

Last updated February 2024

COURTNEY FABER

Assistant Professor

Department of Engineering Education

WORK ADDRESS

140F Capen Hall
University at Buffalo
Buffalo, New York 14260
(716) 645-2024
cfaber@buffalo.edu

EDUCATION

- Ph.D., Engineering and Science Education, Clemson University August 2015
Dissertation Title: “Epistemic Cognition during Problem Solving”
Funded by a National Science Foundation Graduate Research Fellowship (NSF GRFP)
Advisor: Dr. Lisa Benson
- M.S., Biomedical Engineering, Cornell University May 2013
Thesis Title: “Effects of Simvastatin on Endothelial Cell Contractility
and Barrier Integrity”
Advisor: Dr. Cynthia Reinhart-King
- B.S., Bioengineering with a concentration in Materials Science, May 2010
Minor in Chemistry, Clemson University
Calhoun Honors College, summa cum laude
Departmental Honors
Thesis Title: “Triclosan release from poly-lactic acid fiber”

PROFESSIONAL EXPERIENCE

- Assistant Professor, Dept. of Engineering Education** August 2023 – Present
University at Buffalo, Buffalo, NY
- Research Associate Professor and Senior Lecturer,** August 2022 – July 2023
Engineering Fundamentals in Tickle College of Engineering
University of Tennessee, Knoxville, TN
- Director of Engineering Education Graduate Certificate** August 2019 – July 2023
Program University of Tennessee, Knoxville, TN
- Research Assistant Professor and Lecturer,** January 2017 – July 2022
Cook Grand Challenge Honors Program & Engineering
Fundamentals, University of Tennessee, Knoxville, TN
- Adjunct Assistant Professor,** July 2017 – Present
Dept. of Engineering & Science Education
Clemson University, Clemson, SC
- Assistant Professor, Dept. of Technological Studies** Aug. 2015 – Dec. 2016
The College of New Jersey, Ewing, NJ

HONORS AND AWARDS

<i>Curriculum Refresh Collaborative Award</i> Teaching & Learning Innovation Center, University of Tennessee, Knoxville	January 2022
<i>Leadership Acceleration & Development for Rising Stars Program</i> University of Tennessee, Knoxville	August 2022
<i>Alumni Outstanding Teaching Award</i> , University of Tennessee, Knoxville	May 2021
<i>Teaching Fellow for the Tickle College of Engineering</i> University of Tennessee, Knoxville	May 2021
<i>Best Paper</i> for American Society for Engineering Education (ASEE) Student Division	May 2021
<i>Thomas C. Evans Instructional Paper Award</i> , Southeastern Section of the American Society for Engineering Education	May 2018
<i>Experience Learning Faculty Development Grant</i> , University of Tennessee	May 2017
<i>Best Paper</i> for American Society for Engineering Education (ASEE) Student Division	June 2017
<i>Education Research and Methods Apprentice Faculty Grant</i> American Society for Engineering Education	June 2016
<i>National Science Foundation GK-12 Fellowship</i>	August 2012
<i>National Science Foundation Graduate Research Fellowship Program</i>	May 2011
<i>Diversity Programs in Engineering First Year Graduate Student of the Year</i> , Cornell University	May 2011
<i>Diversity Programs in Engineering Student of the Month</i> , Cornell University	March 2011

GRANTS AND CONTRACTS

Summary of Research Funding

Funding category	Past Funding and all Current Funding, including what didn't move to UB		Past Funding and Current Funding that <u>moved to UB</u>	
	Total	Candidate's share	Total	Candidate's share
External sources	\$6,842,054	\$1,660,562	\$1,928,197	\$884,633
Internal sources (TCNJ)	\$6,450	\$6,450	\$6,450	\$6,450
Internal sources (UB)	\$0	\$0	\$19,500	\$19,500
Total funded research	\$1,934,647	\$1,667,012	\$1,954,147	\$910,583

Current Funding

1. CAREER: The Overlooked Barrier – Exploring How Engineering Education Research Teams Negotiate Epistemic Differences, PI: Courtney Faber, 08/01/2022 – 07/31/2027, National Science Foundation: CAREER: EEC # [2144698](#), \$590,963 (100% share)
2. Research Initiation: A Hybrid Community of Practice Model to Prepare Pre-Service Teachers to Teach Engineering, PI: Betsy Chesnutt, Co-PIs: Courtney Faber, Lynn Hodge, 9/1/2021 – 8/31/2024, National Science Foundation: RIEF: # [2106319](#), \$200,000 (40% Share)
3. Exploring Engineering Student Epistemic Thinking on Open-Ended Modeling Problems. UB Research and Creative Activities for Undergraduate program. Summer 2024, \$19,500. (100% share)

Funding that stayed at UTK

1. Community Engaged Disciplinary and Educational Researchers in STEM (CEDERS), PI: Frances Harper, Co-PIs: Courtney Faber, Lynn Hodge, Elizabeth Derryberry, Shalaunda Reeves. 10/2024-09/30/2027, National Science Foundation, Total: \$1,220,257; Faber share: \$244,051 **could not move to UB*
2. NSF Engineering Research Center for Hybrid Autonomous Manufacturing Moving from Evolution to Revolution (ERC-HAMMER), PI at UTK: Tony Schmidt, Co-PIs: Courtney Faber, Jamie Coble, Bradley Jared, Anahita Khojandi, Vasileios Maroulas, 09/2022 – 08/2032, National Science Foundation: ERC: # [2133630](#) UTK portion: \$3,693,600; Faber share: \$531,878.40; Total ERC: \$25,938,414. **could not move to UB*

Past Funding

1. Collaborative Research: Supporting Agency Among Early Career Engineering Education Faculty in Diverse Institutional Contexts, PIs: Alexandra Coso Strong, Courtney Faber, Walter Lee, Cheryl Bodnar, Erin McCave, Courtney Smith-Orr, 06/2017 – 05/2022, National Science Foundation: RFE: # [1738262](#), \$71,682 (100% share); Total Award: \$439,292, other award numbers: 1663909/1664217/1664038/1664016/1664008
2. Research Initiation: The Impact of Engineering Education Guilds – Understanding Vision and Quantifying Propagation, PI: Kaitlin Mallouk, Co-PIs: Courtney Faber and

Alexandra Coso Strong, 10/2019 – 09/2021, National Science Foundation: RIEF: # [1927268](#): \$199,999 (\$17,502 subaward).

