings of cellular processes.

We are honored to have these two acclaimed scientist give our students a **hands-on 3D visualization of biological molecules** (Protein, DNA, and RNA)

Chris Hammell, Ph.D. An investigator in Cold Spring Harbor Laboratory's cancer research program, Dr Hammell is interested in understanding the gene regulatory process that gives rise to normal development in organisms as well as the changes in these processes that cause diseases like cancer. He will be showing kids his *C. elegans* (transparent round worms) that he uses in his experiments. He is able to monitor alterations in genes using green fluorescent protein (GFP) which allows us to "see" genes being turned on and off during development.

Look through a scope with us and see the GFP at work as genes are modified!

Also joining us are Neuroscience graduate students, **Lital Chartarifsky, Caroine Hernandez and Shaina Lu.**

Come experience NeuroProsthetics and watch how they can impact a person's free will! Students will learn how to use their muscle signal to control electrical devices to excite and contract the muscle of another human!

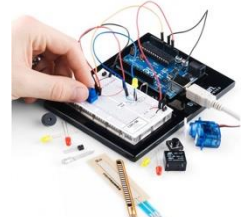
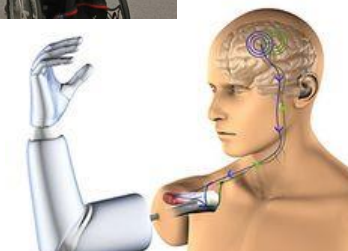


Stony Brook
University



Jessica Kuhn, Undergraduate & Graduate Program Coordinator at Stony Brook University Department of Biomedical Engineering and a team of undergraduate students will provide 3 engaging hands-on activities:

- * Rehab Video Games: Learn how video games can be used for patient therapy
- * Circuit Fire Walker: Learn how Arduino Circuit kits are being used by biomedical engineers
- * EMG arm wrestling machine: Learn how this is used to study neuromuscular control of human elbow movements





FND Group is a fully integrated high-tech enterprise in the Air and Water Industry. The group focuses on global water purification, water safety and water crisis management.

Explore the inner workings of this incredible machine designed to bring drinkable water to all human beings!



Grassroots Environmental Education is a non -profit organization with a mission to educate the public about the relationship between environmental exposures and human health risks. Grassroots serves local and state governments, health care providers, school systems, community groups and other environmental groups and individuals nationwide.

Join Grassroots Environmental to learn how to protect Long Island's drinking water!

Learn about **Long Island's aquifers**, our only source of drinking water, **and the process by which pollutants** (e.g. pesticides, household and personal care products, dry cleaning solvents, gas and other petroleum products, etc.) **can contaminate** this vital natural resource.





Director and Professor, Stevie Famulari, Gds, green designs include green walls and installations for roofs, lobbies, fashions, installations, museums, galleries, offices, and houses.

Her work focuses on greening designs and practices to create healthy spaces and objects for living and working. Her work in greening designs, practices, research and education can be seen nationally and internationally. With the science of phytoremediation, applied to the art of landscape design- Ms. Famulari's works have aesthetic beauty and healing for both people Ms. Famulari has been a Professor of Landscape Architecture for a decade, as well as a director, green artist and researcher, nationally and internationally and the environment.



Mr. Dom Spada— Mr. Spada has been a resident of the Huntington Community and member of the Halesite Fire Department for 10 years. He now serves as the 2nd Assistant Fire Chief and has served as the Captain of the Engine Company in the past. He was appointed Police Commissioner in 2012. He is truly a real life community hero.

Mr. Spada will be **presenting Thermal Imaging Equipment used in life-saving situations and First Responder Technology.**





This student run club is merely in its fifth year of life but has already made their mark in the world of First Robotics Competitions. Attending 3 World Championships, they have certainly proven that they are ready to race with the big bots! Last year, the team made Huntington proud, winning the Engineering Inspiration Award and Safety Award.

The high school students will demonstrate their 2015-16 Regional Competition Championship winning Robot.

Students will have an opportunity to speak with the developers and try their hand at the controls.

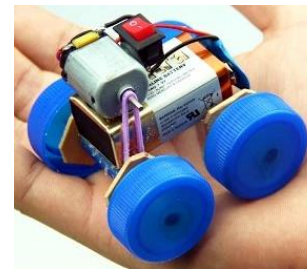


New York Institute of Technology

Joining us from New York Institute of Technology is David Fanning, School of Engineering and Computing Sciences Laboratory Engineer and Arman Haque, current NYIT student and President of the American Society of Mechanical Engineers (ASME) Club.


