

EnvironMentors Chapter at St. Mary's College of Maryland

An Independent Sustainability Project
Submitted for Consideration to Professor Barry Muchnick
For ENST 450: Applied Sustainability Practicum

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Executive Summary

Launching an EnvironMentors program at St. Mary's College of Maryland will establish a secure relationship between our educational facility and St. Mary's County Public Schools with the objective to increase environmental literacy of all students in the community regardless of their race, gender, culture, sexual orientation, or socioeconomic status. This program will help disenfranchised high school students gain access to STEM related programs to decrease the achievement gap, promote environmental awareness and sustainability, and to increase interest of underrepresented youths in the Environmental Studies program at SMCM.

Keywords: STEM, Environment, socioeconomic, underrepresented, sustainability, mentor, EnvironMentors, college access, race.

Introduction

St. Mary's College of Maryland (SMCM) is Maryland's public honors college. It offers an undergraduate, liberal arts education and small-college experience. SMCM is ranked one of the best liberal arts colleges in the nation (U.S. News & World Report, 2015). As a public college, St. Mary's welcomes students with diverse backgrounds and experiences. As an honors college, St. Mary's holds an outstanding faculty, multitalented students, high academic standards, a challenging curriculum, close community, and evokes a spirit for knowledge. Located in Historic St. Mary's City, is it the birthplace for religious freedom, where the first woman petitioned the right to vote, and the first Black Marylander held a seat in legislation (SMCM.edu, 2015). Today the college remains committed to the advocacy of minority and disadvantaged students. In addition to SMCM's academics, its aesthetic waterfront setting on the banks of the St. Mary's River enhances its uniqueness, and provides the perfect atmosphere for students to explore the premiere environmental studies major.

EnvironMentors is a national environment-based mentoring program created in 1992 in Washington D.C. and further developed by the National Council for Science and Environment (NCSE) in 2006. The program provides underrepresented high school students the opportunity to work with researchers and professionals to develop environmentally focused and scientifically rigorous research projects. The program also provides high school students with college access and opportunities for careers within science, technology, engineering, and mathematics (STEM) fields. Currently, there are

thirteen chapters of EnvironMentors distributed nationwide¹. EnvironMentors sponsors include Toyota USA Foundation, Northrop Grumman, and UPS. NCSE also provides financial and program support, professional development, social-networking, and program materials to EnvironMentor chapters across the nation.

The program functions by selecting a group of students from local high schools to 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 students through all stages of the scientific method including posing a question, completing background research, designing and conducting an experiment, and a poster presentation of their findings at the EnvironMentors Science Fair. The fair is an opportunity for the students to share their experiments and what they learned with the local scientific community. The projects are judged and the top three students get the chance to compete at the National EnvironMentors Fair in Washington, D.C. for scholarship prizes. Upon graduation, the majority of mentees pursue enrollment at the university of the EnvironMentors chapter they attended.

Establishing an EnvironMentors chapter at SMCM would benefit SMCM as well as St. Mary's County Public Schools (SMCPS) by fostering a relationship between these educational institutions and allowing underrepresented students to reframe their future with an environmentally focused lens. The extra curricular involvement in STEM related subject matter could also narrow the achievement gap for underrepresented high school students. In addition, establishing a chapter at SMCM would benefit the EnvironMentors

¹ EnvironMentors chapters: Alabama State University, Alabama A&M University, Arkansas State University, Colorado State University, Heritage University, Kean University, Louisiana State University, North Carolina State University, University of California- Davis, University of the District of Columbia, University of Nebraska, Lincoln, and West Virginia University.

program as a whole. SMCM is the perfect location for the project considering its history, sustainability initiatives, respect for the environment, and commitment to the education of underrepresented students.

Context

The goal of the EnvironMentors program is to create active stewards in the community, and to prepare students of all cultural, ethnic, and socioeconomic backgrounds for college degree programs (Hungerford & Volk, 1990; Monk et al, 2014). SMCM is committed to providing a liberal arts education to all students regardless of their race, gender, culture, sexual orientation, or socioeconomic status (SMCM.edu, 2015). Establishing an EnvironMentors chapter at SMCM would significantly advance efforts to 1) narrow the achievement gap of underrepresented students in environmental sciences, 2) attract underrepresented high school students to environmental focused STEM programs, 3) increase sustainable initiatives on SMCM's campus, and 4) encourage underrepresented students to consider SMCM for their higher education career.

