

Welcome to the 2024 Nuclear Medicine and Science Camp!



Paul Cottle
Professor of Physics
Florida State University



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Our 2024 Camp Team



From left: Denise Newsome (Bozeman HS math and science teacher),
Toni Ward (Bozeman Class of 2025) and Julie Steves (Bozeman HS
math teacher)



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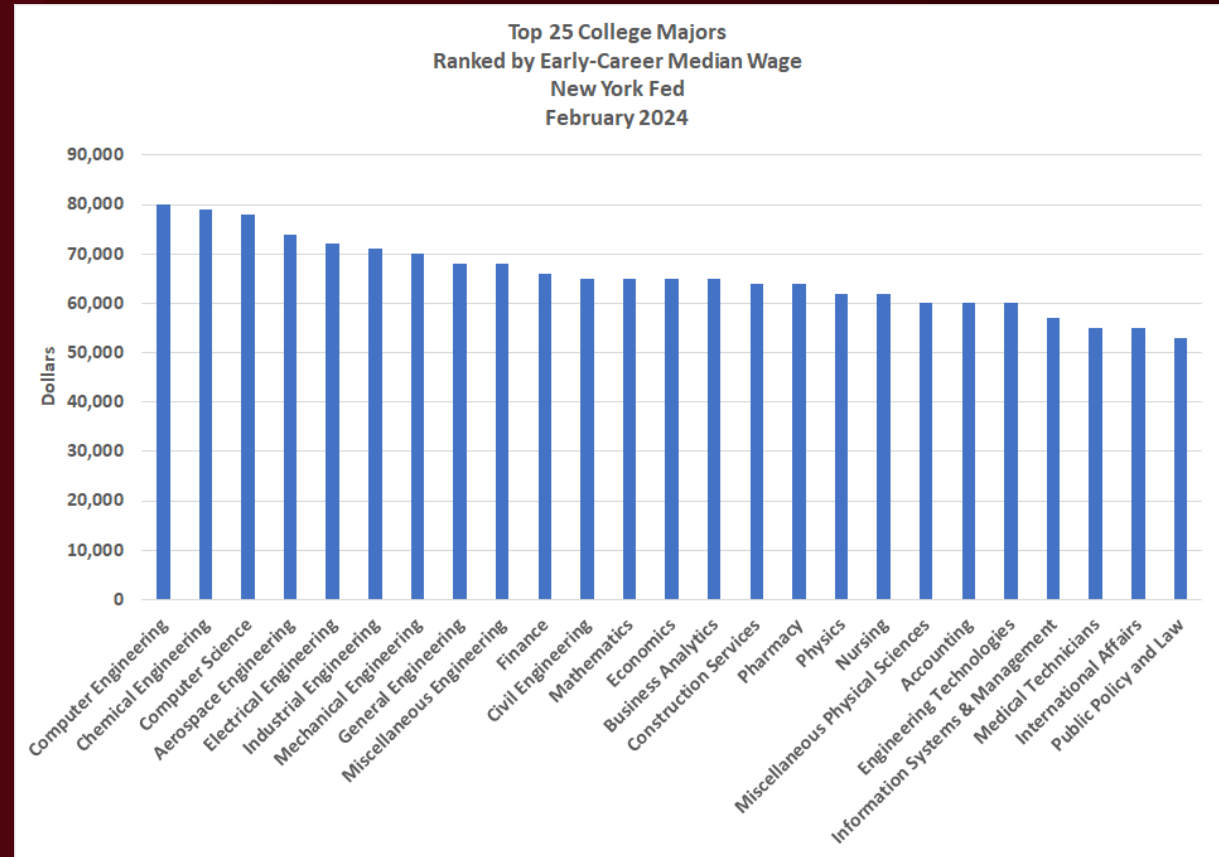
Professor Scott Marley
Department of Physics and Astronomy
Louisiana State University



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Top 25 college majors ranked by salary:

- 10 are Engineering fields
- Physics, Computer Science and Math are also in the Top 25
- All these fields require high level math and science skills



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“It is the demand for these transferable competencies outside of STEM occupations that creates the persistent and growing demand for STEM talent and ultimately results in a wide scarcity of workers with those highly transferable STEM competencies.”

*- Georgetown University Center for Education and the Workforce report
“STEM”*



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What courses do university STEM faculty say high school students should take to prepare to major in their fields?

