WVUteach Program

a *parallel* pathway supporting STEM student success

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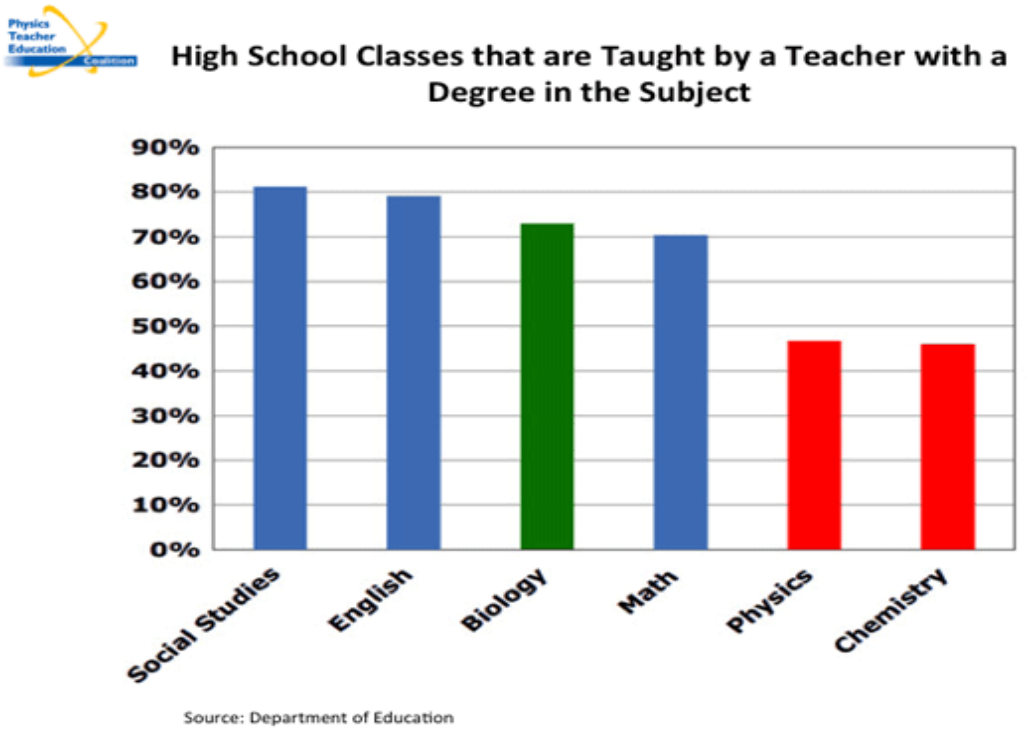
If You Were Educated in a U.S. High School…

. . . there's a good chance that your chemistry or physics teacher didn't have a degree in chemistry or physics.

