



WELCOME!  
LTHS  
STEM Academy



# Meet the Staff

Mr. Kuzan

- STEM, Physics, Physics Club, Robotics Club, STEM Committee

Mr. Setaro

- STEM, Engineering & Design, Robotics Club, STEM Committee, Boys Basketball, Volleyball

Mr. Baratta

- STEM Biology, Biology, AP Environmental Science, Microbiology

Ms. Larice

- STEM Algebra 2 Honors, STEM Geometry Honors

Mrs. York

- STEM Chemistry, Chemistry, AP Chemistry, SGA

Ms. McCarthy - STEM Pre Calculus Honors



# STEM Academy Pathway



8<sup>th</sup> Year of the Academy  
4 Year Program of Studies  
24 Students in each cohort  
Project Based Learning in  
Science, Technology, Engineering &  
Mathematics





# Why STEM?

## THE STEM DILEMMA

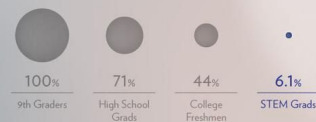
### SCIENCE + TECHNOLOGY + ENGINEERING + MATHEMATICS

Promoting STEM subjects is a national priority to ensure American competitiveness in the 21st Century. To maintain a steady pipeline of STEM-capable graduates, we need to start by investing in more quality STEM-capable teachers to educate and spark student interest in these subjects.

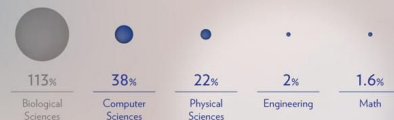
A COLLABORATION BETWEEN GOOD AND HYPERAKT, IN PARTNERSHIP WITH UNIVERSITY OF PHOENIX.

Sources: U.S. Bureau of Labor Statistics, National Science Foundation, National Center for Education Statistics, Business-Higher Education Forum

OF 3.8 MILLION 9TH GRADERS, ONLY 233,000 END UP CHOOSING A STEM DEGREE IN COLLEGE. THAT'S JUST 6 STEM GRADS OUT OF EVERY 100 9TH GRADERS.



ACROSS DEGREE LEVELS, STEM FIELDS HAVE HAD WEAKER THAN AVERAGE GROWTH COMPARED TO OTHER DEGREE FIELDS.



The demand for STEM professionals in the U.S. outpaces supply



Too few university students are graduating in STEM fields

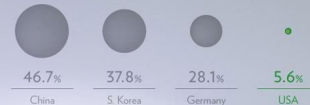


High school students don't have the math proficiency or interest



More STEM grads are needed as teachers to inspire and educate students

THE U.S. FALLS BEHIND IN THE NUMBER OF COLLEGE GRADUATES WITH STEM DEGREES.



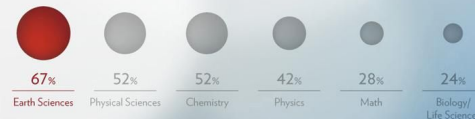
IN THE NEXT FIVE YEARS, STEM JOBS ARE PROJECTED TO GROW TWICE AS FAST AS JOBS IN OTHER FIELDS.



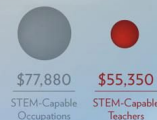
STEM INTEREST AND MATH PROFICIENCY ARE LOW IN 12TH GRADERS.



MANY EDUCATORS END UP TEACHING A STEM SUBJECT EVEN IF THEY DID NOT MAJOR IN IT.



STEM-CAPABLE TEACHERS EARN LOWER WAGES THAN OTHER STEM PROFESSIONALS, MAKING IT HARDER TO RECRUIT.