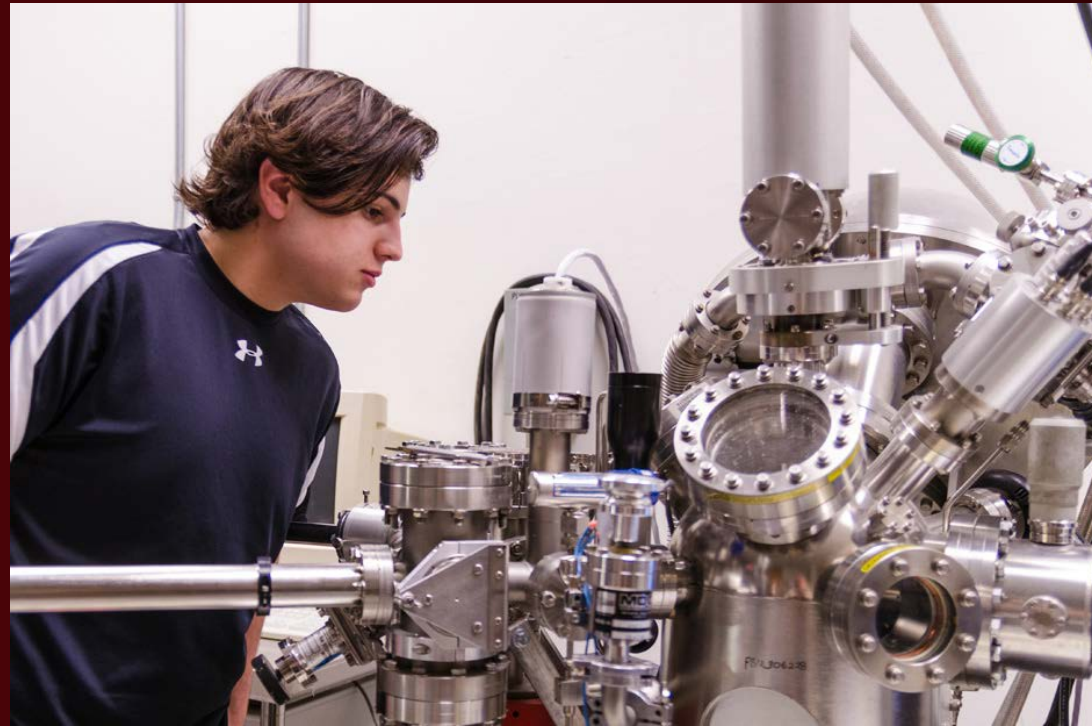


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Engineering



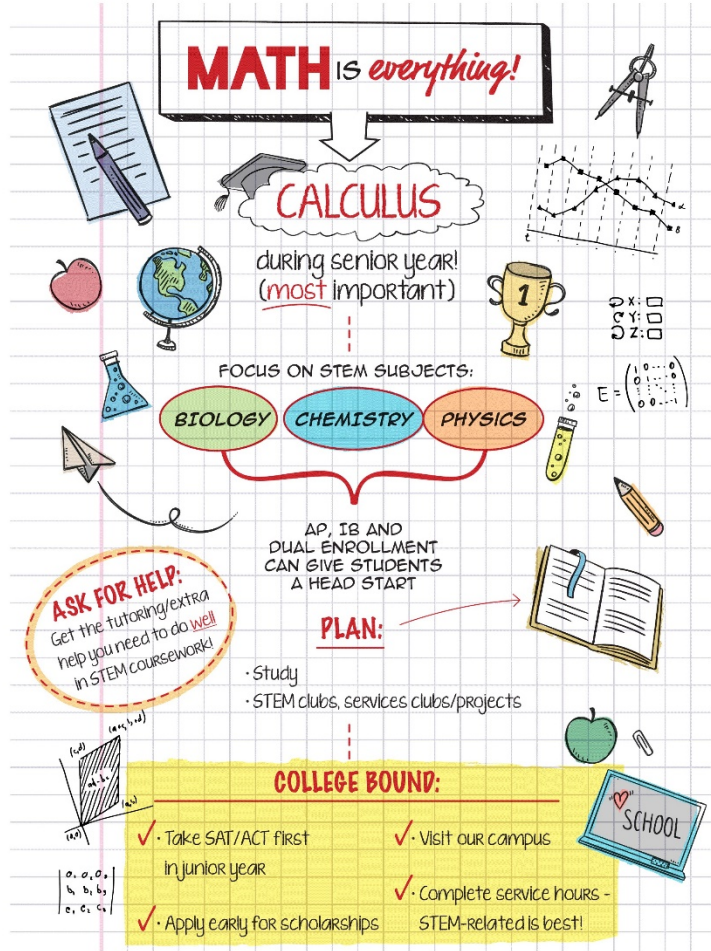
“Most engineering schools require four years of math, including **Pre-Calculus**, although **Calculus or AP Calculus is strongly encouraged**. Engineering schools are also looking for at least three years of science, including **Physics and Chemistry.**”