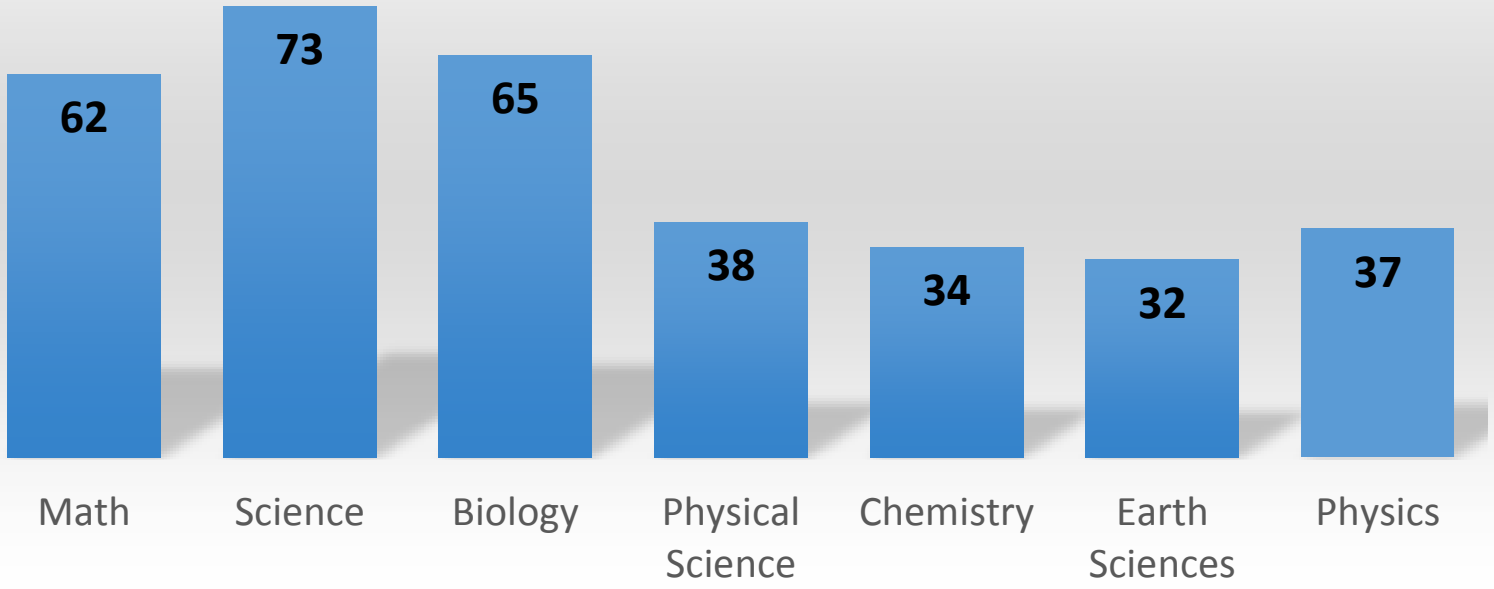
. . . and there's a good chance that your school didn't even offer a physics course.

And it gets worse:



Percentage of Teachers with Both Certification and a Major or Minor in Primary Teaching Field