Come build a car and get to race your design!

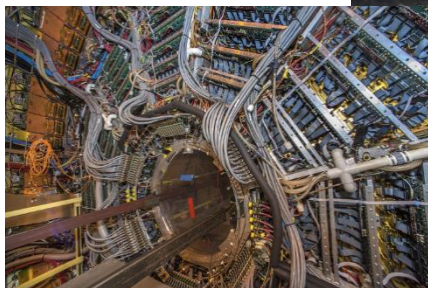
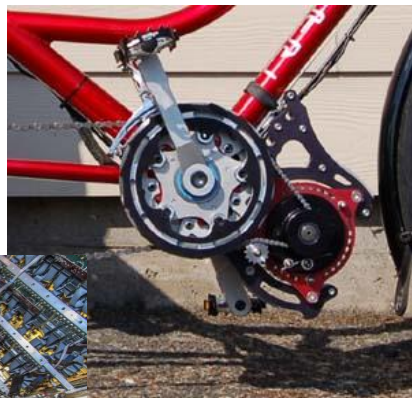
The NYIT SAE Club will also be joining us giving students the opportunity to **assemble and disassemble Mini Baja brake components and wheels.**





Will Jackson - Is a scientist at Brookhaven

National Laboratory  and is currently working on building a Makerspace of his own. Brookhaven National Laboratory is one of America's leading labs in the country, where scientists from all around the world collaborate to solve the biggest energy issues we face today. William will be showing off his DIY electric bicycle



Cradle of Aviation Museum

and Education Center

The Cradle of Aviation Museum is an aerospace museum located in Garden City, New York on Long Island to commemorate Long Island's part in the history of aviation.

Kevin Hershfield and his team will be presenting their Force and Motion program. Experience Isaac Newton in a whole new way! Students will pull, knock and twist their way into a better understanding of Newton's laws of motion through fun, engaging experiments. They will not only have a better appreciation for his laws, but students will never look at their world the same way again. **Experiments include pulling a table cloth from under dishes and racing against other students in their Third Law Challenge!**



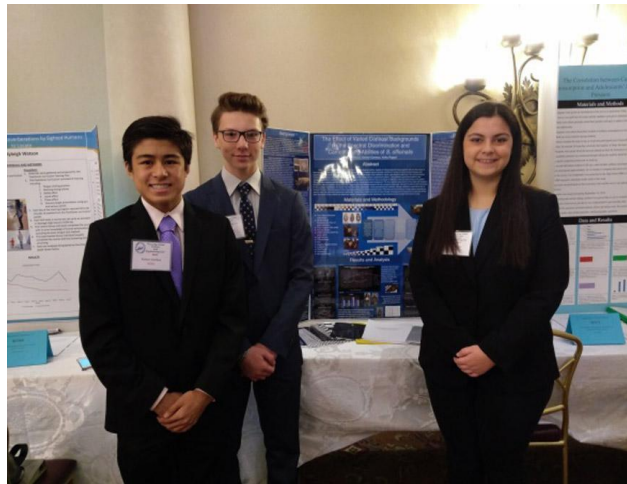
“SMARTS”

Science Minds Advancing Research Topics in Science

HUNTINGTON HIGH SCHOOL SCIENCE RESEARCH

This student focused course & club focuses on the development of college and career readiness goals for the scientist. The students will demonstrate skills at various competitions across Long Island ranging from LISEF (Long Island Science and Engineering Fair) to the National Science Bowl competition.

Students will have an opportunity to **speak to upperclassmen and become familiar with some projects we perform and some commonly used research skills.**





John Suozzi- Is Jack Abram's very own Maker in Residence and would like to invite you to build with him using his Fort Magic Kit, a PVC pipe modular building system where you can build really big structures fast! Ever wanted to build a giant dinosaur, rocket ship, or castle? Well this is your chance to show off your engineering skills!



Matthew Glazer- Is an engineer and fellow maker representing Brooklyn's newest Makerspace, TechShop. Matthew will be demonstrating his DIY electric skateboard he built from scratch. Ask him about his "build story".

Scott Kraft - Is a computer graphics artist who will be showing off his star wars droid he is in the process of building. He is also Local Member of the Long Island Makerspace Meetup Group. On display will be various parts he's crafted from all different types of tools.

Guido Vonelli - Is an electrical engineer, inventor, and mentor to the Long Island Makerspace Meetup Group. He is a true wizard of making cool stuff! Ask him about his job and what gadgets he's invented.