DeSousa-Brent Scholars actively recruits underrepresented students to attend SMCM. The DeSousa-Brent Scholars program defines underrepresented students as first generation college students, Pell Grant recipients, ethnic minorities, and students with disabilities. SMCM provides environmental education opportunities to elementary students through the St. Mary's River Project Education Club, as well as peer mentoring programs via the Multicultural Achievement Peer Program (MAPP). Modeling the infrastructure of these programs already established, SMCM can launch EnvironMentors

to target underrepresented youths in secondary education and provide them college access. Notable target schools include Fair Lead Academies within SMCPS that accommodate at-risk high school students. SMCM could join the ranks of other university EnvironMentors initiatives, and encourage relationships between its higher education facility and the community.

By establishing an EnvironMentors chapter SMCM can help SMCPS narrow achievement gaps in STEM related subjects (Monk et al, 2014). Through the peer mentoring process, high school students perceive their successful mentor to be their future possible selves and become motivated to excel in environmentally challenged STEM subjects (Dr. David Morris, personal communication, 2015). Due to requirements outlined in the EnvironMentor program, there will be an influx of environmental science and sustainability oriented projects being pursued on campus by SMCM students and their high school counterparts. Overall there will be an increase in interest of environmental STEM topics, increase in experiential learning, and large gains in academic achievement (Yeager & Walton, 2011).

SMCM boasts a commitment to the education of all underrepresented youths and respect for the environment but has failed to acknowledge problems within the community to foster the same ideals. Building a relationship between SMCM and SMCPS would help tackle major environmental justice concerns by addressing the achievement gap of ethnic minorities and lack of minority participation in environmental groups. The Chesapeake Bay and Coastal Bay watersheds represent more than 80,000 square miles. Over 40 percent of the over 15 million people living in this area are comprised of African Americans, Hispanics and other minorities. It is projected that

minorities will make up 57 percent of the population by 2060 (allianceforthebay.org, 2015). The Task Force on Minority Participation in the Environmental Community, suggests that lack of minority participation in environmental groups is not from lack of interest but inequalities that reside in communication. Minorities are desirous of environmental conversations (BOCF, 2005). Open channels of communication and participation by all segments of society best assure the sustainable movement in our communities.

Maryland State Law, requires high school students to complete a locally designed program of environmental literacy as set forth in COMAR 13.A.04.17 (MDSE.Maryland.gov). Environmental literacy standard goals “enable students to make decisions and take actions that create and maintain an optimal relationship between themselves and the environment, and to preserve and protect the unique natural resources of Maryland, particularly those of the Chesapeake Bay and it’s watershed (marylandpublicschools.org, 2015).” The cross-disciplinary nature of environmental education has been shown to increase aptitude in STEM subject areas (Monk et al, 2014). STEM programs are available to students who have been accepted to the STEM academy (SMCPS.edu, 2015). Although, this process eliminates a large percentage of minorities and economically disadvantaged students from environmental dialogue and future opportunities in sustainability.

Allowing the future generations to have say in environmental conversations ultimately involves the education and opportunities they receive. St. Mary’s County students must pass the HSA for biology in order to graduate. As it stands for the 2015-16 school year, of those failing the biology exam, 22.6 percent of Black/African American

students are at-risk for not graduating. SMCPs reports consistent achievement gaps in biological sciences (MDK12.org). The 2014 Maryland High School Assessment (HSA) categorized students by race, and shows the greatest achievement gap between Black/African American and White/Caucasian students. Results show the total number of students who failed the SMCPs biology HSA, 25 percent of 10th grade and 22.6 percent 11th graders were Black/African American, compared to 6 percent of 10th grade and 5.5 percent 11th grade White/Caucasian students. The disparity between the scores of Black and White students is apparent. 2014 Maryland State Assessments (MSA) in Science reports similar disparities among 8th graders. Results assess the students at basic, proficient, or advanced levels. Only 54.7 percent of Black/African American students performed at or above level compared to 85.4 percent of White/Caucasian students (MDK12.org). Providing minority students, such as these, access to SMCM's environmental resources would help narrow the achievement gap and increase opportunities for participation in sustainable projects.