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ROADMAP TO ENGINEERING

Here's how to plan for success in college



www.eng.famu.fsu.edu



One college, two universities, unlimited opportunity.



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Meteorology

“In high school, students should take earth sciences, physics, chemistry and mathematics through at least pre-calculus. Generally, students who have completed a course in calculus and/or a course in computer programming will have an advantage when starting their Meteorology and Atmospheric Science studies.”



PennState
College of Earth
and Mineral Sciences

Department of
Meteorology and
Atmospheric Science



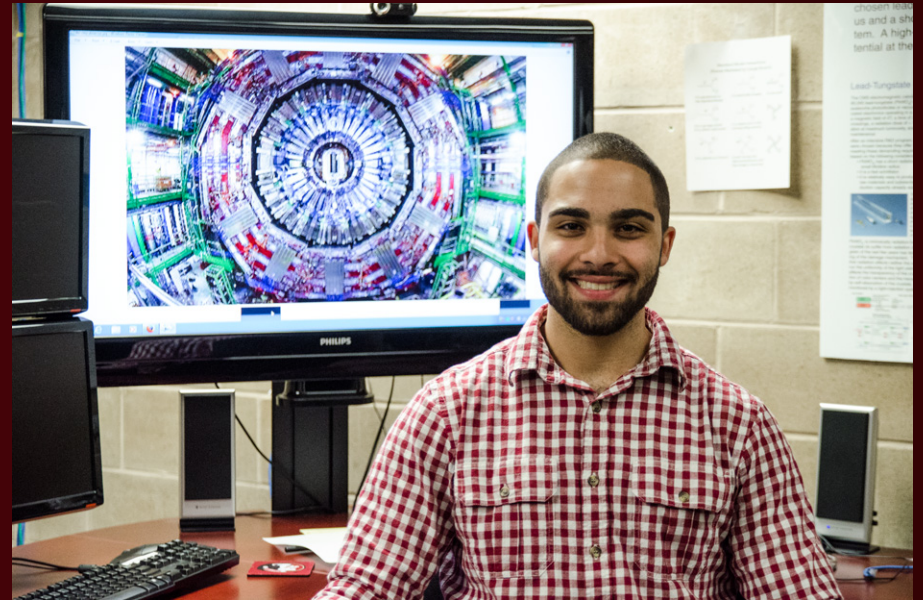
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Computer Science

Department of Computer Science

College of Engineering and Computer Science@UCF

“...a strong background in math and science, including calculus and physics if possible, is key for success as a computer science major, said Gary Leavens, chairman of UCF’s computer science department.”



- “Florida continues computer science push, hoping to train more teachers, enroll more high school students”, *Orlando Sentinel*, July 18, 2019



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Chemistry

“The ideal high school preparation to study chemistry and/or biochemistry includes **four years of college preparatory mathematics**, one year of **physics**, one year of **chemistry**, and one year of **biology**.”



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Biology

IOWA STATE UNIVERSITY Biology Program

“...it is important to have a strong foundation in high school chemistry. Our office encourages students to complete **a minimum of one year of high school chemistry.**”

“A firm understanding of introductory level physics can lead to greater success for students enrolled in the Biology program. **One year of high school physics is recommended.**”

“Courses in Biology, such as Anatomy and Physiology, Genetics, and Advanced Sciences, are helpful for students entering the Biology program. However, **these courses should not take the place of the Chemistry and Physics courses.**”

“Our office encourages students to **complete Algebra I, Algebra II, Geometry, and Trigonometry in high school, if possible.**”



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Architecture

SYRACUSE ARCHITECTURE

- Studio art classes: “extremely important”
- A solid background in physical sciences, including **physics**
- English and humanities classes
- Developed writing abilities
- Foreign language
- Speech or debate classes
- **Math, including trigonometry; calculus recommended but not required**



