Samuel A. Acuña (he/him, pronounce)

Department of Bioengineering
Center for Adaptive Systems of Brain-Body Interactions
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Education

Ph.D., Mechanical Engineering 2015 – 2019
University of Wisconsin–Madison

M.S., Mechanical Engineering 2013 – 2015
University of Wisconsin–Madison

B.S., Mechanical Engineering 2005 – 2012
Brigham Young University

Positions

Research Assistant Professor 2023 – Present
George Mason University, Dept. of Bioengineering
Center for Adaptive Systems of Brain-Body Interactions

Adjunct Teaching Faculty 2022 – 2023
George Mason University, Dept. of Bioengineering

Postdoctoral Research Fellow 2021 – 2023
George Mason University, Dept. of Bioengineering

Patent Technical Advisor 2020 – 2021
Cooley LLP, Patent Prosecution & Counseling

Technical Manager 2019 – 2020
University of Texas at Dallas, UTDesign Senior Engineering Capstone Program

Postdoctoral Researcher 2019 – 2020
University of Texas Southwestern Medical Center, Dept. of Physical Medicine & Rehabilitation

Graduate Research Assistant 2013 – 2019
University of Wisconsin–Madison, Dept. of Mechanical Engineering

Research Assistant 2010 – 2012
Brigham Young University, Dept. of Mechanical Engineering

Systems Engineer 2010 – 2010
The Boeing Company, Airborne Early Warning & Control

Publications

Peer-Reviewed Publications:

1. Engdahl SM, **Acuña SA**, Kaliki RR, Sikdar S (2022). Sonomyography for control of upper limb prostheses: current state and future directions. *Prosthetics and Orthotics*. (Accepted.)

2. Majdi JA, **Acuña SA**, Chitnis PV, Sikdar S (2022). Towards a wearable monitor of local muscle fatigue during electrical stimulation using tissue Doppler imaging. *Wearable Technologies*, 3: E16. [Link]

3. Engdahl SM, **Acuña SA**, King EL, Bashatah A, S Sikdar (2022). First-in-human demonstration of functional task performance using a sonomyographic prosthesis. *Frontiers in Bioengineering & Biotechnology*, 10: 876836. [Link]

4. **Acuña SA**, Tyler ME, Thelen DG (2022). Individuals with chronic mild to moderate traumatic brain injury exhibit decreased neuromuscular complexity during gait. *Neurorehabilitation and Neural Repair*, 36(4-5): 317-327. [Link]

5. Schroeder MJ, **Acuña SA***, Krishnan C, Dhaher YY (2022). Can increased locomotor task complexity differentiate knee muscle forces after ACL-Reconstruction? *Applied Biomechanics*, 38(2): 84-94. [Link] (*Acuña is considered a co-first author.)

6. **Acuña SA**, Ebrahimi A, Pomeroy RL, Martin JA, Thelen DG (2019). Achilles tendon shear wave speed tracks the dynamic modulation of standing balance. *Physiological Reports*, 7: e14298. [Link]

7. **Acuña SA**, Zunker JD, Thelen DG (2019). The effects of sub-threshold vibratory noise on visuomotor entrainment during human walking and standing in a virtual reality environment. *Human Movement Science*, 66: 587-599. [Link]

8. **Acuña SA**, Francis CA, Franz JR, Thelen DG (2019). The effects of cognitive load and optical flow on antagonist leg muscle coactivation during walking for young and older adults. *Electromyography and Kinesiology*, 44: 8-14. [Link]

9. **Acuña SA**, Tyler ME, Danilov YP, Thelen DG (2018). Abnormal muscle activation patterns are associated with chronic gait deficits following traumatic brain injury. *Gait & Posture*, 62: 510-517. [Link] (Finalist for best paper award, GCMAS 2017.)

10. **Acuña SA**, Smith DM, Robinson JM, Hawks JC, Starbuck P, King DL, Ridge ST, Charles SK (2014). Instrumented figure skating blade for measuring on-ice skating forces. *Measurement Science and Technology*, 25(12): 125901. [Link]

Other:

1. **Acuña SA** (2019). Altered neuromuscular control of gait following traumatic brain injury and targeted neuromodulation to improve motor function. *The University of Wisconsin – Madison. ProQuest Dissertations Publishing*, 13882699. [Link]

Conference Abstracts

1. **Acuña SA**, Bashatah A, Sikdar S. How to implement wearable ultrasound for prosthetic hand control. Presentation at the Biomedical Engineering Society annual conference. Seattle, WA. October 2023. (Submitted.)

