

UNIVERSITY *of*
INDIANAPOLIS®

Get the Facts Out: The Importance of **YOU** in Growing the Future STEM Teacher Pipeline

Education for Service

Ms. Deb Sachs - dsachs@uindy.edu


Dr. Kim Baker - bakerkm@uindy.edu

Dr. Kathy Stickney - kstickney@uindy.edu



Supported by the National Science
Foundation under Grant No. 1660653

Goals:

- Equip you with the tools you need to effectively educate students and parents about what STEM teaching really entails
 - Detail the tangible benefits of a STEM teaching career
 - Encourage you to encourage your own students to consider a STEM teaching career
- 
- A solid red decorative wave shape at the bottom of the slide, curving upwards from the left and right edges towards the center.

...our report confirms trends in states' most dire teacher shortage subject areas that other data analysis has shown: States consistently report trouble staffing special education, **mathematics**, **science**, foreign language, and English as a second language classrooms.

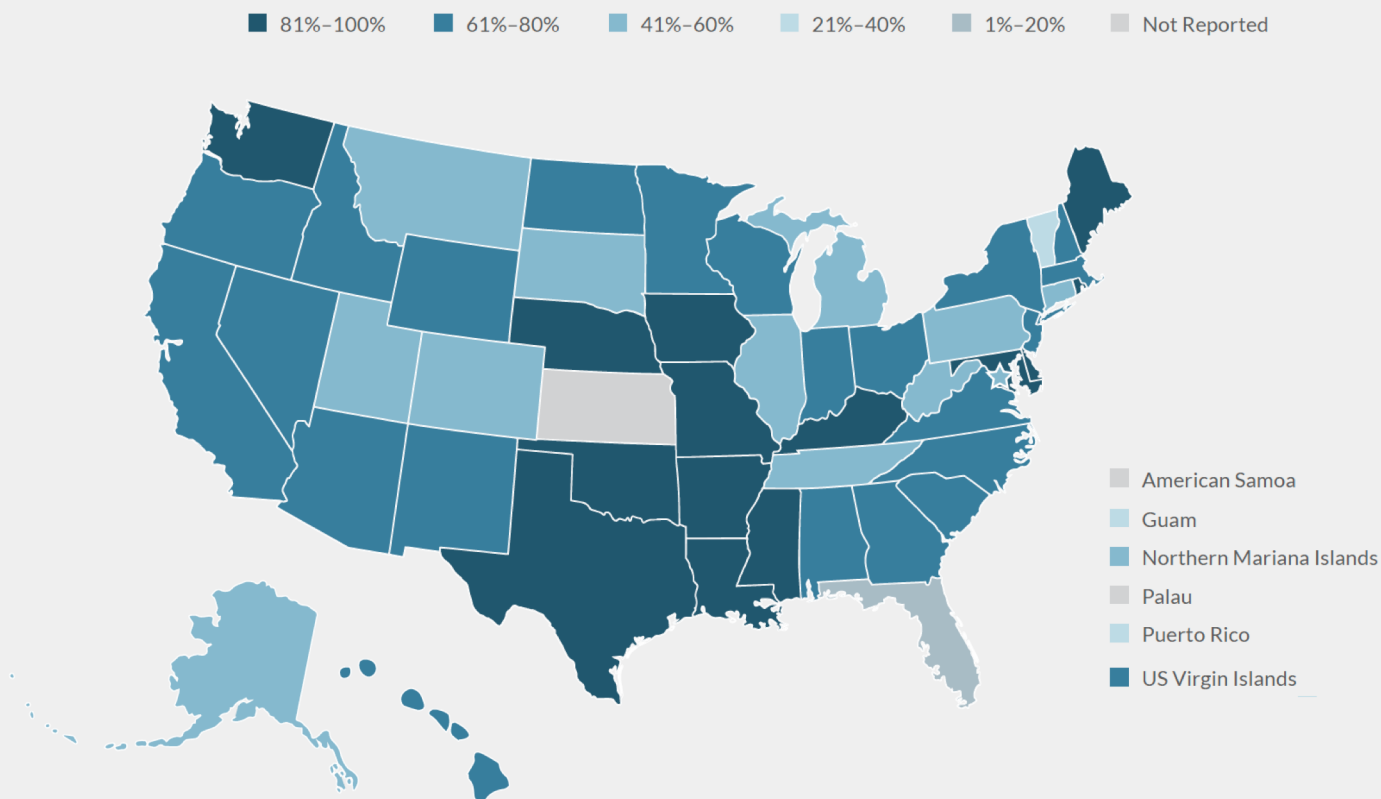
Nuance in the Noise

January 2019, Bellweather Education
Partners



Map 3

Percent of Years States Experienced a Science Teacher Shortage, 1998–2018



Source: Derived from U.S. Department of Education Teacher Shortage Areas Nationwide Listing, available at <https://www2.ed.gov/about/offices/list/ope/pol/ateachershortageareasreport2017-18.pdf>.



