STUDENT SUCCESS
Mid-Atlantic Regional Conference

COLLEGE of SOUTHERN MARYLAND

April 19, 2013

College of Southern Maryland
La Plata Campus
Improving Diverse Student Outcomes in STEM Classrooms

Addressing the Missing Link Today, all educators are expected to be aware of a widening number of gender, socioeconomic, ethnic, demographic, and ability-based issues. Yet most educators have little time for program development and are unaware that they deliver their content with the subtle and unconscious biases that pervade our culture. These small verbal (or non-verbal) communications, also known as micromessages, are the vehicle through which we convey our positive and negative beliefs about students’ ability to learn and be successful. It is the accumulation of these micromessages that impacts student self-efficacy which, in turn, impacts STEM enrollment, retention, performance, and persistence. The National Alliance for Partnerships in Equity (NAPE) and partners have identified a successful professional development model and strategy for transforming classroom practice to better inform and empower STEM educators to engage all their students to better prepare them for successful educational experiences, motivate them to finish rigorous STEM courses, and lead them into STEM careers.
**Dr. Diane Maldonado**  
*Associate Vice President of Academic and Student Affairs, Point Park University*

**Presentation: Navigating Assessment**  
*(See page 6 for description.)*

Dr. Diane Maldonado leads Point Park University’s efforts in curriculum development, assessment of student learning, faculty professional development, and compliance and accreditation. Diane is a Middle States Commission of Higher Education institutional evaluator and has delivered numerous assessment of student learning workshops and presentations in Pennsylvania and on the east coast. Dr. Maldonado earned a Bachelor of Arts degree in English from Allegheny College, Meadville, PA, and a Master of Arts and Ph.D from Duquesne University, Pittsburgh, PA.

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**Dr. Bill Heiser and Jack Andraka**  
*North County High School*

**Presentation: Transforming School Culture with Science and Innovation**  
*(See page 6 for description.)*

Dr. William Heiser is the Principal of North County High School in Anne Arundel County Public Schools. In three years, Dr. Heiser has transformed North County by creating a culture of excellence by raising academic expectations, increasing student access to more rigorous classes, and providing new partnerships with community and business partners. Dr. Heiser is an innovative and results-driven leader with expertise in building a positive school culture and school improvement. This month, Dr. Heiser was named the 2013 Maryland High School Principal of the Year by the Maryland Association of Secondary School Principals (MASSP). He received a Bachelor of Arts degree in Sociology and a Master of Education degree in Guidance and Counseling from Loyola University (Maryland). He earned a Doctor of Education degree specializing in Community College Leadership from Morgan State University.

Jack Andraka, a sophomore at North County High School, recently developed a novel paper sensor to detect pancreatic, ovarian, and lung cancer in five minutes for as little as three cents. Jack won the 2012 Intel International Science and Engineering Fair and over $100,000 as well as the Smithsonian American Ingenuity Award. He conducted his research at Johns Hopkins University. Jack is also on the national junior wildwater kayaking team, has won awards at multiple national and international math competitions, and enjoys playing with his dog and folding origami.

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**Conference Agenda**

- **8:30 a.m.** Registration Opens in BI Lobby
- **8:30 - 9:30 a.m.** Continental Breakfast
- **9:30 - 9:45 a.m.** Welcome/Introductions
- **9:45 - 10:45 a.m.** Keynote Presentations
- **10 - 11 a.m.** Session 1
- **11 - 11:50 a.m.** Session 2
- **12 - 12:50 p.m.** Session 3
- **1 - 2 p.m.** Lunch
- **2:10 - 3 p.m.** Session 3

*Presentations will be held in the Center for Business and Industry (BI Building) and Business Building (BU Building)*

For more information, visit [www.csmd.edu/STEM](http://www.csmd.edu/STEM)
A Free, Easy-to-Use Method for Administering Concept Questions to Promote Active Learning

John Short, College of Southern Maryland

In-class Concept Questions allow students to immediately apply classroom lecture material while providing the instructor with immediate feedback on how well students have understood that material. This session will provide a brief overview of the concept question technique and conduct an audience participation exercise demonstrating a free, easy-to-use method of administering Concept Questions in the classroom.