2. **Acuña SA**, Bashatah A, Sikdar S. How to implement wearable ultrasound for prosthetic hand control. Presentation at the American Society of Biomechanics annual meeting. Knoxville, TN. August 2023. (Submitted.)

3. **Acuña SA**, Krotine M, Gibson G, Boser Q, Hebert J, Sikdar S. Reproducibility of gaze and movement assessment of upper limb function. Presentation at the American Society of Biomechanics annual meeting. Knoxville, TN. August 2023. (Submitted.)

4. **Acuña SA**, Bashatah A, Sikdar S. How to implement wearable ultrasound for prosthetic hand control. Podium presentation at the east coast regional conference for the American Society of Biomechanics. Reading, PA. April 2023.

5. **Acuña SA**, Krotine M, Gibson G, Boser Q, Hebert J, Sikdar S. Reproducibility of gaze and movement assessment of upper limb function. Poster presentation at the east coast regional conference for the American Society of Biomechanics. Reading, PA. April 2023.

6. **Acuña SA**, Bashatah A, Sutherland RF, Kaliki RR, Sikdar S. A wearable ultrasound system for controlling an upper-limb prosthesis. Presentation at the 49th Academy Annual Meeting & Scientific Symposium of the American Academy of Orthotists & Prosthetists. Nashville, TN. March 2023. [Link]
7. Patwardhan S, **Acuña SA***, Engdhal SM, Mukherjee B, Gladhill KA, Bashata A, Dhawan AS, Abreu R, Schofield JS, Joiner WM, Sikdar S. Comparison of virtual end-point trajectories using sonomyography with trajectories derived from coordinated multi-joint movements. Poster presentation at the Military Health System Research Symposium. Kissimmee, FL. September 2022. (*Acuña was added after submission as the presenting author.)
8. **Acuña, SA***, Labbé DR, Dingwell JB, Jenkins E. Using Virtual Reality for Physical Rehabilitation. Symposium presentation at the North American Congress on Biomechanics. Ottawa, ON. August 2022. (*Acuña organized and chaired the symposium.)
9. **Acuña SA**, Engdahl SM, King EL, Bashatah A, Sikdar S. Reliability of sonomyography for controlling prosthetic hand grasps. Poster presentation at the North American Congress on Biomechanics. Ottawa, ON. August 2022.
10. King EL, Engdahl SM, **Acuña SA**, Bashatah A, Sikdar S. Continuous testing of sonomyography as a control paradigm for upper limb prostheses. Poster presentation at the North American Congress on Biomechanics. Ottawa, ON. August 2022.
11. **Acuña SA**, Engdahl SM, Bashatah A, Otto P, Kaliki RR, Sikdar S. A wearable sonomyography system for prosthesis control. Poster presentation at the Myoelectric Controls Symposium. Hosted by the Institute of Biomedical Engineering at the University of New Brunswick. Fredericton, NB. August 2022.
12. Engdahl SM, **Acuña SA**, Bashatah A, Dhawan AS, King EL, Mukherjee B, Holley RJ, Monroe BJ, Lévay G, Kaliki RR, Sikdar S. Assessing the feasibility of using sonomyography for upper limb prosthesis control. Podium presentation at the Myoelectric Controls Symposium. Hosted by the Institute of Biomedical Engineering at the University of New Brunswick. Fredericton, NB. August 2022.
13. Bashatah A, Rima AH, King EL, Kaur A, **Acuña SA**, Chitnis PV, Sikdar S. Wearable ultrasound for rehabilitation applications. Presentation at the 46th International Symposium on Ultrasonic Imaging and Tissue Characterization. Virtual Meeting. June 2022.
14. Engdahl SM, Mukherjee B, Dhawan AS, Bashatah A, Patwardhan S, **Acuña SA**, King EL, Lancaster BC, Akhlaghi N, Holley RJ, Monroe BJ, Kaliki RR, Sikdar S. Development of a novel ultrasound-based modality for control of upper limb prostheses. Presentation at the Trent International Prosthetics Symposium. Hosted online by the International Society for Prosthetics and Orthotics member societies of the United Kingdom and Netherlands. March 2022. (Winner of the Best Paper Award.)
15. **Acuña SA**, Bashatah A, Chitnis PV, Sikdar S. Measuring signal quality in low power wearable ultrasound imaging. Presentation at the Acoustical Society of America. Seattle, WA. November 2021. [Link]
16. **Acuña SA**. Quantitative electromyographic analysis can inform treatment planning for gait disorders. Presentation at the Frontiers of Computing in Health and Society, Institute for Digital Innovation, George Mason University. Fairfax, VA. September 2021.
17. **Acuña SA**, Schroeder MJ, Krishnan C, Dhaher YY. Increased task demand differentiates knee muscle forces after ACL-reconstruction. Presentation at the American Society of Biomechanics Annual Meeting. Atlanta, GA. August 2020.
18. **Acuña SA**, Kunnappally JR, Soedirdjo SDH, Phan P, Kim H, Rodriguez LA, Hutcherson CW, Chung YC, Dhaher YY. The role of estrogen on reciprocal inhibition of the Soleus. Oral presentation at the XXIII Congress of the International Society of Electrophysiology and Kinesiology. Nagoya, Japan. July 2020.
19. Soedirdjo SDH, **Acuña SA**, Kunnappally JR, Phan P, Kim H, Rodriguez LA, Hutcherson CW, Chung YC, Dhaher YY. Isolated mixed effect of estradiol and progesterone on motor neuron excitability. Oral presentation at the XXIII Congress of the International Society of Electrophysiology and Kinesiology. Nagoya, Japan. July 2020.