3. Collaborative Research: Student Perspectives on Researcher Identity and Transformation of Epistemologies, PI: Lisa Benson¹, Co-PIs: Courtney Faber, Rachel Kajfez, Marian Kennedy, 09/2015 – 08/2020, National Science Foundation: REE: # [1531607/1531641](#), \$473,193 (25% share).
4. Understanding Use of Scholarly Sources to Improve Engineering Education, PI: Carol Tenopir, Co-PIs: Jeannine Williams, Courtney Faber, Rachel McCord, 01/2018 – 06/2019, Engineering Information Foundation, \$24,750 (25% share).
5. Exploring Pre-Service Teachers' Process of Writing Lesson Plans and Identity Development, PI: Courtney Faber, 06/2016 – 07/2016, \$6,450 (100% share).

PUBLICATIONS AND TECHNICAL PRESENTATIONS

Google Scholar: ([link](#)), Citations: 677, h-index: 11, i-index:14

ORCID: orcid.org/0000-0001-9156-7616 ([link](#))

Scopus Author ID: 56022071800 ([link](#))

Refereed Journal Articles (* denotes graduate students, + denotes undergraduate student)

Published

1. Riley, D.R.*, Coso Strong, A., Faber, C.J., Mallouk, K.E. “Adoption of Pedagogical Innovations: Social Networks of Engineering Education Guilds” *Education Sciences*, 13 (11): 1102, 2023
2. Coso Strong, A., Faber, C., Lee, W., McCave, E. Bodnar, C., Smith-Orr, C., “In pursuit of impact: Toward a theoretical understanding of professional agency in engineering education” *Journal of Engineering Education*, 112 (1): 195-220, 2023
3. Mallouk, K., Coso Strong, A., Riley, D.*, Faber, C., “How engineering education guilds are expanding our understanding of propagation in engineering education” *Journal of STEM Education*, 23 (3), 2022
4. Faber, C., Ellestad, R., & Walsh, A.⁺, “Information literacy modules for first-year engineering students” *Advances in Engineering Education*, 2022
5. Faber, C., Kajfez, R., Lee, D.*, Kennedy, M., Creamer, E., & Benson, L., "The dynamics of researcher identity and epistemic thinking within undergraduate research experiences: A grounded theory model" *Journal of Research in Science Teaching*, 2022
6. Lee, D.*, Wright, M.⁺, Faber, C., Kennedy, C., & Dittrich-Reed, D., “Participation in biology education research influences student's epistemic development” *CBE Life Sciences*, 20(4), 2021

¹ PI due to the fact that I was a graduate student when the proposal was submitted and as a graduate student, I could not be the PI. I led the proposal development and writing.

7. Kajfez, R., Lee, D.*, Ehlert, K.*, Faber, C., Benson, L., & Kennedy, M., "A mixed methods approach to understanding researcher identity" *Studies in Engineering Education*, 2(1), 1-15, 2021
8. Coso Strong, A., Smith-Orr, C., Bodnar, C., Lee, W., McCave, E., & Faber, C., Early career faculty transitions: Negotiating legitimacy and seeking support in engineering education. *Studies in Engineering Education*, 1(1), 97-118, 2021
9. Faber, C., Kajfez, R., McAlister, A.⁺, Ehlert, K.*, Lee, Dennis M.*, Kennedy, M.S., & Benson, L.C., "Undergraduate Engineering Students' Perceptions of Research and Researchers" *Journal of Engineering Education*, 2020
10. Faber, C. & Benson, L., "Engineering students' epistemic cognition in the context of problem solving: A mixed methods study" *Journal of Engineering Education*, 106(4), 677-709, 2017
11. Faber, C., Vargas, P., & Benson, L., "Engineering students' epistemic cognition in a research environment" *International Journal of Engineering Education*, 32(6), 2487-2500, 2016
12. Faber, C.*, Hardin, E., Klein-Gardner, S., & Benson, L., "Development of teachers as scientists in research experiences for teachers programs." *Journal of Science Teacher Education*, 25(7), 785-806, 2014
13. Lampi, M.C.*, Faber, C., Huynh, J., Bordeleau, F., Zanutelli, M.R., & Reinhart-King, C.A., "Simvastatin ameliorates matrix stiffness-mediated endothelial monolayer disruption" *PLoS One*, 11(1): e047033, 2016

In Review

1. Bodnar, C., McCave, E., Smith-Orr, C., Coso Strong, A., Faber, C.J., Lee, W.C. "Surviving the WILDS of academia: Personas depicting early-career engineering education scholars role crafting to achieve their goals" *Studies in Engineering Education* (Revisions)
2. Faber, C., Carberry, A., & Godwin, A. "Trials and tribulations of ongoing instrument validation: An example from engineering epistemic beliefs" *Journal of Engineering Education* (Revisions)
3. Weatherton, M., Ko, M.E., Nichols, E.L., Krishnan, S., & Faber, C. "All In: Understanding and Motivating Stakeholders to Create an Equitable Culture of Student Success" *CBE Life Sciences* (Under Review)

Refereed Conference Papers with Presentation (presenter name underlined, *graduate student, +undergraduate student)

1. Martin, B. A., Faber, C. J., Chesnutt, B., and McCave, E. "GIFTS: Integration of a Problem-Solving Heuristic Across Teaching and Assessment" *Annual First-Year Engineering Experience (FYEE) Conference*, University of Tennessee in Knoxville, Tennessee, July 2023. 10.18260/1-2-44836
2. Chesnutt, B., Mountain, D. P.*, and Faber, C. J. "The Impact of Pre-Service Teachers' Perceptions of Engineering on Their Self-Efficacy with Teaching Engineering" *American Society for Engineering Education Annual Conference*, Baltimore, MD, June 2023. <https://peer.asee.org/44217> <https://peer.asee.org/43138>

