Kelsey J. Rodgers, Ph.D.

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EDUCATION

Doctor of Philosophy in Engineering Education (Ph.D.) Graduated: August 2016
Purdue University, *West Lafayette, Indiana*

- Dissertation Title: Development of First-Year Engineering Teams' Mathematical Models through Linked Modeling and Simulation Projects, *access at:* https://docs.lib.purdue.edu/cgi/viewcontent.cgi?referer=%20 https://www.google.com/&httpsredir=1&article=2030&context=open_access_dissertations
- Advisory Committee: Dr. Diefes-Dux, Dr. Madhavan, and Dr. Cardella (Engineering Education), Dr. Klimeck (Electrical and Computer Engineering), Dr. Boudouris (Chemical Engineering)

Bachelor of Science in Engineering (B.S.E.) Graduated: May 2011
Arizona State University (ASU) Polytechnic, *Mesa, Arizona*

- Primary Focus: **Mechanical Engineering**
- Secondary Focus: Materials Engineering

EXPERIENCE

Owner, *Dr. Kelsey Joy LLC* January 2022 – Present
Consulting Services

- Created various MATLAB programs to analyze and organize client's large data sets (300,000+ data points) for various requests (e.g., restructured data, flag employees inputting data incorrectly, performance reports).
- Developed a validated Excel databases for a health-care company to help them organize and store their service dates, patient data, billing, and other critical information to increase efficiency and ensure milestones completed.
- Implemented a OneDrive Excel-based and Google Workspace Sheet-based databases to enable a collaborative, synced data with on-going, updated data analytics about sales and billing (invoiced and paid services).

Visiting Research Scholar, *Embry-Riddle Aeronautical University* May 2021 – August 2021
Assistant Professor, *Embry-Riddle Aeronautical University* August 2016 – May 2021
Engineering Fundamentals Department

- Led a NSF-funded collaborative I-USE research project over three years with a budget of $300k to investigate implementing various types of modeling in first-year engineering programs with two other universities.
- Revised and restructured a computer programming (MATLAB) course to improve pedagogy and assessment methods, while increasing student success in the course.
- Advised five undergraduate and one graduate engineering students through various research projects.
- Served in various service positions (e.g., SWE faculty advisor, faculty senate representative, and course monitor).
- Published and presented various works related to how students develop modeling abilities.

Research Assistant, *Purdue University* August 2012 – August 2016
Network for Computational Nanotechnology (NCN) Cyber Platform (nanoHUB.org) (NSF EEC 1227110), PI: Dr. Gerhard, Co-PI: Dr. Madhavan, Supervisor: Dr. Diefes-Dux

- Conducted educational research as member of NCN education team focused on modeling and simulations.
- Helped design and launch the https://nanoHUB.org/education page; One of the team leads on the "How People Learn Nano" page: https://nanohub.org/groups/edresearch (see my contributions: Member Usage Profile).

Researcher, *Purdue University* August 2012 – August 2013
Purdue Graduate Student Government (PGSG) Discovery Engagement and Learning (DEAL) Grant, Peer Researchers: Farshid Marbouti (Engr. Ed.), Hyunyi Jung (Math Ed.), Alena Moon (Chem. Ed.)

- Studied the perspectives of first-year engineering undergraduate and graduate teaching assistants to improve Purdue's First-Year Engineering Program – for students and teaching assistants.

Research Assistant, *Purdue University* August 2011 – August 2012
Formative Feedback Impacting the Quality of First-Year Engineering Student Work on Modeling Activities (NSF EEC 0835873), PI: Dr. Diefes-Dux, Co-PI: Dr. Cardella

- Collaborated on a diverse research team to create pedagogical approaches to develop instructors' ability to provide effective feedback and students' abilities to write, interpret, and utilize feedback.

