Matthew M. Grondin

1025 W. Johnson Street
Madison, WI 53706
Phone: (608) 609-3919
Email: mgrondin@wisc.edu

FORMAL EDUCATION

2027 Ph.D., Educational Psychology-Learning Sciences & Mechanical Engineering
University of Wisconsin-Madison, Madison, WI
Advisors: Drs. Mitchell Nathan and Kate Fu

2023 M.S., Educational Psychology
University of Wisconsin-Madison, Madison, WI
Advisor: Dr. Mitchell Nathan

2018 M.S., Biomedical Engineering
University of Wisconsin-Madison, Madison, WI
Advisor: Dr. Corrine Henak

2016 B.S., Biomedical Engineering
University of Wisconsin-Madison, Madison, WI

2011 A.A.S Mechanical Design and Technology
Northcentral Technical College, Wausau, WI

HONORS AND AWARDS

2026 College of Engineering Award for Graduate Student Mentoring and Service, University of Wisconsin-Madison

2019 Honored Instructor, Department of Mechanical Engineering, University of Wisconsin-Madison

2019 Innovation in Teaching (Nominee), Department of Mechanical Engineering, University of Wisconsin-Madison

2019 M.S. Student Paper Competition Finalist, Summer Biomechanics, Bioengineering, and Biotransport Conference

2018 Early Excellence in Teaching (Nominee) , Department of Mechanical Engineering, University of Wisconsin-Madison

GRANTS AND SCHOLARSHIPS

Jenny Alexander Perseverance Fellowship (2025)
Funding Agency: Wisconsin Center for Educational Research
Amount: $3,500
Role: Graduate Research Assistant

Interdisciplinary Training Program Fellowship (2021-2024)
Funding Agency: Institute for Educational Sciences
Amount: $34,000/year
Role: Graduate Research Assistant

Kemper K. Knapp (2020)
Funding Agency: University of Wisconsin-Madison
Amount: $8,000
Role: Engineers Without Borders-Student Chapter

Wisconsin Idea Fellowship (2020)
Funding Agency: University of Wisconsin-Madison
Amount: $7,000
Role: Engineers Without Borders-Student Chapter

Piper Servant Leadership Fellowship (2020)
Funding Agency: University of Wisconsin-Madison
Amount: $2,500
Role: Engineers Without Borders-Student Chapter

PUBLICATIONS

Paper in Published Proceedings (Peer Reviewed)

1. Haglund, J., Asenova, M., Garzetti, M., **Grondin, M. M.**, Groß, J., & Michelsen, M. (2026). Conceptual blending in STEM education: Stimulating embodiment, creativity, and communication. In J. Bruun & M. Kersting (Eds.), Transitions in science education: Sustainability and digital advances (Proceedings of ESERA 2025) (pp. 490–495). Københavns Universitet, Institut for Naturfagenes Didaktik. https://www.esera.org/wp-content/uploads/2026/07/ESERA_2025_eProceedings.pdf

2. **Grondin, M.M.**, Swart, M. I., Fu, K., & Nathan, M.J. (2025). *Epistemological Connections: How Structure and Function Shape Mechanical Reasoning About Torsion in Gesture and Speech*. 2025 ASEE Annual Conference & Exposition.

3. Nathan, M.J., Swart, M.I., Luu, R.L., **Grondin, M. M.**, & Smith, H.M., (2025). Direction, Magnitude & Torque: Mixed Methods Analysis of Embodied Scaffolds for Transfer of Learning [TALK]: *American Educational Research Association Conference*, Denver, CO, United States.

4. **Grondin, M.M.**, Swart, M. I., Huggett, C. H., Fu, K., & Nathan, M.J. (2024). *Engineering Students' Multimodal Discourse How Speech and Gesture Reveal Emerging Epistemologies When Reasoning About Mechanics of Materials*. 2024 ASEE Annual Conference & Exposition.

5. **Grondin, M.M.,** Swart, M.I., Fu, K., & Nathan, M.J. (2024). *Can Speech Ground Mechanical Reasoning During Engineering Discourse?* 2024 International Conference of the Learning Sciences.

6. **Grondin, M.M.**, Swart, M.I., Pandey, A. R., Fu, K., & Nathan, M.J. (2023). *How does students' use of speech ground and embody their mechanical reasoning during engineering discourse?* 2023 ASEE Annual Conference & Exposition.

7. **Grondin, M.M.**, Kim, D., Raymond, C., Huggett, C., Pandey, A.R., De Leon, C., Morrell, M., Swart, M.I., Xia, F., & Nathan, M.J. (2023). *Embodying Engineering Students' Knowledge Through Gesture.* 2023 American Educational Research Association.

8. Fogel A., Swart, M.I., **Grondin, M.M.**, & Nathan, M.J. (2023). *Pose Detection: Towards Ubiquitous Embodied Interventions*. 2023 International Conference of the Learning Sciences.

9. Fogel, A., Swart, M.I., **Grondin, M.M**, Xia, F., Schenk, K.E., & Nathan, M.J. (2023). *Scaffolding the Conceptual Salience of Directed Actions.* International Conference of the Learning Sciences.