Indiana.Teachers-Teachers.com

Job listings on February 10, 2019:

55 science teaching positions
were **available immediately** in
the State of Indiana

(Includes full-time positions and
substitute positions)

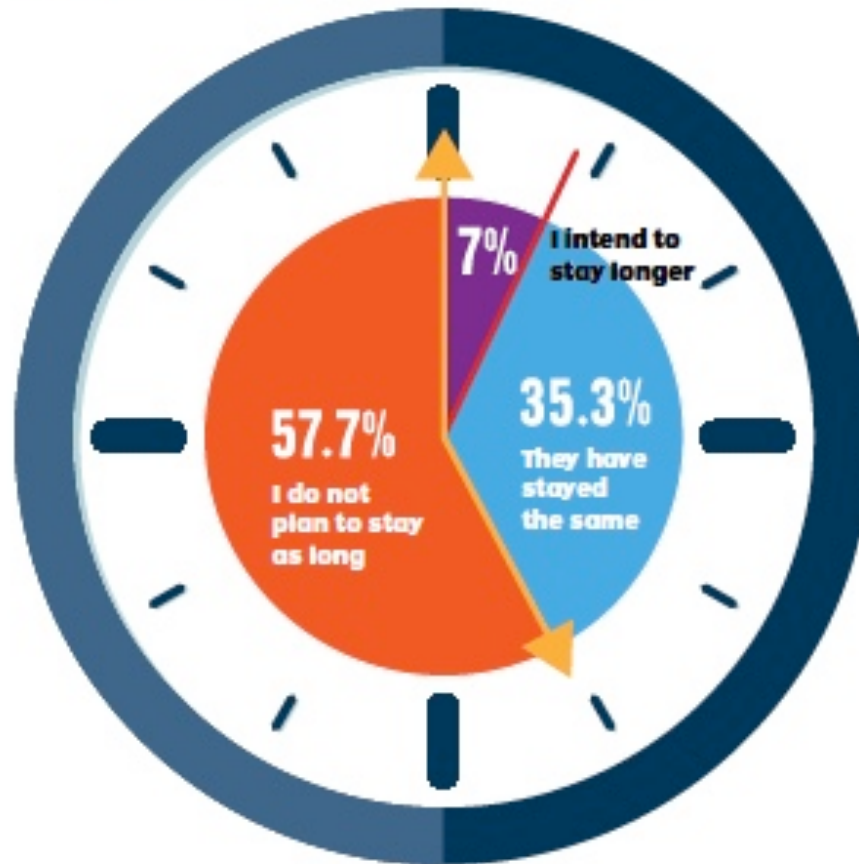
Report of the 2018 NSSME+

DECEMBER 2018

Characteristics of the Science Teaching Force, by Grade Range

	PERCENT OF TEACHERS		
	ELEMENTARY	MIDDLE	HIGH
Age			
≤ 30	19 (1.6)	17 (2.1)	14 (0.9)
31–40	28 (1.6)	29 (2.5)	31 (1.5)
41–50	29 (1.8)	26 (1.9)	28 (1.3)
51–60	20 (1.4)	20 (2.0)	20 (1.1)
61 +	5 (0.8)	8 (1.4)	8 (0.9)

How Have Your Intentions Changed Since You Began Teaching?



NSTA Reports: January 2019

Turn and Talk:

What are some of the reasons people are interested in teaching?



Picture accessed 2/13/19 from: rawpixel.com

Share the brilliance:


What are some of the reasons individuals are interested in teaching?



Picture accessed 2/13/19 from: rawpixel.com

Survey of UIndy Undergraduate Chemistry and Biology Majors

Objectives:

- Determine which factors would ENCOURAGE or discourage UIndy STEM undergraduate students from choosing a career in secondary teaching
 - Determine which factors would make UIndy STEM undergraduate students MORE LIKELY to consider a secondary teaching career
- 
- A solid red decorative wave shape at the bottom of the slide, curving upwards from the left and right edges towards the center.

