Teaching, The Best Kept Secret!

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About AAAS

The AAAS seeks to "advance science, engineering, and innovation throughout the world for the benefit of all people."

https://aaas.org
https://www.aaas.org/programs/stem-education-programs
About ARISE

AAAS ARISE network collects and shares information about topics and strategies for research and evidence-based approaches to:

• prepare STEM teachers for the future
• assess efficacy in STEM teaching
• understand effective ways to recruit, train, and retain a quality STEM teacher workforce

https://aaas-arise.org

AAAS ARISE Network
@NoyceProgram
Teaching: The Best Kept Secret!

Benefits Compared to Industry and University Teaching

Get the Facts Out
Changing the conversation around STEM teacher recruitment

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Please complete the pre-workshop quiz and sign in

surveymonk.../PrePost-Wendy

Sign in:  tinyurl.com/yyumqo9o
Get the Facts Out

Partners

COLORADO SCHOOL OF MINES
ACS Chemistry for Life
AAAPT
AMTE

Get the Facts Out
Changing the conversation around STEM teacher recruitment
Workshop Outline

- **Faculty/Staff presentation**: *Teaching: The best kept Secret*
  - Built in data mining just for this workshop since we’re from different locations across the country

- **How to start sharing the facts...**
  - Presentations for Students
  - Presentations for Faculty/Staff
  - How to Reach Students
  - Posters, Brochures, and Flyers
  - Building Testimonials
  - Assessments
Rate your life

On which step of the ladder would you say you personally feel you stand at this time?
On which step of the ladder would you say you personally feel you stand at this time?

On which step do you think you will stand about five years from now?

The Cantril Self-Anchoring Scale

- Top: 7 or greater for Q1 & 8 or greater on Q2
- Middle: 4 or less for Q1 & Q2
- Bottom: Worst possible life (0)
- Best possible life (10)
Did you know…

Teachers in the United States rate their lives better than all other occupation groups, trailing only physicians.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician</td>
<td>75%</td>
</tr>
<tr>
<td>Teacher (K-12)</td>
<td>69%</td>
</tr>
<tr>
<td>Professional</td>
<td>64%</td>
</tr>
<tr>
<td>Nurse</td>
<td>64%</td>
</tr>
<tr>
<td>Manager, executive, or official</td>
<td>61%</td>
</tr>
<tr>
<td>Business owner</td>
<td>56%</td>
</tr>
<tr>
<td>Clerical or office</td>
<td>55%</td>
</tr>
<tr>
<td>Sales</td>
<td>54%</td>
</tr>
<tr>
<td>Service</td>
<td>50%</td>
</tr>
<tr>
<td>Manufacturing or production</td>
<td>44%</td>
</tr>
<tr>
<td>Construction or mining</td>
<td>44%</td>
</tr>
<tr>
<td>Farming, fishing, or forestry</td>
<td>43%</td>
</tr>
<tr>
<td>Installation or repair</td>
<td>43%</td>
</tr>
<tr>
<td>Transportation</td>
<td>40%</td>
</tr>
</tbody>
</table>

Percentage shown is the % of people ranking their lives at the top of the ladder minus the % of people ranking their lives at the bottom of the ladder.

Question

Why do you think teachers rate their lives so highly compared to other professionals?
Teacher Well-being

- Work-life balance
- Student and colleague relationships
- Financial stability
Day-to-Day Satisfaction

- Students: Relationships and Learning
- Work schedule
- Teaching is challenging/scientific
- Colleagues
- Learning content
- Autonomy of the classroom
Starting salaries

Which is closest to the typical starting salary for K-12 teachers near your institution?

A. $23,000
B. $32,000
C. $45,000
D. $52,000
E. $65,000
Mid-career salaries

After 15 years of teaching and earning a master’s degree, which is closest to the typical K-12 teacher salary in your area?

A. $30,000
B. $45,000
C. $60,000
D. $80,000
E. $110,000
# Teacher Salaries

9-month contracts

($53k annualized → $71k,  $107k annualized → $143k)

<table>
<thead>
<tr>
<th></th>
<th>BA yr 1</th>
</tr>
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<tr>
<td><strong>Jordan School District</strong> <em>(Provo, UT)</em></td>
<td>$53,000</td>
</tr>
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<td>$60,116</td>
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<tr>
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*Includes +$5K that Utah science and math teachers earn if they have a BS in math or science.
# Teacher Salaries

9-month contracts

($53k annualized → $71k, $107k annualized → $143k)

<table>
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<th>District</th>
<th>BA yr 1</th>
<th>MA yr 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan School District*</td>
<td>$53,000</td>
<td>$71,375</td>
</tr>
<tr>
<td>(Provo, UT)</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>$60,116</td>
<td>$106,752+</td>
</tr>
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+ Extra Duty Pay

*Includes +$5K that Utah science and math teachers earn if they have a BS in math or science.
Grade 7-12 Teaching vs. College Permanent Teaching Faculty

|$0$ | $10,000$ | $20,000$ | $30,000$ | $40,000$ | $50,000$ | $60,000$ | $70,000$ | $80,000$

- 7-12 Teacher
- TYC
- MS Granting
- PhD Granting

Year 1 vs. Year 15
Data Mining Question

How does the path to becoming a college faculty member look compared to becoming a high school teacher? Consider:

• time to permanent employment
• advanced degrees
• relocation
• starting salaries
• job availability
• job security
Typical salaries of bachelor degree recipients, Class of 2018

Note: All salaries shown are for 12 month positions except teaching.

