

# Blending Stem Industry Expertise into the Secondary Math or Science Classrooms

Dr. Jennifer Gresko (Faculty Chair of Teacher Education) – Principle Investigator



Title I Conference in San Diego Feb 1-4

**S M I L E**

**S**cience and

**M**ath

**I**nnovative

**L**earning

**E**nvironments

(SMILE) for Encore Careers in Education



**S M I L E** Noyce Scholars Program

<https://www.youtube.com/watch?v=lgFLcNcqC24>



# Cell Phones Poll Everywhere

Text a Code to 22333

Getting to know you!

[http://www.polleverywhere.com/multiple\\_choice\\_polls/8ahdTKLmJdl1PgU](http://www.polleverywhere.com/multiple_choice_polls/8ahdTKLmJdl1PgU)

Introduce Rio Noyce Team



## SMILE Noyce Scholars Program

National Science Foundation

- ❖ Online 15-month comprehensive secondary teacher certification program in math or science.
- ❖ Recruitment of re-careering Engineering, Math, and Science Professionals into a Post-Baccalaureate certification program leading to an Arizona teaching license in grades 7<sup>th</sup> through 12<sup>th</sup>.

# Primary Recruitment Focus Encore Career STEM Professionals



Maintain  
Income

Make a Social  
Impact

Add Personal  
Meaning



# Noyce Scholar Demographics

- 15 Noyce Scholars to Date (9 Math and 6 Science)
- Gender: 54% Males, 46% Female
- Diversity in Ethnicity: 82% White, 6% African American, 6% Native American, 6% Hispanic
- Average Age: 49 Years
- Average STEM Work Experience: 17 Years
- Educational Background/Degrees

## Undergraduate Degree

*Biology*  
*Biological Sciences*  
*Chemistry*  
*Civil Engineering*  
*Electrical Engineer*  
*Geosciences/Environmental Sciences*  
*Math/Probability and Statistics*  
*Metallurgical Engineering*  
*Nursing/Science*

## Masters Degree

*Adult Education*  
*Business Administration*  
*Civil Engineer*  
*Electrical Engineer*

## Doctorate Degree

*Chiropractic*  
*Medical Doctor*

## STEM Work Experience

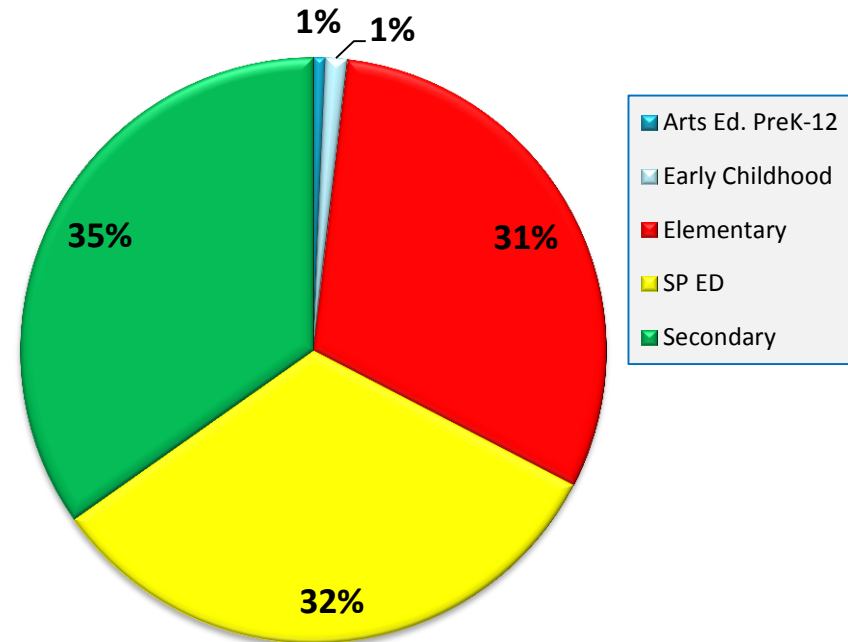
*Abbot Laboratories*  
*Alaska Department of Fish & Game*  
*Amkor Technology*  
*Banner Good Samaritan Medical Center*  
*Dribble Engineering*  
*Freeport-McMoRan Copper and Gold Corporation*

*Intel Corporation*  
*Phelps Dodge Mining Corporation*  
*Phillips Semiconductors*  
*SECOR International Inc.*  
*U.S. Army Flight Surgeon*