Research Assistant, *Arizona State University Polytechnic* Summer 2011
Teaching Engineering Design to Middle and High School Student using Rube Goldbergineering (funded by College of Technology and Innovation, ASU), Co-PIs: Dr. Jordan and Dr. Dalrymple

Research Lab Assistant, *Arizona State University Polytechnic* Spring 2011
Cultivating Students' Adaptive Expertise Using Disassemble/Analyze/Assemble (DAA) Activities (funded by College of Technology and Innovation, ASU), PI: Dr. Dalrymple

ENGINEERING EXPERIENCE

Project Manager, Capstone Project – Honeywell, *ASU Polytechnic* August 2010 – May 2011

- Led a multidisciplinary team of two technology and three engineering students through design and manufacture of an innovative touchscreen-testing machine to meet customer's constraints and criteria with a $20,000 budget.

Engineering Intern, Refrac Systems, *Chandler, Arizona* April 2009 – February 2011

- Inspected aeronautical and medical parts after diffusion bonding and brazing processes to ensure proper bonding/filleting, hardness, strain, and other quality requirements per customer requests.
- Monitored deflection (strain), temperature, pressure applied, and vacuum readings of the furnace chamber and pump lines during the diffusion bonding and brazing processes to obtain optimal results in final inspection.
- Evaluated the tolerance of the in-house inspection tools quarterly to ensure tools met the ISO 9000 standards, including calipers, micrometers, height indicators, and dial indicators.

VIRTUAL DISSEMINATION EXPERIENCE

YouTube Creator/Influencer September 2020 – Present
Channel: Engineering with Dr. Kelsey Joy https://www.youtube.com/c/EngineeringwithDrKelseyJoy

- Developed a MATLAB tutorial for students to cover introductory to advance features and functions.
- Created various engineering and STEM related content to help encourage, motivate, inform, support, and positively influence engineering students, especially people that are underrepresented in engineering.
- Created a YouTube shorts playlist to inform people about various successful people in STEM with emphasis on people from underrepresented races and ethnicities, as well underrepresented genders and sexual orientations.

TEACHING

Assistant Professor, Introduction to Engineering (EGR 101), *ERAU* Fall 2019 – Spring 2021

- Taught one section of about 20 first-year engineering students design through two projects (theoretical project about designing a launch vehicle and hands-on design project – model rockets or gliders) per semester.

Assistant Professor, Introduction to Computing for Engineers (EGR 115), *ERAU* Fall 2016 – Spring 2021

- Taught two to three sections of 20 – 30 engineering students problem solving and **MATLAB** programming skills (e.g., loops, arrays – manipulating/plotting, strings, programmer-defined functions, file input/output) per semester.

Expert Reviewer, First-Year Engineering, *Purdue University – nanoHUB.org* Springs 2013, 2014, 2015

- Reviewed 5 to 15 student teams' design projects 1 to 2 times per semester to give them constructive feedback to help them improve their projects and scaffold their understandings of nanotechnology, models, and simulations.

Presenter, Honors First-Year Engineering Teaching Assistant Training, *Purdue University* Fall 2014

- Provided TAs with sample solution to practice giving feedback on, analyzed their written feedback, created a tailored presentation with samples of their feedback to teach effective feedback skills, and presented materials

Presenter, Training: Introduction to NanoRoughness MEA, *Arizona State University* Summer 2013
- Collaborated with colleagues to host a 2.5 day interactive workshop to train faculty and graduate students how to implement and assess a model-eliciting activity (MEA) in an electrical engineering class.

Guest Lecturer, First-Year Engineering course, *Purdue University* Fall 2012, Spring 2013
- Developed and taught an activity with associated lecture material for a lesson on effective feedback skills.
- Taught the activity in a required FYE course (2 sections - up to 120 students/section).

COURSE EVALUTIONS

The provided information is a summary based on student course evaluations for all courses taught at Embry-Riddle Aeronautical (Fall 2016 – Spring 2021). The course evaluations are scored on 4.0 scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree). The presented categories in the table are averages of students' responses across 3 to 5 questions based on categories used at Embry-Riddle Aeronautical University.