Survey of UIndy Undergraduate Chemistry and Biology Majors

Methods:

- Survey consisting of 24 Likert-scale questions (adapted from Florida State Dept. of Education, 1985) was used to assess students' perceptions of teaching as a career.
- Students voluntarily completed the survey (N=271)
 - General Chemistry I & II (N=211)
 - Organic Chemistry I & II (N=60)

Survey of UIndy Undergraduate Chemistry and Biology Majors

Methods – Part A

Question: What factors would encourage or discourage UIndy STEM students from choosing a high school teaching career?

Likert-scale used in this part of the survey was 1 to 5

1 - strongly discourage

2 - discourage

3 - neutral

4 - encourage

5 - strongly encourage

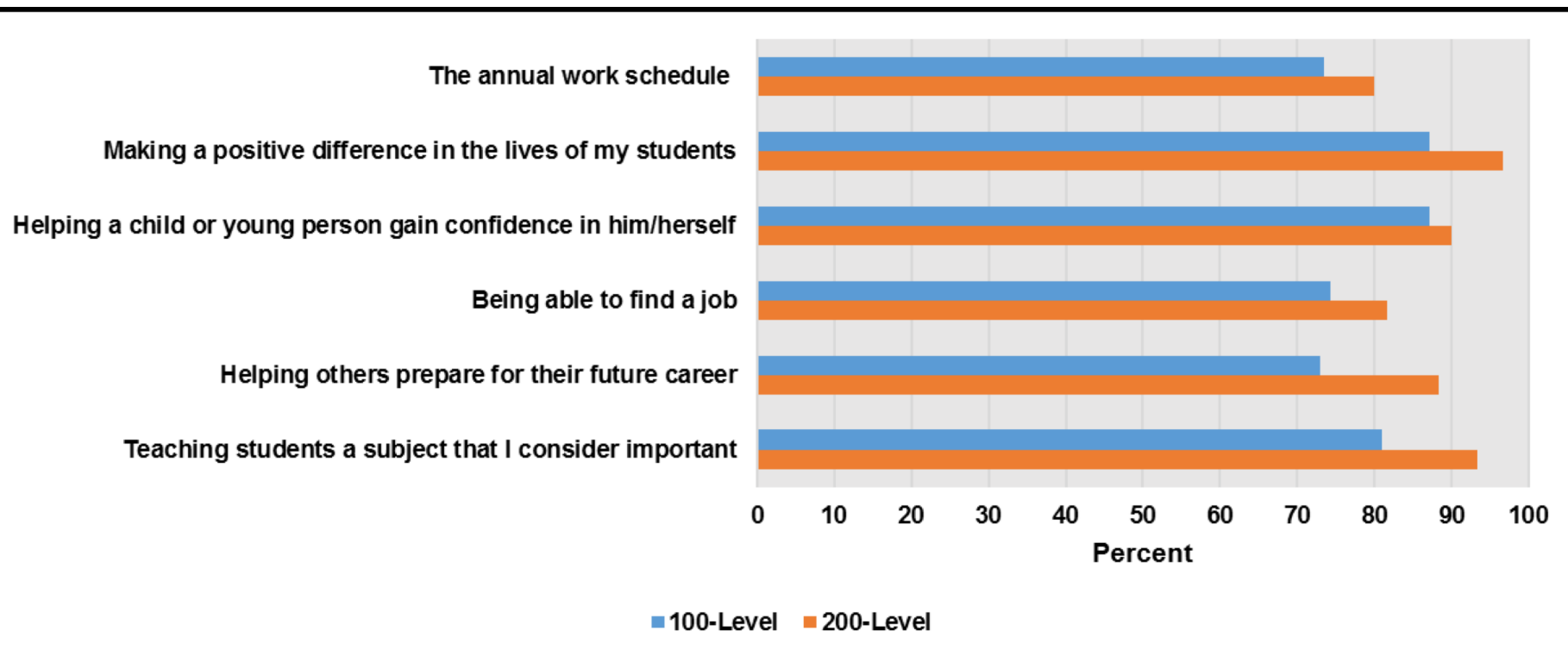
Data grouped by:

Courses: 100-level (General Chemistry) and 200-level (Organic Chemistry)