3. Boyd, I. A.⁺, Chen, C.^{*}, Treffert, L.^{*}, Gillmore, A.^{*}, and Faber, C. J. “Work in Progress: Developing an Ethnographic Observation and Reflection Template: An Example from Studying Epistemic Differences within EER Teams” *American Society for Engineering Education Annual Conference*, Baltimore, MD, June 2023. <https://peer.asee.org/44217>
4. Faber, C., Treffert, L.^{*}, Gillmore, A.^{*}, Boyd, I.⁺, and Chen, C.^{*} “Work in Progress: Making Engineering Education Teams more Effective: An Exploration of a Nearly Epistemic Negotiation” *American Society for Engineering Education Annual Conference*, Baltimore, MD, June 2023.
5. Chesnutt, B., Faber, C. J., and Mountain, D. P.^{*}, “Development of a Hybrid Community of Practice Course Model to Prepare Pre-Service Teachers to Teach Engineering in K-12 (Work in Progress)” *American Society for Engineering Education Annual Conference*, Minneapolis, MN, June 2022
6. Bodnar, C.A., McCave, E. J., Smith-Orr, C., Coso Strong, A., Faber, C., and Lee, W., “Defining academic engineering education roles within the United States” *Proceedings – Research in Engineering Education Symposium & Australasian Association for Engineering Education Conference*, Perth, WA, 2021
7. Blalock, N.⁺, Walsh, A.R., Mountain, D.P.^{*}, Norris, S.E., & Faber, C., “Minimizing communication challenges faced by virtual project teams”. *Proceedings of the American Society for Engineering Education Annual Conference*, Virtual Conference, 2021 (Won Best Paper for the division)
8. Walsh, A.R.⁺, Norris, S.E.⁺, Blalock, N.⁺, Mountain, D.P.^{*}, & Faber, C., “Exploring the team dynamics of undergraduate engineering virtual teams during the rapid transition online due to COVID-19”. *Proceedings of the American Society for Engineering Education Annual Conference*, Virtual Conference, 2021
9. Mallouk, K., Strong, A.C., Faber, C., & Riley, D.R.^{*}, “Engineering education guilds: Understanding their vision for innovation” *Proceedings of the American Society for Engineering Education Annual Conference*, Virtual Conference, 2021
10. Faber, C.J., Lee, W.C., Coso Strong, A., Bodnar, C.A., Smith-Orr, C.S., & McCave, E., “Developing a Model of Professional Agency Toward Change in Engineering Education for Early Career Scholars”. *Proceedings of the American Society for Engineering Education Annual Conference*, Virtual Conference, 2020
11. McCave, E.J., Bodnar, C.A., Smith-Orr, C.S., Coso Strong, A., Lee, W.C., & Faber, C.J., “I graduated, now what? An overview of the academic engineering education research job field and search process” *Proceedings of the American Society for Engineering Education Annual Conference*, Virtual Conference, 2020
12. Benson, L., Faber, C.J., Kajfez, R.L., Kennedy, M.S., Lee, D.M.^{*}, Sobieraj, K.S.⁺, & Kennedy, C.^{*}, “Interactions between engineering student researcher identity and epistemic thinking” *Proceedings of the American Society for Engineering Education Annual Conference*, Virtual Conference, 2020

13. Faber, C. J., Benson, L. C., Kajfez, R. L., Kennedy, M. S., Lee, D. M.*, McAlister, A. M.⁺, Sobieraj, K. S.⁺, Porter, T.⁺, St. Germain, A.⁺, & Wu, G. *, “Dynamics of researcher identity and epistemology: The development of a grounded-theory model” *Proceedings of the American Society for Engineering Education Annual Conference*, Tampa, FL, 2019
14. Kajfez, R. L., Lee, D. M.*, Ehlert, K. M.*, St. Germain, A.⁺, Benson, L. C., Creamer, E. G., Kennedy, M. S., & Faber, C. J., “Work in progress: A mixed methods approach to better understand researcher identity” *Proceedings of the American Society for Engineering Education Annual Conference*, Tampa, FL, 2019
15. Jennings, L.⁺, Faber, C. J., Arnsdorff, K.⁺, & McCord, R., *Board 133: "This Seems Reasonable": Using Epistemic Cognition and Metacognition to Justify the Reasonableness of Solutions in Senior Design*. Paper presented at the 2019 ASEE Annual Conference & Exposition, Tampa, Florida, 2019
16. Williamson, J. M., Rice, N., Tenopir, C., Kaufman, J., Faber, C. J., & McCord, R., *Best Practices for Engineering Information Literacy Instruction: Perspectives of Academic Librarians*. Paper presented at the 2019 ASEE Annual Conference & Exposition, Tampa, 2019
17. Smith-Orr, C., Bodnar, C., Strong, A., Lee, W., Faber, C., & McCave, E., “Collaborative research: Supporting agency among early career engineering education faculty in diverse institutional contexts: Developing a framework for faculty agency” *Proceedings of the American Society for Engineering Education Annual Conference*, Tampa, FL, 2019
18. Walsh, A.⁺, Diehl, E.⁺, & Faber, C., “WIP: Studying the resource networks of first-year engineering students: Establishing a data collection method.” *Proceedings of the American Society for Engineering Education Annual Conference*, Tampa, FL, 2019
19. Benson, L., Kennedy, M., Kennedy, C.* , Lee, D.* , & Faber, C., “Research-with-practice: Insights from developing a workshop linking undergraduate research, identity, and epistemic thinking. ” *Research in Engineering Education: Making Connections Conference*, Cape Town, South Africa, 2019
20. Lee, D. M.* , McAlister, A. M.⁺, Ehlert, K. M.* , Faber, C. J., Kajfez, R. L., Creamer, E., & Kennedy, M., “The use of structured memo-writing in a mixed-methods grounded theory study.” *Frontiers in Education Conference*, Cincinnati, OH, 2019
21. Diehl, E.⁺ & Faber, C., “WIP: Exploration of first-year students’ social networks to complete engineering homework” *Frontiers in Education Conference*, San Jose, CA, 2018
22. Faber, C., “Documenting the redesign and scaling-up of an ill-structured problem” *First-Year Engineering Experience (FYEE) Conference*, Glassboro, NJ, 2018
23. Bodnar, C., Mallouk, K., & Faber, C., “Student approaches to ambiguity while working on a community-based design problem” *Engineering Education for Sustainable Development Conference*, June 3-6, 2018, Glassboro, NJ, 2018

