

*Keeping your student's college options open  
for today's economic environment*

*Paul Cottle, Professor of Physics, Florida State University*

*Mosley High School, April 24, 2018*



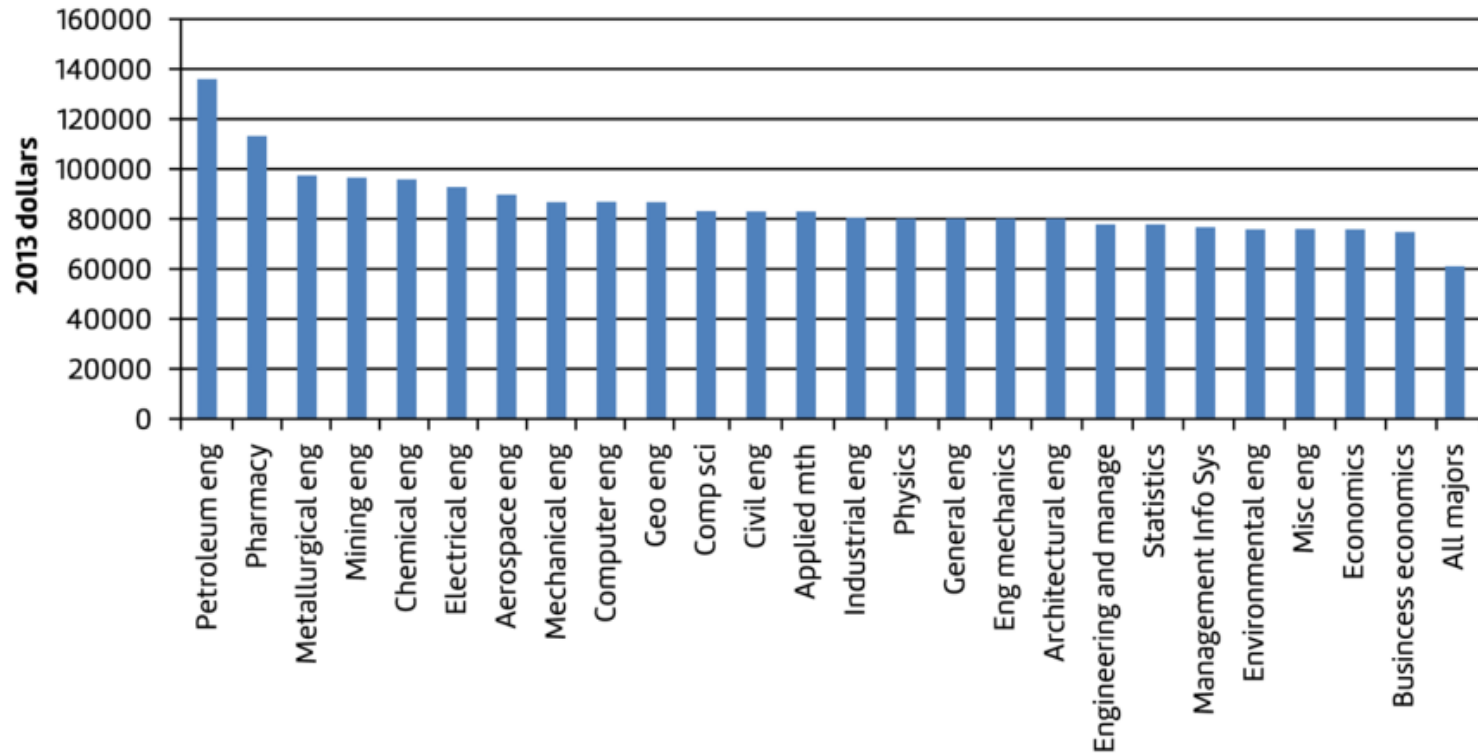
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*Every college-bound student should be prepared to choose any major.*



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## Median annual wages of college-educated workers (ages 25–59)



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# *What does a high school student need to do to keep the engineering option open?*

- *Chemistry*
- *Physics*
- *Calculus (or at least Precalculus)*

*- From the American Society for Engineering Education*



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# ***What does a college student take to prepare for professional school in medicine, physical therapy, dentistry or similar fields?***