Majors: Science, Pre-Health, Engineering, Other

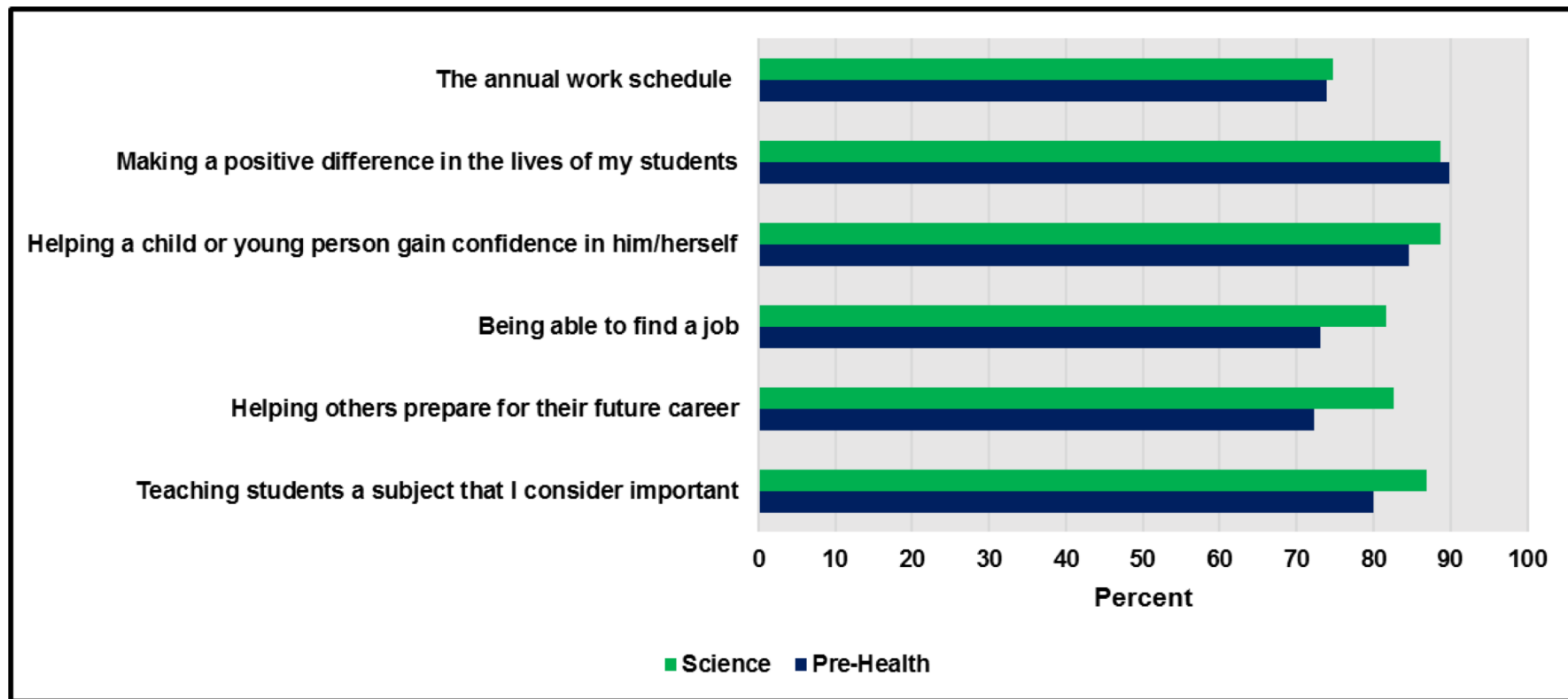
Survey of UIndy Undergraduate Chemistry and Biology Majors

Students' Perceptions Regarding Factors that Would ENCOURAGE Them to Choose a Teaching Career



Survey of UIndy Undergraduate Chemistry and Biology Majors

Students' Perceptions Regarding Factors that Would ENCOURAGE Them to Choose a Teaching Career



Turn and Talk:

What are some of the barriers that prevent individuals from pursuing a teaching career?



Picture accessed 2/13/19 from: rawpixel.com

Share the brilliance:

What are some of the barriers that prevent individuals from pursuing a teaching career?



Picture accessed 2/13/19 from: rawpixel.com

Survey of UIndy Undergraduate Chemistry and Biology Majors

Methods – Part B

Question: What factors would make UIndy STEM students MORE LIKELY to consider a teaching career?

