

# C<sup>2</sup> SUMMIT FOR PEDAGOGICAL ADVANCEMENTS IN STEM

FRIDAY, SEPTEMBER 29, 2023  
8:45 AM–2 PM  
RVCC EVENT CENTER



## SCHEDULE AT A GLANCE

	LOCATION	
	LARGE CONFERENCE ROOM	
<b>Welcome and Keynote</b> 8:45-10:00	Theory of Change to Practice: Using Intersectionality to Drive Systemic Change in STEM	
<b>Concurrent Session 1</b> 10:10-10:55	CONFERENCE ROOM A	CONFERENCE ROOM B, C
	Colloquy on Post-Covid Online Learning in the Pre-Healthcare Majors	Mercer County Community College's Experience with the NSF S-STEM Track 1 Grant
<b>Concurrent Session 2</b> 11:05-11:50	Designing Sequence Courses and the Importance of Cohorting for STEM Students' Success	
<b>Concurrent Session 3</b> 12:00-12:45	AI Fight Club	
<b>Lunch and Snapshots</b> 12:45-2:00	Multiple Presentations	

## SCHEDULE AT A GLANCE

	LOCATION		
	100	101	102
Resources for Teaching Functions in Developmental Math	Engaging Online Physics Students	Box of Lessons: An Open Educational Resource for Exploring Biomolecular Structure and Function	
Customizing your Online Platform	Plant Research in a Class, a cheap and accessible CURE	Cultivating Student Success Through Innovative Practices in Anatomy and Physiology	
	The Use of Infusing Research as a Pedagogy (IRAP) and its Outcomes on STEM Education		
Math is Magical! Check out Some Mathemagics!	Analysis of Effect of Course Modality on Student Success in Health Science Chem	Technological OER Development: Virtual Microscope	
	Heuristic Method for Minimizing Distance without Using Calculus	Utilizing Photographic Scientific Collections in Biology Classes	

## WELCOME & KEYNOTE SESSION SPEAKER: 8:45 AM-10:00 AM

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### DR. BENNY CHAN

Dr. Benny Chan received a Ph.D. in Chemistry from The Pennsylvania State University, University Park, PA, USA and a B.A. in Chemistry from Franklin and Marshall College, Lancaster, PA, USA. He has published in a wide range of areas from electrocatalysis, actinide solid state chemistry, superconductivity, coordination chemistry, and scientific education with over 40 publications in these areas. He has been an advocate for diversity and inclusivity since his start at The College of New Jersey (TCNJ) in 2006. He has been an advocate for justice, equity, diversity, and inclusion and has worked with multiple organizations from the American Society of Engineering Educators, American Chemical Society, American Crystallographic Association, and Out to Innovate. He has developed a rich collaborative research program with sociologist Dr. Lynn Gazley to study how and why STEM students succeed and, more recently, how to shift the faculty culture towards inclusive pedagogy and enact change in a group of scientists. He is active with the American Chemical Society as a leadership trainer for the "Science of Managing Diverse and Inclusive Teams, member of the Committee on Professional Training, former member of the Committee on Minority Affairs, former Councilor for the Trenton Local Section, Chair of the

2022 Mid-Atlantic Regional Meeting of the ACS, and former Chair of the Trenton local section. He was honored in 2019 as Out to Innovate LGBTQ+ Educator of the Year, a 2020 ACS Fellow, The Chemical and Engineering News 2022 LGBTQ+ Trailblazer, 2023 TCNJ Inaugural Innovation in Teaching Award, and the 2023 Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences.

