

Establishing an EnvironMentors Chapter at St. Mary's College of Maryland

ENST450: Applied Sustainability Practicum



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EnvironMentors

EnvironMentors is a national environment-based mentoring program developed by the National Council for Science and Environment (NCSE). The program provides underrepresented high school students the opportunity to work with undergraduates, researchers and professionals to develop scientifically rigorous research projects. The program also provides high school students with college access and opportunities for careers within **science, technology, engineering, and mathematics** (NCSEonline.org).



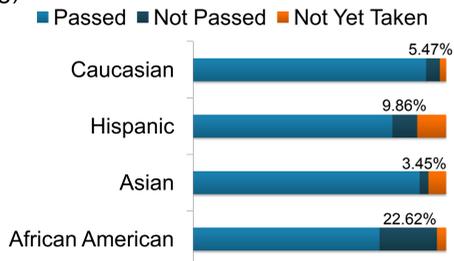
Students from local high schools work one-on-one with a mentor to develop and conduct an environmental research project over the course of the academic year. Mentors guide their student through all stages of the scientific method including posing a question, completing background research, designing an experiment, and presenting the findings at the EnvironMentors Science Fair. The fair is an opportunity for the students to share what they've learned and their experiments with the local scientific community. The projects will be judged and the top three students get the chance to compete at the National EnvironMentors Fair in Washington D.C. for scholarship prizes.

Environmental Education has been shown to increase student aptitude in STEM subject areas.

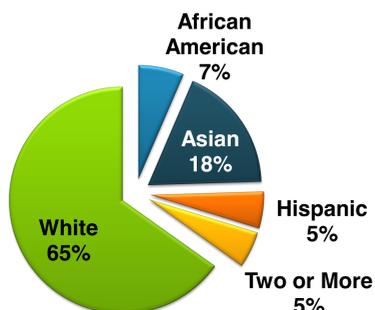
(Monk et al. 2014)

St. Mary's County Public Schools

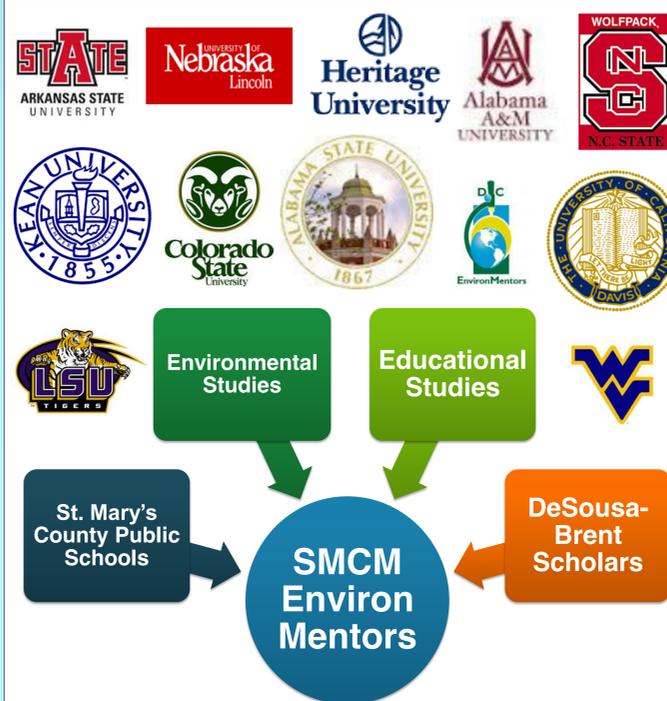
- SMCPS provides opportunities for all students to gain access to STEM related experiences, but is exclusive in the fact that it is reserved to those who are "highly able", "focused", and "most likely to succeed" determined by an application process (SMCPS.org).
- The Biology High School Assessment is a graduation requirement in St. Mary's County. These are the students **at risk** for not graduating in 2016 (MDK12.org):