Course	Clarity of Presentation	Content, Structure, & Organization of the Course	Learning Outcomes	Student/Instructor Interaction
Introduction to Computing for Engineers (MATLAB)	3.8/4.0	3.7/4.0	3.7/4.0	3.8/4.0
Introduction to Engineering	3.7/4.0	3.6/4.0	3.6/4.0	3.8/4.0

ENGINEERING EDUCATION OUTREACH

Speaker, Introduce a Girl to Engineering Workshop (IGEW), *ERAU SWE* Springs 2018, 2019, 2020
- Spoke to parents about how to help encourage their daughters that attended IGEW to further pursue STEM.
- IGEW is an event put on by ERAU SWE members that hosts 200+ 3rd – 5th grade girls to teach them about engineering.

Panel Speaker, Honors First-Year Engineering, *Purdue University* Spring 2015
- Organized three panels of five engineering graduate students from various disciplines to increase first-year engineering students' awareness and understanding of graduate school; participated on one panel.

Volunteer, Women in Engineering Program (WiEP), *Purdue University* Springs 2013, 2014, 2015
- Facilitated activities to engage high school girls in various discipline of engineering through problem-based learning. (*Purdue University, Introducing Girls to Engineering Day – IGED, Spring 2013, 2014, 2015*)
- Taught engineering through problem-based learning. (*Woodland Elementary, 3rd grade, Spring 2013*)

Volunteer, Birck Nanotechnology Center – NanoDays, *Purdue University* April 2013, 2014, 2015
- Introduced middle school kids to nanotechnology through building physical models, interacting with computational models, and engaging conversations about how nanotechnology can impact their lives.

Volunteer, Engineering Projects in Community Service (EPICS), *Purdue University* Fall 2013, Spring 2014
- Reviewed teams' projects and gave them constructive feedback at various phases of the design cycle.

Panel Speaker, ASEE Student Chapter, *The Ohio State University* Fall 2014
- Participated on a panel to speak to undergraduate engineering students about engineering education research and my experiences in graduate school at Purdue University.

SERVICE

Member, American Society for Engineering Education (ASEE) January 2011 – Present
- **Professional Member** (January 2016 – Present); **Student Member** (January 2011 – 2016)

Faculty Advisor, ERAU Collegiate Section of Society of Women Engineers (SWE) Summer 2017 – 2021
- Met with the SWE members and executive committee regularly at some of their weekly member meetings, executive board meetings, social events, outreach events, and additional meetings scheduled for faculty input.
- Developed mentoring relationships with some SWE members (e.g., helping prepare and apply for graduate school).

Course Monitor for EGR 115 (MATLAB course),
Engineering Fundamentals department, *ERAU* Summer 2017 – Spring 2021

- Organized meetings every semester to help prepare faculty for the upcoming semester and reflect upon completion.
- Developed and revised necessary course materials for all sections (e.g., syllabus, modeling problems, assessment tools).
- Managed data collection and assessment in course for ABET accreditation purposes (2018-19 academic year review).

Faculty Member, Engineering Fundamentals Faculty Search Committee, *ERAU* Summer 2019

- Served and voted on the committee to review candidate's materials, select faculty candidates for phone and on-campus interviews, host candidates while at Embry-Riddle, and recommend candidate to department chair for hire.

Committee Member, College of Engineering and College of Arts and Sciences, *ERAU* Spring 2019

- Served on the College of Engineering-Physical Sciences (COE-PS) Task Force to review the intersections of the Engineering curricula and the Physical Sciences courses that serve those curricula to address the high drop-fail-withdraw (DFW) rate for students in Physics I (PS 150), Calculus I (MA 241), and programming (EGR 115).
- Made the recommendation, as a committee, to change PS 150 to have MA 241 as a pre-req. instead of a co-req. and advising first-year engineering students to take CHM 110 & 110L with MA 241 instead of PS 150 based on assessment of other universities' course maps and assessment of relevant student data. *(change implemented Fall 2020)*

Faculty Senate Representative, Engineering Fundamentals department, *ERAU* Fall 2016 – Spring 2018

- Attended biweekly Faculty Senate meetings and actively participated throughout to represent our department's interests.
- Documented notes throughout the meetings and then distributed information to department to ensure they are updated.