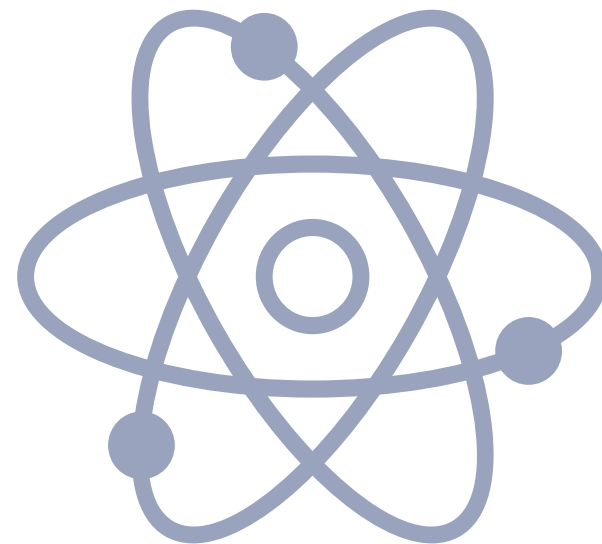
### THEORY OF CHANGE TO PRACTICE: USING INTERSECTIONALITY TO DRIVE SYSTEMIC CHANGE IN STEM

The changing demographics of the NJ student population towards more first generation and students of color was forecasted by decades of census data. Change is hard. Change is complex. Coupling the COVID-19 pandemic, we have seen a seismic shift in student preparation that requires a paradigm shift in our teaching. Luckily, The College of New Jersey's School of Science was already engaged in doing systemic changes to our curriculum to make the courses more inclusive and student centered. We have developed a theory of change, the experimentalist teacher, to help to manage the current conditions and to anticipate the future changes to our student population. We have three pillars to the theory of change, gaining empathy and understanding of our students, a changed toolkit of acceptable pedagogy, and developing a common

## WELCOME & KEYNOTE SESSION SPEAKER: 8:45 AM-10:00 AM

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language, values, and understanding of our responsibility. We have gathered a tremendous amount of data about our most vulnerable student populations to help us design and assess a model for teaching general chemistry. The data informed work has driven additional work into our Inorganic, Analytical, Organic and Physical chemistry curricula and even to study issues like the sense of belonging and respect in our classrooms. The Chemistry Department has developed our vision and mission to be as inclusive as possible so that we can increase the numbers of successful and thriving students in our majors and chemical professionals.



### COLLOQUY ON POST-COVID ONLINE LEARNING IN THE PRE-HEALTHCARE MAJORS, LOCATION: CONF A

**Kris Bompadre & Stephanie Nnadi—Montgomery County College**

Colleges and universities are all suffering a decline in enrollment since the pandemic (<https://nscresearchcenter.org/stay-informed/>). Trends are showing that there is an increase in demand for nurses (<https://www.edumed.org/spotlight/increasing-demand-for-nurses/>), but at the same time, a shortfall in nursing faculty and quality preparation of the students (<https://nursejournal.org/articles/2022-nursing-healthcare-trends/>). To meet these demands, Post-Covid education has embraced online learning, enticing students with convenient living room, pj-wearing opportunities. Online learning can provide accessibility, flexibility, and inclusivity; however, from the student's perspective, there are many myths in regard to online learning (i.e. easier and requires less work). As educators we know that students need a skill set of self-discipline, self-motivation, time-management, and organization that is different from the traditional classroom to be successful online. Many students come into the course unprepared to navigate technology and other challenges of online learning. As educators, we are challenged with upholding course integrity, enforcing academic honesty, and legitimizing the online learning process.

The purpose of this session is to facilitate an open conversation about the challenges and triumphs of faculty who teach online prerequisite courses for pre-healthcare fields.

### MERCER COUNTY COMMUNITY COLLEGE'S EXPERIENCE WITH THE NSF S-STEM TRACK 1 GRANT, LOCATION: CONF B, C

**James Maccariella, Laura Blinderman & Helen Tanzini—Mercer County Community College**

"From August 2015 until July 2020, Mercer County Community College (MCCC) administrated a National Science Foundation S-STEM Track 1 project entitled "Scholarships Advancing Mercer STEM Students (SAMS)." SAMS awarded \$600,000 in scholarships to 98 low-income, diverse students in STEM.

The program implemented and evaluated multiple supports to increase retention by increasing engagement and improving student relationships. Student outcomes included increased satisfaction with student relationships, self-confidence, engagement, and motivation. SAMS offered cohort meetings, a STEM-specific transfer workshop and STEM seminars, career preparation activities such as résumé development and interview practice, intrusive mandatory advising, and STEM clubs.

