

# ASEE/AIChE Summer School for Engineering Faculty

July 24-29, 2022  
Colorado School of Mines  
Golden, CO

## Key to Building and Room abbreviations

### Buildings:

SC = Student Center      MC = McNeil      GC = Green Center      CK = Coors Technology Building

### Rooms with names:

BR = Ballrooms (A, B, C, D, E)      PET = Petroleum lecture hall      MET = Metals hall

FR = Friedhoff rooms

Mines Market is in the Elm residence hall

## Program

### Sunday July 24

noon – 10:00\*      SC BR Lobby      Registration / Room Check-In

\* Arrivals after 10pm please Direct Message [Margot Vigeant](#) in Slack

### Monday July 25

7:00 – 4:30      SC BR Lobby      Registration

07:00 – 08:00      Mines Market      Breakfast

08:00 – 09:00      SC BR ABC      Welcome Reception

09:00 – 12:00      SC BR ABC      Teaching Institute      Michael Prince

12:00 – 13:00      Mines Market      Lunch

13:00 – 14:30      [Session 1 Workshops \(link for abstracts\)](#)

MC 213	Numerical Problem Solving across the Curriculum with Python and MATLAB Using Interactive Coding Templates	Ashlee Ford-Versypt Matthew Stuber and Robert Hesketh
MC 214	NSF Workshop: Grant Writing Tips with NSF CBET Division Director, CBET Program Director and MCB Division Director	Jeanne VanBriesen Raymond Adomatis Theresa Good
MC 215	Promoting mental health and wellness in undergraduate engineers	Sarah Wilson Karin Jensen Andrew Danowitz Melanie Miller
MC 313	Incorporating Hands-on, Inquiry-based Learning Modules into the Chemical Engineering Classroom	Jennifer Weiser Kristine Horvat Courtney Pfluger

MC 314	Becoming an Agent of Change: Theory and Strategy for Effective Change Planning and Implementation for New and Early Career Faculty	Donald Visco Charles Henderson Lisa Bullard Jason Keith David Silverstein
14:30 – 15:00	Break	
15:00 – 16:30	<a href="#"><u>Session 2 Workshops (link for abstracts)</u></a>	
MC 214	NSF Workshop: Grant Writing Tips with NSF CBET Division Director, CBET Program Director and MCB Division Director	Jeanne Van Briesen Raymond Adomaitis Theresa Good
MC 215	Creating a culture of Academic Integrity through prevention, detection, reflection, and accountability	Adam Melvin Lisa Bullard
MC 216	Resources to facilitate active learning	John Falconer
MC 313	Grading: Easier, Better, Faster, Stronger	Joshua Enszer
MC 314	Learn Aspen Plus in 24 Hours – A Modular Approach to Teaching Process Simulation	Thomas Adams Mario Eden
16:45 – 17:30	MC 213/214 Networking: Technical Research MC 313 Networking: Educational Research MC 216 Networking: Professional Track Faculty MC 215 In the (Fume) Hood live podcast - focus on past Summer Schools	
17:30 – 19:00	Mines Market Dinner	
19:30 – 21:30	GC FR 1 Poster Session 1	

**Tuesday Jul 26, 2022**

7:00 – 4:00	SC BR Lobby	Registration	
07:00 – 08:00	Mines Market	Breakfast	
08:00 – 09:00	SC BR ABC	Tuesday Plenary:  Teaching Moves to Foster Student Engagement, Dialog, and Deeper Learning	Mark Windschitl
09:00 – 09:30		Break	
09:30 – 12:00		<a href="#"><u>Session 3 Workshops (link for abstracts)</u></a>	
	GC Pet	Game-Based Learning for Challenging Topics in Chemical Engineering	Daniel Anastasio Matthew Cooper Cheryl Bodnar Daniel Burkey
	MC 214	High structure course design: what, why, and how	Justin Schaffer
	MC 215	Art to Teaching: Using Comics to Improve Student Learning in Engineering	Lucas Landherr Jennifer Pascal
	MC 313	Hands-on Interactive Learning in Fluid Mechanics & Heat Transfer with Virtual Options	David Thiessen Jacqueline Gartner
	MC 314	“How do I get my students to talk?” A primer on classroom discourse that helps engage students and raises the effectiveness of working with peers	Mark Windschitl
12:00 – 13:00	Mines Market	Lunch	
13:00 – 14:30		<a href="#"><u>Session 4 Workshops (link for abstracts)</u></a>	
	MC 213	Applied Statistics and Data Analytics	Richard Braatz Victor M. Zavala
	MC 214	Advisor: Your Most Impactful Role	Lisa Bullard Susan Montgomery