**OF 3.8 MILLION 9TH GRADERS, ONLY 233,000 END UP CHOOSING A STEM DEGREE IN COLLEGE. THAT'S JUST 6 STEM GRADS OUT OF EVERY 100 9TH GRADERS.**



100%

9th Graders



113%

Biological  
Sciences

**ACROSS DEGREE LEVELS, STEM FIELDS HAVE HAD WEAKER THAN AVERAGE GROWTH COMPARED TO OTHER DEGREE FIELDS.**

**IN THE NEXT FIVE YEARS, STEM JOBS ARE PROJECTED TO GROW TWICE AS FAST AS JOBS IN OTHER FIELDS.**



21.4%

STEM Jobs



10.4%

All Jobs





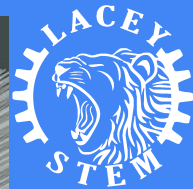
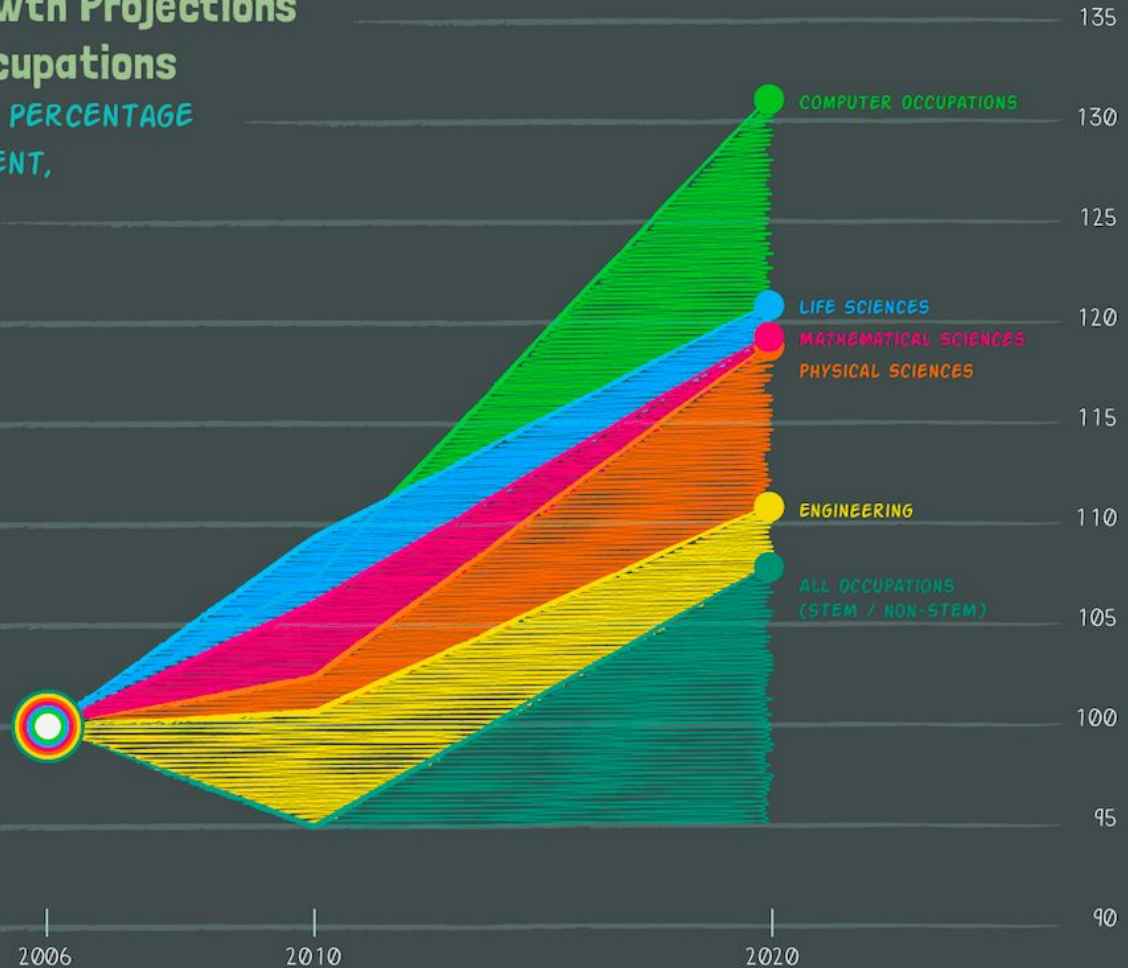
**A workforce prepared to tackle science, technology, engineering and math (STEM) is critical to driving future growth and innovation**





