

FUTURE OF NURSING™

Campaign for Action



Stem Programs
To Grow a Diverse Nursing Workforce

Webinar Summary June 30, 2016

Presenters

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Webinar Goals:

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.
- Learn how your Action Coalition can leverage Science, Technology, Engineering and Math programs (known as STEM) to enhance diversity of your state's nursing workforce.

Across the country, there is a movement to advance the field of nursing so that all Americans have access to high quality, patient-centered care in a health care system where nurses contribute as essential partners in achieving success. This national level [Future of Nursing: Campaign for Action](#) is a result of the Institute of Medicine's landmark 2010 report on the [Future of Nursing: Leading Change, Advancing Health](#).

The *Campaign for Action's* field-based teams, the [Action Coalitions](#) (ACs), are leading this movement and are equipping themselves with knowledge gained from technical assistance provided by the Center to Champion Nursing in America (CCNA), a joint initiative of AARP, the AARP Foundation, and the Robert Wood Johnson Foundation. Such technical assistance comes in the form of webinars, face to face interactions, and other facilitated engagements with public policy leaders, content experts, consultants, and Action Coalition peers across the country.

- Hear from state leaders who have successfully implemented innovative STEM programs and learn how your State Action Coalition can develop a nursing workforce that reflects the demographics of your state.

This webinar has been recorded and can be found on our website at www.campaignforaction.org/webinars

The purpose of this Diversity Learning Collaborative is to describe current, innovative STEM programs that target early age students in diverse communities, said **Adriana Perez**. Attendees will discuss opportunities to replicate or tailor strategies that may help strengthen State Action Coalition Diversity Action plans. A focus on STEM programs may potentially contribute to the sustainability of diversity efforts and overall State Action Coalition impact in growing a nursing workforce that reflects the demographics of the state.

Jennifer Peed noted the dearth of minorities in science, technology, engineering, and mathematics (STEM) might contribute to the U.S. losing its edge when it comes to innovation, says the National Institutes of Health—but as a result, there are now a number of innovative STEM programs that target young students in diverse, disadvantaged communities.

Attendees at this webinar will discuss those programs, and strategies Action Coalition can use to strengthen their diversity action plans. This focus on STEM programs can help sustain and expand diversity efforts and lead to a nursing workforce that reflects the demographics of the nation.

- 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.

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Similar to nursing, we see non non-Hispanic White and Asian populations are overrepresented among STEM workers; about 67 percent of the total workforce was non-Hispanic White, but they held 71 percent of STEM jobs, said Perez.

Asians held 15 percent of the STEM jobs compared with 6 percent of all jobs.

Blacks, American Indians and Alaska Natives, and those of Some Other Race were underrepresented in STEM.

Blacks held 6 percent of STEM jobs, American Indians and Alaska Natives held 0.4 percent of STEM jobs, and those of Some Other Race held 1 percent of STEM jobs.

Hispanics were also underrepresented in STEM occupations. Although they made up about 15 percent of the workforce, they held 7 percent of STEM jobs This graph illustrates disparities in STEM employment by race/ethnicity from 2011

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- 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)

Perez said advances in nursing workforce diversity over the past decade are the result of efforts by national, federal, and nursing stakeholder groups to develop and implement effective policies and programs to promote diversity in the profession.

K-12 Science, Technology, Engineering and Math (STEM) “pipeline” programs have brought more underrepresented minority students into the health professions.

Lessons learned from the Health Professions Partnership Initiative, which is jointly funded by the Robert Wood Johnson and the Kellogg Foundation, indicate that the most effective designs for 11 pipeline programs include structured activities targeted at a well-defined cohort of young student participants.

Structured activities facilitate the measurement of outcomes. The set of program activities should be simple. Successful interventions can be sequenced to expand the program or to include multiple program sites. Staging of growth allows time for local cultural change that, in turn, increases acceptance and participation in the program (RWJF, 2009).

Program success is associated with attention to implementation fidelity, technical capacity for measuring and recording outcomes, and inter-organizational collaboration (DHHS, 2009).

Recommendations: HRSA’s Division of Nursing; and other nursing stakeholders to develop strategies for recruiting, graduating, and employing underrepresented minorities in nursing, starting with pipeline programs in middle schools.

[The RI STEM Expedition of Rhode Island](#)

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

Pamela McCue RN, MSN



Rhode Island Nurses Institute Middle College

Chief Executive Officer
RI Nurses Institute Middle College
Providence, RI

Pamela McCue, is CEO of the RI Nurses Institute Middle College located in Providence RI

She holds an MS in Nursing Administration and is pursuing a PhD in Nursing as a RWJF Future of Nursing Scholar funded through the Rhode Island Foundation at the University of Rhode Island. Her research interest is understanding the nursing education pipeline, specifically at the pre-collegiate level in diversity the nursing and health care provider workforce. Prior to her career at RINI-MC, Ms. McCue was Director of Nurse Registration and Nursing Education for the State of RI and Executive Director of the RI State Nurses Association.

