



Pre-College STEM Resources for Workforce Diversity and Research Capacity



Genesis:

- Increase the numbers of urban, rural and minority students considering research and medical careers

Partnerships:

- Scientists and clinicians partnering with educators, community organizations and science centers

Impact:

- Teacher professional development
- Student and teacher laboratory internships
- Mobile laboratories bring science to rural communities
- Public health literacy
- Career opportunities for minority and underserved students

A Broad Range of Career Options

Tech transfer officer

Science teacher

Clinical trial coordinator

Veterinarian

Journal editor

Pharmaceutical manufacturer

Clinical nurse

Staff scientist

Statistician

Biomedical Workforce

Clinician

Principal investigator

Clinician scientist

Postdoctoral researcher

Science policy analyst

Computational biologist

Grant manager

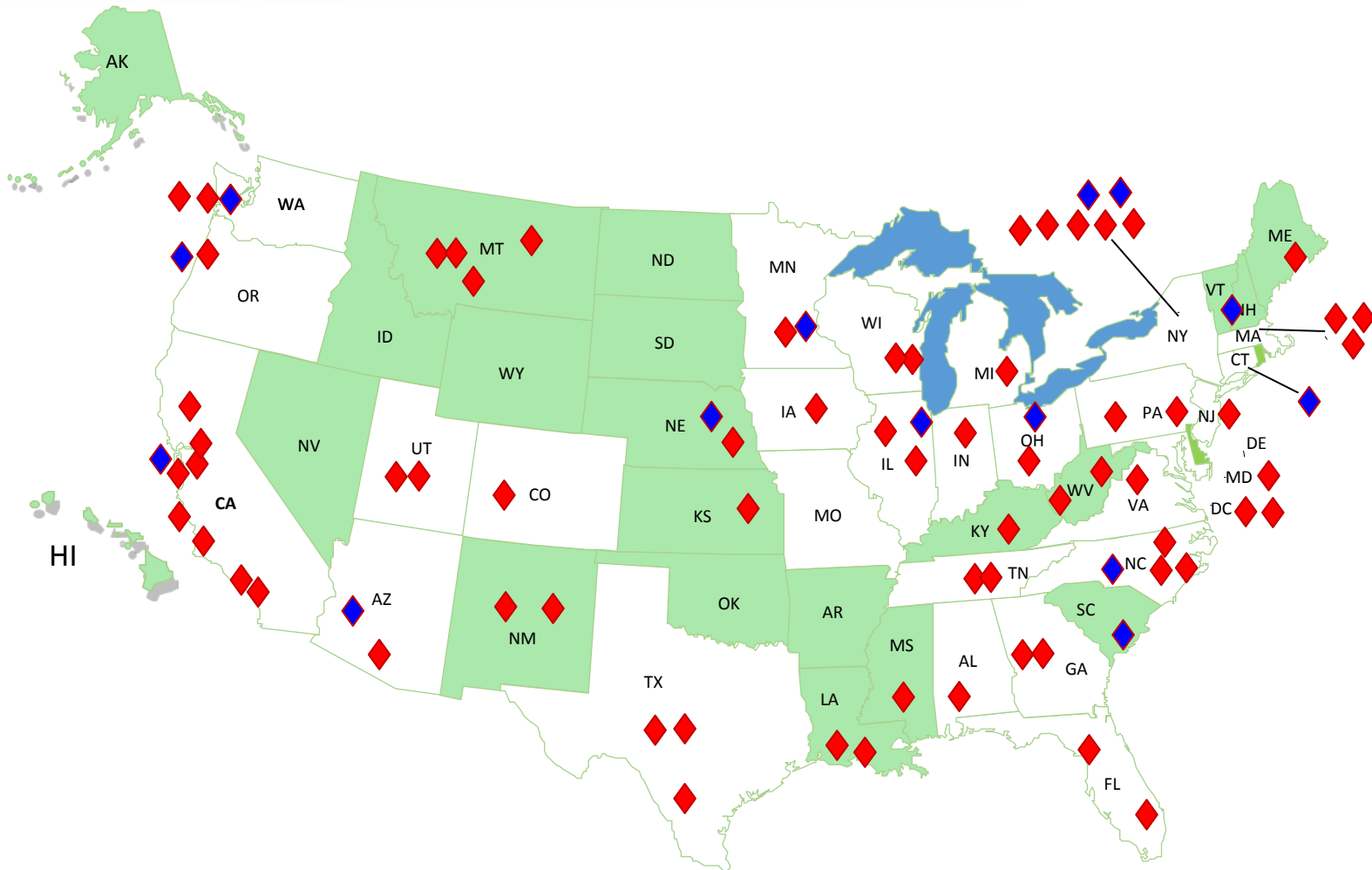
Regulatory official

SEPA Projects

◆ SEPA K-12 STEM Projects

◆ SEPA Museum Exhibits

IDEA States (<\$120M NIH Funding/year)