Schools and Staffing Survey, 2012



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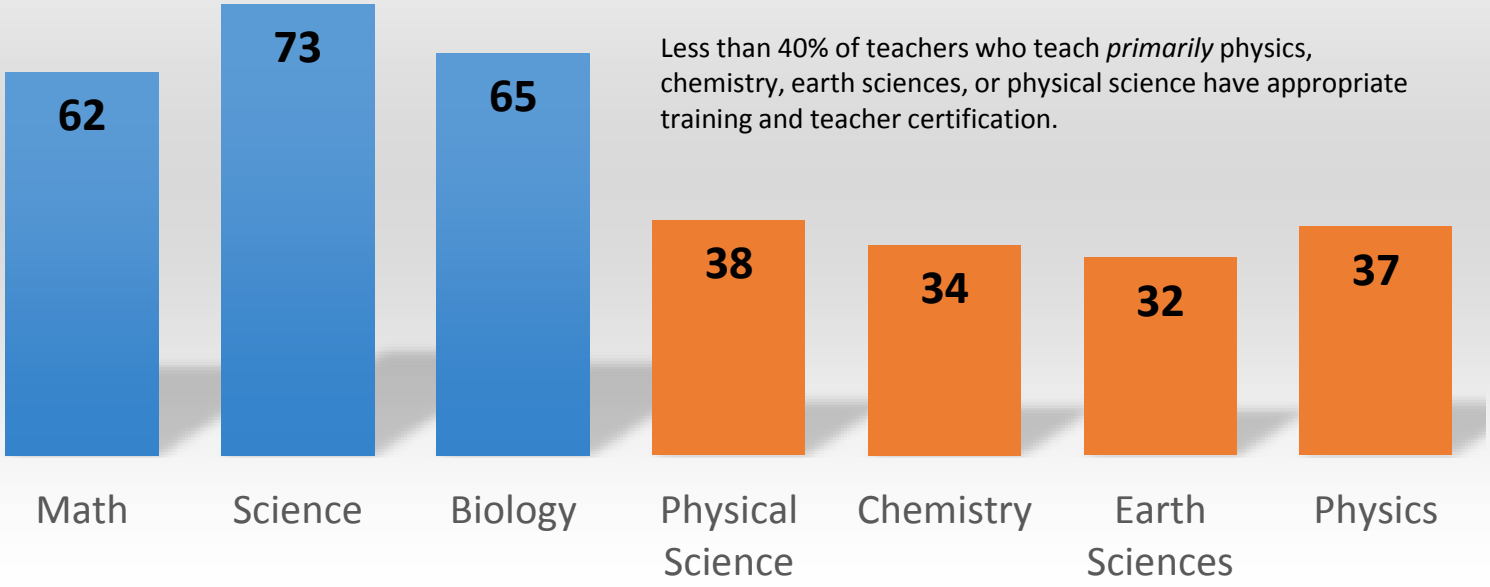
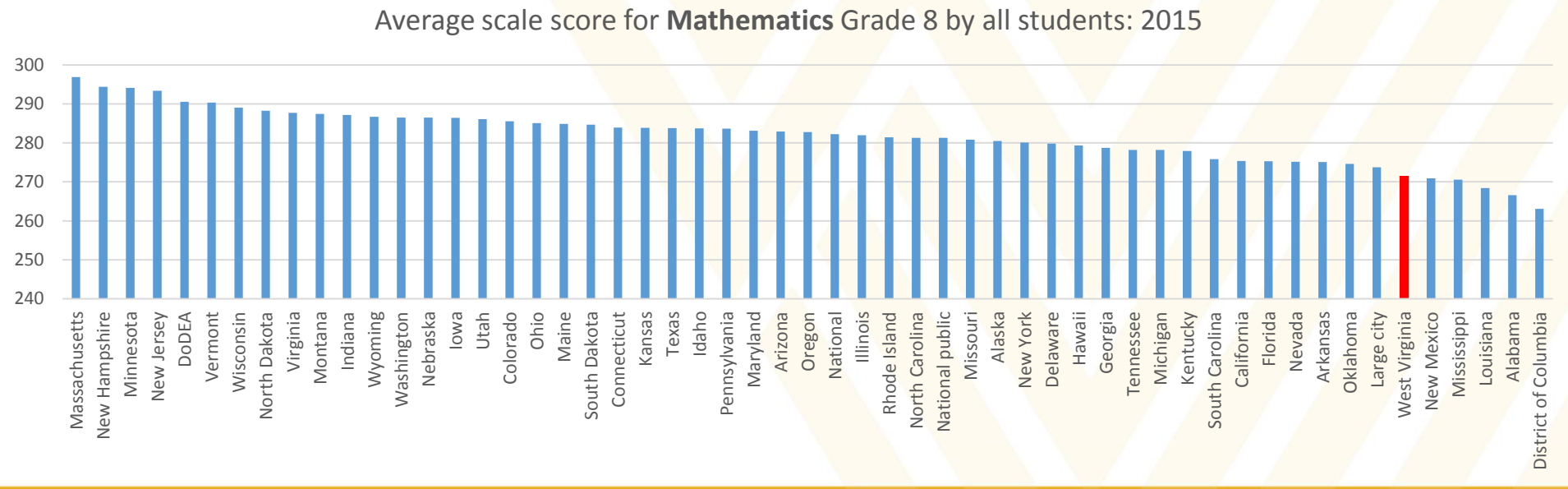