High School Graduation Data and Developmental Mathematics Trends at Maryland Community Colleges

Tyrone McKoy, Community College of Baltimore County

How have the Maryland school and state accountability measures and the implementation of the HSA exam as a graduation requirement impacted the level of college readiness (in mathematics) of students enrolling in college for the first time?

Is There a Method to This Madness?

Stephanie McCaslin, College of Southern Maryland

There has been an ongoing debate in recent years regarding whether scientific concepts should be taught or discovered. Regardless of the stance, most educators believe that the scientific method is an integral understanding. This session will extend this debate, and offer hands-on activities to teach the scientific method. Handouts will be provided.

Know the Learner by Customizing the Learning Through Blended Learning

Michael J. Martirano, St. Mary’s County Public Schools

Discover how SMCPS integrates digital content to meet the needs of all students. Participants will understand how digital curriculum is being employed in high schools in a variety of environments. Students are able to utilize digital content to recover and to accelerate learning. Professional development and data-driven decision-making is key to our model.

Making Lower-Level Core Communication Classes Fun and Interesting, Even for Non-Communication Majors

Sheri Parmelee, College of Southern Maryland

They have to be there, but would prefer not to be. How do you get students interested in a subject they don’t want to explore? Give speeches they would rather not make? This workshop will provide fresh ideas to engage reluctant students and help them find success in speech classes.

The Power of Personality Typing in Teaching and Learning

Arasu Chellaiah, Montgomery College - Takoma Park

Using scientific and proven methods of understanding oneself and others, participants in this workshop will reflect on their own personality types and consider the possibilities of using personality typing tools in their classrooms. This approach builds on strengths that may hitherto been ignored, and identifies shortcomings in a non-judgmental and constructive way.

S.C.A.M.P.E.R Your Way to Productive Thinking

Deborah Riley, Charles County Public Schools

SCAMPER is acronym to expediate brainstorming of new ideas and to promote looking at old thoughts in new ways. SCAMPER provides a mental checklist for students to generate a variety of different ideas. Great for inventive thinking!

STEMulation in the Schoolyard: Investigating Environmental Issues

Timothy Emhoff, Charles County Public Schools

Do you need to motivate students? Are you looking for ways that students can apply knowledge and concepts? Schoolyard Issue Investigation is a concrete way for elementary age students to solve meaningful, real-world problems. You will receive information on identifying schoolyard issues, connecting STEM standards of practices to solving the issues, and various resources to ensure student success through the process.
Using ACCUPLACER Preparation as an Enrollment Initiative
Kristen Vickery, Anne Arundel Community College

With college readiness being at the front of most college agendas, Anne Arundel Community College has looked at innovative ways to engage students prior to taking their placement tests to ensure their understanding and the impact of their actions. This has been particularly important in our K-12 partnerships. With this in mind, Anne Arundel Community College is requiring ACCUPLACER Preparation as part of a four-pronged enrollment requirement.

Using Brain-Based Learning to Promote Student Success
Mary Beth Klinger, College of Southern Maryland
Teresa Coffman, University of Mary Washington

This presentation examines the knowledge, beliefs, and practices of teaching faculty, relative to brain-based learning. It demonstrates how faculty are presently implementing brain-based instructional strategies into their classrooms and examines how future professional development activities can be designed utilizing technology integration tools to help improve teaching and ultimately student learning.

SESSION 2 12 – 12:50 p.m.