24. McCave, E., Faber, C., Bodnar, C., Coso Strong, A., Lee, W., & Smith-Orr, C., “Collaborative research: Supporting agency among early career engineering education faculty in diverse institutional contexts” *Proceedings of the American Society for Engineering Education Annual Conference*, Salt Lake City, UT, 2018
25. Benson, L., Faber, C., Kajfez, R., Kennedy, M., Ehlert, K.*, Lee, D.*, McAlister, A.⁺, & Porter, T.⁺, “Engineering student perspectives on research and what it means to be a researcher” *Proceedings of the American Society for Engineering Education Annual Conference*, Salt Lake City, UT, 2018
26. Coso Strong, A., Smith-Orr, C., Bodnar, C., Lee, W., Faber, C., & McCave, E., “Using a critical incident-centered transition theory framework to explore engineering education research faculty transitions” *Proceedings of the American Society for Engineering Education Annual Conference*, Salt Lake City, UT, 2018
27. Faber, C., Kit, K., & Pionke, C., “Understanding the processes and challenges students experience solving an open-ended problem” *9th Annual First Year Engineering Experience (FYEE) Conference*, 2017
28. Faber, C., Smith-Orr, C., Lee, W., Bodnar, C., Coso Strong, A., & McCave, E., “Best practices for developing a virtual peer mentoring community” *Proceedings of the American Society for Engineering Education Annual Conference*, 2017
29. Capobianco, M.⁺ & Faber, C., “A pilot study investigating the processes preservice teachers use to develop lesson plans” *Proceedings of the American Society for Engineering Education Annual Conference*, 2017
30. Ehlert, K.*, Lee, D.*, Faber, C., Benson, L., & Kennedy, M., “Utilizing cluster analysis of close-ended survey responses to select participants for qualitative data collection” *Proceedings of the American Society for Engineering Education Annual Conference*, 2017
31. McAlister, A.⁺, Lee, D.*, Ehlert, K.*, Kajfez, R., Faber, C., Benson, L., & Kennedy, M., “Qualitative coding: an approach to assess inter-rater reliability” *Proceedings of the American Society for Engineering Education Annual Conference*, 2017 (Won Best Paper for the division.)
32. Benson, L., Faber, C., Kajfez, R., Kennedy, M., Ehlert, K.*, Lee, D.*, & McAlister, A.⁺, “Assessing students’ researcher identity and epistemic cognition” *Proceedings of the American Society for Engineering Education Annual Conference*, 2017
33. Faber, C., Bodnar, C., Strong, A., Lee, W., McCave, E., & Smith, C., “Narrating the experiences of first-year faculty in the engineering education research community: Developing a qualitative, collaborative research methodology” *Proceedings of the American Society for Engineering Education Annual Conference*, 2016.
34. Faber, C., Vargas, P., & Benson, L., “Measuring the engineering epistemic beliefs of undergraduate engineering students.” *Frontiers in Education Conference Proceedings*, 2016

35. Benson, L., Kennedy, M., Ehlert, K.*, Faber, C., Vargas, P., Kajfez, R., & McAlister, A.⁺, “WIP: understanding undergraduate engineering researchers and how they learn.” *Frontiers in Education Conference Proceedings*, 2016
36. Faber, C.* & Benson, L., “Undergraduate engineering students’ development of a researcher identity.” *American Educational Research Association Annual Conference*, 2015
37. Faber, C.* & Benson, L., “Undergraduate students’ recognition and development as researchers.” *Proceedings of the American Society for Engineering Education Annual Conference*, 2015
38. Mcgough, C.*, Faber, C.*, Kirn, A.* , & Benson,L., “Connections between undergraduate engineering students’ problem solving strategies and perceptions of engineering problems.” *American Society for Engineering Education Annual Conference*, 2015
39. Benson, L., Kirn, A.*, Faber, C.*, & Mcgough, C.*, “CAREER: Students’ perceptions of problem solving driven by motivations across time scales.” *American Society for Engineering Education Annual Conference*, 2015
40. Faber, C.*, Grigg, S., Kirn, A.* , Chasmar, J.* , & Benson, L., “Engineering student motivation and perceived metacognition in learning communities” *American Society for Engineering Education Conference Proceedings*, 2014
41. Kirn, A.*, Faber, C.*, & Benson, L., “Engineering students’ perceptions of the future: Implications for problem solving” *American Society for Engineering Education Conference Proceedings*, 2014
42. Benson, L., Kirn, A.* , & Faber, C.* , “CAREER: Student motivation and learning in engineering” *American Society for Engineering Education Conference Proceedings*, 2014
43. Faber, C.*, Kirn, A.*, Hutchinson, R., & Benson, L., “Assessing dynamic transfer of knowledge during engineering problem solving using teaching interviews” *National Association for Research in Science Teaching Conference Proceedings*, 2014
44. Kirn, A.*, Faber, C.*, & Benson, L., “Engineering student metacognition during dynamic transfer in a problem solving scenario” *National Association for Research in Science Teaching Conference Proceedings*, 2014
45. Lampi, M.*, Faber, C.*, Huynh, J.*, Jones, J., Nishimura, N., & Reinhart-King, C., “Simvastatin ameliorates substrate stiffness dependent endothelial dysfunction” *Biomedical Engineering Society Annual Meeting*, San Antonio, TX, 2014
46. Faber, C.*, Hutchison, R., Benson, L., Kirn, A.* , & DesJardins, J., “Assessing student knowledge transfer during group work” *IEEE Frontiers in Education Conference Proceedings*, 2013
47. Zielinski, E., Faber, C.* , & Forbes, M., “Curricular unit: Waves: The three color mystery” *TeachEngineering: Resources for K-12*, 2012

48. Faber, C.*, Huynh, J.*, & Reinhart-King, C., “Simvastatin alters substrate stiffness-dependent endothelial cell traction forces, cell-cell junctions, and permeability.” *Biomedical Engineering Society Annual Meeting*, Atlanta, GA, 2012

Invited Talks

1. “How to Get Involved with Biomechanics Education Research”, American Society of Biomechanics Conference, Knoxville, TN, August 8, 2023.
2. “Exploring How Fundamental Beliefs about Knowledge Impact Learning and Collaborations in Engineering”, University of Tennessee Theory and Practice in Teacher Education Seminar, April 20, 2023.
3. “Deep Dive into Epistemic Cognition”, Rowan University in Engineering Education Foundation Course, October 26, 2020
4. “Assessing what we know: Students’ conceptualization of knowledge in undergraduate research experiences”, Florida International University STEM Transformation Institute Seminar, October 20, 2020
5. “Professional Agency towards Change in Engineering Education”, Clemson University Engineering and Science Education Seminar, April 17, 2020
6. “How we Learn, Think, and Know”, Becker Lecture at University of Tennessee, April 18, 2019
7. “Mixing it Up: Developing a Model of Researcher Identity and Epistemology”, Virginia Tech Engineering Education Department Seminar, April 05, 2019
8. “Practical Tips for Multi-Institutional Research Partnerships”, Panelist - America Society for Engineering Education Special Session, June 24, 2019
9. “How we Learn, Think, and Know”, University of Tennessee Haslam Honors Program Friday Faculty Lecture, March 23, 2018
10. “Engineering ‘Engineering Education’”, University of Tennessee MicNite, March 8, 2018
11. “Improving Undergraduate Engineering Education: Exploring Epistemic Cognition in Problem Solving”, University of Tennessee Chemical and Biomolecular Engineering Seminar Speaker, October 25, 2017
12. “Undergraduate Research Experiences Public Report Launch”, Invited Panelist National Academies of Sciences, Engineering, and Medicine, June 1, 2017
13. “Beliefs about Knowledge: Implications for Practice”, Rowan University College of Engineering Seminar Speaker, December 2, 2016
14. “Supporting Transitioning Engineering Education Researchers – Panel Session Reflecting on Shifts into a Diverse Set of Faculty Career Paths”, American Society for Engineering Education Conference, June 28, 2016