MC 215	Entrepreneurially-Minded Learning for ChemEs (sponsored by KEEN)	Cheryl Bodnar Matt Liberatore Margot Vigeant
MC 216	Resources to facilitate active learning	John Falconer
MC 313	Publishing Your Research on Education	Donald Visco Allison Godwin Milo Koretsky
MC 314	Chemical Engineering Laboratories: What should we be teaching and how should we teach it?	Tracy Carter Samira Azarin Chris Barr Janie Brennan Amy Karlsson Sarah Wilson
14:30 – 15:00	Break	
15:00 – 17:30	<a href="#">Session 5 Workshops (link for abstracts)</a>	
MC 213	Methods and Tools to Help Students Learn Core ChE Concepts	Milo Koretsky
MC 214	Effective and Equitable Team Learning	Victoria Goodrich Troy Vogel
MC 215	From Syllabus to Final Grades: Outcomes-Based Course Design, Delivery, and Assessment	Joseph A. Shaeiwitz Daniel Lepek
MC 313	Hands-on Interactive Learning in Fluid Mechanics & Heat Transfer with Virtual Options	David Thiessen Jacqueline Gartner
MC 314	Visual, creative, student-written problems for any course: Developing unique problems that reverse engineer YouTube videos	Matthew Liberatore Amanda Malefyt
17:30 – 19:00	Mines Market Dinner	
19:30 – 21:30	GC FR 1	Poster Session 2

**Wednesday July 27 Industry Day**

7:00-9:00am	SC BR Lobby	Registration	
07:00 – 08:00	Mines Market	Breakfast	
08:00 – 09:00	SC BR ABC	Gold Sponsor Plenary with 3M, Chevron, and Dow	
09:00 – 12:30	GC FR 2	Vendors, Industry, and Professional Groups (VIP) Expo (continuous)	
09:45 – 10:45	GC PET	Pharmaceutical Industry Panel with Abbvie, Amgen, Bristol Meyers Squibb, and Eli Lilly	
11:15 – 12:00		Vendor Sponsored workshops	
	GC MET	Teaching Chemical Engineering with MATLAB, Simulink, and Hardware	Aycan Hacioglu
	GC PET	CHEMCAD Process Simulation Software and Support Material for Educators	Whitney Garcia
	CK 150	ChemE-Sports(™) Overview: Dynamic Simulation Competition with <i>Petroskills Simulation Solutions Inc.</i>	Matt Garvey
	CK 140	Making the most of Elsevier Engineering Products	Walter Coto
12:00 – 12:30	GC FR 2	Boxed lunch available at VIP Expo	
13:00 – 18:00	Various	Social / Recreation Events - Sign up required see Visibook	
18:00 – 19:30	Mines Market	Dinner (for attendees on campus)	

**Thursday July 28**

DM Margot Vigeant	in Slack	Registration	
07:00 – 08:00	Mines Market	Breakfast	
08:00 – 09:00	SC BR ABC	Thursday Plenary “Unscripted... an IDEAL Chemical Engineering Journey”	Christine Grant
09:00 – 09:30		Break	
09:30 – 12:00		<a href="#">Session 6 Workshops (link for abstracts)</a>	
	MC 213	Methods and Tools to Help Students Learn Core ChE Concepts	Milo Koretsky
	MC 214	Student-centered approaches to textbooks	Matthew Liberatore Daniel Lepek
	MC 215	Hands-On Engineering Design Projects	Taryn Bayles Joshua Enszer
	MC 313	Undergraduate Research: Benefits and Best Practices	Christy Wheeler West Joseph Holles
	MC 314	Enhancing Critical Thinking and Professional and Graduate School Readiness with Connected Teams, Analytics and Experimental Design in a Unit Operations Laboratory	Zenaida Gephhardt
12:00 – 13:00	Mines Market	Lunch	
13:00 – 14:30		<a href="#">Session 7 Workshops (link for abstracts)</a>	
	MC213	Building Effective Teams	Sandy Pettit Clifford Henderson
	MC 215	Principles of Leadership for Engineers	Dennis Hess John Flake
	MC 216	Incorporating Dynamic Simulation into Chemical Engineering Curricula	Martha Grover John Hedengren Thomas Badgwell
	MC 313	Incorporating Anti-racism and Social Justice into Class Examples and Homework Problems	Jennifer Cole Alex Prybutok Chloé Archuleta