Minority students are considerably underrepresented in exclusive STEM programs (Drosback, 2015; NIH.gov, 2011). SMCPs STEM data shows unequal representation of minorities. Of the 155 students in the program, there are 65 percent White/Caucasian, 18 percent Asian, 6.5 percent African American, 5.2 percent Hispanic, and 5.2 percent two or more ethnicities (Jason Hayes, personal communication, 2015). Although these numbers are a direct reflection of the demographics of St. Mary's County, 79.3% majority White/Caucasian, the argument exists in the percentage of minorities failing high school who are underrepresented in the STEM program, and their lack the resources and opportunities to obtain extracurricular environmental education

(census.gov, 2013). This inequality will affect the future participation and innovation of sustainable efforts. It would greatly benefit SMCPS if it were to integrate sustainability and environmental components to each subject area. Moreover, the EnvironMentors program could serve as an avenue for this extra support.

According to the U.S. Congress Joint Economic Committee (JEC), between 2010 and 2020, overall employment in STEM occupations will increase by 17 percent (ed.gov). The concern is that minorities, the most rapidly growing segment of the population, are not represented or pursuing in STEM programs (NIH.gov, 2011). Data shows that one out of four high school students displays interest in pursuing a STEM related career. Since 2011 interest has increased for Asian, Hispanic, and American Indian students, but African American interest has dropped by nearly 30 percent since 2000. Female students have expressed STEM interest at 14.5% compared to 39.6% of their male counterparts (MyCollegeOptions & STEM Connector, 2012). To compete as a leader in the global economy, the President calls on the nation to graduate an additional 1 million students with STEM majors. The influx of student enrollment in STEM education will happen only if underrepresented groups increase participation in the STEM fields (NIH.gov, 2011).

To sustain our nation's comprehensive knowledge in STEM and environment related fields the nation must focus on local issues of minority involvement. Underrepresented youths may have difficulty focusing on a positive perception of the world due to countless environmental obstacles that they face in their daily lives (APA.org, 2015). The goal of the EnvironMentors program is to build mentoring relationships to help underrepresented high school students focus on a promising

tomorrow that is worth their time and effort. Students work to understand the natural world by performing environmental science projects with someone they can look up to. In the process students develop environmental concerns to become future stewards in their community, and succeed in their education (Hungerford & Volk, 1990). Students are able to see their possible future selves as their successful mentor, motivating them to continue the quest for knowledge in environmentally focused STEM subject areas (Markus & Nurius 1986; Leondari et al, 1998; Stout et al, 2011).

An addition, another benefit for SMCM is that STEM students are also more likely to attend small colleges close to home, compared to non-STEM students (MyCollegeOptions & STEM Connector, 2012). This adds a specific component to the addition of an EnvironMentors chapter at SMCM for these students' higher education. Most of the students that attend SMCM's EnvironMentors program will likely seek enrollment at SMCM for their higher education needs. I suggest that the DeSousa-Brent Scholars become mentors for the underrepresented youths, to solidify a permanent relationship between SMCM and SMCPs. This would encourage EnvironMentored students to enroll in college at SMCM by having already established a foundation, and network of friends.

Case Studies

Reviewing case studies from Louisiana State University, Colorado State University, and University of California-Davis I discovered many benefits for implementing the EnvironMentors program at SMCM. Mentors encourage underrepresented students to complete their high school curricula, increase the enrollment of underrepresented

students in STEM subjects, generate more interest in environmental sciences, and enrich the educational experiences. Partnerships were also established between universities and environmental education supporters. Difficulties included longevity of student participation, transportation, and identifying coordinators. Specifically problems arose when students were able to choose their own EnvironMentor instead of a Lead Teacher.

Louisiana State University- EnvironMentors

LSU's chapter of EnvironMentors was established through their School of the Coast and Environment in 2010 and partnered with East Baton Rouge Parish (EBRP) school system. Their mission is to mentor and motivate high school students who are underrepresented in the sciences by planning and conducting environmental research and acquiring skills that allow them to build careers and become more active stewards in their communities. LSU EnvironMentors also strive to meet the following goals: 1) conceptualize and conduct an environmental science-themed research project with a mentor for presentation at the spring science fair, 2) increase environmental literacy and awareness by focusing on environmental issues facing Louisiana and the coastal Gulf of Mexico through inquiry-based learning, and 3) increase college awareness by exposing students to a university environment and STEM fields and providing a one-on-one mentoring experience with academic graduate students, faculty and staff. Also, above all else, the mentors strive to help their students graduate high school, apply to colleges, and seek financial aid.