All In for TEAM!
Susan Sies and Kiersten Meyers, Carroll Community College

TEAM for Success champions a multi-dimensional approach to teacher education utilizing high-impact practices that address and make data-driven decisions about student goals, meaningful curriculum, and engagement. TEAM curriculum embeds learning outcomes for academic advising/transfer; engages students in the co-curricular education academic community and field placements; while improving education course migration, completion, and success at the transfer institution. Come hear how the TEAM game plan is a win-win for student success!

CSM STEM Scholars
Sandra Poinsett, Melanie Osterhouse, Turner Coggins, and Sue Strickland, College of Southern Maryland

Learn about the CSM STEM Scholars program along with the opportunities and benefits the program offers students.

How to Make Science Teaching Interesting
Edith Carron, College of Southern Maryland

Do you hear from your students that biological sciences are so hard and professors are so demanding? Do you struggle to engage your students in classroom activities? Learn how to use some hands-on activities that improve remembering and promote their critical thinking skills. We will explore several techniques—“on spot” quizzes, interactive media files, case studies, games, and YouTube videos. These activities can be used in a traditional classroom or in an online environment.

Integrating Instructional Technology in a Face-to-Face Classroom
Elizabeth Holden Wagenheim and Jeanette Gerrity Gomez, Prince George’s Community College

Instructional technology can be daunting, but it opens up a new channel for expanding learning beyond the classroom as well as increasing active learning and student motivation. In this presentation, we will explore two instructors’ use of the iPad/mobile phone applications, BlackBoard, polling instruments, and features in a smart classroom. There will be the opportunity for participants to share and learn from each other’s use of technology.

Online Biology Courses
Ewa Gorski and Ellen Lathrop-Davis, Community College of Baltimore County

The presentation will focus on the components of online biology courses, including interactive lectures, worksheets, assessments, chats, and discussion board sessions. The presenters will share the pros and cons of online teaching, proctoring exams, conducting discussions, and grading assignments in science courses. An interactive discussion of class size effects on student participation will also be discussed.
Probability and Statistics Activities for K-12 Teachers
Rob Farinelli, College of Southern Maryland

This session will present a variety of topics that can be used to introduce probability and statistical concepts to the K-12 classroom. Participants will be engaged in activities during this session.

Treasure Box
Karen Richardson and Cindy Carpenter, St. Mary’s County STEM Academy

This is a project-based learning experience that “STEM-ifies” current Maryland state curriculum learning objectives. Design teams design a treasure box to store items. The box contains a light that illuminates when the box is open and shuts off when the box is closed. Designs must follow design constraints.

Using Learning Management Systems to Increase Student Accountability
Bonni Miller and Sandy Johnston, University of Maryland Eastern Shore

Students become more effective learners when instructors provide tools to help them assume responsibility for their own educational experiences. Learn how online learning management systems can be used to increase student accountability. Help students avoid making excuses and achieve greater success.

LUNCH SESSION 1 – 2 p.m.

Featured Speaker
Transforming School Culture with Science and Innovation
Dr. Bill Heiser and Jack Andraka, North County High School

Dr. Heiser will share his journey of transforming North County High School into an innovative learning college. Learn some universal strategies that have changed the his school culture from low-performing to high-achieving.

Jack Andraka, a fifteen-year-old 10th grader from North County High School, has traveled the world talking about his development of a new, cheap, and accurate test for detecting pancreatic cancer. Jack won the Grand Price at the Intel International Science & Engineering Fair. Learn about Jack’s remarkable innovation.

SESSION 3 2:10 – 4 p.m.

Biology + The Globe
Frances Turner, Howard Community College

Integration of a globalization component into courses instills knowledge in students to effectively engage the globalizing world. “Biology + The Globe” provides students opportunities to explore global issues related to biology. It promotes students to collaborate, to be aware of socioculture environments, and to learn science-based solutions to global issues.

