STEM Challenges
November 1, 2016
Penn State Harrisburg

Michael Chorney, PhD, Professor of Biology and Chair, Biology and Science Program, Penn State Harrisburg
and
Ms. Rachel Baliira, General Biology Degree Candidate Biology and Science Program, Penn State Harrisburg
Welcome:

Teachers
Students
Faculty Colleagues
Administrators
Engineer Eric Martz, P.E.

Thank you:

The Center for Excellence in Education
Natasha Schuh-Nuhfer, Ph.D.
Director, Teacher Enrichment Program, CEE,
Teacher Enrichment Program Supporters,
The School of Science, Engineering and Technology/
Penn State Harrisburg
A Quick Personal History

Medical school educator-30 yr

Transitioned from research to education outreach

Interested in promoting diversity in STEM professions

Accepted challenge to help build BS Biology program
Challenges Facing STEM Students

Apprehension of mathematics

Poor reading and writing skills

Lack of science preparation

Unrealistic career aspirations, no plans B, C, etc.

Inertia in preparing graduate career applications

Hesitancy to i.d. and interact with mentors, etc.
How to ‘Improve’
Research experiences
Journals and journal clubs
Health/Science clubs, guest professionals
Mentorship teams, candidacy committees
MCAT preparation course
Increased classroom instruction rigor
Better advising
A New Approach

Partnerships between Institutes of Higher Education and local school districts—promoting pathways

Enter Penn State Harrisburg MAPS, Minority Association of Premedical Students, and SNMA-MAPS

“To teach a concept is to know a concept”
Minority Association of Premedical Students

MAPS at Penn State Harrisburg

“...increasing the number of African-American, Latino, and other students of color entering and completing pre-health and medical school.”

SNMA (Student National Medical Association)
SNMA-MAPS founded 1964

Regions

Region 1
California, Nevada, Oregon, Washington, Arizona, Montana, Utah, Idaho, Hawaii, Alaska

Region 2
Nebraska, Wyoming, South Dakota, Iowa, Wisconsin, Illinois, Missouri, North Dakota, Minnesota, Kansas

Region 3
Oklahoma, Texas, Colorado, New Mexico, Arkansas, Mississippi, Louisiana

Region 4
Georgia, Alabama, Florida, North Carolina, South Carolina and the Caribbean

Region 5
Ohio, Indiana, Michigan

Region 6
District of Columbia, Maryland, Virginia

Region 7
Maine, Vermont, New Hampshire, Connecticut, Massachusett s, Rhode Island

Region 8
Pennsylvania, West Virginia, Delaware

Region 9
New Jersey, New York

Region 10
Kentucky, Tennessee
Pipeline Mentorship Program

Penn State Harrisburg

Penn State College of Medicine (Sponsoring SNMA Chapter)

SciTech High

Marshall Math and Science Academy
Pipeline Mentorship

Sci-Tech Students

• Health Professions Recruitment Exposure Programs (HPREP): HPREP continues to expose high school students to science-related activities while introducing them to careers in the health professions.

Marshall Students

• Youth Science Enrichment Program (YSEP): YSEP serves to stimulate elementary and junior high school students' interest in science and health.
Provides (weekly) tutoring in Math and Science related topics.

- Align with lesson plan
- Relate weekly science lesson to medical topics such as diabetes/heart disease
- Review applications process for undergraduate school

Provides (Monthly) hands-on exposure to health professions

- Physician presentations
- Heart rate activity
- Lung Capacity Activity
- Stitching/Suturing activities
Subject Mastery: Positive Feedback Loop in Biology

“To teach a concept is to know a concept”