Refereed Workshops

1. “Team Culture Map Quest: Get on the Best Possible Route for Negotiating Disciplinary Differences” Workshop at the NSF Revolutionizing Engineering Departments (RED) Consortium Meeting, September 22, 2023.
2. “Making Patterns, Breaking Patterns – Applying ethnographic system mapping and analysis to support your group's culture” Workshop at First-Year Engineering Experience (FYEE) Conference. Presented with Lorna Treffert*, July 30, 2023 10.18260/1-2--44845
3. “Research to Practice: Answering the Call to Action”, *Special Session at ASEE Conference hosted by Education Research and Methods Division*. Presented with James Pembridge, Cassandra McCall, and Adam Kirn, June 28, 2022
4. “ERM Presents! Moving Beyond Research Questions”, *Workshop at ASEE Conference sponsored by ERM and BED*. Presented with Erin McCave and Lisa Benson, June 28, 2018
5. “ERM Presents! An Introduction to Research Methods in Engineering Education”, *Workshop at ASEE Conference sponsored by ERM and BED*. Presented with Erin McCave, Lisa Benson, and Kathy Elhert, June 28, 2017
6. “Fostering the Development of Professional Teacher Identities”, *Workshop sponsored by the NJ Department of Education*, July 14, 2016\

GRADUATE STUDENTS

Dissertations/Theses Progress

1. Lorna Treffert, Ph.D. Engineering Education, January 2023 – Present, degree expected May 2026
2. Maurison Nnaemeka Agba, Ph.D. Engineering Education, Feb. 2024 – Present, degree expected May 2029

Special Achievements of Graduate Students

1. Maryrose Weatherton, Recipient of SEC Postdoc Fellowship, May 2023
2. Maryrose Weatherton, Recipient of NSF Graduate Research Fellowship, March 2021

Dissertation/Thesis Committee Member

1. Bailey Von der Mehden, Dept. of Ecology and Evolutionary Biology at the University of Tennessee, Knoxville, Ph.D., 2022 – Present
2. Destiny White, Dept. of Nuclear Engineering at the University of Tennessee, Knoxville, M.S., 2023 – Present
3. Maryrose Weatherton, Dept. of Ecology and Evolutionary Biology at the University of Tennessee, Knoxville, Ph.D., degree awarded August 2023
4. Dennis Lee, Dept. of Engineering and Science Education at Clemson University, Ph.D., degree awarded May 2020
5. Omotola Akinsola, Dept. of Social Work at the University of Tennessee, Knoxville, Ph.D., degree awarded May 2020

Independent Engineering Education Research Projects

1. Alexis Gilmore, Ph.D. student in the Dept. of Biosystems Engineering and Soil Science at the University of Tennessee, Knoxville.

Research Assistants on Funded Projects (not listed elsewhere)

1. Daniel Mountain, Department of Chemical and Biomolecular Engineering at University of Tennessee, M.S., August 2021 to May 2023.
2. Kathy Elhert, Engineering and Science Education at Clemson University, Ph.D., August 2015 – May 2017.

PROFESSIONAL ACTIVITIES

Leadership

Associate Editor , <i>Studies in Engineering Education Journal</i>	October 2022 - Present
Junior Technical Program Chair , <i>Frontiers in Education Conference</i>	January 2024 - Present
Elected Chair , <i>American Society for Engineering Education Research and Methods Division</i>	June 2020 – June 2022
Apprentice Faculty Grant Co-Chair , <i>American Society for Engineering Education Research and Methods Division</i>	June 2018 – June 2019

Reviewer

Best Paper Committee , <i>American Society for Engineering Education, Research and Methods Division</i>	April 2022
Award Reviewer , <i>Apprentice Faculty Grant for American Society for Engineering Education, Research and Methods Division</i>	March 2021
Conference Paper Reviewer , <i>ASEE Annual Conference & Exposition, American Society for Engineering Education</i>	Oct. 2013-Present
Conference Paper Reviewer , <i>First-Year Experience Conference, American Society for Engineering Education</i>	December 2018 – May 2019
Conference Paper Reviewer , <i>Frontiers in Education Conference</i>	March 2013 – August 2018
Conference Paper Reviewer , <i>NARST Annual International Conference, 2015 National Association for Research in Science Teaching</i>	August 2014 – February 2015

Grant Reviewer

Panel Reviewer , National Science Foundation	2023, 2022, 2021, 2020, 2017, 2016
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Membership in Professional and Honor Societies

First Year Programs Division of ASEE, Member	May 2017 – Present
American Society for Engineering Education, Member <i>Education Research and Methods Division and Biomedical Engineering Division</i>	August 2012 – Present
National Association for Research on Science Teaching, Member	August 2012 – August 2018

UNIVERSITY SERVICE

Department Committees

Department of Engineering Education, University at Buffalo

Committee Member, Graduate Admissions August 2023 – Present
Committee Member, Speaker Series (Seminar) August 2023 – Present

Engineering Fundamentals Program, University of Tennessee

Committee Member, Lecturer/Research Assistant Professor August 2019 – July 2020
Search Committee
Committee Member, Lecturer Search Committee January 2018 – December 2018

School Committees

Tickle College of Engineering, University of Tennessee, Knoxville

Committee Chair, Peer Teaching Committee January 2023 – May 2023
Committee Member, Peer Teaching Committee August 2022 – December 2022
Committee Member, Peer Teaching Committee January 2022 – May 2022
Committee Member, Dean Search Committee January 2021 – May 2021
Committee Member, Engineering Fundamentals Director August 2020 – July 2021
Search Committee
Committee Member, Engineering Education Development January 2018 – December 2020
Committee
Committee Member, Peer Teaching Committee January 2018 – December 2018
Committee Member, Outstanding Staff Award January 2018 – December 2018
Committee
Committee Member, Search Committee for Associate January 2018 – December 2018
Dean For Faculty Affairs and Engagement
Committee Member, WomEngineers Executive Leadership January 2017 – December 2019
Council