Likert-scale used in this part of the survey was 1 to 4

1 - not important at all

2 - neutral

3 - important

4 - very important

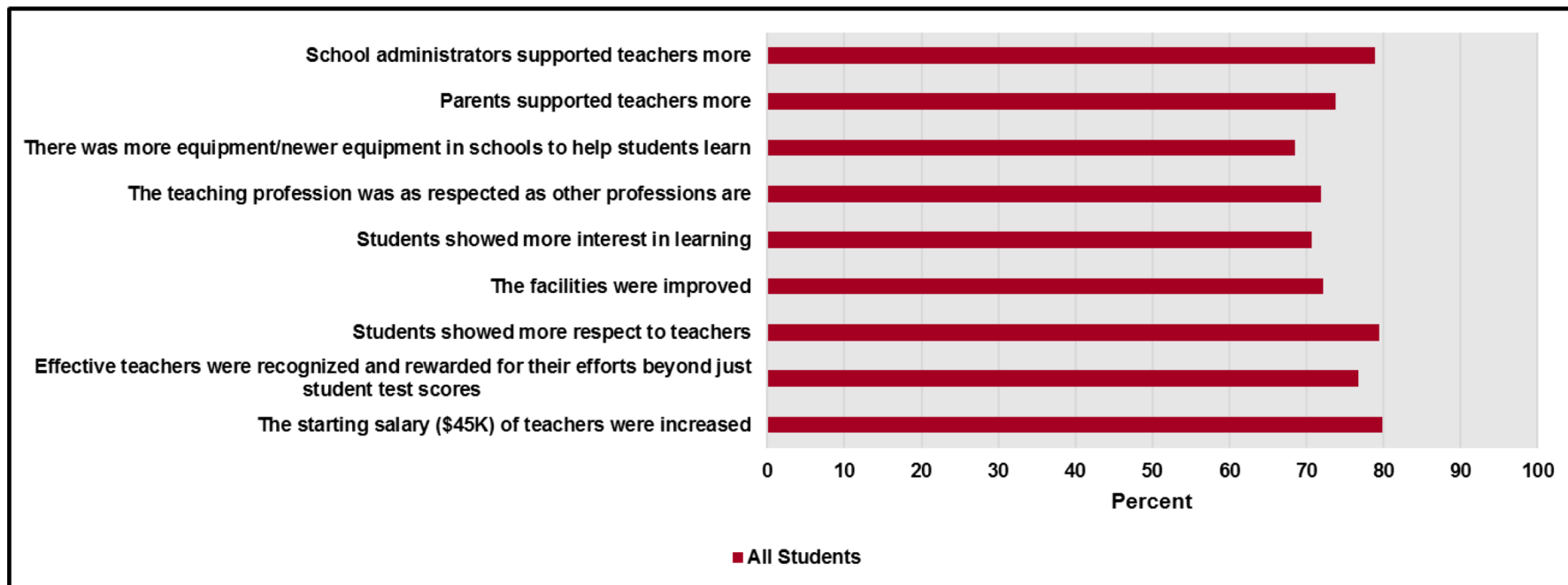
Data grouped by:

Courses: 100-level (General Chemistry) and 200-level (Organic Chemistry)