- ***Two semesters of physics***
- ***At least two semesters of chemistry***
- ***Statistics and perhaps additional math (especially for med school)***



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# ***What are the requirements for a Bachelor of Science degree in computer science?***

- ***Two semesters of calculus***
- ***Two semesters of physics (or a combination of biology and chemistry)***



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# *Keeping career options open...*

## *Math:*

*Complete Precalculus and a Calculus course (AP Calculus AB or BC)*

## *Science:*

*Chemistry and Physics*



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# *What to look for in a college or university*



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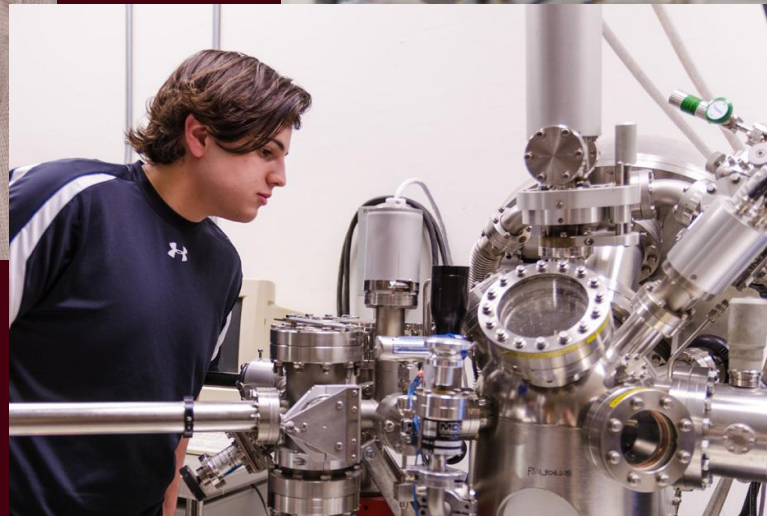
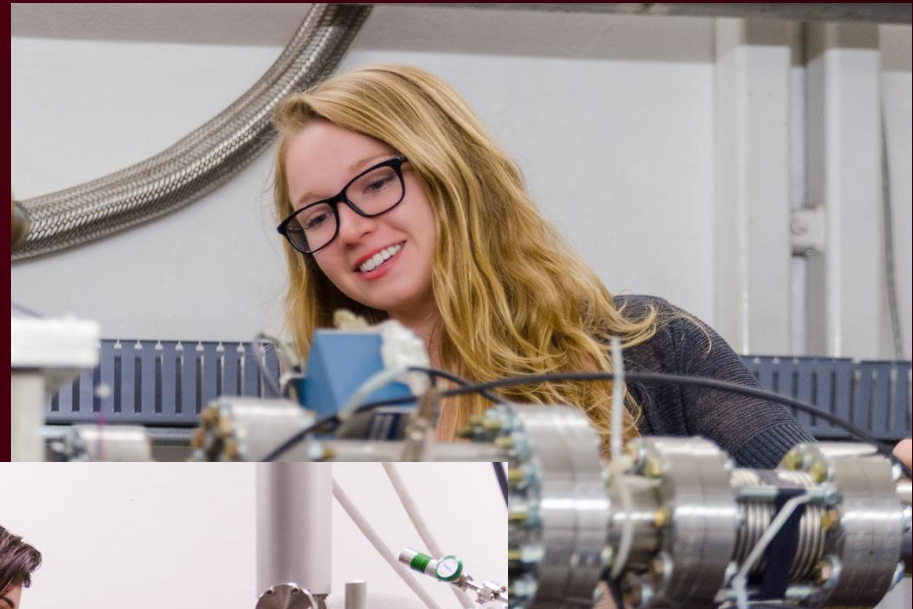