University Committees

University of Tennessee, Knoxville

Committee Member, Faculty Space Taskforce August 2022 – May 2023

OUTREACH ACTIVITIES

Collaboration with Knox County School District to January 2020 – December 2021
develop Engineering Curriculum, Knoxville, Tennessee

Collaboration with Inskip Elementary School for January 2018 – December 2020
Engineering Afterschool Program, Knoxville, Tennessee

Professional Development workshop for Knox County January 2019 – December 2019
STEM teachers run by Industrial and Systems Engineering,
Knoxville, Tennessee

MENTORING ACTIVITIES

- Letter Writer and Writing Mentor**, supported one student who applied for the NSF: Graduate Research Fellowship Program. This student was awarded a GRFP January 2021 – December 2021
- Letter Writer and Writing Mentor**, supported four students who applied for the NSF: Graduate Research Fellowship Program. All four were awarded the GRFP. January 2020 – December 2020
- Faculty Advisor**, Society of Hispanic Professional Engineers January 2020 – December 2021
- Director**, Engineering Education Graduate Certificate Program January 2019 – July 2023
- Presenter**, New Student Orientation Sessions. Presented at four sessions. January 2019 – December 2019
- Letter Writer and Writing Mentor**, supported one student who applied for the NSF: Graduate Research Fellowship Program January 2018 – December 2019

UNDERGRADUATE RESEARCHERS

- S2024:** Aaron Alexander, Electrical Engineering, UB
- S2024:** Kate Ward, Biomedical Engineering, UTK
- S2022-S2024:** Isabel Boyd, Biomedical Engineering, UTK
- F2022-S2023:** Rylie Marlow, Mechanical Engineering, UTK
- Sum 2021-F2022:** Neel Reeves, Aerospace Engineering, UTK
- S2020-F2021:** Sarah Norris, Aerospace Engineering, UTK
- F2020-S2021:** Daniel Mountain, Chemical and Biomolecular Engineering, UTK
- F2020-S2021:** Nathaniel Blalock, Chemical and Biomolecular Engineering, UTK
- F2018-S2021:** Alexis Walsh, Industrial and Systems Engineering, UTK
- F2017-S2020:** Lauren Jennings, Biomedical Engineering, UTK
- F2017-S2019:** Emily Diehl, Industrial and Systems Engineering, UTK
- Honors Thesis Title: "Understanding How Students Use Resources to Complete Homework in First-Year Engineering Courses"*
- S2018-S2019:** Kayla Arnsdorff, Industrial and Systems Engineering, UTK
- F2017-Sum2018:** Gina Carvagno, Psychology, UTK

STUDENT TEACHERS

Supervising student teachers involved seven observations over the course of the semester, individual meetings to discuss challenges, and feedback on lesson plans.

- Fall 2016:** supervised 1 undergraduate and 1 Master of Art (MAT) K-12 Engineering/Technology Education Student Teacher (ST)

Spring 2016: supervised 1 MAT K-12 Engineering/Technology Education ST
Fall 2015: supervised 3 undergraduate K-12 Engineering/Technology Education ST

TEACHING AND COURSES TAUGHT

University at Buffalo

Undergraduate Courses Taught – Instructor of Record

ENS 498: Independent Research

S2024

Enrollment: 1 student for 1 credit hour. This course is designed to provide students the opportunity to gain course credit for conducting undergraduate research. The details of the course expectations were developed collaboratively with the student in the course to align with 1) developing critical thinking skills and exposure to the scientific method, 2) reading current scientific literature, 3) understanding the processes involved with research activities, and 4) gaining knowledge of how to conduct original research.

University of Tennessee, Knoxville, TN

Graduate Courses Taught – Instructor of Record

EF 501: Engineering Education Theory for Research and Practice

S2022

Enrollment: graduate engineering and science students (4 students). This course is 3-credit hours and is one of the core courses in the Engineering Education Graduate Certificate Program. This course addresses foundational principles of engineering education through relevant theories of teaching and learning, curriculum development, assessment, and student development. Broad categories of engineering courses (laboratories, design courses, and lectures) are examined with respect to course design, learning objectives, instructional methods, and assessment and accreditation.

EF 503: Engineering Instruction and Practice

S2020, S2021, S2022

Enrollment: graduate engineering and science students (10 students). This course is 3-credit hours and is one of the core courses in the Engineering Education Graduate Certificate Program. Students will learn to apply research- and theory-based educational methods to develop course materials and assess learning consistent with engineering accreditation standards. This will include discussions of specific teaching methods, pedagogical content knowledge, and the assessment and evaluation of student learning. The course will use the human-centered design process as a mechanism to guide course development and continued improvement. ***This course was a new course I developed.***

EF 504: Engineering Education Research Methods

F2020, F2021

Enrollment: graduate engineering and science students (13 students). This course is 3-credit hours and is one of the core courses in the Engineering Education Graduate Certificate Program. Students will be introduced to a variety of methods and tools available for conducting strong engineering education research studies. The course will cover multiple qualitative, quantitative, and mixed methods approaches. Students will gain knowledge of the theoretical underpinnings of the methods as well as the practical knowledge needed to use the methods in engineering education research. ***This course was a new course I developed.***

Undergraduate Courses Taught - Instructor of Record

EF 327: Engineering Design in K-12 Education F2020, S2020, F2019, S2019, F2018

Enrollment: undergraduate engineering students (38 students total). This course is a service-learning class that gives students the opportunity to apply the human centered design process to develop materials (lessons, activities) to teach engineering concepts to elementary, middle, and high school students. The course started as a partnership with Inskip Elementary in the fall of 2018 and has grown to be a partnership with the Knox County School District and other outreach initiatives through University of Tennessee Knoxville. ***This course was a new course I developed.***

EF 430: Engineering Education Practicum F2017, F2018, F2019

Enrollment: undergraduate and graduate engineering students (17 students across three semesters). This 1-credit hour course is an elective course that was designed to support engineering graduate and undergraduate teaching assistants. The course introduces student to learning theory, the application of engineering design to develop instruction, and research-based teaching practices. Over the semester, the students reflect on their role as a TA, apply new teaching approaches to their roles as TAs, and complete a final classroom innovation project to address a challenge faced by students in their course. ***This course was a new course I developed. I received a \$3,500 course development grant.***

Undergraduate Courses Taught - Co-Instructor of Record

EF 152: Physics for Engineers II F2022, S2023

Enrollment: undergraduate engineering students (~200 students in fall & 600 in spring).