20. **Acuña SA**, Ebrahimi A, Thelen DG. Achilles tendon shear wave speed tracks the dynamic modulation of standing balance. Oral presentation at the XXIII Congress of the International Society of Electrophysiology and Kinesiology. Nagoya, Japan. July 2020.

21. **Acuña SA**, Dhaher YY. Individuals with chronic traumatic brain injury exhibit decreased neuromuscular complexity when walking: an overview of neuromechanics research. Podium presentation at the UT Southwestern Postdoctoral Association Annual Research Symposium. Dallas, TX. September 2019.

22. **Acuña SA**, Ebrahimi A, Thelen DG. Achilles tendon shear wave speed as a measure of the active modulation of standing balance. Podium and poster presentation at the joint conference of the International Society of Biomechanics and American Society of Biomechanics. Calgary, AB. August 2019. (Finalist for ASB Doctoral Student Presentation Competition.)

23. **Acuña SA**, Zunker JD, Thelen DG. Sub-threshold vibratory noise does not alter visuomotor entrainment during human walking. Poster presentation at the Gait and Clinical Motion Analysis Society Annual Meeting. Frisco, TX. March 2019.

24. **Acuña SA**, Tyler ME, Danilov YP, Thelen DG. Changes in dynamic motor control following neurorehabilitation for traumatic brain injury: treadmill vs overground walking. Podium and poster presentation at the American Society of Biomechanics Annual Meeting. Rochester, MN. August 2018. (Finalist for ASB Doctoral Student Presentation Competition.)

25. **Acuña SA**, Tyler ME, Danilov YP, Thelen DG. Improvements in dynamic motor control following neurorehabilitation of chronic balance deficits due to prior traumatic brain injury. Podium presentation at the 8th World Congress of Biomechanics. Dublin, Ireland. July 2018. (Runner up for the ASME-BED PhD Level Student Paper Competition.)

26. **Acuña SA**, Francis CA, Franz JR, Thelen DG. Walking with visual perturbations but not an attention-dividing task modulates muscle coactivation patterns in old adults. Podium presentation at the XXII Congress of the International Society of Electrophysiology and Kinesiology. Dublin, Ireland. June 2018.

27. **Acuña SA**, Michaelis JE, Roth JD, Towles JD. Intervention designed to increase interest in engineering for low-interest, K-12 girls did so for boys and girls. Presentation at the American Society for Engineering Educations Annual Conference and Exposition. Salt Lake City, UT. June 2018.

28. **Acuña SA**, Tyler ME, Danilov YP, Thelen DG. Effect of non-invasive neuromodulation on rehabilitation of gait in chronic traumatic brain injury. Podium presentation at the Gait and Clinical Motion Analysis Society Annual Meeting. Indianapolis, IN. May 2018.

