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Robert Wood Johnson Foundation

**AARP**  
Real Possibilities

# STEM Programs to Grow a Diverse Nursing Workforce

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# Today's Webinar

- Describe current, innovative STEM programs that target early age students in diverse communities.
- Discuss opportunities to replicate or tailor strategies that may help strengthen State Action Coalition Diversity Action plans.
- Q&A



**Jennifer A. Peed, MSW**  
Director, Office of Center Integration  
Center to Champion Nursing in  
America

# Today's Content Expert

## **Adriana Perez PhD, ANP-BC, FAAN**

Assistant Professor  
University of Pennsylvania  
School of Nursing

Diversity Consultant,  
Center to Champion Nursing in  
America



# STEM Programs – What & Why?

- S.T.E.M. – Education in science, technology, engineering, and mathematics has received growing attention over the past decade.
- Students in the U.S. are behind other nations on international assessments of science, mathematics, and problem-solving ability.
- This learning gap is disproportionately observed in minority and disadvantaged populations.
- Effective science education not only prepares students for a career in the sciences but has the added benefit of fostering scientific literacy. Increasing scientific literacy can lead to more informed decisions about health and disease and overall improvements in the public's health.

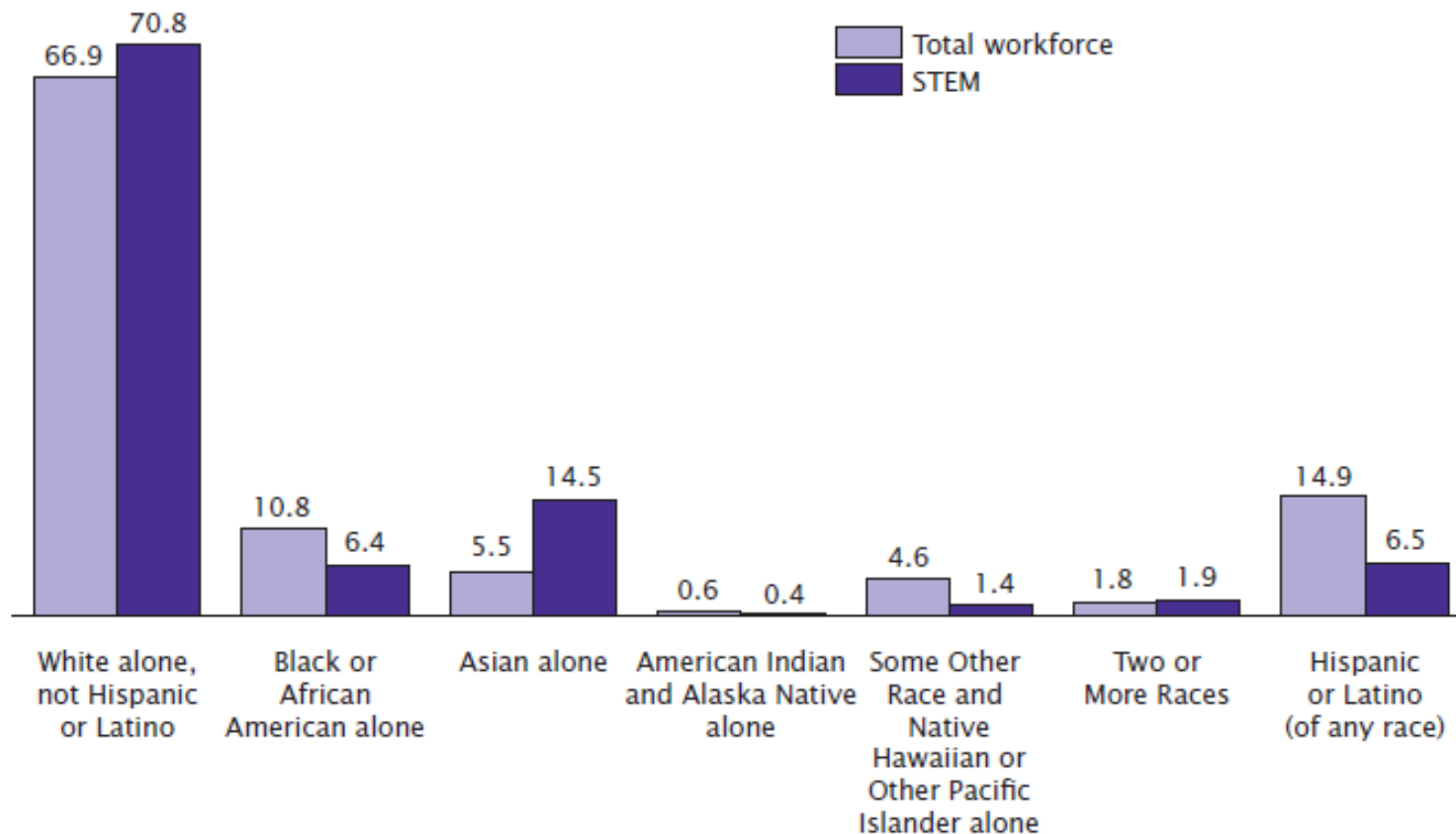
(ARRA, Impact Report)