SAMs exceeded its retention/graduation/transfer goal of 75%

and its retention goal of 50% for underrepresented minorities and women. A survey revealed that 95% of SAMS scholars felt engaged and motivated, and 100% were confident that they will succeed.

This presentation provides MCCC's experience with the NSF S-STEM program, including lessons learned, and challenges. We provide an overview of: the proposal process, processing scholarship recipients, NSF reporting requirements, budget tracking, and importance of close coordination with the college's financial aid and accounting departments. The authors hope this presentation will be helpful to other institutions seeking a NSF-STEM grant.

### RESOURCES FOR TEACHING FUNCTIONS IN DEVELOPMENTAL MATH, PRECALC, & CALC I, LOCATION: 100

**Agnes Azzolino—Middlesex County College**

With a focus on functions, examine some digital manipulatives, spread sheets, and Geometer's Sketch Pads designed to bring movement to a math lecture or lab. Hear a slope. Go from slope to difference quotient to derivative. Use termtiles then sketchpad to compose functions to illustrate  $(line)(line) = (quadratic)$ . "Concretely" translate and reflect graphs. Easily graph functions, composite functions, inverse

functions. Graph  $Asin(Bx-C)+D$  by just changing the variables. Compute compounding, exponential, logistic, normal, ... models. All material, including Geometer's Sketchpad, is now free. Paper posted at: [mathnstuff.com/papers/ccSTEM23.htm](http://mathnstuff.com/papers/ccSTEM23.htm). Come play.

### ENGAGING ONLINE PHYSICS STUDENTS, LOCATION: 101

**Jing Huang—Mercer County Community College**

Students love physics experiments. Moving physics courses online makes the lab experience a challenge. This presentation discusses our mixed at-home and virtual physics labs and how we engage students by building community and clarifying expectations.

### BOX OF LESSONS: AN OPEN EDUCATIONAL RESOURCE FOR EXPLORING BIOMOLECULAR STRUCTURE AND FUNCTION, LOCATION: 102

**Melanie Lenahan and Shuchismita Dutta—Raritan Valley Community College and Rutgers University**

Structure and function is a core concept across many STEM disciplines. In biology, most curricula introduce students to the building blocks and principles of assembly of biological molecules, but only a few engage students in actively visualizing and exploring their shapes, interactions, and functions. Learning

to access and use the vast amounts of bioinformatics and three-dimensional structural data, and rapidly evolving tools for exploring them, to develop structure-function exploration lessons can be time-consuming and challenging. In Spring 2022, participants of the Faculty Mentoring Network, hosted by BioQuest and Molecular CaseNet, gathered resources and lessons they had independently developed to introduce students to the structures of biological macromolecules, their building blocks, and various small molecule ligands that interact with them. They

collaboratively expanded this collection of learning materials and student activities to support students in the early stages of biomolecular structure-function explorations. Materials in the “Box of Lessons” were reviewed by 34 undergraduate educators, revised, and then pilot tested by eight faculty across 11 courses in three countries. We will provide an overview of the resource and how the resources can be used in biology classes along with some lessons learned. Please bring your own device, (laptop or tablet) to interact with the resource and participate in the presentation.

### DESIGNING SEQUENCE COURSES AND THE IMPORTANCE OF COHORTING FOR STEM STUDENTS' SUCCESS: CONF

**Vikul Rajpara & Sherry Heidary—  
Union College at Union County**

Many students majoring in STEM programs are required to take General Chemistry 1 and 2 as part of their curriculum. We believe the collaboration between the faculty to design these sequence courses can greatly contribute to student success. We also strongly believe implementing Independent Study Project will allow students to gain essential skills such as: critical

thinking, effective oral and written communication, analytical reasoning, collaborative working with their peers, computer, and information literacy, writing competency, presentations techniques, and leadership quality. We will be presenting the results of our collaboration for the past 11 years on designing and redesigning the General Chemistry sequence courses, the effect of standardized assessments tools, introducing Independent Study Project, creating an active learning environment, and introducing Micro-Cohort setting in classroom. We will also showcase the comparison between Honors Sections vs non-Honors Sections.