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A Simple Summary

Taking

Chemistry

Physics

Calculus



**in high school equips a student
for success in a wide range of
challenging fields!**



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**42% of the national
high school
graduating class of
2019 had taken a
physics course.**

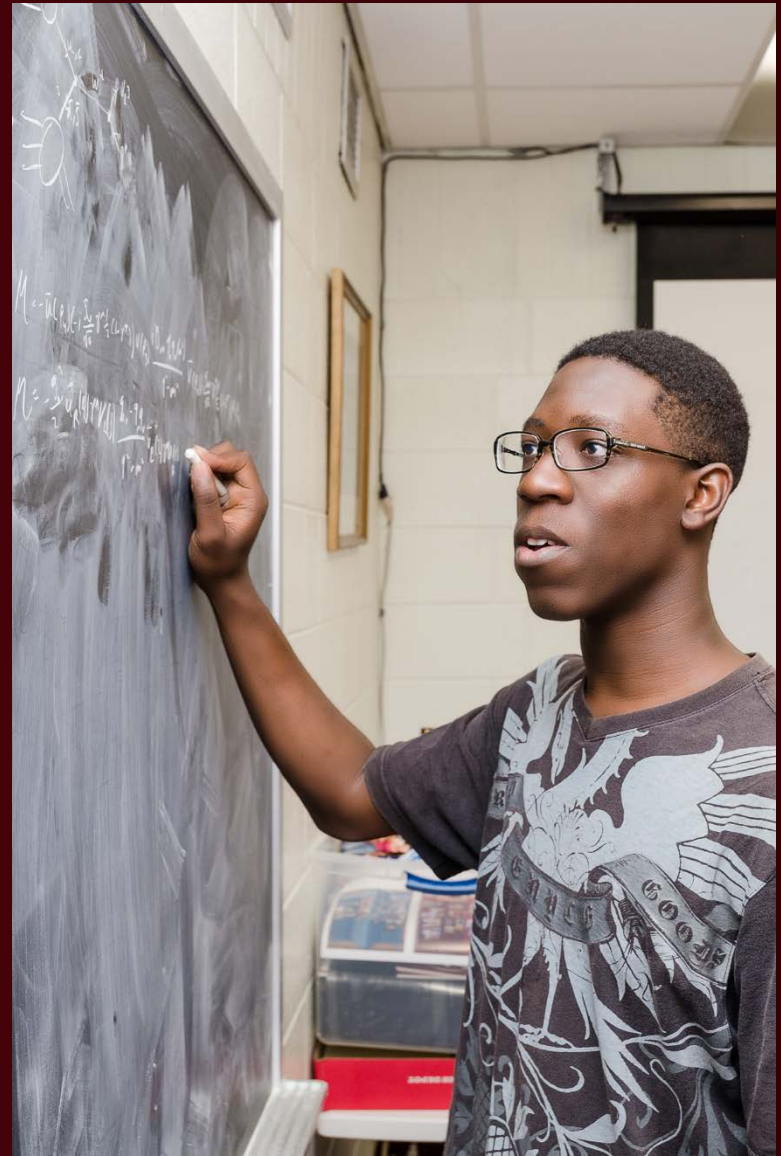
American Institute of Physics