The LSU EnvironMentors staff includes a Chapter Director, and two Coordinators who oversee day-to-day activities, faculty and staff volunteers, and graduate students

who are the mentors (2:1 mentor to student ratio). EnvironMentees are transported to the campus every Monday to work on their projects after school. Project examples include, “Aquatic Invertebrates as Natural Algae Control”, “Environmental impacts of Worm Composting”, and “Can the Clay Pot Prevent Motezuma’s Revenge? Testing Water Purification Methods for Developing Countries.” They do not receive credit for their work, but high school students are motivated by the all expenses paid trip to Washington D.C. with a chance to win a college scholarship. Mentors team up and alternate weeks to work on the project with the high school students, which increases mentor participation in the program. Mentors receive one graduate-level credit hour a semester for mentoring in the EnvironMentors program (environments.lsu.edu, 2015) .

LSU formed partnerships with existing organizations on their campus to foster EnvironMentors success. LSU has a program called LSU Gaining Early Awareness and Readiness for Undergraduate Program (Gear Up) in their College of Education for at-risk high school students that also provides transportation. Through EBRP’s school system LSU formed a relationship with Scotland Magnet High School, a competitive magnet school previously exposed to STEM activities. A Lead Teacher at the magnet school coordinates with LSU to select students for the program and attends weekly meetings. There is no fee associated with student participation. NCSE provides the annual operating costs. LSU also partnered with the Louisiana Sea Grant for financial support, and the Sea Grant staff also participates in program activities throughout the year.

The key findings of this program were 1) students succeeded in completing the program, their high school curricula, and are enrolling in postsecondary education institutions, 2) students enjoyed the program, were exposed to new experiences, and

showed an increased interest level in the environmental sciences and postsecondary education, and 3) mentors found the program to be a rewarding experience, improved their scientific communication skills, and enjoyed the opportunity to share their knowledge with the students (Monk et al 2014). Based on this case study, SMCM could encourage St. Mary's County underrepresented students to complete their high school requirements, increase participation of underrepresented students in environmental science, generate more interest in environmental studies and sustainability at SMCM, and enrich the educational experience of participants.

Colorado State University- EnvironMentors, Poudre High School

In 2012, Colorado State University EnvironMentors was in its second year at Poudre High School. The chapter is comprised of one director, a faculty member from the Warner College of Natural Resources, and one graduate student program coordinator. The school recruited participants through Upward Bound and Talent Search to seek initial interest in the EnvironMentors program in the fall. Six students showed interest, two decided to participate, and one student dropped out. The students met weekly with their mentors to work on projects, and there were additional one-on-one meetings with mentors to exclusively work on research papers. There were also several opportunities for the students to attend field trips and learn from guest speakers. Overall, two male and one female Hispanic student completed the program in 2012.

The mentors consisted of undergraduate CSU students from an environmental leadership program. The students formed relationships with the EnvironMentors and were able to individually select which mentor they would be working with throughout the

year. The downfall to this modification was that it took a long time for mentor-mentee's to pair up. Students in CSU's case study reported that it was key to have a strong relationship with your mentor to sustain motivation throughout the program. One student, Angela, was in her second year at CSU's EnvironMentor program. Her first year experience was not optimal because she said that she did not have a connection with the mentor, and since they did not have designated meeting times, the meetings became less frequent throughout the year. As a result they did not start their project until the month that it was due.

A challenge to this program was the lack of correspondence between the mentors and mentees. Student participants also noted that they were not accustomed to constant networking and communication through cell phones or email. Although, students said that the interactions that they did have were positive ones (Nedland, 2012). Director, Brett Bruyere explained "While the context of our program is clearly academic, inevitably that supportive relationship extends into other realms as our mentors and the students meet at a coffee house to discuss their project or drive together for an hour as they go to a site to collect data. For some of the students, our mentors are among few adults in their lives that provide a supportive and encouraging role," says Bruyere. Graduate program coordinator, Sean Hill believes that the mentoring relationship is a positive way for undergraduates to develop a relationship with their local community by promoting environmental studies. It will also provide them with an opportunity to be a role model and a leader. "This sense of responsibility can be life changing," says Hill (coloradostate.edu, 2009).