### CUSTOMIZING YOUR ONLINE PLATFORM, LOCATION: 100

**Yazhu Liu & Shaoshao Yang—  
Borough of Manhattan Community  
College & LaGuardia Community  
College**

Have you ever considered creating customized online materials using your questions and videos? Do you want to offer a free online homework platform for students? If so, Helpyourmath may be the solution for you! Helpyourmath is an Open Educational Resource (OER) developed by community college faculty members. It provides a comprehensive, free online homework platform and mini-lectures that can be integrated into math classes. The key advantage of Helpyourmath is its ability to allow instructors to customize their courses by incorporating their own problem sets. This session will guide you through importing existing courses into your Helpyourmath account and demonstrate how to customize courses based on your own problem sets. By attending this session, you will gain the knowledge and skills necessary to leverage the full potential of Helpyourmath and enhance your math instruction. Helpyourmath is an Open Educational Resource developed by community college faculty members. It provides a comprehensive, free online homework platform and mini-lectures that can be integrated into math classes. The key advantage of Helpyourmath

is its ability to allow instructors to customize their courses by incorporating their own problem sets.

### FIRST 20 MINUTE SESSION: PLANT RESEARCH IN CLASS, A CHEAP AND ACCESSIBLE CURE, LOCATION: 101

**Catarina Mata—Borough of  
Manhattan Community College**

This low budget Course-based Undergraduate Research Experiences (CURE) Course has students design, perform and present their own research experiment on factors affecting the physiology or phenology of beans, *Phaseolus vulgaris* L. over one semester of three hour weekly labs. Students discuss environmental factors that may affect the growth, seed production and/or photosynthesis. Such as temperature, light intensity, soil nutrition, heavy metal contamination, salinity etc. Then the class divides in groups of 3-4 according to topic of interest, gets instructed on literature search, and reminded of what is needed for a research experiment. The whole class uses the same control plants, followed in turns by all groups. All that is needed is cheap: soil, pots, beans, rulers and regular lab scales. In all treatments height, number of leaves, color of the last fully expanded leaf and photosynthesis are measured, and in the end fresh and dry masses and pigment contents as well. Number

of stomata and other factors may also be used. Results are collected in pre-designed spreadsheets and uploaded during lab to the class Discussion board on Blackboard and become available to all. Students are lightly guided through collaborative data analysis. The semester ends with group research posters. Peer feedback is used to edit and later present at the College student research symposium and other venues.

**SECOND 20 MINUTE SESSION:  
THE USE OF INFUSING RESEARCH  
AS A PEDAGOGY (IRAP) AND ITS  
OUTCOMES ON STEM EDUCATION  
ADVANCEMENT AT UNION COLLEGE,  
LOCATION: 101**

**Mohamed Mohamed—Union College  
at Union County**

”Pedagogical advancements in STEM education constantly evolve as researchers and educators seek new and innovative ways to engage students and promote learning. The Infusing Research as Pedagogy (IRAP) strives to improve critical thinking skills, retention, and graduation for students majoring in STEM at Union College. Some of the most promising pedagogical approaches in STEM education include:

- Inquiry-based learning: a student-centered approach that encourages students to ask questions, explore, and discover knowledge. IBL effectively

promotes student engagement, critical thinking, and problem-solving skills.

- Project-based learning is another student-centered approach involving students working on real-world problems. PBL allows students to apply their knowledge and skills to solve problems relevant to their interests and experiences.
- Experiential learning is a hands-on approach that allows students to learn by doing. Experiential learning can be achieved through field trips, internships, and other opportunities for students to apply their knowledge and skills in real-world settings.

- Active learning: is a participatory approach that engages students in education. Active learning can be achieved through group work, debates, and simulations.

- Technology-enhanced learning uses technology to support and enhance learning. This experience gives students hands-on experience with STEM research and helps them develop the necessary skills and knowledge.”

