



Knowles

TEACHER INITIATIVE

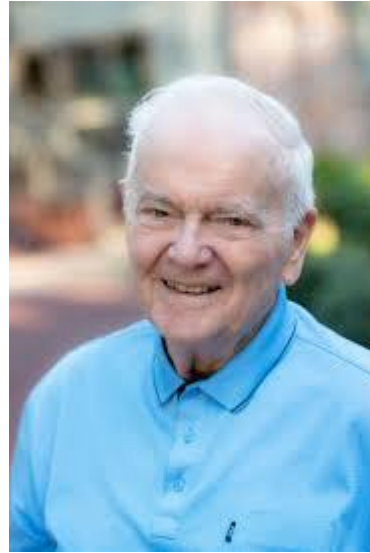
Transforming Mathematics & Science Education



ADAM QUAAL
JOHN W. NORTH HS
2016 TEACHING FELLOW

TEACHER RETENTION

- **Overall attrition: 8%** (LPI, 2016)
 - **19-30%** within the **first five years**
- **Actively seeking other careers or opportunities: 48%** (Gallup, 2018)
 - Most common reason for leaving is **career advancement**
- Further complicated by **subject area** shortages, **school location** disparities, etc.



ESTABLISHED IN 1999
to bring about a greater
understanding of science
and mathematics in the US
through improved teaching
and learning.



DIFFERENTIATORS

1

Focus on Teacher Leadership

The Knowles Teacher Initiative recognizes that *teachers can and should be* the drivers of educational improvement.

DIFFERENTIATORS

2

Early-Career Leadership Development

The Knowles Teacher Initiative recognizes that *teachers can and do act as leaders in the profession from the beginning of their careers.*

DIFFERENTIATORS

3

A National Network

The Knowles Teacher Initiative has *created and is sustaining a national network* of more than 300 teachers who are committed to improving mathematics and science education in their classrooms and beyond.

DIFFERENTIATORS

4

Sustained Support

The Knowles Teaching Fellowship supports early-career teachers for five full years because learning to teach well requires time, effort and resources. The Knowles Teacher Initiative also *supports the efforts of teachers to improve education beyond their own classrooms throughout their careers.*

DIFFERENTIATORS

5

For Teachers, by Teachers

The Knowles Teacher Initiative *offers sustained professional development*, grounded in classroom practice—designed and led by teachers—to teachers throughout the U.S. through the Knowles Academy.