# Sustained Growth Projections for S.T.E.M. Occupations

EMPLOYMENT AS A PERCENTAGE  
OF 2006 EMPLOYMENT,  
BY OCCUPATION





**STEM SKILLS ARE  
REQUIRED FOR  
JOBS ACROSS  
MANY DIFFERENT  
INDUSTRIES:**



Photography



Nutrition



Medicine



Architecture



Animation



Computer or video  
game design



Aeronautics  
(Earth & space flight)



Forensic science

The U.S. Bureau of Labor  
Statistics estimates that at least

**8,654,000**

**U.S. STEM jobs**

will exist in 2018, not including  
self-employed STEM individuals

In the U.S., the average  
professional with a STEM  
degree earns about

**\$78,000**

**ANNUALLY**

The national  
average wage is

**\$42,979**





# COURSE PATHWAYS



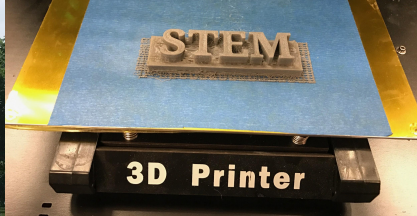
	9th	10th	11th	12th
STEM	STEM I	STEM II	STEM III H & AP STEM Physics 1	STEM IV- Capstone H
MATH	STEM Geo H STEM Alg 2 H	STEM Alg 2 H Pre Calc H	Pre Calc H AP Calc AB	Calc AP Calc AB AP Calc BC
SCIENCE	STEM Bio H	STEM Chem H AP Biology	AP Chemistry AP Biology AP Environmental	AP Biology AP Chemistry AP Environmental
ELECTIVES	Foreign Lang	Computer Science Business	Computer Science AP Comp Science Engineering & Design 2 Business	Engineering & Design 3 Business



# EXAMPLE PATHWAYS



	9th	10th	11th	12th
Student 1	STEM I STEM Bio H English 9 H World History H STEM Geo H Spanish 1 Elective Gym/Health	STEM II STEM Chem H English 10 US History I H STEM Algebra 2H Spanish 2 Business Gym/Health	STEM III H AP STEM Physics 1 English 11 H OCC History STEM Pre-Calc H AP Chem Spanish 3 H Gym/Health	STEM IV- Capstone H AP Biology OCC English AP Psychology AP Calc Human Anatomy H Spanish 4 H Gym/Health
Student 2	STEM I STEM Bio H English 9 World History H STEM Geo H German 2 Elective Gym/Health	STEM II STEM Chem H English 10 H US History I H STEM Algebra 2H German 3 Exploratory Business Gym/Health	STEM III AP STEM Physics 1 AP Lit & Comp US History 2 STEM Pre-Calc H German 4 H AP Biology Gym/Health	STEM IV- Capstone AP Psych AP Lang MD Intern AP Calc AP German Human Anatomy H Gym/Health



# What Else?

STEM Club & STEM Committee

- All STEM Students
- Fundraisers
- STEM Socials
- Field trips
- Community Projects

Robotics Club

- Design, Build, Compete





# Get Involved!

Clubs, Activities & Sports





# Clubs & Activities

- |                   |                           |                      |
|-------------------|---------------------------|----------------------|
| 1. Art Club       | 12. Emergency Services    | 23. Marching Band    |
| 2. AADA           | 13. Environmental Club    | 24. Math Team        |
| 3. Biology Club   | 14. FBLA                  | 25. NHS              |
| 4. Chemistry Club | 15. FTA                   | 26. Peer Mediation   |
| 5. Choir          | 16. Heroes & Cool Kids    | 27. Physics          |
| 6. Close Up       | 17. Hospitality & Tourism | 28. Robotics         |
| 7. Computer Club  | 18. Interact              | 29. Sci Fi/ Fantasy  |
| 8. Concert Band   | 19. Intergenerational     | 30. SGA              |
| 9. Dance Team     | 20. International         | 31. Silver Lining    |
| 10. DECA          | 21. Jazz Band             | 32. Ski              |
| 11. Drama Club    | 22. Lion's Mane Newspaper | 33. Special Olympics |
|                   |                           | 34. Yearbook         |