**CULTIVATING STUDENT SUCCESS  
THROUGH INNOVATIVE PRACTICES  
IN ANATOMY AND PHYSIOLOGY,  
LOCATION: 102**

**Frank Pietropollo, Caitlin Burns &  
Paulina Cardaci—County College  
of Morris**

The Anatomy and Physiology (A&P) faculty at County College of Morris have implemented a variety of strategies to enhance the student learning experience and increase student success. Initiatives include standardization of the curriculum in lecture and laboratory, providing resources for instructors, and extensive student support options outside the classroom. Some of these student support options include: an orientation session offered to students enrolled in A&P I prior to each semester in an

effort to prepare students to start off on the right track, Tutoring Center: Science opportunities, utilization of publisher and virtual resources, and a student performance improvement plan (PIP). The PIP is offered to students to identify study tactics and useful resources to increase chances of success in the course. Faculty collect data to understand the validity of current initiatives which will be briefly discussed toward the end of the session.

**AI FIGHT CLUB, LOCATION: CONF  
Sherry Heidary & Lana M Liddy-  
LaPadura—Union College at Union  
County**

We have entered the age of Artificial Intelligence (AI)! New advancements and capabilities seem to be announced every day, leading to predictions of tremendous impacts on all aspects of our lives, including how we learn. Instead of banning or avoiding AI, we think it is beneficial, for both faculty and students, to embrace it responsibly. By harnessing the power of AI in education, we can create more personalized, efficient, and engaging learning environments that encourage students to use their critical thinking skills and empower them to reach their full potential. As

an added benefit, the more familiar your students become with generative AI, including its strengths and weaknesses, the less likely they will be to turn to it for generating responses and submissions. While AI-generated assignments offer significant advantages, it's important to recognize that they should complement, not replace, human instruction and guidance. The role of teachers remains crucial in providing mentorship, support, and nurturing social-emotional skills. In this presentation, we will recap our experience requiring the use of competing generative AI in research assignments, its impact on students critical thinking skills to overcome error and inaccuracies and the significance in the field of STEM education.

**MATH IS MAGICAL! CHECK OUT SOME MATHEMAGICS!, LOCATION: 100**

**George Soliman—Raritan Valley Community College**

You're invited to a mathemagics show! Come check out the 27 and 25 card tricks, both more mathematically intensive than the familiar 21-card trick. There will be special appearances by Euler, Fibonacci, and Pascal! Plus even more tricks revealing some beautiful mathematics! And unlike traditional magic, all tricks will be revealed with the beautiful mathematics behind them. Amaze your students; and even yourselves!

**FIRST 20 MINUTE SESSION: ANALYSIS OF EFFECT OF COURSE MODALITY ON STUDENT SUCCESS IN HEALTH SCIENCE CHEMISTRY, LOCATION: 101**

**Mekhala Girish & Michael Ansonoff—Middlesex County College**

A common prerequisite for students who plan to pursue an associate degree in para medical discipline (i.e., dental hygiene, pharmacist's assistant, nursing, respiratory care, etc.) is a single semester survey chemistry course covering topics as diverse as general chemistry, organic chemistry, and biochemistry. Traditionally this course has been delivered in person with 3 hours of lecture time and at least 2 hours of lab time over a

14-15-week semester. During the COVID-19 pandemic, this course, like many others, was adapted to online delivery format. During the period of the pandemic (between March 2020 and January 2022) both lecture and lab portions were delivered in synchronous online format. After COVID-19 pandemic restrictions were removed, this course reverted partially to the traditional in person format. However, based on student feedback some sections of the course continued to deliver lecture content in online format. Analysis of student grades on equivalent departmental final exams for the various modalities (in person, live synchronous, asynchronous) confirms that health STEM courses can be successfully offered in a hybrid format.

This presentation will identify some of the limits of online synchronous and asynchronous STEM course offerings as well as present lessons learned in development of a successful hybrid health science STEM course.

**SECOND 20 MINUTE SESSION: HEURISTIC METHOD FOR MINIMIZING DISTANCE WITHOUT USING CALCULUS AND ITS SIGNIFICANCE, LOCATION: 101**

**Ivan Retamoso—Borough of Manhattan Community College**

The presenter will demonstrate innovative approaches to solving applied optimization problems

that involve minimizing distance while respecting constraints. These alternative methods will not rely on calculus derivatives but instead utilize a "reflection principle" grounded in symmetry, geometric properties, and heuristic techniques. By employing these novel approaches, the presenter aims to provide a fresh perspective and foster a deeper understanding of the subject matter.