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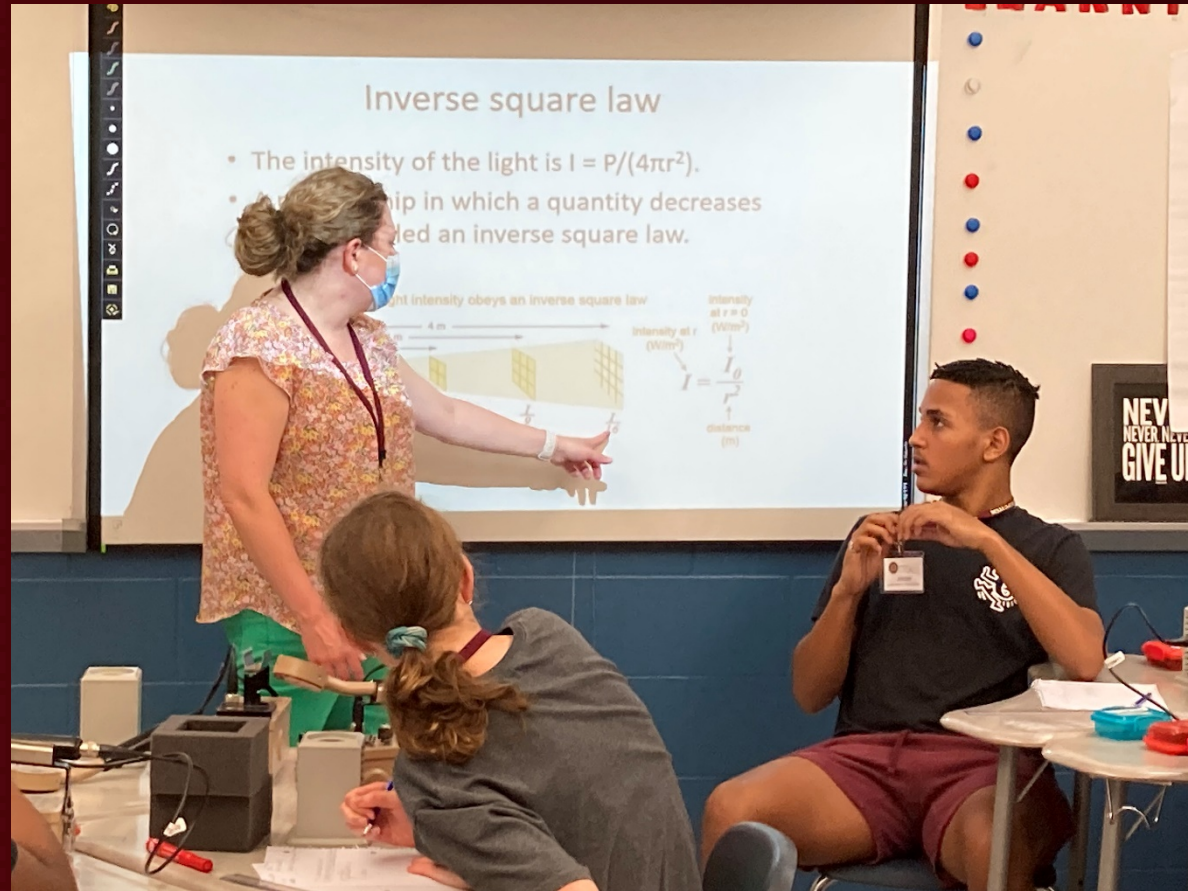
**15% of the nation's
recent high school
graduates have
taken a calculus
course.**

Education Week (2018)



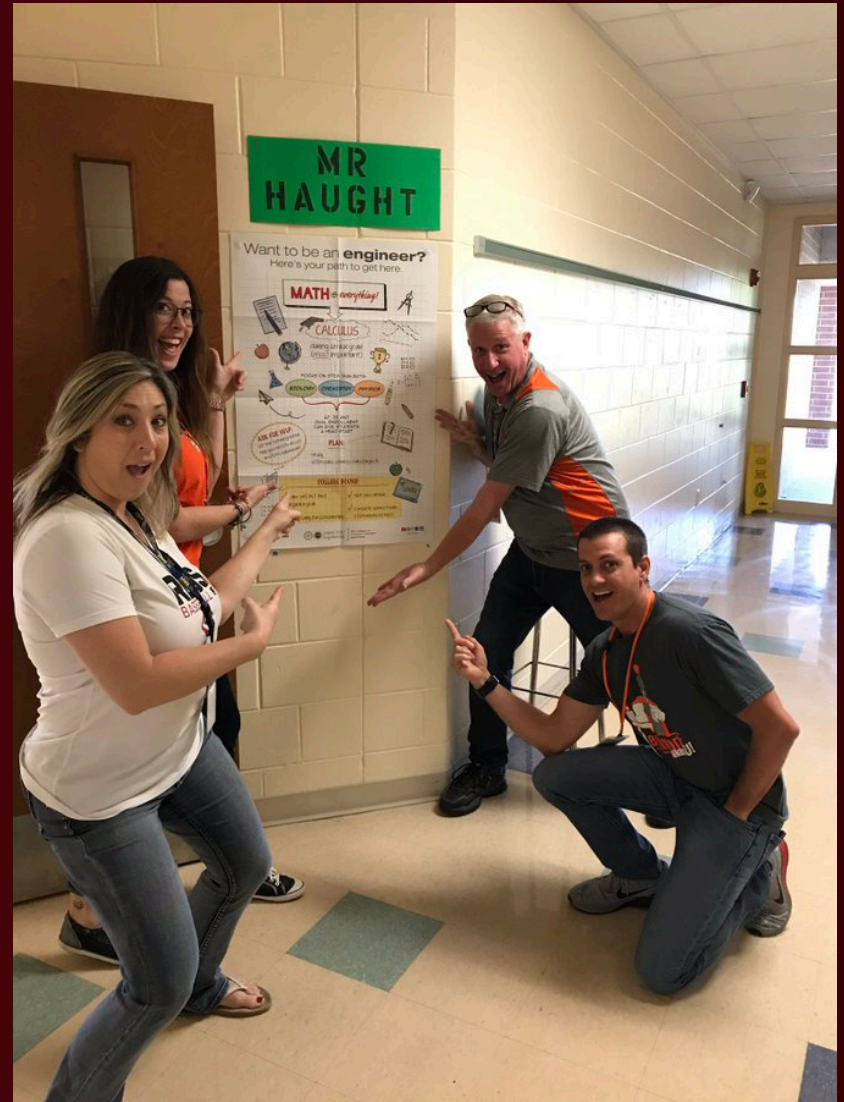
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Great math and science teachers are the key to STEM career opportunities! Support your school's teachers!