# Disparities in STEM Employment

Figure 9.

## Racial and Ethnic Representation in the STEM Workforce

(In percent. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see [www.census.gov/acs/www/](http://www.census.gov/acs/www/))



Note: Native Hawaiian or Other Pacific Islander alone was combined with Some Other Race because of a small number of sample observations.

Source: U.S. Census Bureau, 2011 American Community Survey.

# STEM Programs & Nursing

- Pipeline programs in the health professions have a documented record of success across a spectrum of academic entry points, including secondary school (DHHS, 2009).
- The most effective designs of pipeline programs include simple, structured activities targeting young student participants.
- Policy recommendations include the continued support for HRSA's Division of Nursing and other stakeholders to develop strategies to recruit, graduate and employ underrepresented minorities in nursing, starting with middle school programs.

(National Advisory Council On Nurse Education And Practice, 2013)

# The RI STEM Expedition

“A Strategy to Diversify the Nursing  
and Health Professions Workforce”

Pamela McCue RN, MSN



**Rhode Island Nurses Institute  
Middle College**

# Today's Guests from Rhode Island

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**Pamela L. McCue, MS, RN**  
Chief Executive Officer  
RI Nurses Institute Middle  
College  
Providence, RI





## Mission Statement

To prepare a diverse group of students to become the highly educated and professional nursing workforce of the future.

## Vision

To create an innovative high school experience that is student-centric, structured to foster a supportive learning environment , and committed to developing the skills, knowledge, and passion necessary to excel in the nursing and allied health professions