KNOWLES PROGRAMS

**Teaching Fellows
Program**

**Senior Fellows
Program**

KNOWLES PROGRAMS

**Teaching Fellows
Program**

**Senior Fellows
Program**

35

FELLOWS

**NEW MATH AND
SCIENCE TEACHERS**

**GREAT DISCIPLINARY
KNOWLEDGE**

**CAPACITY, DRIVE
AND COMMITMENT TO
TEACHING**

**LEADERSHIP
POTENTIAL**

1 PHASE

REFLECT

AND DEEPEN KNOWLEDGE

INCREASE

LEARNING OPPORTUNITIES
FOR ALL STUDENTS

ENGAGE

IN INQUIRY WITH OTHERS

2

PHASE

SHIFT

FOCUS TO THE COMMUNITY

UNDERSTAND

THE WHOLE SYSTEM

ENGAGE

COLLEAGUES IN THE WORK

LEAD

FROM GOALS AND
COMMITMENTS

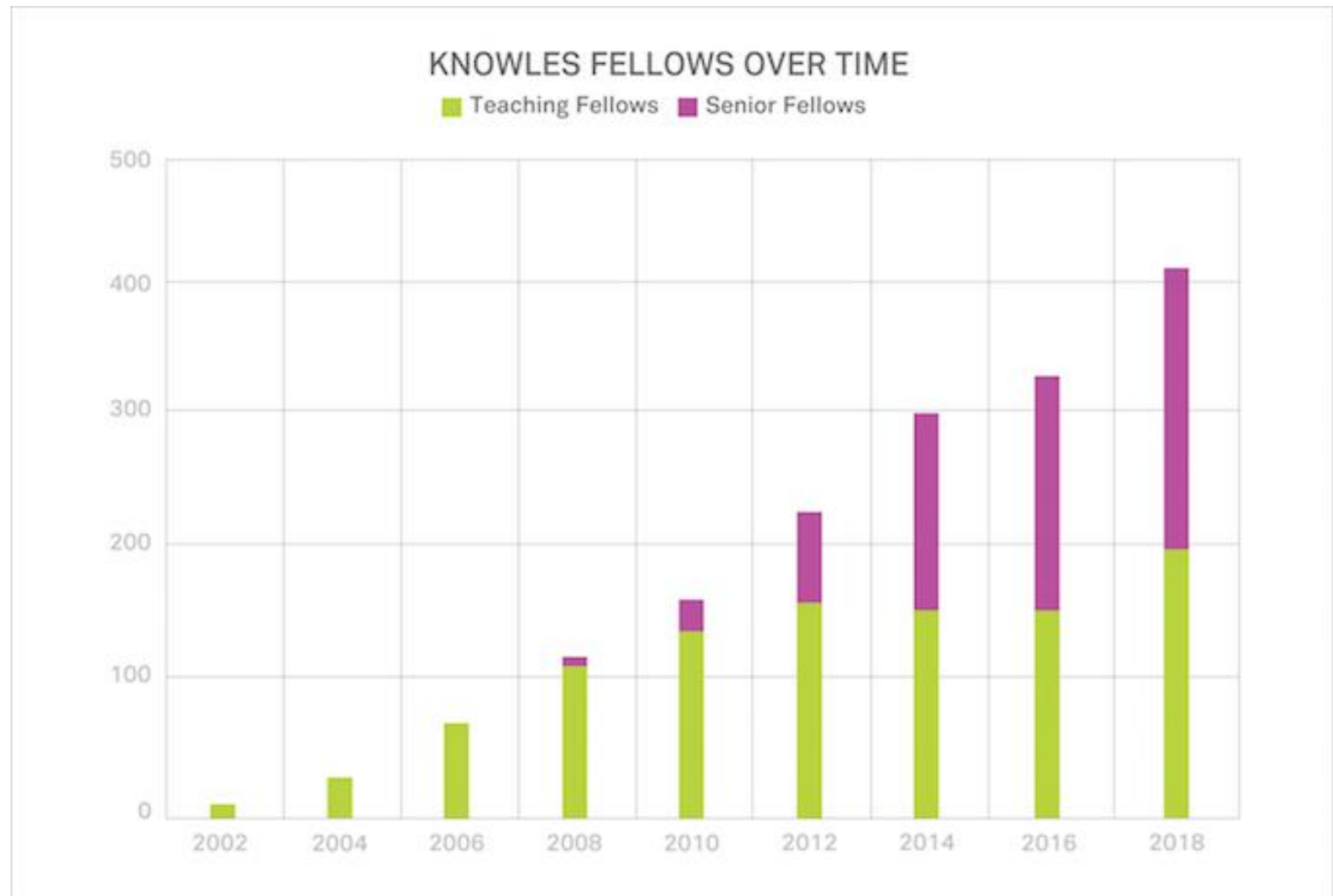


EXPERIMENT

PEER-LED COMMUNITIES

RE-IMAGINE RELATIONSHIPS

**CONNECTIONS
THROUGH COHORTS**





**NATIONAL
NETWORK**

KNOWLES PROGRAMS

**Teaching Fellows
Program**

**Senior Fellows
Program**

KNOWLES PROGRAMS

Teaching Fellows
Program

Senior Fellows
Program



SUPPORTS NETWORK

AMPLIFIES INVESTMENT

STRENGTHENS PROFESSION

SENIOR FELLOW PROJECTS

KNOWLES
COACHING
NETWORK

KALEIDOSCOPE:
EDUCATOR VOICES
AND PERSPECTIVES

KNOWLES
ACADEMY

MENTORING & COACHING

- Real-world experience
- Regular check-ins
- Reflection and inquiry
- Support through challenges





Fall 2019

Setting Teachers Up for Success: A Reflection on Providing Professional Development

[Read Article](#)



Knowles Engineering

Leveraging engineering design for science and mathematics education

Why Engineering?

Engineering provides engaging contexts to learn and practice math or science.

"The engineering design process is really useful as a way to approach word problems (particularly word problems that don't have a specific question but it's also good for the traditional word problems, too).

"I think it also helps build connections between math and science classes because it encourages me to use problems with meaningful

What We Do

We work with teachers and districts to bring engineering into math and science classrooms through building teachers' capacity for teaching their existing content in exciting STEM-integrated ways. We currently offer the following services but would be happy to discuss other customized options.

Knowles Academy Courses

- o [Engineering Core Program](#): Year-long professional learning

KNOWLES PROGRAMS

**Teaching Fellows
Program**

**Senior Fellows
Program**

**Knowles
Academy**

KNOWLES PROGRAMS

Teaching Fellows
Program

Senior Fellows
Program

Knowles
Academy

KNOWLES ACADEMY

1

Teachers Supporting Teachers

2

**Professional *Community*
Development**

3

**Long-Term Support for Sustainable
Change**

4

**Professional Expertise &
Leadership**

KNOWLES ACADEMY



Physics for the Next Generation:
The Patterns Approach

**Courses are several days, with multiple
virtual follow-ups
Financial aid is available**

KNOWLES ACADEMY

- **Physics for the Next Generation: The Patterns Approach**
- Engaging Math and Science Students in Engineering Design
- **Designing Instructional Tasks to Increase Student Engagement and Learning in Science**
- Using Effective Group Work to Maximize Learning for All Students
- ***and more!***



“

“I really felt I got so much out of the workshop and am excited to implement ideas in my classroom next year. I felt I walked away with a deeper understanding of the engineering design process and much more confidence and skills in using the engineering design process in my science classroom.”

-SHANNON MOREY, PHYSICS AND COMPUTER
SCIENCE TEACHER, ABBOTT LAWRENCE
ACADEMY, LAWRENCE, MA

HOW TO CONNECT

- Find Knowles Teaching/Senior Fellows near you



HOW TO CONNECT

- **Find Knowles Teaching/Senior Fellows near you**
- **Attend a Knowles Academy course this summer**
- Recommend new teachers for the Teaching Fellowship
- Consider occasional openings for Knowles support staff

THANK YOU!

adam.quaal@knowlesteachers.org

knowlesteachers.org



Transforming Mathematics & Science Education