Faculty Member, Electrical Engineering and Computer Sciences (EECS) Faculty Search Committee, *ERAU* Spring 2017

- Served and voted on the committee to review candidate's materials, select faculty candidates for phone and on-campus interviews, host candidates while at Embry-Riddle, and recommend candidate to department chair for hire.

GRANTS

Principle Investigator (awarded), *National Science Foundation (NSF)* October 2018 – September 2021

- Awarded I-USE grant for $299,831 to support a collaborative research project about modeling pedagogy. Title: Collaborative Research: Researching How You Teach Holistic Modeling (RHYTHM). Award: DUE 1827392.
- Served as lead PI at ERAU with two supporting institutions: University of Louisville and San Jose State University.

Co-Principle Investigator (awarded), *National Security Agency (NSA)* August 2019 – November 2020

- Awarded $73,777 by the Department of Defense (DoD) Cyber Scholarship (CySP) to fund one graduate student.

Investigator (awarded), *ERAU Center for Teaching and Learning Excellence (CTLE)* Summer 2018

- Awarded $2,500 to redesign ERAU's MATLAB course (EGR 115) to address .

Investigator (awarded), *ERAU Center for Teaching and Learning Excellence (CTLE)* Spring 2018

- Awarded $3,000 to investigate how students develop growth mindset through standards-based grading in ERAU's MATLAB course (EGR 115) with colleague Dr. James Pembridge.

AWARDS

Nominated for University's Outstanding Teaching Award, 2019, 2020
Embry-Riddle Aeronautical University – Daytona Beach campus

- Nominated by my department chair for the campus wide Outstanding Teaching Award.

Nominated for College's Outstanding Teaching Award, 2019, 2020
College of Engineering, Embry-Riddle Aeronautical University

- Nominated by my department chair as the department candidate for the COE Outstanding Teaching Award.

Best Paper Award, Summer 2019
American Society for Engineering Education, First-Year Program Division

- Awarded by the *ASEE 2019 annual conference First-Year Program Division* for the paper "Impact of a modeling intervention in an introductory programming course" (annual award recognizes the best conference paper).

Honorable Mention for the William Elgin Wickenden Award, Spring 2015
American Society for Engineering Education (ASEE)

- Honorable Mention for an article that appeared in the October 2016 issue of the *Journal of Engineering Education* - "Selecting Effective Examples to Train Students for Peer Review of Open-Ended Problem Solutions."
- The annual Wickenden Award recognizes an article that represents the highest standards of scholarly research in engineering education among the articles published in the Journal in each volume year.

ENE Outstanding Research Award, Engineering Education, *Purdue University* Spring 2015

- One award given by the School of Engineering Education to acknowledge outstanding research conducted.

2011 WISE Success Story Award, Women in Science and Engineering, *ASU Polytechnic* May 2011

- Award received "in recognition of valuable contributions to Arizona State University Polytechnic".