# Education Inequities (NCES, 2010)

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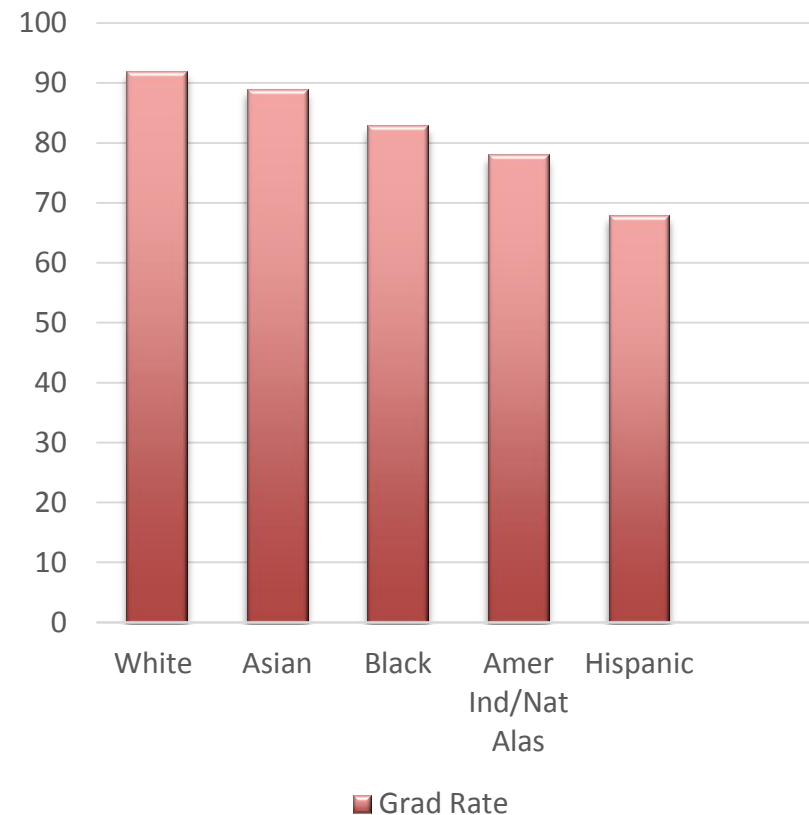
**Lower quality K-12 education**

**Score lower on standardized tests**

**Likely to have more inexperienced teachers and teachers not certified in content areas math/science**

**Tracking –students of color less likely to be placed in college prep courses (Fletcher, 2012)**

## Grad Rate



# What We Know

- Dual Track Career & Academic Courses more likely to attend college (Fletcher, 2012)
- Connection between core academic courses and career knowledge (Fletcher & Cox, 2012)
- Early interest strongest predictor of eventual employment in health/medical professions (Fuch & Miller, 2012)

# What We Know

- Parent Encouragement of college attendance, math, science more (Fuchs & Miller, 2015)
- Algebra 1 by 8<sup>th</sup> grade and HS calculus –predictors of college health care degree (Fletcher & Cox, 2012)
- Career investigation begins in middle school (Cohen, Palumbo, Rambur, & Mongeon, 2004; Hoke, 2006; Knight, Abdallah, Findeisen, Devereaux-Meillo, & Dowling, 2011)

- **Early decisions dictate curriculum & effort in college**  
(Cohen et al., 2004; Fletcher, 2012; Miller & Kimmel, 2012; The Sullivan Commission, 2004; Villarruel et al., 2001)
- **Role models, mentors, real health care experiences**  
(Loftin, Newman, Gilden, Bond, & Dumas, 2013; Degazon & Mancha, 2012; Banister, Bowen-Brady, & Winfrey, 2014; Noone, 2008).
- **Student self-efficacy & teacher expectations strong influence in pursuit of STEM career**  
( Lee, Min. & Mamerow, 2015)

# Key Components

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College  
Prep/STEAMM  
Curriculum

Nursing/Health Care  
Knowledge

Social Emotional  
Supports

Dual/Concurrent  
College Enrollment

Prof Socialization  
Workforce Exp  
Role Models  
Mentors

# Key Components

- **Professional Socialization**
  - Values of Nursing
  - Professionalism
  - Scholarship
  - Empathy & Compassion
  - Character
- **Workforce Experience**
- **Speakers/Mentoring**
- **Internships**
- **CNA/EMT/ First Aide/CPR**