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Questions?



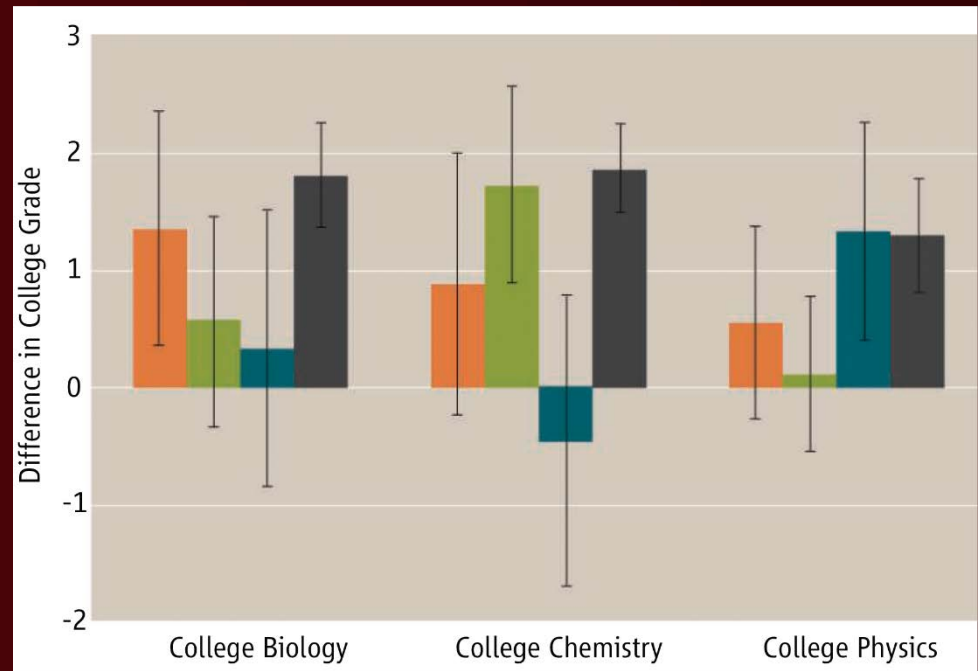
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Taking biology in high school helps a student succeed in college biology.

Taking chemistry in high school helps a student succeed in college chemistry.

Taking physics in high school helps a student succeed in college physics.

Taking calculus in high school is correlated with success in all three sciences in college