JOURNAL PUBLICATIONS

1. Marbouti, F., **Rodgers, K. J.**, Verleger, M. A., & Thompson, A. (2022). Development of students' concepts of modeling across subsequent CAD and Programming courses. *IEEE Transactions on Education*. doi: 10.1109/TE.2022.3175678.
2. Kong, Y., Douglas, K. A., **Rodgers, K. J.**, Diefes-Dux, H. A., & Madhavan, K. (2017). Size and scale framework and assessment for first year engineering students. *Journal of Engineering Education*. 106(3). pp. 431-453. DOI: 10.1002/jee.20172.
3. Verleger, M., **Rodgers, K. J.**, **&** Diefes-Dux, H. A. (2016). Selecting effective examples to train students for peer review of open-ended problems. *Journal of Engineering Education*, 105(4). pp. 585-604. DOI: 10.1002/jee.20148.
4. **Rodgers, K. J.**, Horvath, A. K., Jung, H., Fry, A. S., Diefes-Dux, H. A., & Cardella, M. E. (2015). Students' perceptions of and responses to teaching assistant and peer feedback. *Interdisciplinary Journal of Problem-Based Learning*, 9(2).
5. Jung, H., Horvath, A. K., Diefes-Dux, H. A., **Rodgers, K. J.**, & Cardella, M. E. (2015). Characteristics of feedback that influence student confidence and performance during mathematical modeling. *International Journal of Engineering Education, 31(1), pp. 42–57.*

PEER-REVIEWED CONFERENCES with PROCEEDINGS

1. **Rodgers, K. J.,** Thompson, A., Hawkins, N., Verleger, M. A., & Marbouti, F. (2022). Developing a program to assist in qualitative data analysis: how engineering students' discuss model types. *Proceedings of the 129th Annual American Society of Engineering Education (ASEE) Conference & Exposition*. Minneapolis, MN. June 26-29.
2. **Rodgers, K. J.,** Verleger, M. A., Marbouti, F., & Thompson, A. (2021). Types of Models Identified by First-Year Engineering Students. *Proceedings of the 128th Annual American Society of Engineering Education (ASEE) Conference & Exposition*. Long Beach, CA. June 27-30.
3. Marbouti, F., **Rodgers, K. J.,** Verleger, M. A., & Thompson, A. (2021). What does influence first-year engineering student understanding of modeling?. *Proceedings of the 128th Annual American Society of Engineering Education (ASEE) Conference & Exposition*. Long Beach, CA. June 27-30.
4. Shah, N., Thaker, P., **Rodgers, K. J.**, Thompson, A., Verleger, M. A., & Marbouti, F. (2021). First year engineering students' understanding and application of models: comparing impact of CATIA vs. MATLAB courses. *Proceedings of the American Society of Engineering Education (ASEE) Southeastern (SE) Section Annual Conference*. Virtual Conference. March 8-11.
5. **Rodgers, K. J.,** Verleger, M. A., & Marbouti, F. (2020). Comparing students' solutions to an open-ended problem in an introductory programming course with and without explicit modeling interventions. *Proceedings of the 127th Annual American Society of Engineering Education (ASEE) Conference & Exposition*. Virtual Conference. June 22-26.
6. Marbouti, F., **Rodgers, K. J.**, & Verleger, M. A. (2020). Change in student understanding of modeling during first-year engineering courses. *Proceedings of the 127th Annual American Society of Engineering Education (ASEE) Conference & Exposition*. Virtual Conference. June 22-26.
7. **Rodgers, K. J.**, McNeil, J. C., Verleger, M. A., & Marbouti, F. (2019). Impact of a modeling intervention in an introductory programming course. *Proceedings of the 126th Annual American Society of Engineering Education (ASEE) Conference & Exposition.* Tampa, FL. June 16-19.
8. Pembridge, J. J. & **Rodgers, K. J.** (2018). Examining self-efficacy and growth mindset in an introductory computing course. *Proceedings of the 48th ASEE/IEEE Frontiers in Education Conference*. San Jose, CA. Oct. 3-6.
9. **Rodgers, K. J.**, Pembridge, J. J., Long, L. L., III, Verleger, M. A., & Steinhauer, H. M. (2017). Small wins - Big impact: Narratives from behind the scenes. *Proceedings from 2017 First-Year Engineering Experience (FYEE) Conference*. Daytona Beach, FL. August 6-8.
10. **Rodgers, K. J.**, Dala, N. J., & Madhavan, K. (2017). How First-Year Engineering Students Develop Visualizations for Mathematical Models. Proceedings of the 124th ASEE Annual Conference and Exposition. Columbus, OH.

