

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

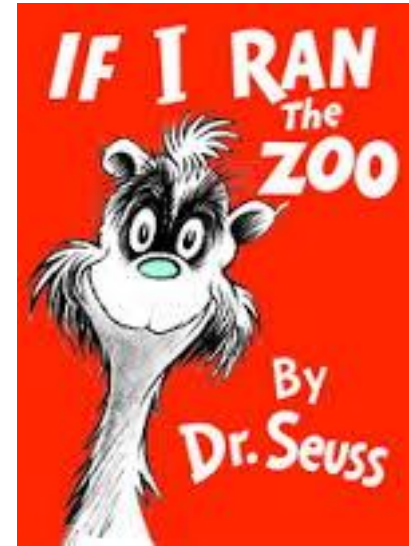
Health/Science clubs, guest professionals

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



SNMA (Student
National Medical
Association)

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

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 10

Kentucky,
Tennessee

Region 9

New
Jersey,
New York

Region 7

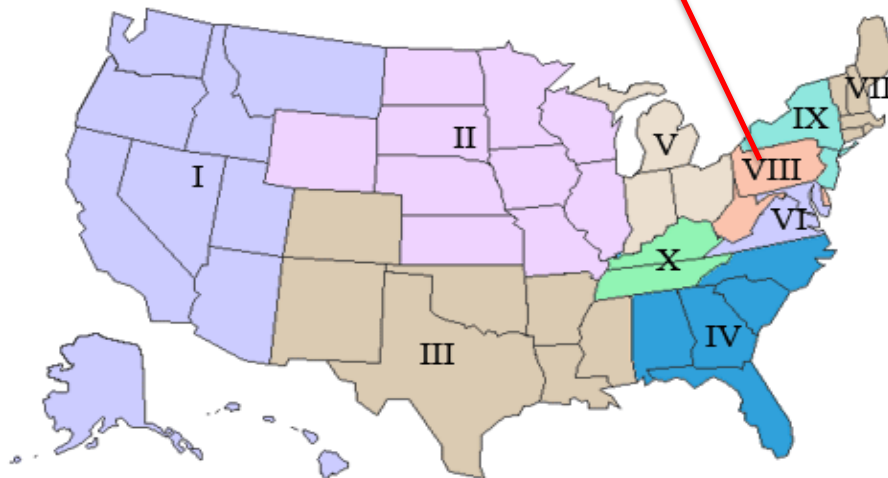
Maine,
Vermont, New
Hampshire,
Connecticut,
Massachusetts,
Rhode
Island

Region 6

District of
Columbia,
Maryland, Virginia

Region 8

Pennsylvania,
West Virginia,
Delaware



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

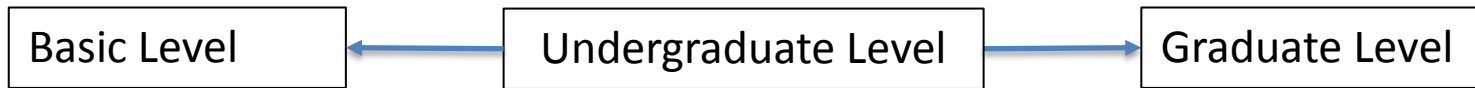


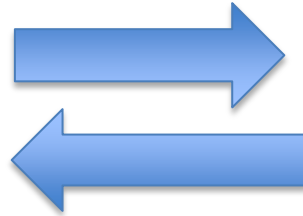
Provides (Monthly) hands-on exposure to health professions

- 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”





Positive Feedback Loop in Biology