# Partners

West View Nursing & Rehabilitation

Women & Infant's Hospital

Memorial Hospital

Kent County Memorial Hospital

Hattie Ide Chaffee Home

Center for Justice

Evergreen House Health Center

Lifespan- Rhode Island Hospital

Elmhurst Extended Care

EPOCH Senior HealthCare on Blackstone Blvd

Arbor Hill Assisted Living

Highlands on the East Side

Home & Hospice Care of Rhode Island



# Partners

Brown University

RI Department of Health

American Heart Association

Leukemia and Lymphoma Association

Home Care Assistance of RI

Community Connection Healthcare

HOSA

Lifespan Community Health Services

Walgreen's

CVS HEALTH

The Miriam Hospital

St. Elizabeth Court

Cherry Hill Manor



**It's Our Community**

# In Their Own Words

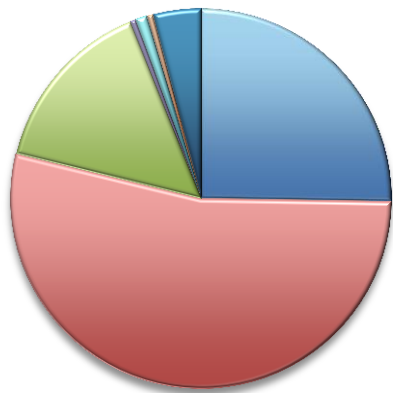
- “I have direction now. More than getting a piece of paper-a HS diploma does not mean much”
- “Teachers care here-my old ones did too-but the RINI teachers held a mirror up to me
- Before I did not know the concept of school. Why I was going-Just for going? RINI taught me knowledge is the best thing. It can get me places. I am going to college”

# In Their Own Words

- “ I learned about myself - I found my self-worth here”
- “I did not remember what empathy & compassion meant until you told me. I was treated that way by the teachers and staff.”
- “Professionalism is knowing who you are and where you are going. I feel powerful. I am proud of myself”

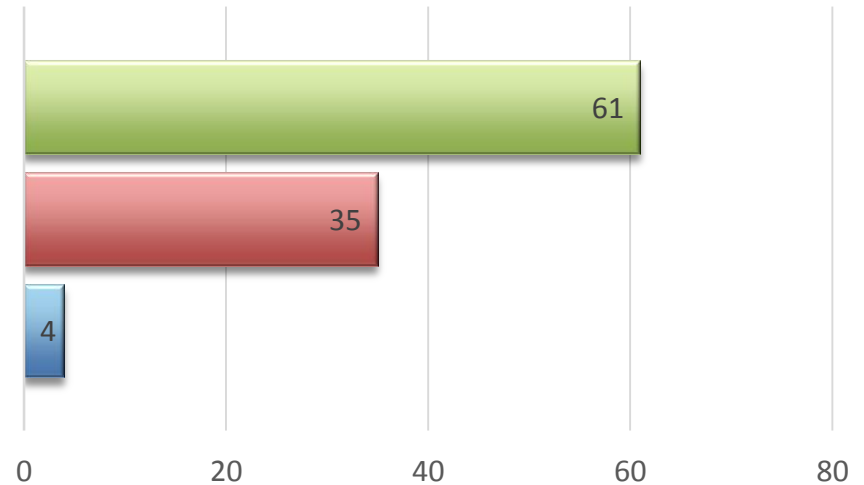
# RINI Students 272

### Race/Ethnicity



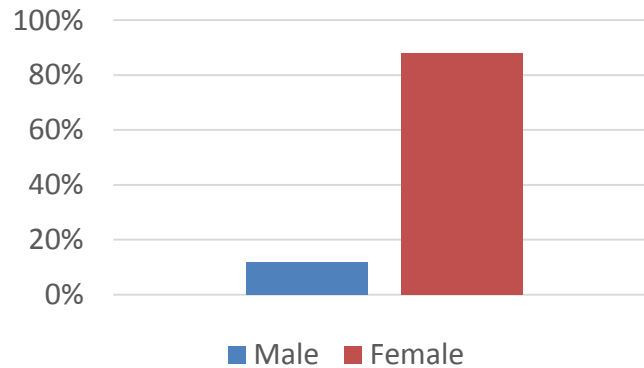
- African/Black
- Hispanic/Latino
- White
- Asian
- Native Amer/Native Haw
- Carribean
- Multi-racial

### Primary Lang at Home



- English
- Spanish
- Portuguese

### Gender



# Board of Directors

- State Nurses Association
- Health Care Employers
- Nursing Education/Higher Ed
- Graduate Nursing Student
- Community Members
- Parents
- Public Health Department
- Leaders in Nursing Practice