This course is 4-credit hours and meets five days a week. It is the second course in the introductory engineering course sequence. It focuses on a calculus-based study of statics, fluid dynamics, electricity, waves, and thermodynamics. The course also emphasizes engineering design and effective teamwork. The course is taught using a flipped classroom approach. I taught this class with one other instructor. We equally contributed to the development of course materials and teaching.

EF 327: Engineering Design in K-12 Education F2020

Enrollment: honors undergraduate engineering students (6 students).

See above for a description of this course. I was the led instructor for this course and co-taught it with another faculty member so they could teach it in future semesters.

EF 157: Honors Physics for Engineers I F2020, F2019, F2018, F2017

Enrollment: honors first-year undergraduate engineering students (604 students total, ~150 a semester).

This course is 4-credit hours and meets five days a week. It focuses on a calculus-based study of basic physics concepts, including vectors, kinematics, Newton's laws, forces, work-energy, and impulse-momentum. The course also emphasizes engineering design and effective teamwork. EF 151 is required for first-year engineering students. Honors students can choose to take EF 157 to meet part of their Honors' course breadth requirement. I taught this class with two other instructors. We equally contributed to the development of course materials and teaching. I led the development of instructional pages for our labs and the mentoring of our teaching assistants in 2019 and 2020.

EF 158: Honors Physics for Engineers II

S2021, S2020, S2019, S2018, S2017

Enrollment: honors first-year undergraduate engineering students (604 students, ~110 a semester). This course is 4-credit hours and meets five days a week. It is the second course in the introductory engineering course sequence. It focuses on a calculus-based study of statics, fluid dynamics, thermodynamics, and waves. The course also emphasizes engineering design and effective teamwork. I taught this class with two other instructors. We equally contributed to the development of course materials and teaching. I led the development of instructional pages for our labs and the mentoring of our teaching assistants in 2019, 2020, and 2021.

The College of New Jersey, Ewing Township, NJ

Undergraduate Courses Taught: Instructor of Record

Creative Design

F2015, S2016

Enrollment: undergraduate students at The College of New Jersey (72 students total, 24 students per section). This 4-credit hour course is open to all students at The College of New Jersey and satisfies a Liberal Learning requirement. The goal of the course is to introduce students to human-centered design through multiple design projects and help them develop strategies to be more creative problem solvers.

K-12 Engineering/Technology Education Three Course Sequence

F2015, S2016, F2016

Enrollment: undergraduate students in the Engineering/Technology Education teacher preparation program at The College of New Jersey. The K-12 Engineering/Technology Education Sequence includes three 4-credit hour courses: 1) Junior Professional Experience, 2) Methods in Technology Education, and 3) Seminar in Technology Education. The goal of these courses is to prepare students to teach engineering/technology across K-12, focusing on design-based pedagogies. These courses are offered every other semester. I revised course content to incorporate practices and theories based on current engineering education and educational psychology research; developed and incorporated assignments that align with EdTPA; and modified the course sequence to include more field hours and effective order of courses.

Biotechnology

S2016, F2016

Enrollment: undergraduate pre-service teachers (28 students total, 14 student per section). This 4-credit hour course is required for students in the K-12 Engineering/Technology Education program and is a technical elective for integrative STEM education double majors. The goal of this course is to introduce students to iconic and recent advancements in biotechnology. I revised course materials to incorporate more recent advancements in biotechnology (ie. CRISPR) and developed new inquiry-based fermentation lab activity.

Undergraduate Courses Taught: Co-Instructor of Record

Foundations for Success

Summer 2016

Enrollment: incoming first-year students at The College of New Jersey (34 students across two sections). This course introduces students who are in the *Educational Opportunity Fund and Foundation for Increasing and Retaining STEM Students* to practices and strategies that will support them as they reach their academic goals. I taught this course with one other instructor. We equally contributed to the development of course materials and teaching.

Clemson University, Clemson, SC

Graduate Courses Taught: Co-Instructor of Record

Engineering and Science Education Research Methods

S2015

Enrollment: graduate students in the Ph.D. and certificate programs in Engineering and Science Education at Clemson University (19 students). This 3-credit hour course introduces graduate students in the Ph.D. and certificate programs in Engineering and Science Education to qualitative, quantitative, and mixed methods research approaches. I taught the qualitative and mixed methods sections of the course.

Undergraduate Courses Taught: Co-Instructor of Record

Engineering Disciplines and Skills

S2014

Enrollment: first-year undergraduate engineering majors at Clemson University (53 students). This is a 3-credit hour course that is the first course engineering majors take. The course focuses on engineering problem solving and uses student-centered activities to support student learning. I taught this course with one other instructor. We equally contributed to the development of course materials and teaching.

ADDITIONAL TEACHING AND CURRICULUM CONTRIBUTIONS

2012: CLIMB GK-12 Program, The Cornell Learning Initiative in Medicine and Bioengineering program that pairs graduate student fellows with a middle or high school teacher in the surrounding area. I mentored a high school chemistry teacher in the lab for six weeks and taught three honors chemistry courses and one chemistry in the community course with approximately 25 students in each class biweekly at Ithaca High School for a semester.

PROFESSIONAL DEVELOPMENT ACTIVITIES

For all the professional development activities listed below, I served as a participant.

Activity	Description	Date
Introduction to Critical Behavior Interviewing	This 3-hour workshop was run by Organizational Development and Effectiveness. The workshop focused on how to use the four steps of Critical Behavioral Interviewing within academic search committees.	March 6, 2024
Faculty Launch and Mentoring Program	I was selected to be part of the first cohort of this program. This program is run through SEAS and includes biweekly writing sessions, workshops, and a writing retreat.	Spring 2024
STEM Collaborative Group	This group is a UTK Community of Scholars group focused on STEM education research, community engaged scholarship, or teaching scholarship.	Fall 2021 to present
Faculty Mentoring Group	This group is a peer mentoring group coordinated through the Provost’s Office.	Fall 2021 to present
Habit Building, Creating Change, & Group Coaching Fundamentals	Many clients come to coaching because they are looking to create change in their lives or work. In this training, we will explore different strategies that can help clients build new habits to create effective and lasting change. Each of the topics and tools will help you learn more about the components of habit creation and	Fall 2021