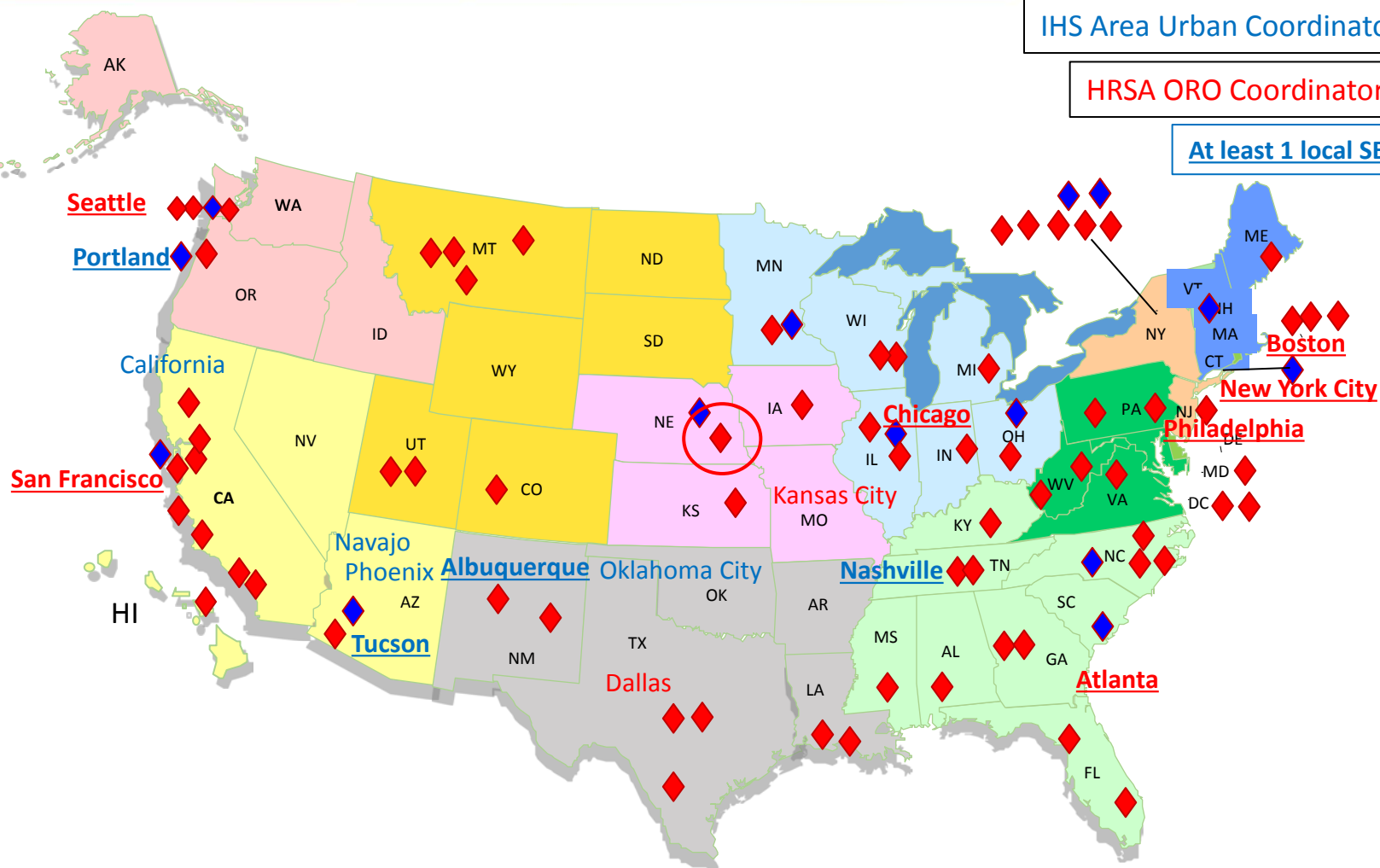


Indian Health Service (IHS) Geographic Regions

IHS Area Urban Coordinators

HRSA ORO Coordinators

At least 1 local SEPA



Building Bridges: Health Science Education in Native American Communities

Partners:

- University of Nebraska Medical Center's Munroe-Meyer Institute
- Great Plains Area Tribal Chairmen's Health Board
- K-12 Schools in Nebraska and South Dakota.