# *What to look for in a college or university: Evidence-based pedagogy*



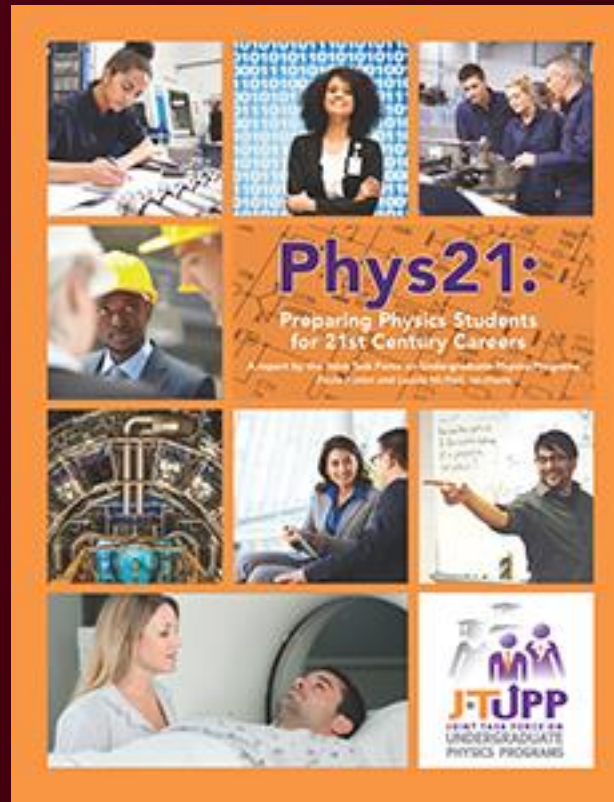
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# *What to look for in a college or university: Undergraduate research opportunities*



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# *FSU Physics Department cited as one of five model undergraduate programs by national task force*