29. **Acuña SA**, Tyler M, Danilov Y, Thelen DG. Individuals with a prior traumatic brain injury exhibit decreased neuromuscular complexity during gait. Thematic poster presentation at the American Society of Biomechanics Annual Meeting. Boulder, CO. August 2017.

30. Zunker JD, **Acuña SA**, Thelen DG. Piezoelectric device for peripheral stochastic sub sensory vibration. Poster presentation at the American Society of Biomechanics Annual Meeting. Boulder, CO. August 2017.

31. Francis CA, Michaelis JE, **Acuña SA**, Towles JD. Impact of Biomechanics-based activities on situational and individual interest among K-12 students. Podium presentation at the 2017 American Society for Engineering Education Annual Conference and Exposition. Columbus, OH. June 2017.

32. **Acuña SA**, Tyler M, Danilov Y, Thelen DG. Muscle activation patterns during walking are correlated to clinical gait assessments after traumatic brain injury. Podium presentation at the Gait and Clinical Movement Analysis Society Annual Meeting. Salt Lake City, UT. May 2017. (Nominated for best paper.)

33. **Acuña SA**, Thelen DG. Cranial nerve non-invasive neuromodulation for symptomatic treatment of traumatic brain injury. Poster presentation at the Opportunities in Engineering Annual Conference. Madison, WI. November 2016.

34. Francis CA, Franz JR, **Acuña SA**, Thelen DG. Gait and balance training improves gait variability in older adults. Thematic poster presentation at the American Society of Biomechanics Annual Meeting. Raleigh, NC. August 2016.
35. **Acuña SA**, Tyler M, Danilov Y, Thelen DG. Cranial nerve non-invasive neuromodulation for symptomatic treatment of mild and moderate traumatic brain injury: effects on muscle coordination patterns during walking. Podium presentation at the XXI Congress of the International Society of Electrophysiology and Kinesiology. Chicago, IL. July 2016.
36. **Acuña SA**, Tyler M, Danilov Y, Thelen DG. Cranial nerve non-invasive neuromodulation for symptomatic treatment of mild and moderate traumatic brain injury: effects on muscle coordination patterns during walking. Poster presentation at the Dynamic Walking Conference: Principles of Dynamic Locomotion. Holly, MI. June 2016.
37. **Acuña SA**, Thelen DG. Efforts for preventing falls in the elderly via stochastic resonance. Poster presentation at the Opportunities in Engineering Annual Conference. Madison, WI. October 2015.
38. **Acuña SA**, Towles JD, Thelen DG. Modeling based analysis of the trapezial-metacarpal joint to reduce osteoarthritis. Poster presentation at the Opportunities in Engineering Annual Conference. Madison, WI. November 2014.
39. Smith DM, **Acuña SA**, Hawks JC, Packard JG, Robinson JM, King DL, Ridge ST, Charles SK. System for measuring figure skate forces on ice. Poster presentation at the 7th World Congress of Biomechanics. Boston, MA. July 2014.

Invited Presentations

1. Wearable ultrasound for controlling prosthetic hands. Department of Mechanical Engineering, Brigham Young University. Provo, UT. May 2022.
2. Research and teaching in biomedical engineering education, University of the District of Columbia. Washington, DC. May 2022.
3. Improving physical rehabilitation with virtual reality and wearable ultrasound. Department of Mechanical Engineering, Gonzaga University. Spokane, WA. April 2022.
4. Towards wearable ultrasound imaging with the Achilles tendon. Medical Engineering Conference, hosted by the Biomedical Engineering Society at George Mason University. Fairfax, VA. March 2022.
5. Using ultrasound to measure Achilles tendon kinematics, kinetics, and material properties when walking. Acoustical Society of America Annual Conference. Seattle, WA. November 2021. [Link]
6. Improvements in dynamic motor control following neurorehabilitation of traumatic brain injury. Biomedical Engineering Guest Lecture Series. University of the District of Columbia. Washington, DC. January 2021.
7. Becoming successful product design engineers. Future Faculty Career Exploration Program. Rochester Institute of Technology. Rochester, NY. September 2018.
8. Non-invasive neuromodulation to improve upright balance when walking. Neuromechanics seminar. Brigham Young University. Provo, UT. May 2017.
9. Maintenance of balance with aging: choose your steps carefully. 28th Annual Colloquium on Aging. UW–Madison Institute on Aging. Madison, WI. September 2016. (*Voted most popular speaker by colloquium attendees.*)
10. Maintaining balance while aging: choose your steps carefully. The Wisconsin Institutes for Discovery: Noon @ the Niche lecture series. University of Wisconsin–Madison. Madison, WI. March 2016.
11. Maintenance of balance with aging: choose your steps carefully. UW–Madison Institute on Aging Materials Science Program. Madison, WI. October 2015.