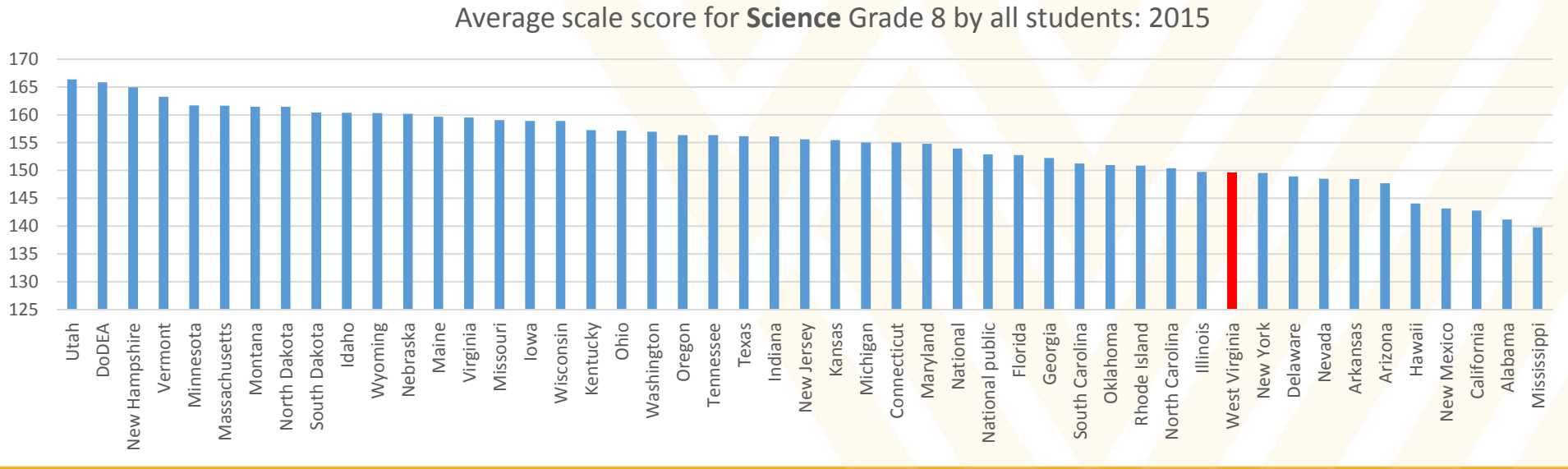
Less than 40% of teachers who teach *primarily* physics, chemistry, earth sciences, or physical science have appropriate training and teacher certification.

Student Performance in Mathematics



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2015 Mathematics Assessment.

Student Performance in Science



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2015 Mathematics Assessment.

The Problem

- West Virginia does not have enough well-qualified math and science teachers to fill current openings.
- Many K-12 students in math and science are being taught by those without a major or minor in math or science.
- 8th grade student mathematics and science proficiency in WV is in the lowest quartile nationally.
- The demographic of middle and secondary school teachers is aging, and shortages are present and predicted to increase in the future.

One Solution

(and the *only* currently admitting undergraduate pathway at WVU)

- **If** more STEM majors can graduate with their STEM B.A. or B.S. *also* well-prepared and certified to teach secondary school . . .
- **. . . then** more well-prepared STEM teachers may end up in WV schools helping future generations of students be successful.

Underlying Philosophy

I. To **eliminate barriers** in order to to attract and retain the widest range of the brightest science, mathematics, engineering, and computer science students into teaching careers.

II. To **provide a high-quality teacher preparation experience**.

WVUteach

- Most STEM majors can graduate with their desired degrees ***and*** certification to teach secondary biology, chemistry, physics, or math, without extending their college careers.
- WVUteach students get early field experiences in an elementary or middle school classroom with support from teammates, a Master Teacher, and a Mentor Teacher.
- Total commitment is typically 27 – 36 credits; some WVUteach courses meet requirements for students' majors, others fulfill **GEF 4** and **GEF 5**, and *all* count toward graduation.

What is the Course Sequence?