The fundamentals of sustainability include the responsibility to care for our

environment for future generations, and speaks to the responsibility that mentors have over their students. “Through modeling behavior and integrated curriculum, campus sustainability empowers students to develop solutions to poorly designed social, economic, and political systems that will enhance environmental and community prosperity. Campus sustainability builds community awareness around social, economic, and environmental issues, offers resources to identify and create solutions, and serves as an integral partner in the implementation of these solutions, locally and globally” (Stephenie Presseller, personal correspondence, 2015). Mentors metaphorically pass the torch to their students to develop environmentally friendly habits by teaching them throughout the year. This creates sustainability in the community that begins with the initiative of the college. SMCM would be a monumental figure in the promotion of sustainability if it were to establish an EnvironMentors chapter.

University of California- Davis- EnvironMentors, Woodland Senior High School

University of California at Davis (UCD) began its EnvironMentors chapter, called “AggieMentors”, in the College of Agriculture and Environmental Sciences in 2009. It further expanded into the College of Science, Technology, Engineering, and Math in 2011. A case study in 2011 focused on their partnership with Woodland Senior High School. The chapter consisted of nine female, two males, eight Hispanic, and three Caucasian. Their science teacher advertised the program in their class by showing them a video about the program to stimulate interest. UCD EnvironMentors reported that these participants were underrepresented students from rural agricultural families.

The program is facilitated by the Outreach Coordinator of UC Davis’ Department

of Land Air, and Water Resources (DLAWR) and a student coordinator at the college. There are two established directors, a professor from the DLAWR, and a professor from the UC Davis' Department of Chemical Engineering and Materials Science. Past experiments have included "The Effect of the Number of Wraps and Thickness of Wire on Energy Generation Using Rain Water", "How Does the Impact of Salinity on Native Species vs. Invasive Species Change the Future for the Sacramento-San Joaquin Valley?", "Household Anthropogenic Pollutants Against Soil Respiration", and "Decomposition of waste materials in surface and subsurface soil."

AggieMentors is a nine month program beginning in September. There is one Lead Teacher who facilitates the program at the high school. Mentors-mentees meet for two hours weekly at their school or UCD campus. A chapter coordinator meets with students regularly for guidance, to address problems, and to organize campus visits. UCD EnvironMentors provides a monthly field trip to the campus for students who did not have the resources to access transportation.

UCD AggieMentors are graduate students recruited through campus wide emails. High school students reported joining the program looking for a "friendly person" to provide guidance throughout the EnvironMentors process. Mostly these students wanted mentors to direct them in what direction to take after high school. For example, John, who was interested in learning about science and working with college students, said that the mentors get you in touch with people who can answer your questions, and "get motivated to go to college."

UCD AggieMentors and mentees found challenges in communication and transportation. Most of the students did not have vehicles. The SMCMM program should

provide transportation to avoid this obstacle. They also had the independence to match up to a mentor by themselves it also took a long time for the mentor-mentees to pair up. It would be necessary to the program to identify Lead Teachers at the partner schools, to help with the pairing process.

Project Overview

There are important aspects of my research that apply to the formation of an EnvironMentors Chapter at SMCM. I recommend that before SMCM establishes an EnvironMentors Chapter a brainstorming session is imperative of all the parties involved to discuss members' roles and responsibilities, partnerships, budget, and agree on a high school focus group. At this point, involvement of the separate departments would be understood and the application process could begin (guidelines from NCSE can be found in Appendix A, and budget Appendix B).

At the meeting, stakeholders would discuss how the chapter will be formed. From the case studies it was most common to have one or two directors, and one or two coordinators (including a student). Mentors were either from university clubs, environmental graduate students, or recruited from emails. As discussed with F. J. Talley, the DeSousa-Brent Scholars is an existing program with the infrastructure and interest to become mentors for the new chapter. April Ryan, SMCM Educational Facilitator, will be needed to help mentors become official volunteers in the SMCPs database. Directors and coordinators could be of the existing parties involved, or interested faculty volunteers. NCSE recommends initiating an EnvironMentors cohort of 12-15 students matched one-to-one with mentors from faculty, undergraduates, graduate students, and environmental

and science professionals in the community. As shown in the case studies, cooperation and commitment was an issue. LSU found greater participation when they matched two mentors two one student, and alternated the weeks in which the mentor worked with the student.