# Built on a Successful Teacher Preparation Program Model 2000-2014

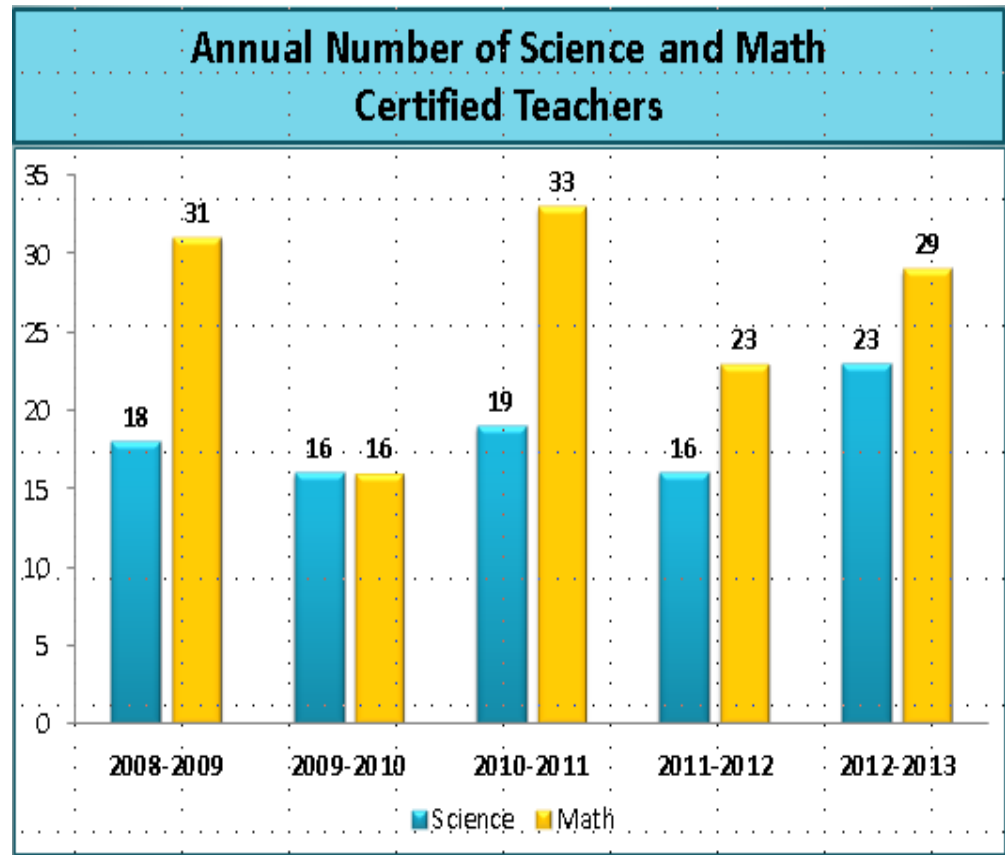
- First state approved community college teacher preparation program in Arizona and first online program
- Program designed around the belief that a certification program should be rigorous and high-quality
- Teachers need not to go into debt for choosing teaching as a career path.

**Total Certified Teachers  
2001 through 2013 = 2,417**



# Secondary Math and Science Certified Teachers

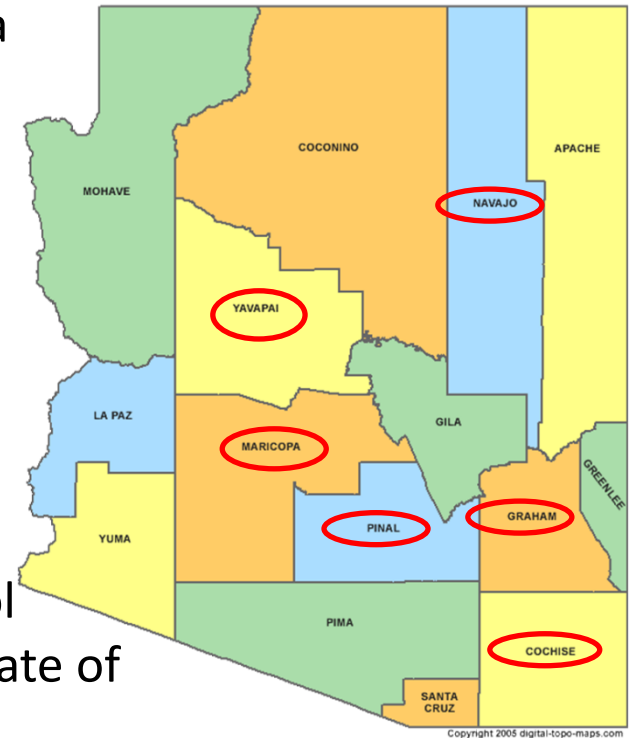
- Growth reflects the start of alternative pathway to certification, Teacher In Residence Program.
- The regular Teacher Preparation Program should not supplant, but increase math and science teachers in overall program.