The Two High-School Pillars Supporting College Science

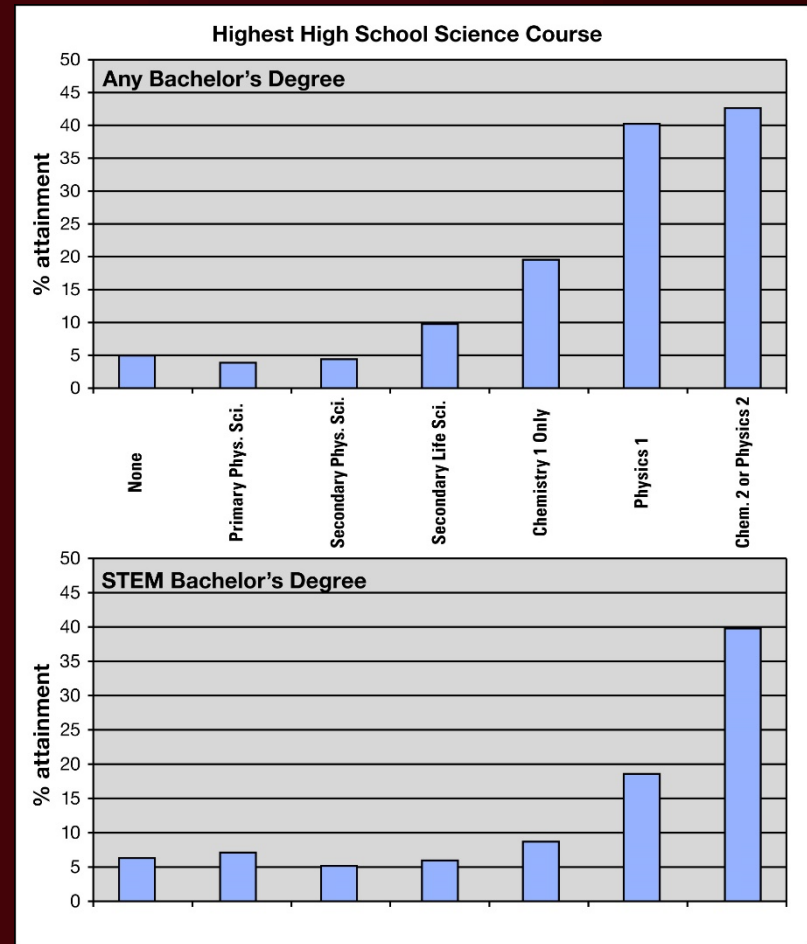
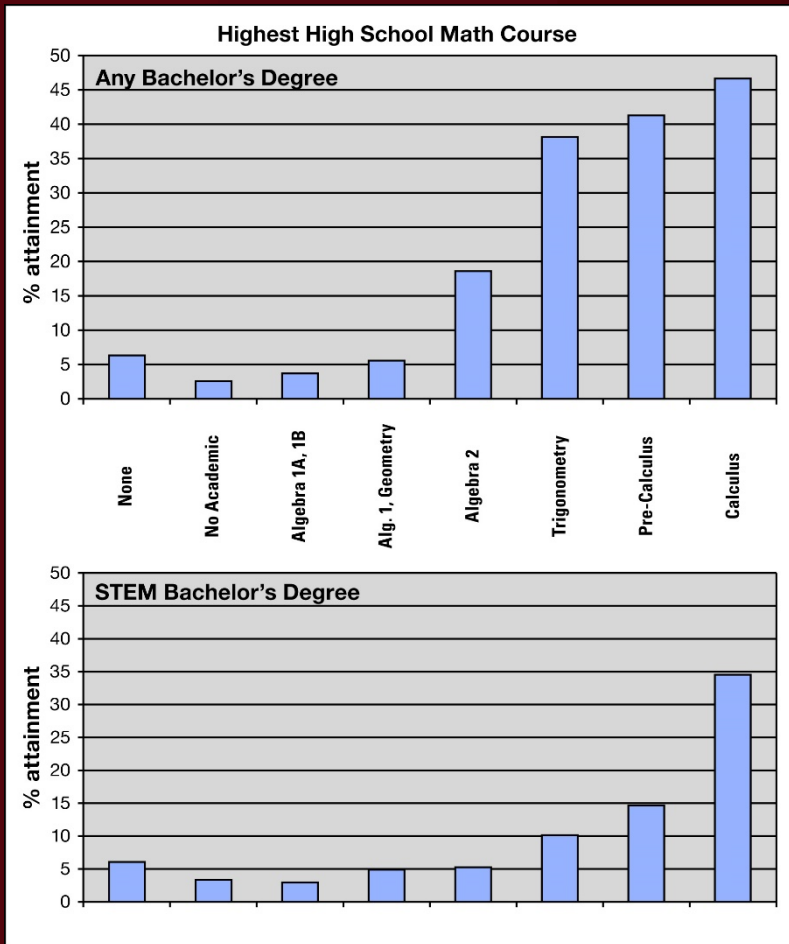
Philip M. Sadler^{1*} and Robert H. Tai²

www.sciencemag.org SCIENCE VOL 317 27 JULY 2007
Published by AAAS



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High school calculus and physics courses are correlated with dramatically higher STEM bachelor's degree attainment rates.



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Tyson et al., JESPAR, 12:3,
243-270 (2007)

Florida State University's Studio Physics Program



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