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***Thank you!***

***Questions?***

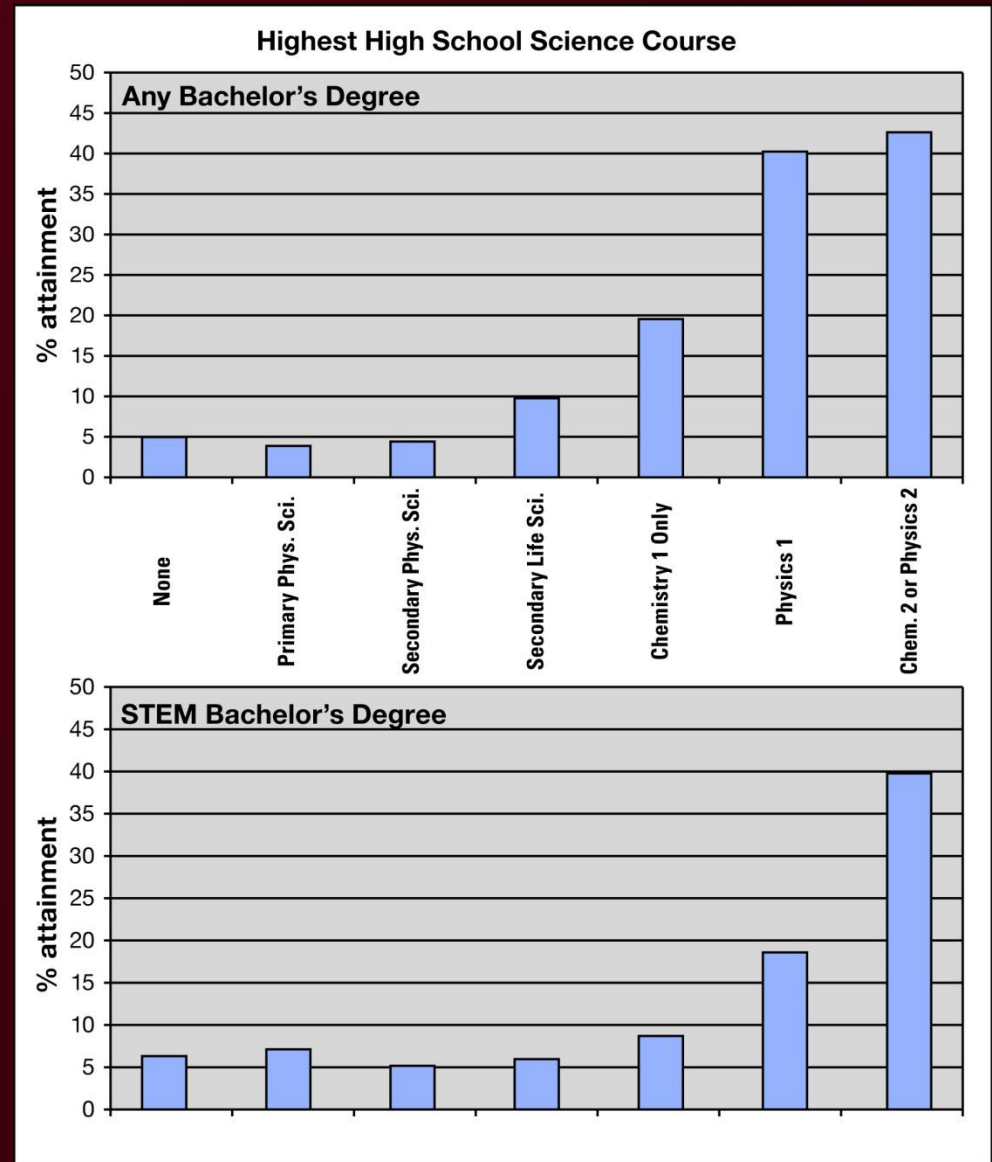


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# High school physics correlated with STEM bachelor's degree attainment

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

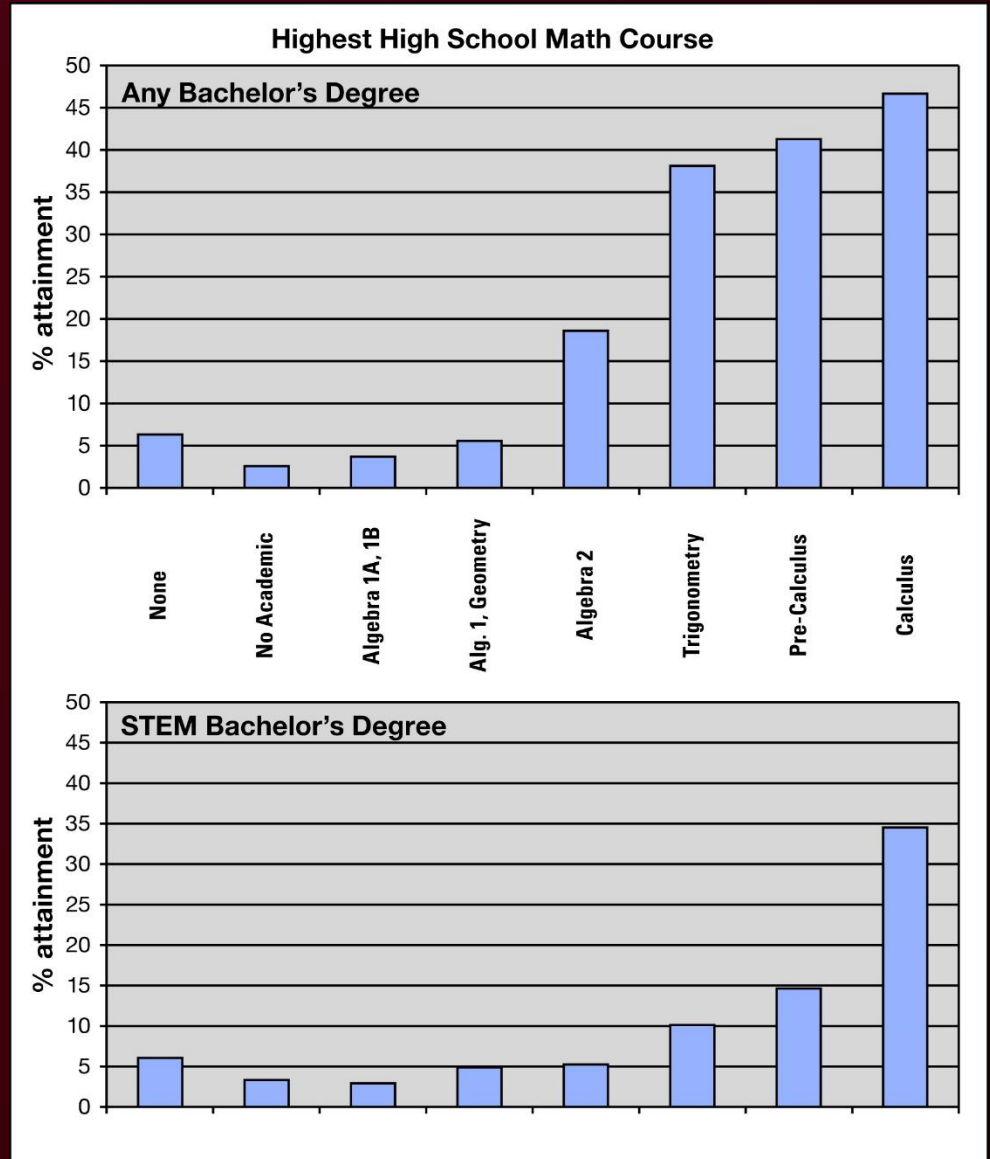
*Quoted in White and Cottle, Phys. Teach. 49, 418-420 (2011)*