## Faculty & Staff

- Certified secondary teachers
- RN faculty
- SNT
- Guidance Counselors
- Literacy and Numeracy
- Social Worker
- ELL Specialists
- Special Ed
- Internship Coordinator
- Administrative Assistants
- Security

## Administrators

- CEO/RN
- CAO
- CFO
- COO

# Results, Challenges & Evolution

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# RI Nurses Institute Middle College

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# The Texas STEM Expedition

Betty Adams PhD, RN

&

Patricia Allen, EdD, RN, CNE, ANEF,  
FAAN

# Today's Guests from Texas

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**Betty Adams, PhD, RN**

Dean & Professor

Prairie View A&M University

Houston, Texas



# Today's Guests from Texas

**Patricia Allen, EdD, RN,  
CNE, ANEF, FAAN**

University Distinguished  
Professor

Texas Tech University  
Health Sciences Center  
Lubbock, Texas



- Texas Science, Technology, Engineering and Mathematics is also known as

***T-STEM***



- This “initiative provides a foundational approach to empower teachers, inspire students, and advance the studies in these four fields.
- The state is home to 70 T-STEM academies and seven blended Early College High School (ECHS)/T-STEM Academies with more than 40,000 students across the Texas.
- The T-STEM initiative is connected with a national STEM network”.

# T-STEM Objectives

- “Increase the number of students entering postsecondary studies and careers in science, technology, engineering, and mathematics.
- Facilitate the promotion of quality school leadership that supports school redesign efforts, quality teacher recruitment and improved teacher preparation.
- Assist in the long-term educational and economic development, and alignment of these fields.”

\*<http://www.edtx.org/college-ready-standards-and-practices/t-stem/>

# Three Elements

- A three pronged approach enables T-STEM to be successful in Texas





# Key Elements

- **T-STEM Academies** – demonstration schools and learning labs, which develop innovative methods to improve science and math instruction.
- **T-STEM Centers** –
  - located at universities and regional education service centers
  - create new STEM instructional materials, provide professional development.
  - coordinate with industry and business partners who provide resources for the T-STEM Academies.
- **T-STEM Network** –
  - serves as a conduit between T-STEM Academies and T-STEM Centers.
  - offers professional development, exemplary profiles and other STEM education resources. .

- To ensure fidelity to the model, T-STEM Academies use the T-STEM Design Blueprint, Rubric, and Glossary as a guide to build and sustain STEM schools that support the desired 7 benchmarks
- The blueprint/rubric is a 40 page “road map” addressing how the academy will self assess their compliance to the 7 benchmarks of the T-STEM Initiative ...very detailed.
- This document is available at:  
[http://www.tstemblueprint.org/uploads/artifacts/benchmark-1/1\\_2015\\_Blueprint\\_Final.pdf](http://www.tstemblueprint.org/uploads/artifacts/benchmark-1/1_2015_Blueprint_Final.pdf)

## Benchmark 3 of T-STEM (Outreach, Recruitment and Retention Plans)

- First objective of this benchmark-
  - recruit and encourage participation from underrepresented student and families
  - including plans for transportation, child care for family events, and translation of all marketing tools.
- T-STEM in Texas includes grades 6-12, but nationally this initiative is beginning in pre-school
- Admission is by a lottery and open access for all (no GPA or testing criteria or past disciplinary problems)
- 50% or greater of the students selected are economically disadvantaged & underrepresented.

# Anderson High School

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# T-STEM Academy Example

- L.C. Anderson High School, located in northwest Austin serves a diverse population, with more than 50 different languages spoken in students' homes.
- Anderson has been named a T-STEM academy by the Texas Education Agency.
- Anderson's career and technology programs highlight medical, engineering, film, manufacturing and computer science.