Furthermore, during the talk, the presenter will emphasize the educational significance of these alternatives. By showcasing their practical applications and highlighting their conceptual foundations, attendees will gain valuable insights into the broader implications and real-world relevance of these problem-solving techniques. The talk will offer a compelling justification for incorporating these alternative methods into educational curricula, enriching students' learning experiences and empowering them with versatile problem-solving tools.

**FIRST 20 MINUTE SESSION: TECHNOLOGICAL OER DEVELOPMENT: VIRTUAL MICROSCOPE, LOCATION: 102**

**Dorothy Salinas & Caitlin Burns—County College of Morris**

This session will focus on the creation of a custom, virtual microscope that serves as an Open Educational

Resource (OER) for college-level biology courses. The virtual microscope was developed as an interdisciplinary collaboration between faculty members of the Biology and Chemistry Department and Information Technologies Department at County College of Morris (CCM), Randolph, NJ. It is a product of the Open Textbook Collaborative (OTC), a New Jersey Higher Education program, funded by the U.S. Department of Education. The virtual microscope allows online students to learn and practice microscopy skills without the need for a physical microscope. The elimination of a physical microscope (and associated slides) has substantially lowered course cost. All students, regardless of course modality, have the ability to utilize the microscope as a study tool outside of the classroom. The extensive slide deck reflects the course learning objectives of several biology courses at CCM and has successfully reduced common barriers to student success. As an OER, the virtual microscope is open access and can be utilized by faculty and students at other institutions with the ability to customize the slides to fit their own course learning objectives.

**SECOND 20 MINUTE SESSION:  
UTILIZING PHOTOGRAPHIC  
SCIENTIFIC COLLECTIONS IN  
BIOLOGY CLASSES, LOCATION: 102**

**Kenneth Cabarle—Atlantic Cape  
Community College**

Organismal Collections and Field Collections have been a long standing pedagogical technique in the Biology classroom. Collections allow the student to learn critical skills related to work in the scientific fields. These critical skills include: collection protocols, QC/QA for Field/Lab/Research collections, Organismal Identifications utilizing taxonomy, and ultimately introduce the student to wider ranging skill set needed to enter the workforce as a field or lab technician. The use of collections also presents some challenges such as permitting, adherence to environmental and governmental regulations, working with institutional

requirements and the effort needed in accessioning and storing/ disposing/distributing collections after the class is over. To address these issues I initiated a capstone project in General Biology II which focuses on the students collecting field photographs of organisms to simulate the traditional field collection. This has so far been quite successful and has run as a capstone the last 3 semesters. In spring of 2023 the class had the opportunity to also complete an embedded honors component in the class that is intertwined with and supports the capstone collection. This presentation includes a basic description of the overall idea/use of photographic collections in the Biology classroom, provides some examples of student work and addresses some of the issues related to utilizing photos and A/I in the future Biology classroom.



**THIS IS ROCKET SCIENCE**

**Christopher Vaughen—Montgomery  
County Community College**

Rocket science inspired activities for algebra through differential equations

**MY FAVORITE NUMBERS**

**George Soliman—Raritan Valley  
Community College**

Numbers. They're the most basic building blocks of mathematics. But there are some numbers that are just flat out awesome! Here are some of my personal favorites.

**A FOCUS ON READING AND WRITING  
IN BIOLOGY CLASS**

**Emral Devany —Kingsborough  
Community College**

Many community college students lack the reading and writing skills that are important for STEM learning. Reading scientific texts is not a simple, read-the-words-in-a-page activity. It requires critical thinking, digesting facts, synthesis of information and frequent revision of conclusions. Only assigning readings to the students, assuming they already have reading skills or processes may lead to community college students not completing the readings, having difficulty with keeping up with the class content and eventually get disengaged from the class all together. Writing is also a high impact tool that is often used to improve student

learning, success, and critical thinking. Science courses typically implement writing in the form of laboratory and/or research reports but not in the form of a learning tool in the classroom. Here, I am introducing ways to demonstrate reading strategies and show our students how to approach even the most basic scientific texts and to extend the use of writing and use it as a tool to learn biology.