University of Nebraska. Omaha

<http://www.unmc.edu/mmi/education/sepa/>

Omaha Tribe

Umo^ŋho^ŋ Nation Public School

Walthill Public School

Santee Tribe

Santee Community School

Winnebago Tribe

Winnebago Public School

St. Augustine Indian Mission School

Rosebud Tribe

Todd County School District

St. Francis Indian School

Sisseton-Wahpeton Tribe

Tiospa Zina Tribal School

Yankton Tribe

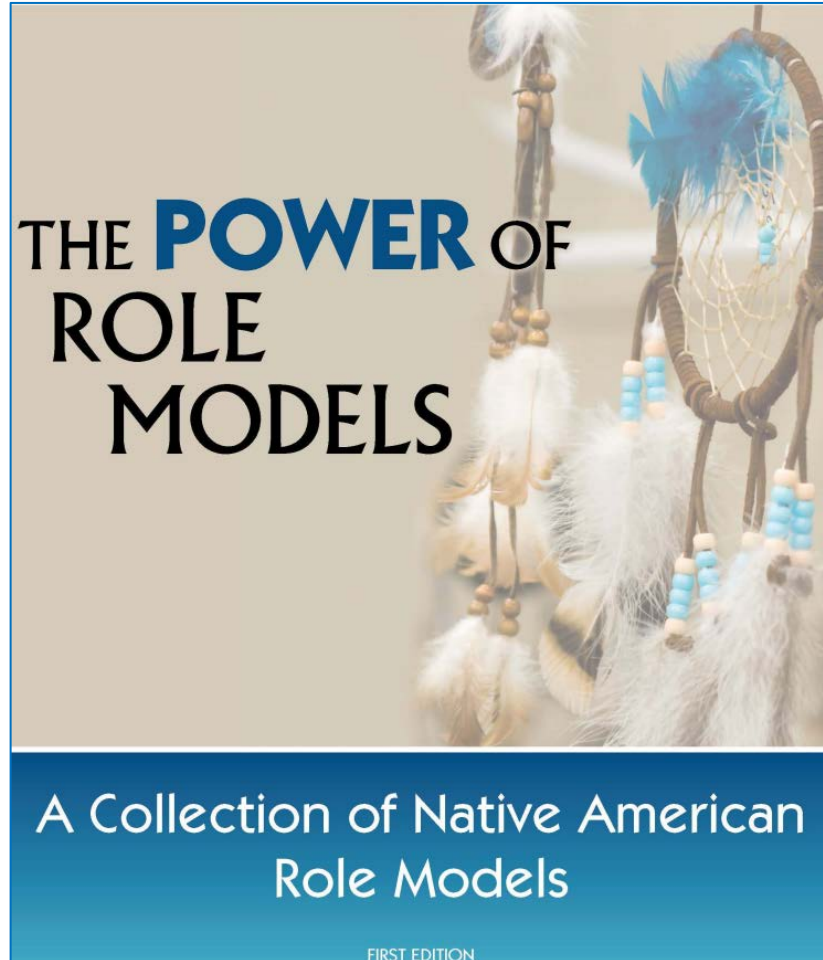
Marty Indian School

Wagner Community Schools

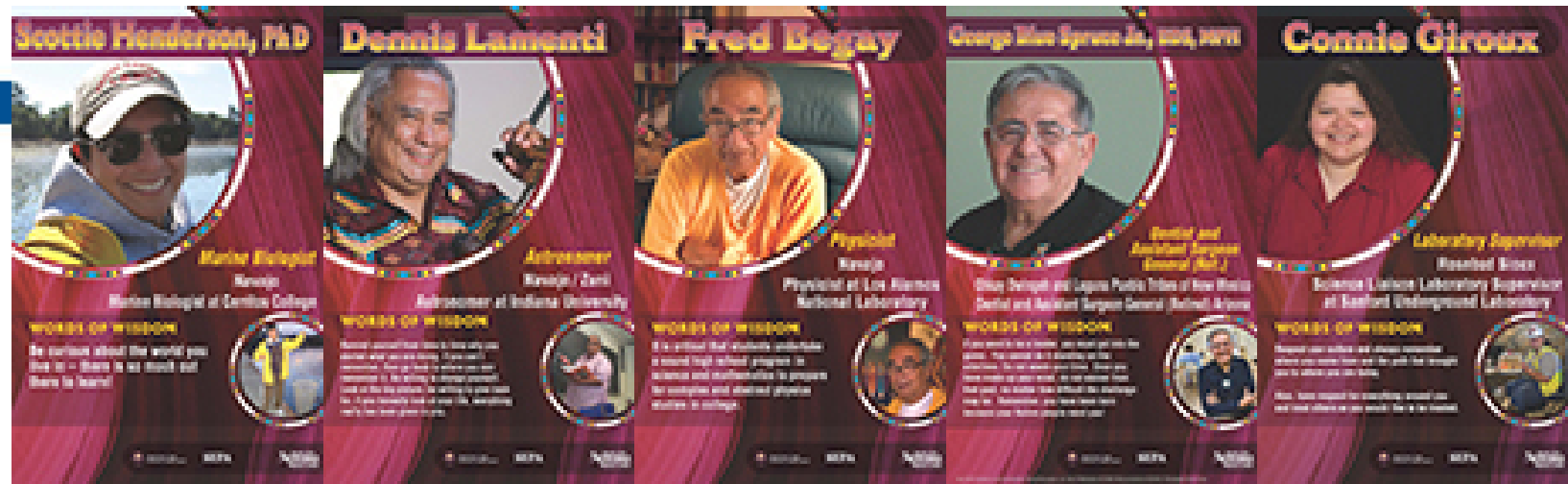
Building Bridges: Health Science Education in Native American Communities – **Advisory Council (partial list)**

- **Great Plains Tribal Chairmen's Health Board**
 - Jerilyn Church
Dr. Corey Smith
- **Omaha Tribe**
 - Pam Boehle, Umoⁿhoⁿ Nation Public School
Michelle Blackbird, Umoⁿhoⁿ Nation Public School
Ed Stansberry, Walthill Elementary School
- **Ponca Tribe**
 - Pat Eichberger, Education Director
- **Winnebago Tribe of Nebraska**
 - Don Blackbird, St. Augustine Indian Mission School
 - Paula Kuebler, St. Augustine Indian Mission School
 - Kay Earth, Winnebago Public School
 - Linda Kendra, Winnebago Public School
- **Santee Sioux Tribe**
 - Hank Miller, Nebraska Indian Community College - Santee Campus
 - Julene Kay, Santee Community School
- **Sisseton Wahpeton Oyate**