11. **Rodgers, K. J.**, Boudouris, B., Diefes-Dux, H. A., & Harris, M. (2016). Integrating exposure to nanotechnology through project work in a large first-year engineering course. *Proceedings of the 123rd ASEE Annual Conference and Exposition.* New Orleans, LA. June 26-29.
12. **Rodgers, K. J.**, Diefes-Dux, H. A., & Madhavan, K. (2015). Impact of simulation development on mathematical model development. *Proceedings of the Research in Engineering Education Symposium (REES),* Dublin, Ireland, July 13-15.
13. Diefes-Dux, H. A., **Rodgers, K. J.**, & Madhavan, K. (2015). Students' understanding of mathematical models, simulations, and their relationship. *Proceedings of the Research in Engineering Education Symposium (REES),* Dublin, Ireland, July 13-15.
14. **Rodgers, K. J.**, Kong, Y., Diefes-Dux, H. A., & Madhavan, K. (2015). Framework of basic interactions to computer simulations: analysis of student developed interactive computer tools. *Proceedings of the 122nd ASEE Annual Conference and Exposition.* Seattle, WA. June 14-17.
15. **Rodgers, K. J.,** Diefes-Dux, H. A., Madhavan, K., & Kong, Y. (2014). Mini Workshop – Developing engineers for a changing world through modeling and simulation-based pedagogy. *Proceedings of the 44th ASEE/IEEE Frontiers in Education Conference,* Madrid, Spain, Oct. 22-25.
16. **Rodgers, K. J.**, Marbouti, F., Shafaat, A., Jung, H., & Diefes-Dux, H. A. (2014). Influence of teaching assistants' motivation on student learning. *Proceedings of the 44th ASEE/IEEE Frontiers in Education Conference,* Madrid, Spain, Oct. 22-25.
17. **Rodgers, K. J.**, Tafur, M., Marbouti, F., & Siepel, J. (2014). Physical response to feedback in game-based learning. *Proceedings of the 44th ASEE/IEEE Frontiers in Education Conference,* Madrid, Spain, Oct. 22-25.
18. Shafaat, A., Marbouti, F., & **Rodgers, K. J.** (2014). Utilizing MOOCs for blended learning in higher education. *Proceedings of the 44th ASEE/IEEE Frontiers in Education Conference,* Madrid, Spain,
19. Kong, Y., Diefes-Dux, H., **Rodgers, K. J.**, Douglas, K. A., & Madhavan, K. (2014). Work in progress: Development and validation of a Nano Size and Scale Instrument (NSSI). *Proceedings of the 44th ASEE/IEEE Frontiers in Education Conference,* Madrid, Spain, Oct. 22-25.
20. Hanoglu, O., **Rodgers, K. J.**, Kong, Y., Madhavan, K., & Diefes-Dux, H. (2014). Work in progress: First-year engineering students¹ knowledge of nanotechnology. *Proceedings of the 44th ASEE/IEEE Frontiers in Education Conference,* Madrid, Spain, Oct. 22-25.
21. **Rodgers, K.J.**, Diefes-Dux, H. A., & Madhavan, K. (2014). Investigating first-year engineering students understanding of computer simulations and interactivity. *Proceedings of the 41st SEFI (European Society for Engineering Education) Annual Conference,* Birmingham, England.