Majors: Science, Pre-Health, Engineering, Other

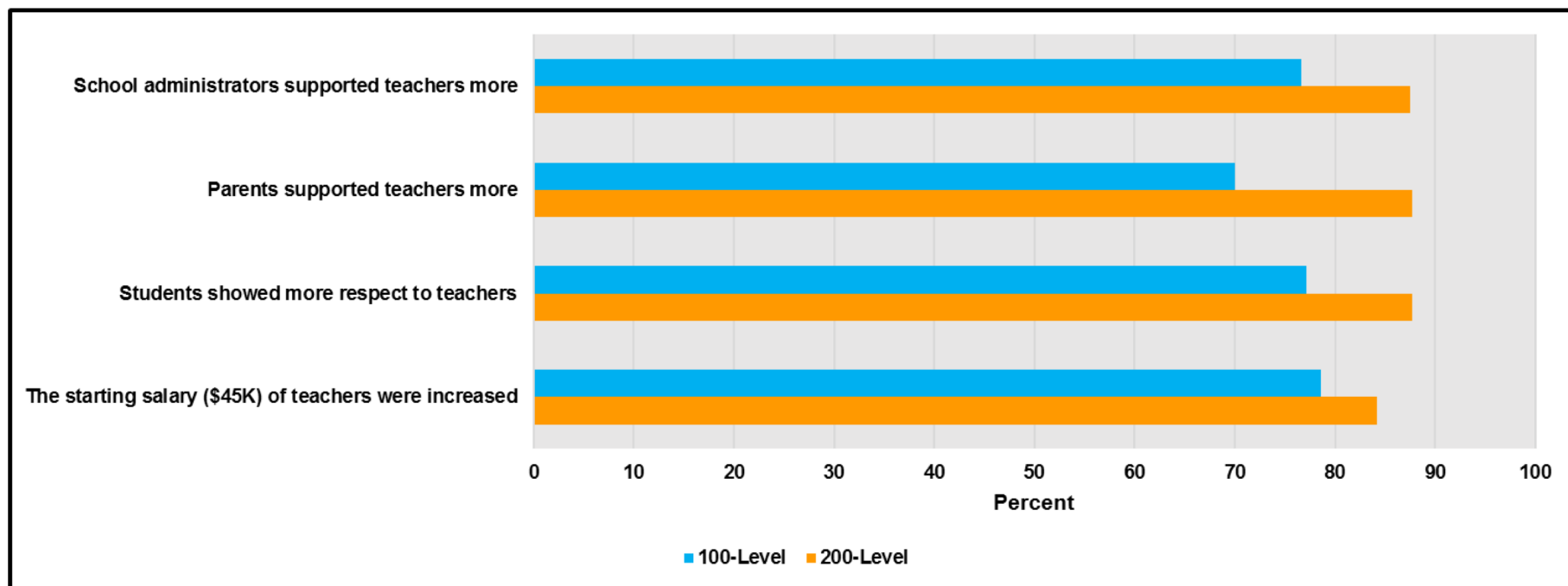
Survey of UIndy Undergraduate Chemistry and Biology Majors

Students' Perceptions Regarding Factors that Would Make Them MORE LIKELY to Choose a Teaching Career



Survey of UIndy Undergraduate Chemistry and Biology Majors

Students' Perceptions Regarding Factors that Would Make Them MORE LIKELY to Choose a Teaching Career



**Burned out: why are so many teachers
quitting or off sick with stress?**

2018

**The Truth About Teacher Burnout: It's Work Ind
Depression**

American Psychological Association
Psych Learning Curve
August 20, 2018

**Teacher pay in Indiana continues its
downward slide**

NWI.com June 16, 2018

5 Teaching Misperceptions and Realities





Misperception:

Teaching pays less than other careers using the same degree.

Reality:

The annual mean wage for teachers is \$61,815 while the annual mean wage for all person's with a bachelor's degree is \$59,124.



Misperception:

Graduating with a degree to teach will result in life-long college debt.

Reality:

Teachers may be eligible for forgiveness of up to \$17,500 for some student loans.



Misperception:

Teachers cannot retire comfortably.

Reality:

In Indiana, it is possible for public school teachers to retire with full benefits as early as age 55.



Misperception:

Teaching is repetitive and boring.

Reality:

Most teachers say that student interactions make teaching a satisfying career.



Misperception:

It is difficult to find a job in teaching.

Reality:

The demand for educators in most certification fields and in most areas of the country is strong.



Dispelling
misperceptions

Brainstorming Session



Picture accessed 2/14/19 from: Banner vector created by vectorpocket - www.freepik.com

Share the brilliance:

What are some things you can do to help dispel misperceptions about teaching and grow the future STEM teacher pipeline?



Picture accessed 2/13/19 from: rawpixel.com

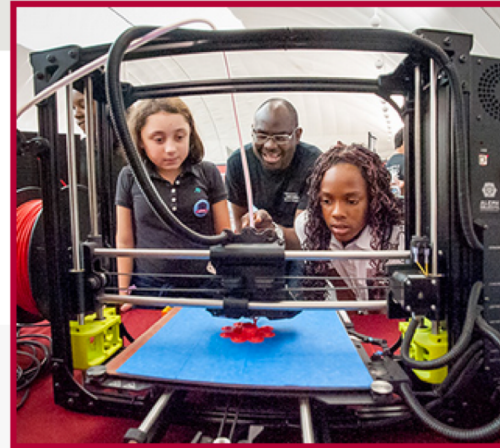


Someone encouraged the student to become a teacher.

What is UIndy doing?