 - Lisa Forcier, Tiospa Zina Tribal School

Building Bridges: Health Science Education in Native American Communities



Marine Biologist, Astronomer, Physicist, Assistant Surgeon General and Lab Supervisor



Nurse, Biologist, Dental Assistant, Pharmacy Technician and Health Scientist



Building Bridges: Health Science Education in Native American Communities

“ To succeed, you must first fail. Don’t be afraid to fail, but don’t approach an endeavor expecting fail. Failure (and practice) provides the experience and knowledge, which are two important components for leadership.”

Dr. Julius Yellowhair



Navajo (Diné)

Optical Engineer

Albuquerque, New Mexico

Education

- B.S. Optical Engineering, University of Arizona
- M.S. Electrical Engineering, University of New Mexico
- M.S. Optical Science, University of Arizona
- Ph.D. Optical Science, University of Arizona

Awards/Recognitions

- Featured in the **SACNAS Journal**.
- Outstanding Graduate Student in Electrical Engineering
- US Patent No US 8,582,092,B1

Reasons why you like your job

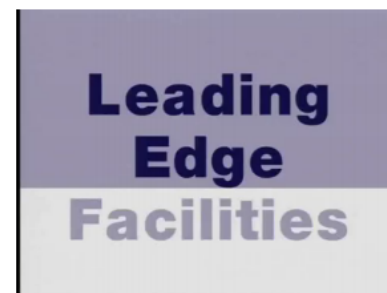
1. The work is never boring; it is always challenging and fun.
2. I get to work and learn from very smart and talented people.
3. I work on projects that I enjoy and make a positive impact for our future society.