22. **Rodgers, K. J.**, Kong, Y., Diefes-Dux, H. A., & Madhavan, K. (2014). First-year engineering students' communication of nanotechnology size and scale in a design challenge. *Proceedings of the 121st ASEE Annual Conference and Exposition.* Indianapolis, IN. June 15 – 18.
23. Jung, H., Moon, A., **Rodgers, K. J.**, & Marbouti, F. (2013). Mathematical modeling problems: What affects teaching assistants' ability to provide feedback? *Psychology of Mathematics Education*. Chicago, IL. Nov. 14 – 17.
24. **Rodgers, K.J.**, Diefes-Dux, H.A., & Madhavan, K. (2013). Case studies: First-year engineering nanotechnology-based design projects. *Proceedings of the 43rd ASEE/IEEE Annual Frontiers in Education Conference,* Oklahoma City, OK. Oct. 23-26.
25. Moon, A., Jung, H., Marbouti, F., **Rodgers, K. J.**, & Diefes-Dux, H. (2013). Undergraduate and graduate teaching assistants' perceptions of their responsibilities – factors that help or hinder. *Proceedings of the 43rd ASEE/IEEE Annual Frontiers in Education Conference,* Oklahoma City, OK. Oct. 23 – 26.
26. **Rodgers, K. J.**, Diefes-Dux, H.A., & Madhavan, K. (2013). First-year engineering students explore nanotechnology in engineering. *Proceedings of the 40th SEFI (European Society for Engineering Education) Annual Conference.* Leuven, Belgium. Sep. 16-20.
27. **Rodgers, K. J.**, Diefes-Dux, H.A., Madhavan, K., & Oakes, B. (2013). First-year engineering students' learning of nanotechnology through an open-ended project. *Proceedings of the 120th ASEE Annual Conference and Exposition.* Atlanta, GA. June 23-26.
28. Marbouti, F., **Rodgers, K.J.**, Jung, H., Moon, A., & Diefes-Dux, H. (2013). Factors that help and hinder teaching assistants' ability to execute their responsibilities. *Proceedings of the 120th ASEE Annual Conference & Exposition.* Atlanta, GA. June 23-26.
29. **Rodgers, K. J.**, Fry, A. S., Diefes-Dux, H. A., & Cardella, M. E. (2012). First-year engineering students' peer feedback on open-ended mathematical modeling problems. *Proceedings of the 42nd ASEE/IEEE Annual Frontiers in Education Conference,* Seattle, WA. Oct. 3-6.
30. **Rodgers, K. J.**, Diefes-Dux, H. A., & Cardella, M. E. (2012). The nature of peer feedback from first-year engineering students on open-ended mathematical modeling problems. *Proceedings of the 119th ASEE Annual Conference and Exposition,* San Antonio, TX. June 10-13.
31. Mathis, P. D., **Rodgers, K. J.**, Huffman, T. J., Purzer, S., & Gong, Y. (2012). Comparing the process of modeling for local and global problems completed by first-year engineering students. *Proceedings of the American Society of Engineering Education (ASEE) Illinois-Indiana Section.* Valparaiso, IN.