Mission Statement of the Stem Program

Rhode Island Nurses Institute

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)

- 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
- Students of color less likely to be placed in college prep courses (Fletcher, 2012)

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)
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- Early interest strongest predictor of eventual employment in health/medical professions (Fuch & Miller, 2012)
- Parent Encouragement of college attendance, math, science more (Fuchs & Miller, 2015)
- Algebra 1 by 8th 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



- **Professional Socialization—Students take an oath of uphold values;20 students in a class; literary coaches; lectures recorded; classes 8:30 am to 3 pm**
 - Values of Nursing
 - Professionalism
 - Scholarship
 - Empathy & Compassion
 - Character
- **Workforce Experience**

- **Speakers/Mentoring**
- **Internships**
- **CNA/EMT/ First Aide/CPR**

Partners in Stem Program

- 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
- 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 Our Own Words](#)



“I have direction now.”

- “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”
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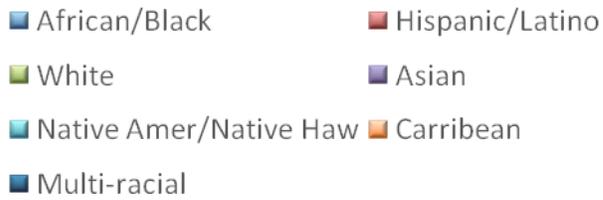
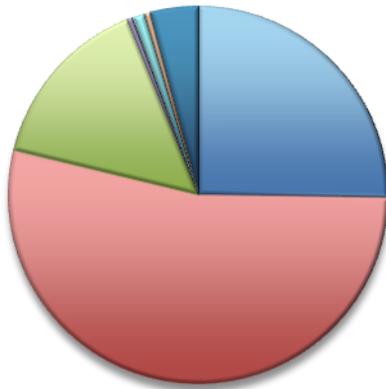


- “ I learned about myself - I found my self-worth here”
- “I did not remember what empathy & compassion meant until you told me. I was treated that way by the teachers and staff.”
- “Professionalism is knowing who you are and where you are going. I feel powerful. I am proud of myself”

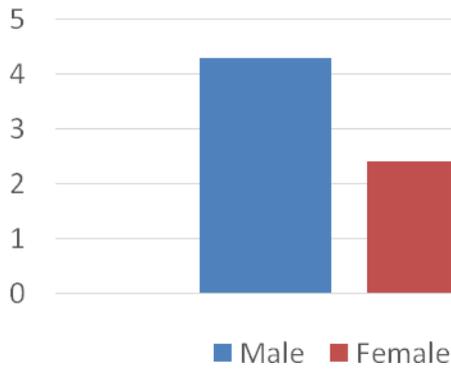
[RINI Details](#)

Located in downtown Providence; 272 students; no tuition;87 percent meet guidelines for free or reduced lunch; multi-racial; more male students

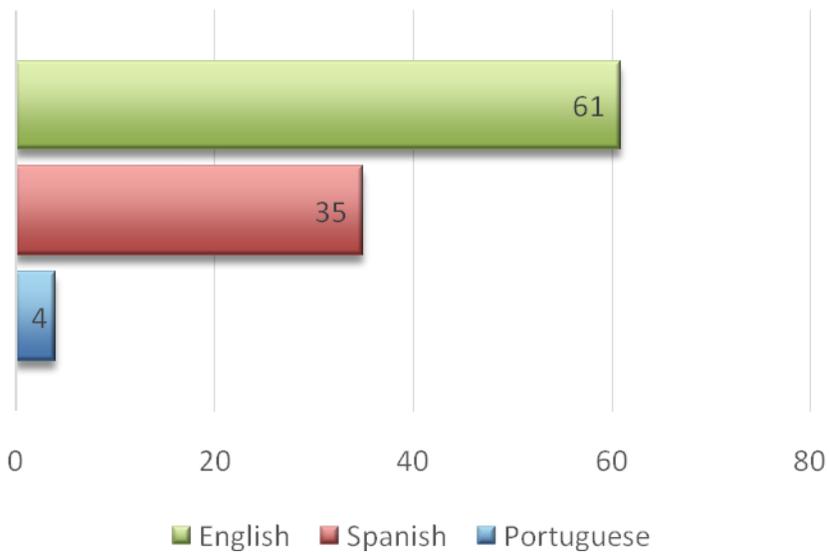
Race/Ethnicity



Gender



Primary Lang at Home



Board of Directors

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

Faculty & Staff – 34 staff; five RNs

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





The Texas STEM Expedition

Betty Adams PhD, RN

&

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



Betty Adams, PhD, RN Dean & Professor Prairie View A&M University Houston, 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”.
- “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>

[A three pronged approach enables](#)

T-STEM to be successful in Texas.



- **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

- 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

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

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



- This link to the White House Conference on Early Stem 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)

Closing Thoughts

These CAMPAIGN IMPERATIVES were **delivered and** discussed in 2013 with Action Coalitions with the culture of health added:

- 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

AC Coalition Membership Resources available here:

<http://campaignforaction.org/our-network/state-action-coalitions/>

The IOM's recommendations include: the need for more advanced education of registered nurses; nurses leading innovations in health care and being appointed to decision making bodies; all nurses practicing to the full extent of their education and training; a more diverse nursing workforce and faculty; and more interprofessional collaboration among nurses, physicians, and other members of the health care team in the educational and clinical environments.

For more information from the Center to Champion Nursing in America about this webinar, technical assistance or other questions related to the Future of Nursing, Campaign for Action contact Natalie Moulding at nmoulding@aarp.org or Madeline O'Brien at mobrien@aarp.org

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