In the case studies it was found that transportation was an issue. Mentors should become certified drivers of the college by Public Safety so that a car pool can be arranged weekly for the students to be picked up and taken to SMCM. If the students do not have a way to arrange transportation back home, then the SMCM students could drop them back off. This could be worked into the overall budget, and discussed with SMCPS to see what types of insurance might be needed or parent permission for this arrangement to occur.

What type of student SMCM is looking to support is another issue. The ideal EnvironMentors student is middle of the road high school student from an underrepresented background. EnvironMentors defines underrepresented as students of diverse racial and ethnic backgrounds, diverse socioeconomic backgrounds, diverse communities, women, and at-risk youth. EnvironMentors “embraces average students who, with modest additional attention from a mentor and immersion in an environmental research experience, could blossom and become motivated to pursue a science and/or environmental college and career path” (NCSE, 2015). The SMCPS Fair Lead Academies enroll students are at risk for failing high school, and do not have a STEM academy. They would be an excellent focus group. If this was the school chosen or any school, it would then have to be decided how and to whom would SMCM advertise the program. Appointing a lead teacher at the partnering high school would be essential to pair up mentors with a respective student and prevent delays, but this can be a

responsibility of SMCPs.

Outcomes

There has yet to be any remarkable outcomes of this project other than personal growth. I am aware that I will not see this project come to fruition, but the initiative that I am taking to get all the parties involved in the conversation will help lay the foundation for this project. My goal is to collaborate with the existing departments that may have a part in SMCM's EnvironMentors chapter. Organizers need be aware of the discrepancies in achievement of underrepresented students in our community, and how a program like this would be instrumental in closing the achievement gap in the biological sciences by providing STEM opportunities to underrepresented students by increasing involvement and initiatives for environmental projects on SMCM's campus. All while promoting the holistic idea of a sustainable SMCM and local community.

At this point I have maintained contact with the EnvironMentors director, Jessica Soule. I have also partnered with SMCM Educational Studies Educational Facilitator, April Ryan, SMCM Director of the DeSousa-Brent Scholars, F.J. Talley, and Sue Johnson from the SMCM Environmental Studies Steering Committee. SMCPs Secondary Education Sciences Director, Jason Hayes, is also on board to create the EnvironMentors Program. My original plan was to initiate an informational meeting to discuss the program and organize the application. This is still my objective, but I have not yet organized a date.

I plan on continuing this project during the summer, with my only goal to generative enough motivation for the involved parties to carry out this program. I have

also reached out to SMCM's Dr. Danielle Carter Assistant Professor of Political Science who is an advocate of educational/environmental justice. She is acting as an advisor to best use my skills and talents for the cause of social equality. I shall see where her guidance takes me.

Conclusions

EnvironMentors has identified four core areas that encompass the pillars of their program. These include mentoring, experimental research, environmental stewardship, and college access. SMCM should institute an EnvironMentors program because with these goals the program will encourage underrepresented youths to become interested in environmental studies, help students finish high school, increase enrollment of underrepresented youths at SMCM, and enrich the educational experience of the SMCM mentors. SMCM will be able to help build a sustainability community by promoting environmental awareness, offering the resources needed for students to identify and create solutions to environmental problems, and serve as an integral partner in the future efforts to implement these solutions.

Participants of EnvironMentors have the chance to unique chance to participate in place-based education (Lakoff, 2010). In David Sobel's *Place Based Education*, Executive Director Laurie Lane-Zucker said, "The path to a sane, sustainable existence must start with a fundamental reimagining of the ethical, economic, political, and spiritual foundations upon which society is based, and that this process needs to occur within the context of a deep local knowledge of place. We believe that the solutions to many of our ecological problems lie in an approach that celebrates, empowers, and

nurtures the cultural, artistic, historical, and spiritual resources of each local community and region, and champions their ability to bring those resources to bear on the healing of nature and community” (2005). SMCM can play an integral role in this process. SMCM has the resources and ability to perform environmental science projects with underrepresented students and increase engagement in sustainable efforts for the community and nation. The EnvironMentors program helps students to understand issues on a global systemic scale. Mentors help the students develop solutions to these problems, positive motivation, and a thirst for environmental knowledge at SMCM.