Bars represent the middle 50% of salaries, i.e. between the 25th and the 75th percentiles.
Reprinted from the Summer 2019 Salary Survey, with permission of the National Association of Colleges and Employers, copyright holder.
Did you know... There are student loan forgiveness programs and scholarships for math and science teachers.

Federal loan forgiveness $17,500
Federal Loan & Grant Programs

Direct/FFEL Forgiveness
- $17,500
- 5 years of consecutive teaching
- low income school

TEACH Grants
- $4,000/year

Perkins

Year 5: 30%
Year 4: 20%
Year 3: 20%
Year 2: 15%
Year 1: 15%

Want to know more about Federal Student Aid?
https://studentaid.ed.gov/sa/
Did you know... Most teaching jobs have better retirement benefits than other jobs you can get with the same degree.

Teachers in the U.S. retire at age 59 compared to age 63 for all occupations.
Retirement Benefits

Mississippi Public Employees Retirement System

• Example: Begin teaching at 22 years old, full retirement benefits at 47 (25 years) with 3% annual increases
  – 2% x (Years of service) x (highest earned income) (e.g. a pension) (2% 25 years, 2.5% later YOS)
  – Yearly Annuity Value* of $16,312
  – + Social Security

*Yearly Annuity Value: Someone in industry would have to invest this amount at 7% ROR to have the same available retirement as a teacher’s pension based on average life expectancy
Teacher Retention

What fraction of grade 7-12 teachers remain in the profession at year 5?

A. 28%
B. 41%
C. 59%
D. 78%
E. 90%
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†2015 U.S. Dept. of Ed
Public School Teacher Attrition and Mobility in the First Five Years: Results From the First Through Fifth Waves of the 2007–08 Beginning Teacher Longitudinal Study
Curriculum Standards

Think about how you would teach one of the objectives below:

Chemistry - Matter & Its Interactions: Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

Physics - Forces & Interactions: Analyze data to support the claim that Newton’s second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

Math - Algebra: Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
Content Flexibility

• Do these standards appear to provide restrictive instructions about when, what, and/or how a teacher teaches?

• Grade 7-12 State, NGSS, and Common Care standards allow teachers flexibility in how they teach within their own classrooms.

• Some districts also have pacing guides, typically elementary or middle school.
Autonomy & Agency

What fraction of teachers report having at least some control over content, topic, and skills to be taught?

A. 20%
B. 40%
C. 70%
D. 90%
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2017 Educator Quality of Work Life Survey by AFT the American Federation of Teachers - A Union of Professionals and BATs the Badass Teachers Association ~5,000 teachers responding.
Autonomy & Agency

What fraction of teachers report having at least some control over selecting teaching techniques?

A. 20%
B. 40%
C. 65%
D. 85%
E. 95%
Autonomy & Agency

What fraction of teachers report having at least some control over selecting teaching techniques?

A. 20%
B. 40%
C. 65%
D. 85%
E. 95%

2017 Educator Quality of Work Life Survey by aft the American Federation of Teachers - A Union of Professionals and BATs the Badass Teachers Association ~5,000 teachers responding.
90% report control over content, topic, and skills to be taught?

95% report at least some control over teaching techniques
Respect

What fraction of teachers somewhat agree or strongly agree with the statement “I am treated with respect by students and parents.”

A. 27%
B. 39%
C. 57%
D. 65%
E. 87%

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Get the Facts Out

Project Motivation

Severe shortage of Physics, Chemistry, and Math teachers
Math and Science Teaching

Student Interest

What fraction of U.S. students indicate some level of interest when asked:

*How interested are you in being a middle or high school teacher?*

A. 0% - 10%
B. 10% - 25%
C. 25% - 40%
D. 40% - 60%
E. >60%
How interested are you in being a middle or high school teacher?

Math and Science Teaching

2017 POPA report – Recruiting teachers in high needs....
Math and Science Teaching

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B. 10% - 25%
C. 25% - 40%
D. 40% - 60%
E. >60%
Planning to Pursue Certification includes those who answered agree/strongly agree (A/SA) to either “I plan to pursue certification at my institution” or “I plan to pursue certification through another route”. Has Interest includes those who A/SA with any of the four I would if (IWIf) statements and/or those who answered A/SA to “I want to become a grade 7-12 teacher” (WTT) but did not A/SA with either certification statement. Neutral includes those remaining who chose neutral on any one of WTT, either certification statement, or IWIf statement. Doesn’t Want to Teach includes those who D/SD with all seven statements – WTT, certification, and IWIf statements.
Dropping enrollments!