St. Mary's County 2015 High School Students in STEM



Environmental Community



- One-on-One Mentoring:** Environmental, science, and natural resource professionals, faculty and college students volunteer as mentors to high school students. Mentors support students in conducting rigorous research projects, serve as important role models, and motivate students to pursue college.
- Environmental stewardship:** students have multiple opportunities to engage in the local environment. For example, students participating in 2013-14 visited wildlife refuges, went on weekend camping trips, helped with habitat restoration or invasive species removal, and conducted water quality sampling.
- Experimental research projects:** With the support of their mentor, students design and conduct an experimental research project based on an environmental topic based on their choice. Students develop the critical thinking, analytic and communication skills vital to their success in college and future careers.
- College preparation:** EnvironMentors provides students with a range of college preparation activities, including exposure to a college campus, labs, and library; assistance with college applications and financial aid; and an introduction to environmental and natural resource degree programs.

STEM students are more likely to prefer attending a small or medium-sized college that is close to home, compared to non-STEM students.

(MyCollegeOptions & STEPreconnector, 2011)

Diversity at SMCM

St. Mary's College of Maryland is committed to providing a liberal arts education to all students regardless of their race gender culture, sexual orientation, or socioeconomic status (SMCM.edu).

The **DeSousa-Brent Scholars** program actively recruits underrepresented students to attend SMCM. They could be natural mentors for the EnvironMentors program, helping to mend the achievement gap in STEM related fields.



Research suggests that EnvironMentors students develop:

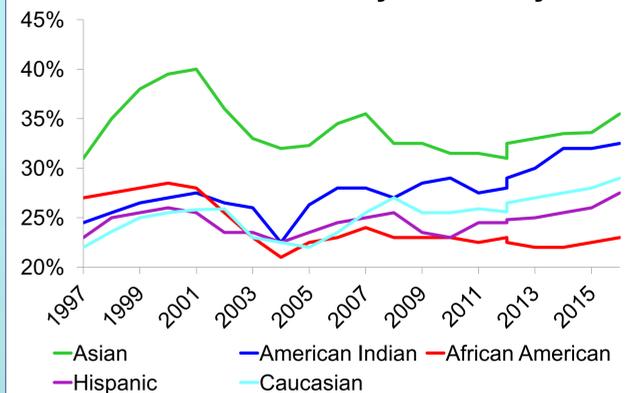
- Improved scientific research skills
- Increased awareness of STEM career paths
- Confidence in ability to study science
- Increased self confidence

*EnvironMentors 2009-10 student focus groups and 2010-11 longitudinal alumni research

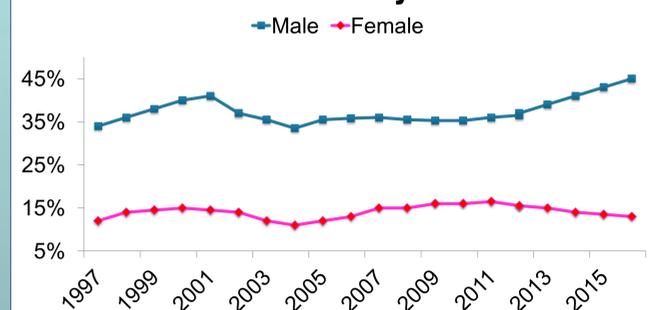
Hispanics and non-Hispanic blacks have over the past decade been underrepresented in U.S. jobs in STEM fields in large part because of the lack of equality in education opportunity.

(Washington Post, 2011)

National 20-Yr. Trends in STEM Interest by Ethnicity



National 20-Yr. Trends in STEM Interest by Gender



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References:
MDK12.org (2014) HAS Test preparation & Status. Website <http://mdk12.org/data/HSA/Tests/ParticipationAndStatus.aspx?Nav=1.5.5.2-10.18.15.11#bargraph-allgrades> [Accessed April 15 2015]
SMCM.edu (2015) Website www.smcm.edu [Accessed April 15 2015]
Monk, M.H., Baustain, M.M., Saari, C.R., Welsh, S., D'Elia, C.F., Powers, J.E., & Francis, P. (2014) EnvironMentors: Mentoring At-Risk High School Students through University Partnerships. International Journal of Environmental & Science Education, 9(4), 385-397.