# Anderson High School Demographics

- African American 5.7%
- Hispanic 32.3%
- White 50.9%
- American Indian 0.2%
- Asian 7.1%
- Pacific Islander 0%
- Two or More Races 3.8%
- Economically Disadvantaged 22.8%
  
- ***STARR Performance Passing Rates Science 99% and Math 96%***

**Jones Future Academy  
College of Nursing Tour – November 13, 2015**

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- STEM Program that promotes and advances education for multicultural high school students to baccalaureate nursing education.
  - Houston Independent School District Futures Academy
  - Houston Community College
  - Prairie View A&M University
- Professional development in health science
- Program and students access to committed resources
- Ongoing fostering student interest in health sciences
  - Results: High School Diploma to Associate Science in Nursing (ASN) to Bachelor of Science in Nursing (BSN)



# Stem Education Coalition

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- National initiative oversees policy on STEM education, gathers resources and maintains data and demographics on the STEM initiative

<http://www.stemedcoalition.org/reports/>



# White House Symposium on *EARLY STEM*

- This link to the conference can be found at:
- <https://www.whitehouse.gov/photos-and-video/video/2016/04/21/white-house-symposium-early-stem> (Amazing information about how we learn)
- Early use of math is predictive of later success
- Early math use transfers to other areas: oral language grows and self regulation increases
- Kindergarten math ability predicts whether a child will graduate from high school
- Start science in Pre-K (explore the way the world works)

## Interactive Polling Question #1

- On the top right corner of your screen, please click the "polling" icon
- Please answer the following multiple choice question:

**Are you are working with middle schools or high schools to promote diversity in nursing?**

- A. Yes
- B. No

## Interactive Polling Question #2

- On the top right corner of your screen, please click the "polling" icon
- Please answer the following multiple choice question:

**Have you included middle schools or high schools as community partner organizations in your coalition?**

- A. Yes
- B. No

# Questions or Comments?



**Press \*1 on your telephone key pad to ask a question  
(Please be sure to record your name after the prompt)**

**OR**

**Use the “chat” feature to send “everyone” a question.**



If you are having trouble asking a question, please click the “Raise Hand” button on the bottom right of your screen

You can find the recording, webinar summary, and additional resources by going to: [www.campaignforaction.org/webinars](http://www.campaignforaction.org/webinars).

# Closing Thoughts

## CAMPAIGN IMPERATIVES:

- Moving *BEYOND* Nursing!
- Must delivery short term *RESULTS* → while developing long range plans!
- Must have the *COURAGE* to place the right *LEADERS* at the helm – remove weak or ineffective *LEADERS*
- Must have *FUNDING* to sustain work
- Must not ignore *DIVERSE* stakeholders critical to success
- Must integrate *Culture of Health* opportunities into your work

# Campaign Resources

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Visit us on the web at [www.campaignforaction.org](http://www.campaignforaction.org)  
For webinar resources:  
<http://campaignforaction.org/resources>

Campaign for Action

ABOUT ISSUES OUR NETWORK BLOG RESOURCES GET INVOLVED Q

## Resources

### A LIBRARY AT YOUR FINGERTIPS

Help promote better health through nursing by tapping into hundreds of resources, including studies, toolkits, webinars, and other materials organized in the categories in which the *Campaign* pushes for action.

#### ISSUES

- Improving Access to Care
- Transforming Nursing Education
- Promoting Nursing Leadership
- Increasing Diversity
- Collecting Workforce Data
- Fostering Interprofessional Collaboration
- Building Healthier Communities

#### TOOLS & TIPS

- Academic Progression in Nursing (APIN)
- Advocacy
- Communications and marketing
- Funding opportunities
- Meetings
- Milestones (Dashboard indicators)
- News releases

- Organizational excellence
  - Fundraising
  - Internal operations
  - Stakeholder engagement
- Research
- State Implementation Program (SIP)
  - Grantee projects
  - Grantee resources
- Webinars

keywords

BY STATE

RESET ✕



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