FIGURE 7
Change in enrollment varies by teacher preparation program type

Teacher preparation program enrollment by program type and year, 2010–2018

*Institution of higher education.
Declining Perceptions

Would you like your child to become a teacher?

National totals, 1969-2018

Gallup produced the PDK polls from 1969 to 2015. Langer Research Associates has produced the PDK poll since 2016, including the 2018 poll.

PDK poll, 2018
Get the Facts Out

Project Motivation

Start Celebrating the Positives of the Profession!

*Teachers well-being is higher than all other occupation groups, trailing only physicians*
Post Test

Please complete the post-workshop quiz:
surveymonkey.com/r/PrePost-Wendy

Sign up for GFO updates here:
GettheFactsOut.org/Wendy
Get the Facts Out
Project Motivation

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How to Get the Facts Out

GettheFactsOut.org

• Presentations Faculty/Staff
• Presentations Students
• How to Reach Students
• Posters, Brochures, Data handouts
• Flyer template
• Share your passion for teaching
• Assessments

Target Audiences:
1. Faculty and advisors
2. Students, peers, and parents
Faculty Presentations

Two flavors

• For Sharing the facts
  – 15 minutes
  – 50 minutes

• Creating new GFO Champions
  – 30 minutes
  – 75 – 240 minutes
Student Presentation

- Clicker-question, Discussion-based
- Students concerned with salaries, job satisfaction, and retirement.
- Variable length:
  - 15 min
  - 30 min
Summary of Teacher Benefits

• Teachers in the United States rate their lives better than all other occupation groups, trailing only physicians.
• Starting pay nationally ~$45K (9-month, base salary)
• Mid-career pay nationally $60K - $100K (9-month, base salary)
• Retire < 60 years-old w/ pension & SS in most states
• There are student loan forgiveness programs and scholarships for math and science teachers.
• You can get a job almost anywhere in the U.S. or abroad as a science or math teacher.
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How to Reach Students

• Admissions *(create a video)*
• Attend the beginning of a class *(even on Zoom)*
• Direct email
• Student Life events
• Office of Residence Life
• Career Center
• Student math and science associations
• Alumni association

*Any other options on your campus?*
Other Recruiting Resources

Brochures     Flyers     Posters
GFO Champions

What is a GFO Champion?

- Anyone who shares the facts about teaching.
- Sharing the facts includes
  - having a conversation with a prospective teacher
  - sharing a meme on Facebook
  - giving a workshop at a regional meeting or
  - using any GFO resource

- Posters
- Brochures
- Flyer Template
- Student Presentation
- Faculty Presentation

- Perceptions Surveys: PTaP for students or PTaP.HE for faculty
- How to Reach Students
- Tested Messaging
Critical Features of Sharing the Facts

What should you do as a GFO Champion?
- Actively seek out opportunities to share information about teaching as a profession.
- Identify locally relevant data about teaching as a profession and update the Get the Facts Out materials.
- Avoid voicing misperceptions about teaching as a profession when others voice them, based on available facts.
- Habitually share the positive aspects of teaching as a profession that are supported by data rather than anecdote.
- Seek to further your learning and engaging in the Get the Facts Out national community.

What should “Sharing the Facts” look like?
- Addresses multiple stakeholders (students, faculty, staff, advisors, local teachers, etc).
- Reaches large numbers of stakeholders from within each audience.
- Uses tested messages and resources from Get the Facts Out.
- Uses multiple strategies and modalities (e.g. personal conversations, presentations, posters, video).
- Uses multiple venues (e.g. classrooms, student groups, faculty meetings, etc.).

Outcomes
Various stakeholders
- Notice and understand messages related to Get the Facts Out.
- Have positive attitudes towards teaching as a profession.
- Engage in conversations with trusted others (peers, faculty, advisors, champions) to process ideas about teaching as a profession.

NOTE: needs to link to PDF.
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GFO Champion Support

Register as a GFO Champion

GettheFactsOut.org

- Four levels of Champions
- Earn points for each activity
- List on your cv & annual faculty update
- Recognition via the GFO Newsletter
GFO Champion Support

Facebook Group

- Ask questions about resources or the profession
- Get memes to share on your page
- Talk to GFO researchers about our studies
New and Improved support for GFO Champions

Request local teacher salary data!

https://tinyurl.com/data-request

- Our data miners will look up 2-4 districts near your institution.
  - Year 1 BS
  - Year 5 BS and MS
  - Year 15 MS
- Request specific districts
GFO Champion Support

Presentation feedback

Pre-register your presentation
- Link and instructions provided before the presentation in the slide deck
- Pre/post survey embedded in slides
- Evaluator will email your results!

Teaching: The Best Kept Secret!
Benefits Comparison at University

Please complete the pre-workshop quiz
https://www.surveymonkey.com/r/GFOPrePost
Discussion: Get the Facts Out at your institution!

• What have you been doing for your recruitment efforts?
• What could you add?
• Which GFO resources might be useful, and where could you use them?
• What challenges do you see with using these?
THANK YOU!

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