# LTHS Sports



## Fall

1. Boys Soccer
2. Cheerleading
3. Cross Country
4. Field Hockey
5. Football
6. Girls Soccer
7. Girls Tennis
8. Girls Volleyball
9. Gymnastics

## Winter

1. Bowling
2. Boys Basketball
3. Boys Swimming
4. Boys Winter Track
5. Winter Cheerleading
6. Competition Cheer
7. Girls Basketball
8. Girls Winter Track
9. Ice Hockey
10. Wrestling
11. Girls Swimming

## Spring

1. Baseball
2. Boys Volleyball
3. Boys Golf
4. Boys Lacrosse
5. Boys Outdoor Track
6. Boys Tennis
7. Girls Golf
8. Girls Lacrosse
9. Girls Outdoor Track
10. Softball

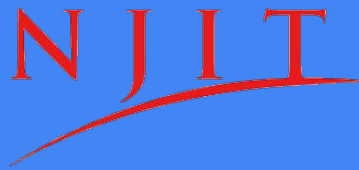
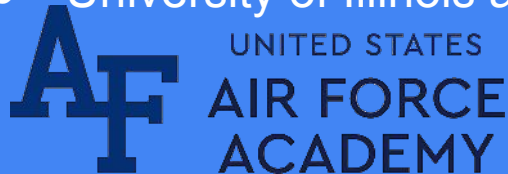


# 2016 STEM Academy Graduates

- Clemson University
- New Jersey Institute of Technology (NJIT)
- Rutgers University School of Engineering
- Rowan University
- Texas A&M
- Rensselaer Polytechnic Institute
- University of Rochester
- United States Air Force Academy
- University of Illinois at Champaign
- University of Illinois at Champaign



Rensselaer



- Chemical Engineer
- Mechanical Engineering
- Engineering
- Medical
- Civil Engineering
- Mechanical Engineering
- Mechanical Engineering
- Mechanical Engineering
- Statistics and Computer Science
- Mathematics and Comp/Science



UNIVERSITY of  
ROCHESTER



TEXAS A&M  
UNIVERSITY





# 2017 STEM Academy Graduates



- University of Maryland
- Binghamton University
- Rutgers College of Engineering
- Kean University
- Rowan University
- George Washington University
- University of Rhode Island
- North Carolina State
- OCC/Rowan University
- OCC
- Fairleigh Dickinson University



- Physics
- Chemistry
- Material Engineering
- Political Science
- Computer Engineering
- Business Administration
- Biomedical Engineering
- Civil Engineering
- Civil Engineering
- Business
- Cosmetic Chemistry



THE GEORGE  
WASHINGTON  
UNIVERSITY  
WASHINGTON, DC



# 2017 STEM Academy Graduates

- Duke University
- Philadelphia University
- Drew University
- Rutgers College of Engineering
- University of South Carolina
- OCC
- University of Delaware
- Penn State University
- University of Delaware
- Rensselaer Polytechnic Institute



Environmental Sciences & Policy  
Architecture & Historic Preservation  
Business  
Biomedical Engineering  
Biomedical Engineering  
Nursing  
Sports Management  
Finance  
Chemistry  
Mechanical Engineering



DREW

**PhilaU**  
PHILADELPHIA UNIVERSITY



**Rensselaer**





# 2018 STEM Academy Graduates



- Seton Hall University
- Seton Hill University
- Rutgers University
- University of Miami
- Stevens Institute of Technology
- OCC
- University of Delaware
- Stony Brook University
- High Point University
- Stockton University
- US Merchant Marine Academy
- Rider University
- Loyola University



HIGH POINT  
UNIVERSITY

Nursing / Business

Pre-Med

Aerospace / Computer Sci / Finance

Mathematics

Engineering

Nursing / General Science / Comp Sci

Education

Statistics

Actuarial Science

Environmental Science

Marine Engineering

Psychology

Mechanical Engineering



UNIVERSITY  
OF MIAMI



STEVENS  
INSTITUTE of TECHNOLOGY  
THE INNOVATION UNIVERSITY®

LOYOLA  
UNIVERSITY MARYLAND



Stony Brook University





# GRIT & OWNERSHIP



It's up to you!