# High school calculus correlated with STEM bachelor's degree attainment

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

*Quoted in White and Cottle, Phys. Teach. 49, 418-420 (2011)*



# Taking high school physics correlated with success in college physics

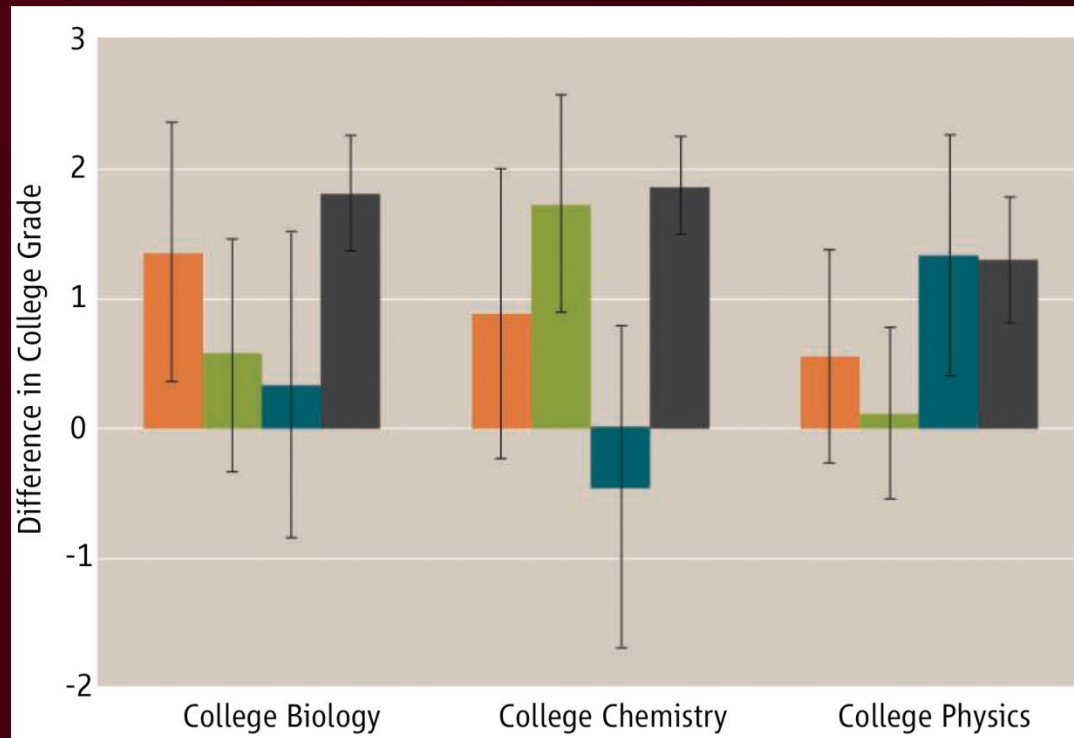
HS bio

HS chem

HS phys

HS calculus

*Sadler and Tai,  
Science 317, 457-  
458 (2007)*



# Salaries for a selection of college majors