10. **Grondin, M.**, Swart, M., Xia, F., & Nathan, M. (2022). *Assessing Engineering Students' Embodied Knowledge of Torsional Loading Through Gesture*. 2022 ASEE Annual Conference & Exposition. https://peer.asee.org/assessing-engineering-students-embodied-knowledge-of-torsional-loading-through-gesture

11. Fogel, A., Swart, M.I., **Grondin, M.M.**, & Nathan, M.J. (2022). *Grounding Embodied Learning using Online Motion Detection in The Hidden Village.* 2022 International Conference on Computers in Education.

Journal Articles

12. **Grondin, M.M.**, Liu, F., Vignos, M., Samsonov, A., Li, W., Kijowski, R., & Henak, C. (2021). Bi-Component T2 Mapping Correlates with Articular Cartilage Material Properties. *Journal of Biomechanics, 116, 110215*.

CONFERENCE PRESENTATIONS

13. Nathan, M.J., Swart, M.I., Luu, R., **Grondin, M.M.**, Kim, C., Beier, J.P., Xia, F., Kemper, R.D. (2025). Direction, Magnitude & Torque: Evidence for embodied scaffolds' impact on understanding and transfer of learning. Proceedings of Annual Conference of the Cognitive Science Society, San Francisco, CA.

14. Luu, R., Dey, I., & **Grondin, M.M.** (2023). *Exploring the Meaning of Thriving in Academic Spaces: An Experimental Collaborative Autoethnography Forum*. [Forum]. 2023 Learning Sciences Graduate Student Conference.

15. **Grondin, M.M.**, Sung, H., Dey, I., & Luu, R. (2022). *Positionality Matters: Diversifying Research Teams Can Affect Data Analyses*. [Forum]. 2022 Learning Sciences Graduate Student Conference.

16. **Grondin, M.M.** & Nathan, M.J. (2022) *Gesture-Speech Mismatch in Engineering*. [Oral Presentation]. 2022 International Society for Gesture Studies.

17. **Grondin, M.M.** (2021). *Educating Engineers Through Gesture: How Spontaneous Gesture Analysis Can Guide Educators*. [Poster Presentation]. 2021 Learning Sciences Graduate Student Conference.

18. **Grondin, M.M.**, Liu, F., Faruqui, S., Samsonov, A., Li, W, Henak, C., & Kijowski, R. (2020). *Correlation Between Single-Component and Bi-Component T2 Parameters and Proteoglycan Content and Mechanical Properties of Cartilage*. [Poster Presentation]. 2020 International Society for Magnetic Resonance Imaging in Medicine.

19. **Grondin, M.M.**, Liu, F., Vignos, M., Du, J., Henak, C., & Kijowski, R. (2019). *Comparison of Single-Component and Multi-Component T2 Parameters and Mechanical Parameters of Human Patellar Cartilage at 3.0T*. [Poster Presentation]. 2019 International Society for Magnetic Resonance Imaging in Medicine.

20. **Grondin, M. M.**, Liu, F., Vignos, M., Kijowski, R., & Henak, C. (2019). *McDespot Quantitative MRI Correlates with Articular Cartilage Material Properties*. [Poster Presentation]. 2019 Summer Biomechanics, Bioengineering, and Biotransport Conference.

TEACHING AND ADVISING

Teaching

Courses Taught/Co-Taught at the University of Wisconsin-Madison

EP 301: How People Learn
ME 201: Introduction to Mechanical Engineering
ME 306: Mechanics of Materials
ME 307: Mechanics of Materials Lab
ME 564: Heat Transfer
ME 601: Soft Tissue Mechanics
INTEREGR 170: Engineering Design Practicum
Badger Pre-College Program: Engineering Fundamentals and Design
Badger Pre-College Program: Insights into Engineering Fields of Study

Advising

University of Wisconsin-Madison

Undergraduate Engineering Students (Completed): 3

PROFESSIONAL DEVELOPMENT

2024 Certificate of Research, Teaching, and Learning, DELTA, University of Wisconsin-Madison

2023 Undergraduate Research Mentee Training, DELTA, University of Wisconsin-Madison

2019 Teaching in Science and Engineering: The College Classroom, DELTA, University of Wisconsin-Madison

2019 Leveraging Tech to Teach, DELTA, University of Wisconsin-Madison

2019 Informal Science Education for Scientists and Engineers, DELTA, University of Wisconsin-Madison

OUTREACH OPPORTUNITIES

Science Expeditions Volunteer, Showcasing The Hidden Village Narrative and GeoGebra HoloLens Video Games, University of Wisconsin-Madison, 2026

Science Expeditions Volunteer, Showcasing The Hidden Village Narrative and GeoGebra HoloLens Video Games, University of Wisconsin-Madison, 2025

KidWind, Volunteer Program Judge, 2024, University of Wisconsin-Madison, 2025

Science Expeditions Volunteer, Showcasing The Hidden Village Narrative Video Game, University of Wisconsin-Madison, 2022

KidWind, Volunteer Program Judge, 2022, University of Wisconsin-Madison, 2025

Engineers Without Borders-Student Chapter Volunteer, Grant Writer, University of Wisconsin-Madison, 2020-2021

Engineering Expo Volunteer, Uniaxial Tension and Compression Testing Activity, University of Wisconsin-Madison, 2017-2018

Engineering Expo Volunteer, High School Engineering Student Chauffer, University of Wisconsin-Madison, 2014-2016