ELEMENTARY EDUCATION //

**TEACH TODAY, TRANSFORM
TOMORROW.**



//

The School of Education is proud to build upon its strong reputation for producing great teachers to be the first to offer a cutting-edge interdisciplinary Elementary Education STEM program. Its fresh, novel, and innovative approach to teacher education is unlike any in the country.



UNDERGRADUATE EDUCATION //

Secondary & All-Grade Education
Elementary Education

EXPLORE //

Why Teach?
Career Information & Job Support
Partnerships
Scholarships and Awards
Student Organizations
Faculty
Accreditation

What is UIndy doing?

ABOUT TEACH (STEM)³



Teach (STEM)³ is a one-year urban clinical residency program combined with graduate coursework and two years of post-residency mentoring support to prepare effective secondary and middle school STEM teachers. Coursework and residencies create a one-year, full-time program correlating with partner district calendars. Upon completion, scholars will earn a Master of Arts in Teaching (MAT) degree along with licensure in a STEM content area.

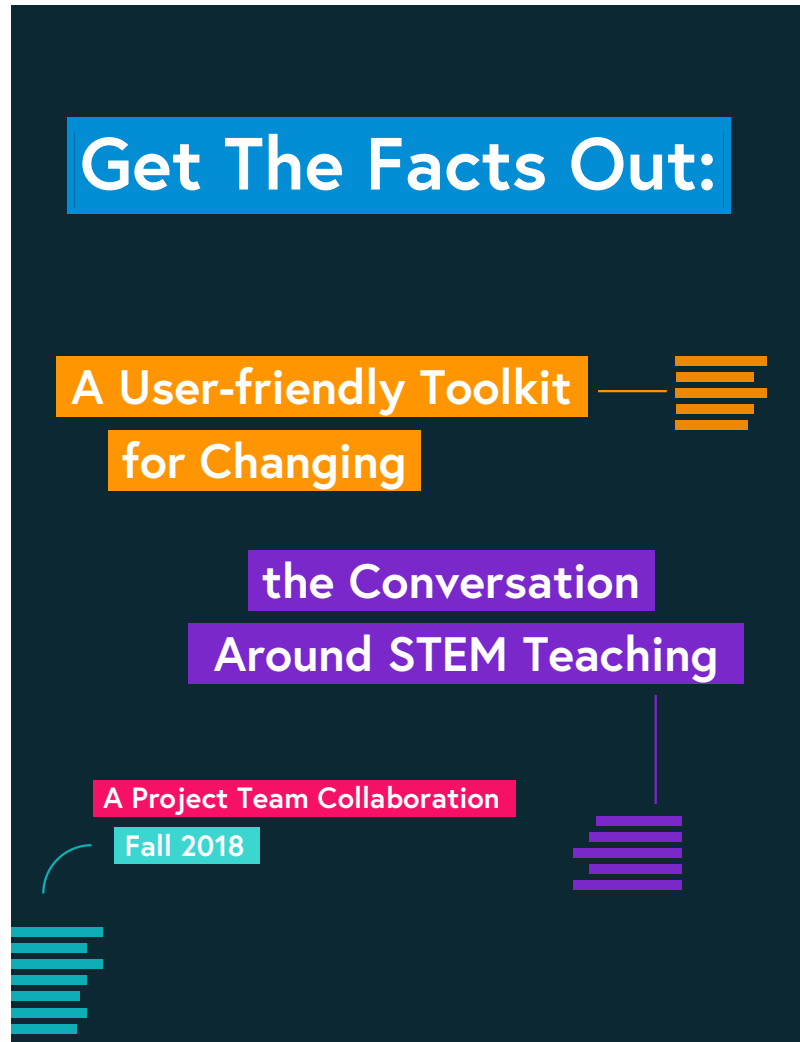
BECOME A NOYCE SCHOLAR THROUGH THE TEACH (STEM)³ PROGRAM

RECEIVE UP TO \$20,000 TO COMPLETE
A MASTER OF ARTS IN TEACHING



UNIVERSITY of INDIANAPOLIS

Resource:



<http://tinyurl.com/y64plnnrrt>

Now It's Your Turn...

Get the Facts Out: The Importance of **YOU** in Growing the Future STEM Teacher Pipeline

Ms. Deb Sachs - dsachs@uindy.edu

Dr. Kim Baker - bakerkm@uindy.edu

Dr. Kathy Stickney - kstickney@uindy.edu



Supported by the National Science
Foundation under Grant No. 1660653