Appendix

A.

New Chapter Proposal Guidelines

Section I: Chapter Goals and Anticipated Outcomes

Proposing institutions are asked to provide the following information:

- A. Statement of need explaining the rationale for developing an EnvironMentors chapter.
- B. Summary of goals for initiating an EnvironMentors chapter.
- C. Summary of outcomes you hope to achieve for students, mentors, your institution and your community through launching an EnvironMentors chapter.

Section II: Chapter Core – Students and Mentors

Students from underrepresented backgrounds in your community and your cadre of mentors are the lifeblood of your EnvironMentors program. Therefore, thoughtful attention should be given to recruitment of both your students and your mentors. The extent to which you develop a strong cohort of students and cadre of mentors will have much bearing on the ultimate success of your first year program.

We recommend initiating an EnvironMentors chapter with a cohort of 12 to 15 students matched one-to-one with 12 to 15 mentors from faculty, undergraduate and graduate students, and environmental and science professionals in the local community. This represents a large enough group to provide the critical mass needed to build camaraderie between student and mentor participants, and is small enough to be manageable. We recommend working with your partner high school to help assemble your first year group of students or, in some cases, working with a partner college preparation or other program from which you can draw students.

Target Student Population

The ideal EnvironMentors students are middle of the road high school students from underrepresented backgrounds. EnvironMentors considers “underrepresented” to include students of diverse racial and ethnic backgrounds, diverse socioeconomic backgrounds, students from diverse communities, women, and at-risk youth. In addition, EnvironMentors students are those who are neither top-achieving students who have many of the resources to make it on their own, nor are they among lowest achievers for whom social work intervention may be required. EnvironMentors embraces average students who, with modest additional attention from a mentor and immersion in an environmental research experience, could blossom and become motivated to pursue a science and/or environmental college and career path.

Mentors

Current EM chapters include a broad array of mentoring models including faculty, graduate and undergraduate students and individuals working in environmental fields in the local community. Some chapters work exclusively with faculty and graduate students as mentors. Other chapters have developed service learning courses in which students enrolled in the course serve as mentors to fulfill the service component of the class. This model enables the Chapter Director and Chapter Coordinator to meet with their mentors on a regular, weekly basis. Still other chapters work with

two mentors per students including one faculty advisor and a graduate or undergraduate student who supports their student-mentee on a day-to-day basis. The only mentoring requirement in EnvironMentors is that each student has at least one mentor, and that student works independently of one another.

Section III: Chapter Personnel – Building Your EnvironMentors Team

Laying the foundation for a successful EnvironMentors chapter requires building a successful team of committed individuals including someone in a leadership position who will be ultimately responsible for the chapter; a Chapter Director, who leads development of the chapter; a Chapter Coordinator, who runs the program with students and mentors, and serves as a liaison between your institution and your partner high school; and a Lead Teacher who helps in student recruitment and coordination throughout the program season and serves as an advocate for EnvironMentors at your partner high school.

(A) Chapter Leadership

It is highly important that someone in a leadership position at your institution support new chapters. This may be a Dean, Department Chair, even a Provost. Regardless, you will need someone in a leadership position to politically support your efforts, as well as to potentially appropriate funds for your new chapter. Chapters may be hosted in any number of different colleges and departments including Natural Resources, Environmental Science, Oceanography and Coastal Sciences, as well as other colleges or departments such as the College of Education.

(B) Chapter Director (5-10% FTE)

The Chapter Director plays a lead role in organizing EnvironMentors at your institution, develops ties with other colleges and departments on campus, coordinates the partnership with a local high school and teacher, recruits mentors, and builds additional financial and in-kind support for the chapter within the institution and community. The Chapter Director should be an academic staff member, or equivalent, with strong leadership skills in program and organizational development and management. Time allocated to EnvironMentors varies over the course of the year, and by chapter, but typically ranges from 5%- 10% FTE.