	<p>how these components can contribute to positive changes for clients.</p> <p>In the second half of this training, we will explore different strategies for engaging with clients in group settings. When clients come together to be coached as a group, they are not just working with you, but also interacting with each other. Each topic and tool will help you to consider the different elements that contribute to an effective and impactful group coaching session.</p> <p><i>30-hour course</i></p>	
Coaching Foundations & Championing the Client	<p>There are several foundational elements of the coaching relationship that serve to strengthen a coach's ability to assist their clients in achieving their goals. In this training, we will start to explore specific tools and activities that help coaches to deepen their relationships with clients, ensure trust, and build confidence in a client's ability to make choices and decisions that will move them in a positive direction.</p> <p><i>26-hour course</i></p>	Fall 2021
UT Collegiate Recovery Academy	Conversations around Mental Health and Substance Abuse and how to become a Collegiate Recovery Ally.	12.2.21
Understanding Levers of Change in Academia	Enacting change in big, complex institutions is a daunting task - especially for grad students, postdocs, and early career faculty - and knowing the levers of power on your own campus is an essential first step. In this two-part workshop, participants will do a deep dive into the structural aspects of change (regimented processes, deadlines, and rules) and the social components of power in higher education (key stakeholders, institutional culture, and unspoken norms).	11.24.21
NCFDD: Re-Thinking Mentoring: How to Build Communities of Inclusion, Support, and Accountability	This virtual workshop is designed to start a new type of discussion about mentoring by describing the common problems that pre-tenure and post-tenure faculty members experience and why traditional mentoring programs fail to meet those needs. We propose an alternative framework for mentoring that focuses on needs assessment and shifts the idea of mentoring from a relationship between two faculty members towards building a broad network of support, community, and accountability. The virtual workshop concludes with a presentation of best practices in mentoring pre-tenure, under-represented and mid-career faculty.	11.17.21
Workshop: A Graduate Student Panel on Exploring Race, Identity & Intersectionality	Our identities as graduate students impact how we experience race in higher education, and those experiences in turn impact the teaching and research we pursue. Join us for a powerful panel discussion of Indiana University–Purdue University Indianapolis (IUPUI) graduate students reflecting on their experiences and scholarship around race, identity, and intersectionality. Bring questions and prepare to reflect on your own experiences as part of this hour-long event.	9.21.21
Coaching 101	There are several elements of the coaching session structure that will remain the same no matter what kinds of clients you are	Summer 2021

	<p>working with. In the latter half of this training, you will learn about these elements and the different session components that you will want to build into each meeting with your clients. Having structure for your coaching sessions will allow for the goals and objectives for each session to be clear to you and to your client. The course creation concept of backward design is used; concepts such as setting shared goals, defining measurable objectives, and creating accountability systems to check that goals are being met.</p> <p><i>22-hour course</i></p>	
Equity-Minded Reform of Teaching and Service Workloads	<p>Dr. O’Meara’s workshop drew upon her work with the Faculty Workload and Rewards Project, an NSF-funded assessment. It began with a discussion of the common problems that arise in large universities, a situation summed up nicely in her Op-Ed piece for Inside Higher Education, The Hallway Ask: Many decisions that have a profound effect on faculty workload are made in informal ways, in circumstances where “the ask” and its benefits or consequences are not clear.</p>	3.4.21
TCE Student engagement forum	<p>TCE is hosting a Student Engagement Forum for faculty to discuss student engagement strategies and practices in hybrid and online classes.</p> <p>Many faculty reported that maintaining a high level of student engagement was particularly difficult after we went online last spring. We will present a number of ideas that faculty could adopt to increase engagement, and we are hoping that attendees will discuss these and share their own ideas.</p>	8.4.20
Promoting Student Wellness in the Online Classroom	<p>Run by the Committee on Diversity, Equity, and Inclusion through the American Society of Engineering Education. This workshop focused on providing tools for faculty to support students’ well-being within online classes.</p>	7.15.20
Canvas: Getting Started with Canvas Studio	<p>This workshop will provide an overview of the Canvas Studio video platform - the next-generation online video learning platform. Canvas Studio integrates with Canvas and allows instructors to seamlessly create media interaction and active learning experiences in the online classroom. Learn how Canvas Studio can engage both students and instructors, provide insightful viewing analytics, generate captions, and turn video and audio content into conversation.</p>	6.25.20
Virtual Vol Bootcamp: Managing Online Class	<p>This workshop is part of the Virtual Vols Bootcamp. You must register for the bootcamp and a code will be emailed to you. Whether your online class has 25 students or 250, knowing how to manage the virtual classroom is an essential component of promoting an active and inclusive online learning environment. In this workshop, participants will learn strategies for organizing and managing online discussions, how to prevent unwanted visitors in a Zoom class session, and tips for keeping students engaged.</p>	6.18.20
Virtual Vol Bootcamp: Online Assessment Workshop	<p>This workshop is part of the Virtual Vol Bootcamp. In this workshop, participants will learn strategies for designing and delivering online assessments.</p>	6.16.20

Safe Zone Ally Training Level 2 through ASEE	This Level 2 Safe Zone Ally Training workshop focuses on the concepts and implications of privilege and bias, and ways that allies can support LGBTQ+ individuals.	6.25.18
Safe Zone Ally Training Level 1 through ASEE	This Level 1 Safe Zone online workshop describes key LGBTQ+ terminology and concepts, explores LGBTQ+ identity development and the coming out process, and offers simple strategies for being an ally and building an inclusive environment for LGBTQ+ individuals.	6.24.18
Diversi-Tea	Diversi-Tea is part of an ongoing effort to facilitate communication among faculty, staff and graduate students about issues related to inclusive teaching practices. In each session, faculty and staff will be given the opportunity to learn from one another and engage in dialogue about the various ways of incorporating inclusive teaching practices.	3.20.18
A Few Things Cognitive Science Teaches us About Effective Teaching	This workshop was run by the International Federation of Engineering Education Societies. In the past three to four decades, cognitive scientists have discovered a lot about the learning process— what happens in the brain when we learn something and what methods and conditions of instruction promote learning. It turns out that the practices of the standard lecture-based teaching model are not on the list of promotive factors. This presentation reviews some of the principal findings of the scientists, outlines practical teaching strategies based on those findings, and reviews evidence that those strategies are indeed more effective than the traditional ones.	12.7.17
Experience Learning Summer Institute at UTK	This institute was four weeks long and included eight sessions with two individual consultations. The focus was to incorporate/redesign/develop a course that includes experiential learning.	Summer 2017
Standards Based Grading Institute	This institute included instruction on Standards Based Grading and incorporation of these grading practices into engineering courses. In addition, the program included a community of practice piece and required the development of a video to highlight the use of standards based grading.	Spring 2017