A Brain-Based Approach for Teaching Developing Writers
David Robinson, Barbara Johnson, Kimberley Donnelly, and Marybeth Moore, College of Southern Maryland

What is brain-based learning, and can it make grammar approachable, doable...even fun? In this session, three colleagues will present the pedagogy, methodology, and outcomes of a year-long pilot of Rita Smilkstein’s revolutionary Tools for Writing program in the developmental writing classroom and discuss applications for all levels of instruction.
Don’t Have Time For In-Class Review? Substitute An Online Review!  
*Kathleen P. Lauber, College of Southern Maryland*

Students taking science courses often wish to spend extra time in the laboratory to review the subject material covered in class. Student access to labs is often restricted to times when the instructor can be present. One solution to this situation is to develop an online digital picture review that students can access at any time. With students being able to review subject material as much as they wish, and whenever they feel the need. The success rate of students using the online review should increase in these classes. During this session you will be introduced to the Impatica program that was used to format such an online review.

The E in STEM  
*Shadei Jones, College of Southern Maryland*

This session will provide insight for teachers on how to elevate student interest in engineering education.

Lecture Management—A Modern Approach to the Active Learning Pedagogy  
*Dr. Ahmed Tarek, Cecil College*

Recent advances in teaching pedagogy reveal that students learn better with hands-on, integrated to lecture methods and slide presentations. A better strategy would be to incorporate lecture, followed by hands-on. Lecture Management, a new paradigm in Academic Research deals with delivering content in alignment with student learning within allocated class time with available instructional resources.

Featured Speaker  
**Navigating Assessment**  
*Diane Maldonao, Point Park University*

Student learning assessment has been the focal point of higher education regional accreditation and accountability initiatives for nearly two decades, but how successful have assessment efforts been? Have most higher education institutions embraced a meaningful culture of assessment that helps to define their missions and improve educational quality? How successful are colleges and universities at using assessment results to improve student learning? This session will summarize the current state of student learning outcomes assessment in higher education by tracing trends in regional accreditation and by reporting research findings related to assessment of student learning progress and pitfalls. The session will culminate by setting forth future paths of navigation to help community colleges become better at assessing student learning outcomes in order to illustrate educational value and quality to stakeholders.

STEM for All  
*Jennifer Consalvo, St. Mary’s County Public Schools*

This presentation, one of the STEM 6 for All County performance tasks, Will show an example of a interdisciplinary STEM lesson and show how to get students engaged in all of the key components of STEM. One of its main features will be the use of Moodle in this instructional platform.

Student-Centered and Project-Based Learning  
*Tamarah Dishman, St. Mary’s County Public Schools*

STEM 8 teachers Irv Smoot and Tamarah Dishman from St. Mary’s County middle school STEM Academy would like to give an overview of the program that features a school within a school along with the tie-in to STEM for All initiatives. The hands-on, inquiry and cooperative team based, problem solving projects and challenges should serve as a model for good teaching practices for both science and mathematics for all students.

**Turn ON Your Cell Phone: How to Engage Your Students in the Lecture Using Smart Phones, Tablets, or Laptops**  
*Encarni Trueba, Community College of Baltimore County – Catonsville*

Learn how to use this easy and free interactive student response system using smart phones, tablets, or laptops. Get instant feedback and engage your classroom with educational games or quizzes. This is simple way to replace interactive clickers and to assess the learning with live results.
CSM graduate David Burch has taken full advantage of the mechanical engineering partnership program with the University of Maryland’s A. James Clark School of Engineering, Southern Maryland Higher Education Center, and Naval Air Station Patuxent River. The program enables students to take their freshman and sophomore years of classes at CSM, and then to transfer seamlessly to University of Maryland where they complete their bachelor’s degrees. The program also may provide a paid cooperative opportunity with the Naval Air Warfare Center Aircraft Division.

“The co-op for me is a once-in-a-lifetime opportunity,” said Burch, now in the University of Maryland program. “Seeing the correlation between what we learned in the classroom and real-world use is invaluable.”

David Burch
La Plata High School Graduate, CSM Graduate
Transfer Student, University of Maryland, Mechanical Engineering Student