(C) Chapter Coordinator (50%-100% FTE)

The Chapter Coordinator is very important to successful delivery of EnvironMentors with student and mentor participants. The Chapter Coordinator works directly with students and mentors, facilitates the relationship between the mentor and mentee, and guides teams through the development of their EnvironMentors research project. The Chapter Coordinator also conducts weekly meetings with students, helps facilitate skill-building workshops, events, and field trips, and supports administration of the evaluation tools. Chapter Coordinators need strong skills in youth group leadership, good rapport with underrepresented high school students, be highly motivated, resourceful, and enthusiastic. This position is often structured as a Graduate Student Assistantship, but can also be served by a staff coordinator of a partnering college access program such as Upward, Gear up, or even from a local non-profit.

(D) Lead Teacher

Most chapters identify a Lead Teacher(s) at each partner high school they work with. Depending on the chapter model, Lead Teachers play a variety of roles from fully integrating EM into an existing science class, helping to assemble students for after

school EM club meetings, and helping with skills workshops on sequential steps of the scientific method. Identifying a Lead Teacher at each school you work with will provide strong additional assets to your EnvironMentors personnel team.

Section IV: Chapter Partners

New chapters may consider establishing a partnership with one or more local high schools that serve students from underrepresented backgrounds and/or partnership with a college access organization (on or off campus) that provide a cohort of students to recruit from.

(A) High School Partner

- a) Our experience has shown the following factors to strongly influence success of new chapters. Close proximity of the partner high school to your university.
- b) Stable NCLB accreditation of your partner high school(s). We have learned that some low performing schools are not able to take on enrichment programs such as EnvironMentors.
- c) Scheduling model at the high school. EnvironMentors works best at a high school when EnvironMentors students can meet at a regular class or club time throughout the school year. If your partner high school follows a “Block”, or “Modified Block” schedule.
- d) A highly motivated teacher(s) who is willing and able to incorporate EnvironMentors into his or her curriculum or provide support for an EnvironMentors club.

(B) College Access Partner

Our experience has shown that chapters that work with a college access program partner have exceptionally strong student and program outcomes. We strongly encourage new chapters to partner with a college access or other college prep program. Please address whether Upward Bound, Gear Up, or some other College Access/Prep program exists at your campus or in your community and how you might to partner with them to enhance your EnvironMentors students college preparedness.

Section V: Chapter Budget

EnvironMentors chapter budgets have ranged from \$10,000-\$45,000 depending on staffing structure and university overhead. Please refer to the Chapter Budget Sample included in the New Chapter Proposal Framework to note EM chapter allocation of funds for: a) Personnel, b) Program Expenses including Events and Workshops, Field Trips, Student Supplies and Equipment, and the Chapter Fair/Awards Ceremony. Some chapters may need to budget for university overhead, liability insurance (contact your institution’s Risk Management Office), and Mentor Background Checks (contact your partner high school to learn about their background check policy for tutors, mentors, and other volunteers).

Section VI: Opportunities and Constraints

Please let us know of any additional opportunities for collaboration, partnership, and/or support for your proposed EM chapter within your institution and community and/or additional support

for students, mentors, your Lead Teacher(s) such as in kind provision of student supplies and equipment, or financial contributions for student incentives and possibly scholarships.

B. Budget

EnvironMentors	
Sample Chapter Budget	
a. Personnel	
EnvironMentors Director	
EnvironMentors Chapter Coordinator - staff or grad student	\$20,000
2nd EnvironMentors Chapter Coordinator (optional)	
Fringe Benefits (estimated at 25%)	\$5,000
<i>Subtotal Personnel</i>	\$25,000
b. Program Expenses	
Events/Workshops	\$5,000
Student Research Project Supplies	\$1,500
Chapter Fair (student poster boards, food, certificates)	\$750
<i>Subtotal Program Expenses</i>	\$7,250
c. Travel Expenses	
Local travel (bus rentals)	\$1,000
Pre-Season Meeting	\$1,500
National Fair (travel to DC for 3 students + 1 adult)	\$2,000
<i>Subtotal Travel Expenses</i>	\$4,500
c. General Expenses	
Office Supplies	\$250
Printing (manuals, resources)	\$1,000
Postage	\$250
Telephone	\$500
Mentor Background Checks (varies)	\$500
<i>Subtotal General Expense</i>	\$2,500
TOTAL DIRECT EXPENSES	\$39,250

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