	MC 314	Chemical Engineering Laboratories: What should we be teaching and how should we teach it?	Tracy Carter Samira Azarin Chris Barr Janie Brennan Amy Karlsson Sarah Wilson
14:30 – 15:00		Break	
15:00 – 16:30		<a href="#"><u>Session 8 Workshops (link for abstracts)</u></a>	
	MC 213	Best Teaching Practices for Collaborative and Inclusive Environments in Teams	Sindia Rivera-Jiménez Courtney Pfluger
	MC 214	University Citizenship	Laura Ford
	MC 215	Promoting mental health and wellness in undergraduate engineers	Sarah Wilson
	MC 216	Teaching Process Control Using Dynamic Simulations	Martha Grover John Hedengren Thomas Badgwell
	MC 313	Brewing Beer and the Relation to Chemical Engineering	Kevin Cash
	MC 314	Teaching Engineering Ethics through Highly Interactive, Team-based, Playful Games	Beth Rundlett Jennifer Fiegel, Scott Streiner
16:45 – 17:30	MC 214	Networking: Capstone Design	
	MC 314	Networking: Transport	
	MC 313	Networking: Thermo & Mass & Energy Balances	
	MC 213	Networking: Labs	
	MC 216	Networking: Kinetics/Reactors/Controls	
	MC 215	In the (Fume) Hood live podcast - focus on the 2022 ChESS	
18:00 – 21:00	SC BR ABC	Banquet (Ticketed event)	

**Friday July 29**

08:00 – 12:00 SC Ballroom D open for luggage dropoff and Check Out

07:00 – 08:00 Mines Market Breakfast

08:30 – 09:00 SC BR ABC Closing thoughts and survey

09:30 – 12:00 [Session 9 Workshops \(link for abstracts\)](#)

MC 213	The Applied Neuroscience of How We Learn	Dendy Sloan Fernando Giráldez Cynthia Norrgran
MC 214	Process Safety in Chemical Engineering: Frameworks and Approaches	Tom Meadowcroft Tracy Carter Cheryl Bodnar Elif Miskioglu Dan Crowl Hunter Flodma
MC 215	Hands-On Engineering Design Projects	Taryn Bayles Joshua Enszer
MC 216	Development of Learning Assistants (LAs) to improve Student Success	Sandy Pettit Clifford Henderson
MC 314	Visual, creative, student-written problems for any course: Developing unique problems that reverse engineer YouTube videos	Matthew Liberatore Amanda Malefyt
12:00 – 13:00	Mines Market Lunch for folks still on campus	
12:00-13:00	CACHE lunch (off-campus, only if pre-registered via Visibook)	
Various	Transport to airport (sign up through Visibook only)	