- ARSC 120: Step 1 (1, F/S)
- ARSC 220: Step 2 (1, F/S)

service hours and honors credit available

- UTCH 221*: Knowing & Learning in M&S (3, F)
- UTCH 222: Classroom Interactions (3, S)
- MATH 318**: Perspectives in M&S (3, F)
- [SCI] 376: Research Methods (3, S)
- MATH 376: Functions & Modeling (3, S)
- MATH 238: Geometry for Teachers (3, S)
- C&I 434: Teaching Secondary Math (3, F)
- UTCH 420: Project-Based Instruction (3, F)
- UTCH 430: Apprentice Teaching (10, F/S)

Field experiences

Math certification only

*** GEF4***

**** GEF5***

Other STEM Majors

- Other STEM majors such as Engineering, Computer Science, Agriculture, Health Sciences, etc. may require additional time to graduation.
- For some WV State subject area requirements for certification, substitutions can be made when course content allows.
    - For example, chemistry certification requires **CHEM 341/342** or **CHEM 346/347**, but **CHE 320** and **CHE 450** cover the required content and fulfill the state requirement.
- And, for students requiring additional time to graduation who definitely intend to teach, some scholarships are available for those final semesters.

SAMPLE PLAN (CHE)

Fall 2016

MATH	155	*	4
ENGR	101		2
ENGR	199		1
CHEM	115	*	4
ENGL	101		3
ARSC	120		1
			15

Fall 2017

CHE	201		3
CHEM	233	*	3
CHEM	235	*	1
MATH	251		4
PHYS	112	*	4
ENGL	102		3
UTCH	221	*	3
			21

Spring 2017

MATH	156	*	4
CHEM	102		3
PHYS	111	*	4
CHEM	116	*	4
GEF6	GEF6		3
ARSC	220		1
			19

Spring 2018

CHE	202		3
CHE	230		3
UTCH	222		3
CHEM	234		3
CHEM	236		1
GEF7	GEF7		3
			16

Summer 2018

Math 261		4

Fall 2018

CHE	310		3
CHE	311		3
CHE	320	*	3
CHE	351		2
CHEM	215		4
MATH	318	*	3
			18

Fall 2019

CHE	435		3
CHE	450	*	2
CHE	455		4
UTCH	420		3
BIOL	115		4
elec	elec		3
			19

Spring 2019

CHE	312		3
CHE	315		3
CHE	325		3
CHE	326		3
CHE	355		2
CHEM	376		3
			17

Spring 2020

CHE	451		2
CHE	456		3
CHE	475		3
GEOL	101		3
GEOL	102		1
elec	elec		3
			15

Fall 2020

UTCH	430	10

Additional Motivation

- WVUteach provides STEM students an alternate pathway after graduation.
  - Students can still go to graduate school or professional school;
  - and are also able to teach.
- First two classes **(ARSC 120 and ARSC 220)** are “try it out” courses.
  - 1 credit hour
  - Offer hands-on teaching experiences in the classroom
  - Award students $100 tuition reimbursement for grade of C or better
- If a student ultimately decides not to continue with the WVUteach program, he or she will:
  - learn about teaching and learning, which can improve his or her *own* learning.
  - gain valuable communication skills that are useful in any setting.
  - meet in small classes that emphasize collaborating, cooperating, and teamwork.

Ways to Support STEM Majors

- Encourage students to start early in WVUteach
  - One WVUteach course per semester
  - Those who start later need to double up
- Four-year Plans of Study are available at: **wvuteach.wvu.edu**
- Encourage students to talk with a WVUteach Advisor to plan out their four years (and to assess course conflicts)
  - Most of our upper level courses are only offered once a year.

And . . .

Recruiters:

- WVUteach is the only UTeach replication in West Virginia
- More than one career pathway for STEM majors

CLASS Advisers:

- Attractive opportunity for undecided students
- Students not currently majoring in a STEM field who might be considering this option should try out Step 1

Thank You!