# 28 District Partnerships

## Representing 6 Counties in Arizona

- Pool of Math and Science mentor teachers with 5 years of teaching experience in Noyce Scholar's Content Area
- Provide 150 hours of Field Experience
- Provide 9 to 12 weeks of Student Teaching
- Interview Noyce Scholars for math and science openings in district
- BioScience High School in Phoenix Union High School District giving scholars first-hand experience with state of the art classroom materials and resources
- High-Need District/ Rural Grow Your Own Concept



# 18 Industry / Association Partnerships



# Key Concepts of the SMILE Program

- Recruitment of Noyce Scholars
- Coursework enhancements
- Self- Efficacy Driving Force of Program
- Selection of “Best Fit” for classroom (particularly high need schools)
- Induction Model for Program



# Self- Efficacy Driven

- Giving back to society
- Making an impact on next generation of mathematicians and scientists
- Fulfilling dreams
- Reflecting on self efficacy – **Katy Westersund**



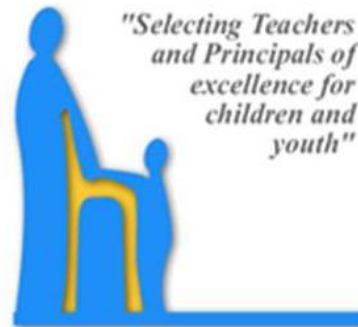
# Scholar Testimonial

# Selection of “Best Fit” for Classroom

- Explore Teaching Workshop



- Haberman STAR Teacher Pre-Service Teacher Screening Test



# Selection of “Best Fit” for Classroom

- Interview Committee
  - Only Applicants who pass Explore Teaching Rubric
  - Diversified interview team
  - Interview Questions/rubric
- Best Fit for High-Need District and At-Risk Students— **Michael Yarish**



# Scholar Testimonial

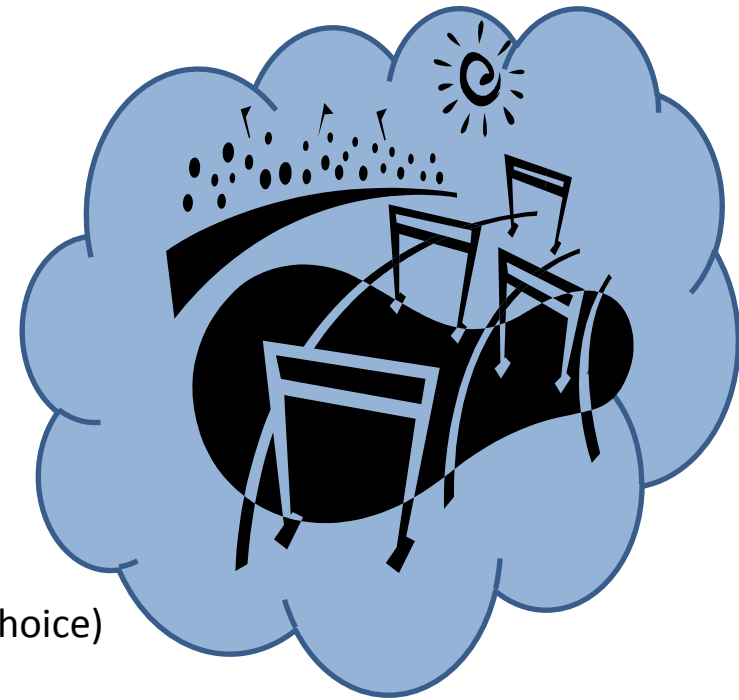
# Induction Model for SMILE

- Noyce Success Coach for coursework
- Noyce Advisor for student teaching
- First Year of Teaching Mentor
- Communities of Practice (NING Platform)
- Proven Program Benefits



# SMILE Program Hurdles

- Recruitment of STEM professionals
- Transition from corporate world to classroom
  - Scholars' "wth- it-ness"
  - Engaging classroom of teenagers
  - Knowing teaching is more than instruction (organization, record keeper, flexible, etc.)
- District expectations
  - AP or Honors classroom instruction
  - Automatic placement of scholar in district (it's scholar's choice)



# SMILE Benefits

- Post Baccalaureate Degree Certification
- Flexibility of Online Learning
- Mentorship and Support
- Cost Effectiveness (Lower Community College Tuition)
- Master Degree Partnerships
- Assisted Job Placement





# SMILE Noyce Scholars Program

## Bringing SMILEs to the next generation

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[www.riosalado.edu/noyce](http://www.riosalado.edu/noyce)



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