## Workshop Descriptions

Session 1				
Monday 13:00 - 14:30	Title	Presenters	Emails	Description
	NSF Workshop: Grant Writing Tips with NSF CBET Division Director, CBET Program Director and MCB Division Director	Jeanne VanBriesen  Raymond Adomaitis  Theresa Good	ChESS main for workshop Q&A    	NSF proposal writing workshop with NSF program and division directors.
	Incorporating Hands-on, Inquiry-based Learning Modules into the Chemical Engineering Classroom	Jennifer Weiser  Kristine Horvat  Courtney Pfluger	jennifer.weiser@co oper.edu  khorvat@newhave n.edu  c.pfluger@northeas tern.edu	Examine application and implementation of hands-on, inquiry-based learning modules in Chemical Engineering Courses and collaboratively work to develop modules for your own courses.
	Promoting mental health and wellness in undergraduate engineers	Sarah Wilson  Karin Jensen  Andrew Danowitz  Melanie Miller	s.wilson@uky.edu  kjens@illinois.edu  adanowitz@calpoly. edu  memi257@uky.edu	This discussion-based workshop aims to give you the tools to recognize and respond to students in distress and create a classroom culture that prioritizes the mental health and wellness of both you and your students.
	Becoming an Agent of Change: Theory and Strategy for Effective Change Planning and Implementation for New and Early Career Faculty	Donald Visco  Charles Henderson  Lisa Bullard  Jason Keith  David Silverstein	dviscoj@uakron.ed u  charles.henderson @wmich.edu  lgbullar@ncsu.edu  keith@bagley.msst ate.edu  david.silverstein@u ky.edu	This workshop will provide new faculty with the tools to most effectively implement systemic changes in their departments and institutions by providing them with proven strategies for change, including a dashboard that allows them to create a framework for implementation.
	Numerical Problem Solving across the Curriculum with Python and MATLAB Using Interactive Coding Templates	Ashlee Ford-Versypt  Matthew Stuber  Robert Hesketh	ashleefv@buffalo.e du  matthew.stuber@u conn.edu  hesketh@rowan.ed u	This workshop explores Python and MATLAB templates and interactive coding notebooks for use throughout chemical engineering core courses and computational thinking as a problem solving approach. Students do not need prior Python or MATLAB programming

				to use these templates.
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Session 2				
Monday 15:00 - 16:30	Title	Presenters	Emails	Description
NSF Workshop: Grant Writing Tips with NSF CBET Division Director, CBET Program Director and MCB Division Director	Jeanne VanBriesen	Chess@ for messaging		NSF proposal writing workshop with NSF program and division directors.
	Raymond Adomaitis			
	Theresa Good			
	Grading: Easier, Better, Faster, Stronger	Joshua Enszer	enszer@udel.edu	Design and implementation of custom-made rubrics to evaluate specific holistic qualities of student work, from individual homework problems through large team design projects.
	Resources to facilitate active learning	John Falconer	john.falconer@colorado.edu	We will discuss online resources that can save faculty time and help them teach more effectively using active learning.
Creating a culture of Academic Integrity through prevention, detection, reflection, and accountability	Adam Melvin	melvin@lsu.edu		This workshop will provide attendees with tips and resources to help create a culture of academic integrity for their students and faculty.
	Lisa Bullard	lgbullar@ncsu.edu		
Learn Aspen Plus in 24 Hours – A Modular Approach to Teaching Process Simulation	Thomas Adams	tadams@mcmaster.ca		This workshop will instruct attendees on methods, resources, and educational materials that can be utilized by students and instructors alike to gain proficiency in formulating and solving chemical engineering problems with Aspen Plus.
	Mario Eden	edenmar@auburn.edu		

Session 3				
Tuesday 09:30 - 12:00	Title	Presenters	Emails	Description
	Hands-on Interactive Learning in Fluid Mechanics & Heat Transfer with Virtual Options	David Thiessen Zeynep Durak	thiessen@wsu.edu zeyneppezgi.durak@wsu.edu	Attendees will be instructed briefly on learning theory and then design philosophy and implementation of hands-on interactive learning strategy through use of Low-Cost Desktop Learning Modules.
	“How do I get my students to talk?” A primer on classroom discourse that helps engage students and raises the effectiveness of working with peers	Mark Windschitl	mwind@uw.edu	This workshop will acquaint participants with principles of productive talk in classrooms, how to set up norms for interacting with one another, the use of “talk moves” to foster reasoning, and how instructors can use different routines for students to publicly share and deliberate solutions to problems. Attendees can share what they know and take away strategies for their own classrooms.
	High structure course design: what, why, and how	Justin Schaffer	jshaffer@mines.edu	Learn what high structure courses are, why they are effective, and how to design them yourself!
	Game-Based Learning for Challenging Topics in Chemical Engineering	Daniel Anastasio Matthew Cooper Cheryl Bodnar Daniel Burkey	anastasi@rose-hulman.edu mecoope3@ncsu.edu bodnar@rowan.edu daniel.burkey@uconn.edu	Learn how to use (and play!) games suitable for teaching challenging topics and professional skills in chemical engineering.
	Art to Teaching: Using Comics to Improve Student Learning in Engineering	Luke Landherr Jennifer Pascal	l.landherr@northeastern.edu jennifer.pascal@uconn.edu	This hands-on, engaging workshop will introduce the decades-long history of comics in education, the success of comics in STEM education, and enable participants to make comics for their own courses.