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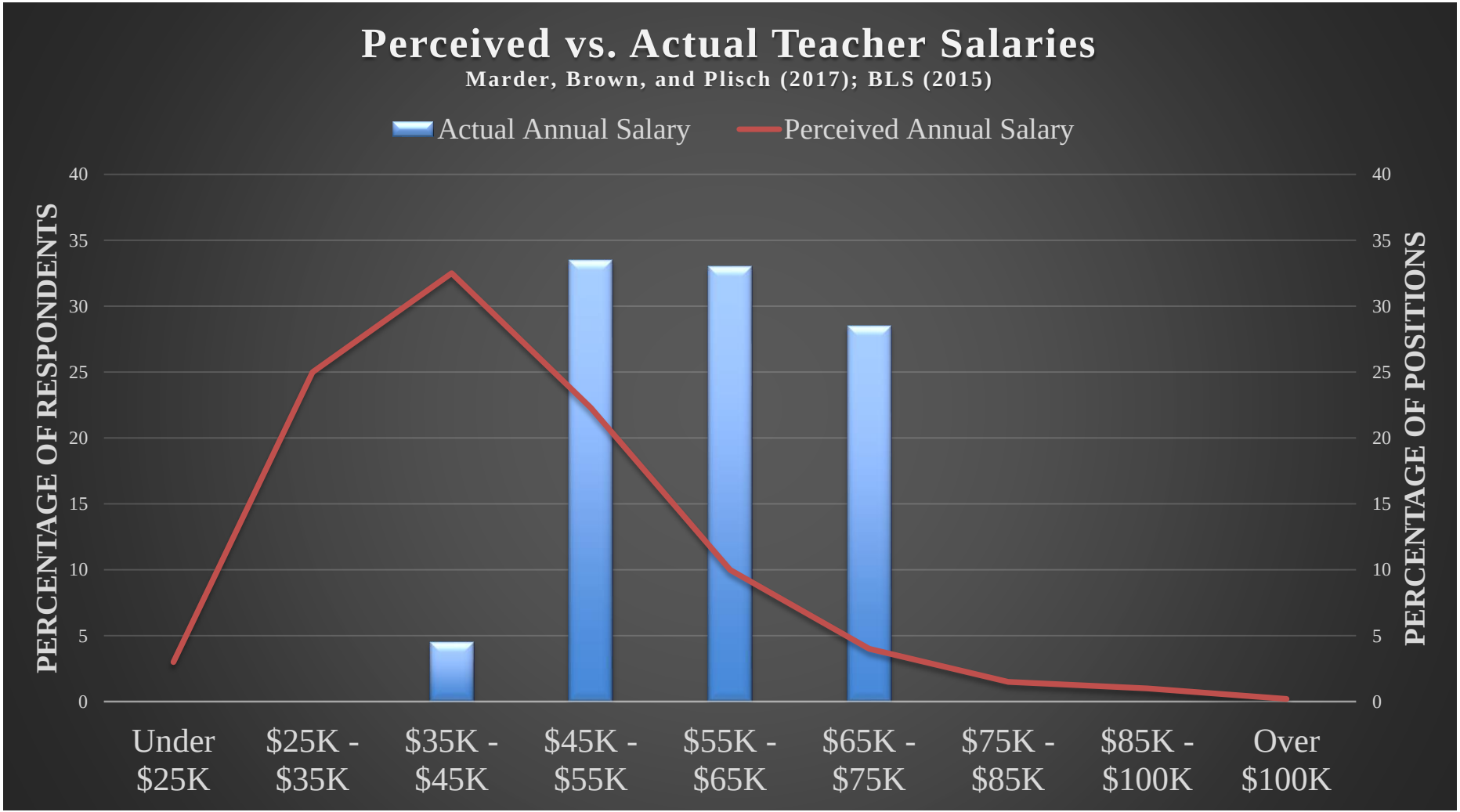
Perceived vs. Actual Teacher Salaries
Marder, Brown, and Plisch (2017); BLS (2015)
Actual Annual Salary
Perceived Annual Salary
PERCENTAGE OF RESPONDENTS
PERCENTAGE OF POSITIONS
40
35
30
25
20
15
10
5
0
Under $25K
$25K - $35K
$35K - $45K
$45K - $55K
$55K - $65K
$65K - $75K
$75K - $85K
$85K - $100K
Over $100K