How did you become interested in this career?

“Since I was in grade school, I always enjoyed math and science. Math was always my main interest. I spent much time studying math on my own. I used to read and study math books under a kerosene lamp at night and play math games while I was doing my daily chores.”

Special Job Skills

Math skills are essential if you pursue a career in science, technology and engineering. Creativity is also important to come up with new and fresh ideas along with new ways of doing things. Having initiative is also a necessary skill--this true in any field. If you don't have the initiative, you can feel lost in your employment and can get left behind.



Dr. Yellowhair works at the Sandia National Laboratories in New Mexico. This is a fascinating facility.

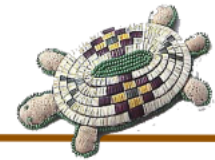
Building Bridges: Health Science Education in Native American Communities

"Any obstacle can be overcome; achievement is merely the marriage of dreams and labor. Economic conditions, ethnicity, and every other factor cease to matter when the life of an animal is on the line; a Native girl from a small farm in Nebraska can be in an intense operating room assisting an emergency surgery on a millionaire's horse."

Edie Siddle



Oglala Lakota
Veterinary Technician
Sheridan, Wyoming



Education

A.A. Associate of Arts, Laramie County
Community College, Cheyenne Wyoming
A.A.S. Associates of Applied Science, Eastern
Wyoming College

Motivation

"Growing up on a small horse ranch, I have always had a desire to be around animals and to help them in anyway that I can. I believe that helping animals is a very noble cause and is one we can trace back to our ancestors who depended on animals for survival. Being involved in the treatment of injured animals as well a preventive medicine for others is very satisfying."

Benefits

- Variety is one of the best benefits of my profession, I get to participate in a variety of procedures and work with a variety of animals.
- It is very satisfying to help a creature in need and I enjoy getting to witness the progress of animals as they recover due to our treatment. It is very fulfilling to help something which cannot help itself.



Special Job Skills

- As a vet-tech, you have to wear several hats. I perform the duties of a radiologist, anesthesiologist, dental hygienist, nurse and even occasionally perform surgeon-like tasks like suturing incisions or wounds.
- Thorough knowledge of anatomy, physiology, chemistry, and biology are required to maintain proficiency and are attained through schooling at a reputable college.

Building Bridges: Health Science Education in Native American Communities

Curriculum Supplement Series



NIH Office of Science Education



NIH curriculum supplements for K-12 science teachers
<https://science.education.nih.gov/>

Contact OSE/SEPA

By E-mail:
scied@mail.nih.gov

By Telephone:
301-594-8901

STEM Resources for teachers and
students:
<http://www.nihsepa.org>

Curriculum Supplement Series

- Teacher's Guides to two weeks of lessons on the science behind important health topics
- FREE upon request to educators in the U.S
- or download HTML or PDF online
- Examples:
 - ✓ *The Brain: Understanding Neurobiology Through the Study of Addiction*
 - ✓ *How Your Brain Understands What Your Ear Hears*
 - ✓ *Looking Good, Feeling Good: From the Inside Out*
 - ✓ *Open Wide and Trek Inside (dental health for ES students and parents)*
 - ✓ *Chemicals, the Environment, and You*



SEPA SCIENCE EDUCATION
PARTNERSHIP AWARD
Supported by the National Institutes of Health

NM FRESH: New Mexico's Future Researchers Exploring Science and Health (SEPA)

Partners:

- Albuquerque Area Indian Health Board
- Albuquerque Area Southwest Tribal Epidemiology Center



<http://nihsepa.org/grants/sepa-new-mexico>
University of New Mexico, Albuquerque, NM

Translating Translation and Scientific Questioning in the Global K-12 Community



- “Programs must also go to where the action is - that is, the reservations - in an intensive way”
- “If the pipeline is to be built and energized and tribal members who have gotten through the pipeline must be part of the team”
- “SEPA-supported Native American students (and teachers) who have completed summer internships form an important network”

University of Arizona, Tucson