Session 4				
Tuesday 13:00 - 14:30	Title	Presenters	Emails	Description
	Publishing Your Research on Education	Donald Visco	dviscoj@uakron.edu	This workshop focuses on developing the ideas in your submitted poster for the Summer School into a high quality education research manuscript suitable for publication in a peer-reviewed journal such as Chemical Engineering Education.
		Allison Godwin	godwina@purdue.edu	
		Milo Koretsky	Milo.Koretsky@tufts.edu	
	Advisor: Your Most Impactful Role	Lisa Bullard	lgbullar@ncsu.edu	This workshop will equip faculty for a) course-based advising of undergraduate students, b) non-course specific advising of undergraduate students, and c) research-based mentoring of graduate students.
		Susan Montgomery	smontgom@umich.edu	
	Resources to facilitate active learning	John Falconer	john.falconer@colorado.edu	We will discuss online resources that can save faculty time and help them teach more effectively using active learning.
	Applied Statistics and Data Analytics	Richard Braatz	braatz@mit.edu	This session provides materials and best practices to help new faculty excel in teaching applied statistics and data analytics to undergraduate chemical engineers
		Victor M. Zavala	victor.zavala@wisc.edu	
	Chemical Engineering Laboratories: What should we be teaching and how should we teach it?	Tracy Carter	t.carter@northeastern.edu	We will discuss common learning outcomes for laboratory courses and share best practices for how to achieve those outcomes, with a special emphasis on process safety.
		Samira Azarin	azarin@umn.edu	
		Chris Barr	cjbarr@umich.edu	
		Janie Brennan	jbrennan@wustl.edu	
		Amy Karlsson	ajkarl@umd.edu	
		Sarah Wilson	s.wilson@uky.edu	
	Entrepreneurially-Minded Learning for ChemEs (sponsored by KEEN)	Cheryl Bodnar	bodnar@rowan.edu	This hands-on workshop will introduce the 3C's of Entrepreneurial Mindset - Curiosity, Connections, and Creating Value and give you some quick-start ways to help instill these
		Matt Liberatore	matthew.liberatore@utoledo.edu	
		Margot Vigeant	mvigeant@buckland.edu	

				habits-of-mind in yourself and your students.
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Session 5				
Tuesday 15:00 - 17:30	Title	Presenters	Emails	Description
	Hands-on Interactive Learning in Fluid Mechanics & Heat Transfer with Virtual Options	David Thiessen	thiessen@wsu.edu	Attendees will be instructed briefly on learning theory and then design philosophy and implementation of hands-on interactive learning strategy through use of Low-Cost Desktop Learning Modules.
		Zeynep Durak	zeynepezgi.durak@wsu.edu	
	Methods and Tools to Help Students Learn Core ChE Concepts	Milo Koretsky	Milo.Koretsky@ufts.edu	This workshop's goal is to provide early career faculty members with specific educational methods and tools that they can incorporate into their classroom to encourage their students to think deeply about the central concepts in core chemical engineering courses.
	Visual, creative, student-written problems for any course: Developing unique problems that reverse engineer YouTube videos	Matthew Liberatore Amanda Malefyta	matthew.liberatore@utoledo.edu malefyta@trine.edu	Solve the solutions manual dilemma with YouTube problems: Student-written problems that reverse engineer actions in a video by applying course concepts.
	Effective and Equitable Team Learning	Victoria Goodrich Troy Vogel	v.goodrich@nd.edu tvogel1@nd.edu	This workshop will focus on designing effective team experiences and facilitating student interactions in engineering courses while maintaining an equitable and inclusive environment for student learning.
	From Syllabus to Final Grades: Outcomes-Based Course Design, Delivery, and Assessment	Joseph A. Shaeiwitz Daniel Lepek	jas0105@auburn.edu daniel.lepek@cooper.edu	This workshop will introduce participants to student learning outcomes and will provide them the ability to design, deliver, and assess their courses successfully using an outcomes-based pedagogical framework.