OTHER CONFERENCES and PRESENTATIONS

1. Shah, N., Thaker, P., **Rodgers, K. J.**, & Verleger, M. A. (2020). First-year engineering students? identification of models in engineering. *Discovery Day presented by The Office of Undergraduate Research at Embry-Riddle Aeronautical University*.

2. **Rodgers, K. J.**, Kong, Y., Diefes-Dux, H. A., & Madhavan, K. (2015). Development of a guided-instructional tool for evaluating simulations. *Poster presented at Engineering Education (ENE) Industrial Advisory Council semester review meeting*, West Lafayette, IN. April 14.
3. **Rodgers, K. J.**, Kong, Y., Diefes-Dux, H. A., & Madhavan, K. (2014). Development of a guided-instructional tool for evaluating simulations. *Poster presented at Engineering Education (ENE) Industrial Advisory Council semester review meeting*, West Lafayette, IN. November 7.
4. **Rodgers, K. J.**, Kong, Y., & Madhavan, K., Diefes-Dux, H. A. (2014). Development of a guided-instructional tool for evaluating simulations. *Poster presented at first nanoHUB user conference*, Phoenix, AZ. April 9 – 11.
5. Kong, Y., Diefes-Dux, H. A., & **Rodgers, K. J.** (2014). Nano size and scale instrument (NSSI). *Poster presented at first nanoHUB user conference,* Phoenix, AZ. April 9 – 11.
6. **Rodgers, K. J.**, Diefes-Dux, H. A., Jung, H., & Cardella, M. E. (2013). A comparative analysis of feedback from undergraduate and graduate teaching assistants on open-ended problems. *Paper presented at the annual meeting of the 2013 American Educational Research Association.* San Francisco, CA. April 26 – May 1.
7. Jung, H., Diefes-Dux, H.A., **Rodgers, K. J.**, Cardella, M. E., & Horvath, A.K. (2013). Characteristics of feedback that influence student confidence and performance during mathematical modeling. *Paper presented at the annual meeting of the 2013 American Educational Research Association.* San Francisco, CA. April 26 – May 1.
8. **Rodgers, K. J.**, Diefes-Dux, H. A., & Cardella, M. E. (2012) Preparing first-year engineering students to give effective peer feedback on open-ended mathematical modeling problems. *Poster presented at the Annual Graduate Student Educational Research Symposium*. West Lafayette, IN.
9. **Rodgers, K. J.**, Diefes-Dux, H. A., & Cardella, M. E. (2012) Learning to engage in peer review: a foundational aspect of stem practice. *Poster presented at the 2012 Sigma Xi Graduate Student Research Awards Competition Poster Session*. West Lafayette, IN.
10. **Rodgers, K. J.** (2011) Formative feedback: Impacting the quality of first-year engineering student work on model-eliciting activities. *Poster presented at the New Directions in Engineering Education Symposium*. West Lafayette, IN.

WORKSHOPS

1. Diefes-Dux, H., Marbouti, F., **Rodgers, K. J.**, & Shafaat, A. (2015). Feedback for systems engineers. *Workshop presented at International Council of Systems Engineers (INCOSE) Regional Conference. Cleveland, OH.* Oct. 25.
   - Conducted a professional development workshop for system engineers to improve their peer feedback skills.
2. **Rodgers, K. J.**, Hart, M., Budnik, M., Shuba, T., & Kong, Y. (2014). Nanotechnology as the content for stem learning & teaching. *K-12 Workshop presented at the 121st ASEE Annual Conference and Exposition. Indianapolis, IN.* June 14.
   - Organized a team and necessary materials to present to middle and high school teachers on how to introduce nanotechnology, focusing on size and scale, within curricula in a 2.5-hour session using interactive activities.
3. **Rodgers, K. J.**, Diefes-Dux, H. A., & Madhavan, K. (2013). NanoRoughness Model-Eliciting Activity (MEA). *Workshop presented at National Academy of Minority Engineering Program Association* (*NAMEPA), Purdue University: West Lafayette, IN*. Feb. 6-9.
   - Engaged 20-30 university administrators in a model-eliciting activity and discussed benefits of utilizing this pedagogy with emphasis on inclusion of underrepresented students.

SERVICE – REVIEWER

Journal Reviews:

Journal of Engineering Education (JEE)	March 2018, August 2019, January & March 2020
Sage Open	December 2019, December 2020
IEEE Transactions on Education	July & December 2018
Interdisciplinary Journal of Problem-Based Learning (IJPBL)	Nov. 2015

Conference Reviews:

American Society for Engineering Education (ASEE) Annual Conference	every year 2014 – 2022
IEEE Frontiers in Education (FIE) Annual Conference	2012, 2013, 2014, 2015, 2016, 2017
International Conference of the Learning Sciences (ICLS) Bi-annual Conference	2014, 2016
Research in Engineering Education Symposium (REES)	2015
International Conference on Computer Supported Collaborated Learning (CSCL) Bi-annual Conference	2015
American Society for Engineering Education (ASEE) International Forum	2014