Grant Support

Completed:

R01HD092697-01S1 (PI: Thelen DG) 2018 – 2019
NIH Eunice Kennedy Schriver National Institute of Child Health & Human Development
Research Supplement to Promote Diversity in Health-Related Research
"Noninvasive assessment of in vivo tissue loads to enhance the treatment of gait disorders"
Role: Co-Investigator
Amount: $35,915

R25GM083252 (PI: Carnes, ML) 2015 – 2017
NIH General Medical Sciences
Initiative for Maximizing Student Development
"Training and education to advance minority scholars in science (TEAM-Science)"
Role: Trainee

Graduate Research Scholar Fellowship 2014 – 2018
State of Wisconsin Advanced Opportunity Program & Wisconsin Alumni Research Foundation
Community: Graduate Engineering Research Scholars, University of Wisconsin–Madison

Honors & Awards

Finalist, International "Rethink EMG" Competition. Delsys Inc. 2022
Best paper award (with Engdahl SM). Trent International Prosthetics Symposium. 2022
Finalist, Graduate Student Rapid Poster Award Competition, International Society of Biomechanics. 2019
Travel Award, Education Council of the Gait and Clinical Movement Analysis Society. 2019
3rd place, Engineering Expo Graduate Exhibits, UW–Madison. 2019
Finalist, Doctoral Student Presentation Competition, American Society of Biomechanics. 2018
Runner Up, ASME-BED PhD Level Student Paper Competition, 8th World Congress of Biomechanics. 2018
Student Travel Grant, De Luca Foundation, 8th World Congress of Biomechanics. 2018
1st place, Engineering Expo Graduate Exhibits, UW–Madison. 2018
Kevin Granata Young Investigator Award, Gait and Clinical Movement Analysis Society. 2017
Finalist, Best Paper Award, Gait and Clinical Movement Analysis Society. 2017
Student Travel Grant, De Luca Foundation, American Society of Biomechanics. 2017
Greatest Impact Award, National Biomechanics Day Student Competition. 2017
1st place, Engineering Expo Graduate Exhibits, UW–Madison. 2017
Travel Award, Education Council of the Gait and Clinical Movement Analysis Society. 2017
Mechanical Engineering—Graduate School Physical Sciences Division Fellowship, UW–Madison. 2016
1st place, Engineering Expo Graduate Exhibits, UW–Madison. 2016
Diversity Travel Award, American Society of Biomechanics. 2015
NCEES Fundamentals of Engineering Exam. 2012

Professional Organizations

Member, Center for Adaptive Systems of Brain-Body Interactions, George Mason University
Member, American Society of Biomechanics
Member, Biomedical Engineering Society
Member, International Society of Electrophysiology and Kinesiology
Member, Gait and Clinical Movement Analysis Society
Affiliate Member, UW–Madison Teaching Academy
Affiliate Member, National Postdoctoral Association

Professional Service

Manuscript Review:

Biomechanics
Gait & Posture
Sensors
Ultrasonic Imaging

Conference Paper Review:

American Society of Biomechanics

American Society of Mechanical Engineers, International Design Engineering Technical Conferences & Computers and Information in Engineering Conference.

Grant Review:

National Science Foundation reviewer (2023)

Special Projects in Rehabilitation Excellence(SPiRE), Veterans Health Administration Office of Research and Development.

American Orthotic & Prosthetic Association (AOPA), Center for Orthotic & Prosthetic Learning and Outcomes/Evidence-Based Practice (COPL)

Organized Symposiums:

Using Virtual Reality for Physical Rehabilitation. North American Congress on Biomechanics. Ottawa, ON. August 2022.