Session 6				
Thursday 09:30 - 12:00	Title	Presenters	Emails	Description
	Hands-On Engineering Design Projects	Taryn Bayles	tbayles@pitt.edu	Participants will be provided with a variety of inexpensive hands-on engineering design projects which have real world relevance, which are threaded by STEM content utilizing the engineering design process.
		Joshua Enszer	enszer@udel.edu	
	Methods and Tools to Help Students Learn Core ChE Concepts	Milo Koretsky	Milo.Koretsky@uft.edu	This workshop's goal is to provide early career faculty members with specific educational methods and tools that they can incorporate into their classroom to encourage their students to think deeply about the central concepts in core chemical engineering courses.
	Student-centered approaches to textbooks	Matthew Liberatore Daniel Lepek	matthew.liberatore@utoledo.edu daniel.lepek@cooper.edu	Interactive textbooks and related digital tools create pre-class engagement leading to more active, collaborative classes and opportunities for deeper learning to address course objectives.
	Enhancing Critical Thinking and Professional and Graduate School Readiness with Connected Teams, Analytics and Experimental Design in a Unit Operations Laboratory	Zenaida Gephardt	gephardtzo@rowan.edu	This workshop provides a template to enhance students' critical thinking, collaboration, and professional and graduate school readiness through connected teams, engineering analytics and experimental design focusing on obtaining robust conclusions and managing uncertainty.
	Undergraduate Research: Benefits and Best Practices	Christy Wheeler West Joseph Holles	cwest@southalabama.edu jholles@uwyo.edu	Come learn techniques and best practices to efficiently mentor undergraduate researchers to maximize 1) results for you as researcher, 2) the outcomes and experience for the student researchers, and 3) the outcomes and metrics for your institution.

Session 7				
Thursday 13:00 - 14:30	Title	Presenters	Emails	Description
	Principles of Leadership for Engineers	Dennis Hess John Flake	dennis.hess@chbe.gatech.edu johnflake@lsu.edu	This workshop will describe approaches to the development of technical leadership or sociotechnical skills by building a leadership mindset in students and in early career faculty members using courses, workshops, and seminars.
	Incorporating Dynamic Simulation into Chemical Engineering Curricula	Martha Grover John Hedengren Thomas Badgwell	martha.grover@chbe.gatech.edu john_hedengren@byu.edu tom.badgwell@csi-automation.com	The session will provide instructors with specific chemical and biological engineering examples, to integrate dynamic simulation into various courses within the chemical engineering curriculum.
	Incorporating Anti-racism and Social Justice into Class Examples and Homework Problems	Jennifer Cole Alex Prybutok Chloé Archuleta	jennifer-cole@northwestern.edu aprybutok@u.northwestern.edu ChloeArchuleta2024@u.northwestern.edu	The workshop gives faculty a foundation and guide on how to add anti-racism, diversity, equity, inclusion, and social justice contexts in chemical engineering courses, homework problems, and projects to foster anti-racist engineers through regular engagement with these contexts.
	Chemical Engineering Laboratories: What should we be teaching and how should we teach it?	Tracy Carter Samira Azarin Chris Barr Janie Brennan Amy Karlsson Sarah Wilson	t.carter@northeastern.edu azarin@umn.edu cjbar@umich.edu jbrennan@wustl.edu ajkarl@umd.edu s.wilson@uky.edu	We will discuss common learning outcomes for laboratory courses and share best practices for how to achieve those outcomes, with a special emphasis on process safety.
	Building Effective Teams	Sandy Pettit Clifford Henderson	spettit@usf.edu clhenderson@usf.edu	The goal of this workshop is to familiarize faculty with team development models and to equip them with tools and techniques to build and manage effective, inclusive, and productive teams.