**HARMONIZE HEIGHTS AND  
LEARNING LOWS: A DR. SEUSS-  
INSPIRED TALE OF STUDENT  
ENGAGEMENT!**

**Ellen Genovesi—Mercer County  
Community College**

Embark on a whimsical journey as the presenter shares their experience at Mercer County Community College, where they ventured into the world of Harmonize. Inspired by the storytelling style of Dr. Seuss, this presentation delves into the highs and lows experienced during a pilot program that utilized Harmonize to enhance student engagement in an online biology course for non-science majors. From the mountaintops of enthusiasm and active participation to the valleys of challenges and unexpected hurdles, this presentations candidly discusses the successes, setbacks, and lessons learned throughout this pilot program. Gain insights into effective strategies for enhancing student engagement using Harmonize for discussion board



posts. Discover the challenges and successes encountered in creating a vibrant online learning community. Learn practical lessons and best practices for implementing Harmonize. Explore the strategies employed, student responses, and the impact on the online learning community. Prepare to be inspired and entertained as the presenter recounts the moments of triumph and discovery, as well as the trials and tribulations faced along the way.

### EXTENSION OF HIGH LEVEL STEM LEARNING USING MAKERSPACES

**Mary Engel—Lehigh Carbon Community College**

Preparing students for the challenges they will face in our rapidly changing work environment requires an increasing emphasis on high-level STEM education. While traditional classroom instruction provides a strong and essential foundation in theoretical concepts, there is often insufficient time allotted for bridging the gap between theory and real-world applications in STEM courses. Makerspaces have emerged as inclusive, interdisciplinary educational environments that can be used to extend learning at all course levels in a hands-on, cost effective manner. By integrating makerspaces into high level STEM courses, students can spend nominal class time gaining practical skills, engaging in real-world problem-solving and troubleshooting

activities providing valuable experience for entering the workforce. We will examine successful examples where makerspace activities allow for exploration and the promotion of critical thinking to bridge this gap between theory and applications in high level STEM courses. The role of educators in facilitating makerspace experiences and how these inviting, innovative environments can be used to promote applicable connections will be explored. This presentation aims to inspire educators and institutions to embrace makerspaces as powerful tools for providing the next generation of STEM professionals with the skills needed to thrive in our constantly evolving workforce.

### BUT IT'S A F2F COURSE!: USING ONLINE DISCUSSION BOARDS TO STUDY ETHICAL REASONING IN A FACE-TO-FACE MICROBIOLOGY COURSE

**Jenifer Martin—County College of Morris**

As professors, we may often feel overwhelmed with assessments. In addition to the traditional course learning outcomes and program learning outcomes that are assessed in our courses, we may have additional general education outcomes that need to be assessed if we are teaching general education courses. Using in class time to not only cover all of those learning outcomes, but also access those

outcomes can be challenging. This snapshot session will discuss how the use of online discussion boards can allow for professors to more effectively cover certain topics, achieve better student engagement in those topics, and increase outcomes assessment scores for those topics.

### CREATING A FRAMEWORK FOR STUDENTS TO DEBUNK THE MYTH THAT RACE IS BIOLOGICAL

**Melanie Lenahan & Karen Gaffney—Raritan Valley Community College**

The detrimental consequences of racist ideologies exist across all facets of society, despite the core premise being untrue - the belief that race is biological. First, this belief is false, and second, it is dangerous, with harmful and even fatal consequences. This myth has served as a rationale and justification for white supremacy, imperialism, colonialism, genocide, land theft, slavery, segregation, eugenics, and more. Institutions of higher education have an opportunity to take a more active role in debunking the myth that race is biological through teaching. This presentation will discuss an interdisciplinary project that enables students to create curricular materials that contribute to supporting faculty in debunking the myth that race is biological.





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