Conference Organization Committees:

East coast regional conference, American Society of Biomechanics. 2022 – 2023

Key Roles:

Student Advisory Committee, American Society of Biomechanics. 2016 – 2019
Chair, National Biomechanics Day Committee. University of Wisconsin–Madison. 2015 – 2018

STEM Outreach:

National Biomechanics Day presentation. College Readiness Early Identification Program, GMU. 2023
National Biomechanics Day presentation. College Readiness Early Identification Program, GMU. 2022
Career Day Panelist. College Readiness Early Identification Program, GMU. 2021
National Biomechanics Day, Engineering Expo exhibit. UW–Madison. 2019
National Biomechanics Day, Engineering Expo exhibit. UW–Madison. 2018
After school activity. Nuestro Mundo Community School. Monona, WI. 2018
Presentation. Teen Science Cafe. Wisconsin Institute for Discovery. Madison, WI. 2017
National Biomechanics Day, Engineering Expo exhibit. UW–Madison. 2017
After school activity. Nuestro Mundo Community School. Monona, WI. 2017
Classroom presentation. Federal Way High School. Federal Way, WA. 2016
National Biomechanics Day, Engineering Expo exhibit. UW–Madison. 2016
After school activity. Nuestro Mundo Community School. Monona, WI. 2016
National Biomechanics Day, Engineering Expo exhibit. UW–Madison. 2015
After school activity. Nuestro Mundo Community School. Monona, WI. 2015
Classroom presentation. Akira Toki Middle School. Madison, WI. 2014

Other:

Senior Design Adjudicator. Jonsson School of Engineering & Computer Science, UT Dallas. 2019

Teaching Experience

George Mason University
BENG 501 (Research Methods), Instructor 2022
BENG 375/575 (Intellectual Prop., Regulatory Concepts, and Product Dev.), Instructor 2022
BENG 492/493 (Senior Advanced Design), Faculty Advisor for Senior Design Team 2021 – 2023
PROV801/802 (Community-Engaged Interdisciplinary Methods), Guest Lecturer 2022
ME 443/444 (Mechanical Design), Faculty Advisor for Senior Design Team 2021 – 2022
BENG 391 (Professional Development), Guest Lecturer 2021 – 2022

Gonzaga University
MENG 330 (Machine Design), Guest Lecture 2022

University of Texas at Dallas
MECH 4382 (Senior Design), Technical Manager 2020

University of Wisconsin–Madison
ME 549 (Product Design), Teaching Assistant and Lecturer 2015 – 2018
BME 200/201/300/301 (Biomedical Engineering Design), Mentor for Student Design Team 2016 – 2017
Pre-College Enrichment Opportunity Program for Learning Excellence (Mechatronics), Instructor 2017

University of Wisconsin–Milwaukee
KINES 910 (Advanced Seminar in Health Sciences), Guest Lecture 2016

Brigham Young University
ME 373 (Scientific Computing and Computer Aided Engineering), Teaching Assistant 2012

Mentoring Experience

Graduate Students
Erica King, George Mason University (Bioengineering) 2021 – Present
Joseph Majdi, George Mason University (Bioengineering) 2021 – 2022
Tony Kim, University of Texas–Dallas (Biomedical Engineering) 2019 – 2020

Undergraduate Students
Gabriel Gibson, George Mason University (Bioengineering) 2022 – Present
Maddie Krotine, University of Virginia (Biomedical Engineering) 2022
Ryan Devlin, University of Texas–Dallas (Biomedical Engineering) 2020
Bailey Ramesh, UW–Madison (Biomedical Engineering) 2017 – 2018
Isaac Loegering, UW–Madison (Biomedical Engineering) 2016
John Zunker, UW–Madison (Mechanical Engineering) 2015 – 2018

Mentored Student Honors and Awards
Faustin Prinz Undergraduate Research Fellowship, John Zunker 2016

Professional Development

Proposal Writing (ME 699). 15-week course. George Mason University. 2022
Preparing Future Faculty Workshop. 4-week course. Auburn University. 2021

Responsible Conduct of Research. 9-week course. UT Southwestern.	2020
Preparation for a Scientific Career. 9-week course. UT Southwestern.	2019
Information Mastery for Postdoctoral Trainees. 9-week course. UT Southwestern.	2019
Future Faculty Career Exploration Program. 1-week course. Rochester Institute of Technology.	2018
Research Mentor Training. 14-week course. UW–Madison.	2018
Teaching in Science and Engineering. 14-week course. UW–Madison.	2017
Effective Teaching with Technology. 14-week course. UW–Madison.	2016
Improv to improve Teaching & Science Communication. 14-week course. UW–Madison.	2016