Session 8				
Thursday 15:00 - 16:30	Title	Presenters	Emails	Description
	University Citizenship	Laura Ford	laura-ford@utulsa.edu	This session will encourage attendees to create a career plan from the many different options for fulfilling service obligations to the department, the institution, and the profession.
	Brewing Beer and the Relation to Chemical Engineering	Kevin Cash	kcash@mines.edu	Brewing beer is one of the oldest chemical processing technologies, and in this workshop we will cover potential avenues for incorporating it into your classes or an engineering department.
	Promoting mental health and wellness in undergraduate engineers	Sarah Wilson Karin Jensen Andrew Danowitz Melanie Miller	s.wilson@uky.edu kjens@illinois.edu adanowitz@calpoly.edu memi257@uky.edu	This discussion-based workshop aims to give you the tools to recognize and respond to students in distress and create a classroom culture that prioritizes the mental health and wellness of both you and your students.
	Best Teaching Practices for Collaborative and Inclusive Environments in Teams	Sindia Rivera-Jiménez Courtney Pfluger	rivera.jimenez@eng.ufl.edu c.pfluger@northeastern.edu	Explore strategies and best practices to teach and assess collaboration and inclusive environments in chemical engineering teams.
	Teaching Engineering Ethics through Highly Interactive, Team-based, Playful Games	Beth Rundlett Jennifer Fiegel Daniel Burkey	beth-rundlett@uiowa.edu jennifer-fiegel@uiowa.edu daniel.burkey@uconn.edu	This workshop will train faculty on teaching engineering ethics through highly interactive, team-based, playful games to improve student engagement and ethical knowledge retention.
	Teaching Process Control Using Dynamic Simulations	Martha Grover John Hedengren Thomas Badgwell	martha.grover@chbe.gatech.edu john_hedengren@byu.edu tom.badgwell@csi-automation.com	The session will provide instructors with specific chemical and biological engineering examples to motivate students to learn different modeling, analysis, and control techniques and to have the students engaged in authentic learning experiences.

Session 9				
Friday 09:30 - 12:00	Title	Presenters	Emails	Description
	Hands-On Engineering Design Projects	Taryn Bayles	tbayles@pitt.edu	Participants will be provided with a variety of inexpensive hands-on engineering design projects which have real world relevance, which are threaded by STEM content utilizing the engineering design process.
		Joshua Enszer	enszer@udel.edu	
	Development of Learning Assistants (LAs) to improve Student Success	Sandy Pettit	spettit@usf.edu	The goal of this workshop is to familiarize faculty with the use of Learning Assistants (LA) to optimize student success in flipped/blended and large enrollment courses and to provide resources for the training of LAs and development of LA programs.
		Clifford Henderson	clhenderson@usf.edu	
	Visual, creative, student-written problems for any course: Developing unique problems that reverse engineer YouTube videos	Matthew Liberatore	matthew.libera tore@utoledo.edu	Solve the solutions manual dilemma with YouTube problems: Student-written problems that reverse engineer actions in a video by applying course concepts.
		Amanda Malefyt	malefyta@trine.edu	
	Process Safety in Chemical Engineering: Frameworks and Approaches	Tom Meadowcroft	meadowcroft@rowan.edu	This interactive workshop will provide instructors with a foundation of Process Safety knowledge and tools/resources they can use to incorporate Process Safety content into all ChE courses to meet ABET criteria.
		Tracy Carter	t.carter@northeastern.edu	
		Cheryl Bodnar	bodnar@rowan.edu	
		Elif Miskioglu	elif.miskioglu@bucknell.edu	
		Dan Crowl	crowl@mtu.edu	
		Hunter Flodman	hunter.flodman@unl.edu	
	The Applied Neuroscience of How We Learn	Dendy Sloan	esloan@mines.edu	This workshop will address the four common neuroscience pillars of learning, some common neuroscience misconceptions, and 13 neuroscience take-home messages to improve learning.
		Fernando Giráldez	fernando.girald ez@upf.edu	
		Cynthia Norrgran	cnorrgra@mines.edu	