Samuel Engblom

Assistant Professor of Instruction, Texas State University, San Marcos, TX
sengblom@txstate.edu — +01 (406) 589-7756 — LinkedIn

RESEARCH INTERESTS

Physics Education Research, Conceptual Resources for Physics, Collaborative Learning, Group Work Dynamics, Undergraduate Learning Assistants, Graduate Teaching Assistant Training, Pedagogical Knowledge Development, Responsive Teaching

EDUCATION

University of Illinois Urbana-Champaign, Urbana, IL — 2017 — 2024
Ph.D., Physics, 2024
Supervisor: Eric Kuo
Thesis: Identifying and building on Learning Assistants' resources for taking up constructivism-aligned teaching practices

Montana State University, Bozeman, MT — 2012 — Dec. 2016
Bachelor of Science: Physics
Bachelor of Science: Electrical Engineering
Minor: Mathematics
Minor: Optics and Photonics

ACADEMIC EXPERIENCE

Assistant Professor of Instruction — San Marcos, TX
Texas State University — 2026 — Present

- PHYS 1335: General Physics I for life science majors
- PHYS 1365: Physics for educators

Postdoctoral Research Associate — Urbana, IL
University of Illinois Urbana-Champaign — 2025 — 2026

- Methodologies: semi-structured interviews, video analysis, coding schemes, task design
- Case studies and complex systems analysis of student collaborative learning in introductory labs
- Designed, implemented, and evaluated the outcomes of a Graduate Teaching Assistant Professional Development

Lab Coordinator for PHYS 101: College Physics I — Urbana, IL
University of Illinois Urbana-Champaign — 2025 — 2026

- Designed and revised introductory physics lab curricula based on best practices from education literature
- Led weekly training meetings for Graduate Teaching Assistants and Undergraduate Learning Assistants

Graduate Research Assistant — Urbana, IL
University of Illinois Urbana-Champaign — 2021 — 2024

- Case study research on Undergraduate Learning Assistant teaching practices
- Developed a coding scheme that identifies instructor resources for responsiveness
- Designed and assessed the outcomes of a pedagogy course for Undergraduate Learning Assistants
- Mentored undergraduate researchers in qualitative research methodologies

Instructor of Record for PHYS 394: Pedagogy Teaching Physics — Urbana, IL
University of Illinois Urbana-Champaign — Fa. 2023 — Sp. 2024

- Designed and implemented a course reform to increase undergraduate Learning Assistant uptake of constructivism-aligned teaching practices
- Created and piloted written evaluations used to assess undergraduate Learning Assistant pedagogical knowledge

Graduate Teaching Assistant — Urbana, IL
University of Illinois Urbana-Champaign — 2017 — 2021

- PHYS 394: Pedagogy Teaching Physics — Sp. 2019—Fa. 2021
- PHYS 101 & 102: College Physics Laboratory — Fa. 2019—Fa. 2020
- PHYS 102: College Physics E&M Discussion — Sp. 2018—Fa. 2018
- PHYS 101: College Physics Mechanics Discussion — Fa. 2017

Undergraduate Teaching Assistant — Bozeman, MT
Montana State University — 2015 — 2017

- PHSX 301: Mathematical Methods in the Physical Sciences — Sp. 2017
- PHSX 205 & 207: College Physics I & II — Fa. 2015 — Sp. 2017
- EELE 308: Signals and Systems Analysis — Fa. 2015

PROJECTS

Group Hierarchies and Collaboration University of Illinois Urbana-Champaign, IL
Postdoctoral Research Associate 2025 — Present

- Video analysis of student groups working together in introductory physics labs
- Conducted semi-structured interviews with members of participating student groups
- Modeling of student groups as complex systems with both individual-level and group-level behavior

TA Collaborative Learning Professional Development University of Illinois Urbana-Champaign, IL
Postdoctoral Research Associate 2025 — Present

- Designed course content based on research-backed best practices
- Gathered and analyzed quantitative data of student-student and student-TA interactions

Conceptual Resources of Learning Assistants for Responsive Teaching University of Washington-Seattle, WA
Graduate Researcher Fa. 2022 — 2025

- Collected Learning Assistant reflections and written work for analysis
- Developed a coding scheme identifying Learning Assistant resources for responsiveness to student thinking
- Coded Learning Assistant data from four institutions

University of Illinois Urbana-Champaign Physics Learning Assistant Program Urbana, IL
Graduate Researcher, Course Designer, Instructor Sp. 2019 — 2025

Mentored Students

Caitlin Mamaril University of Illinois Urbana-Champaign, IL
Graduate Research Assistant 2025 — 2026

Michael J. Matos University of Illinois Urbana-Champaign, IL
Undergraduate Research Assistant 2022 — 2024

Jackie Vargas University of Illinois Urbana-Champaign, IL
Undergraduate Research Assistant 2022 — 2024

Emma Darbro University of Illinois Urbana-Champaign, IL
Undergraduate Research Assistant Sp. 2024

PUBLICATIONS & TALKS

Journal papers

- A. Alesandrini, **S. W. Engblom**, L. Goodhew, R. Scherr, *Learning Assistants' resources for understanding instruction that centers student ideas*, International journal of STEM education, submitted & awaiting review
- In-Progress: **S. W. Engblom**, M. J. Matos, J. Vargas, E. Kuo, *"And what does that force mean?"–A case study of LA conceptual resources for constructivism-aligned instruction*
- In-Progress: **S. W. Engblom**, E. Darbro, M. J. Matos, J. Vargas, E. Kuo, *Results of a responsive teaching intervention in an undergraduate learning assistant pedagogy course*

Conference papers

- **S. W. Engblom**, J. Vargas, M. J. Matos, and E. Kuo, *"It's not all sunshine and rainbows: The role of empathy and prior experiences in a learning assistant's teaching practices*, accepted for the 2026 PERC Proceedings [Pasadena, CA, July 22-23, 2026].
- **S. W. Engblom**, M. S. Mahmood, M. J. Matos, and J. Vargas, *Learning assistants' teaching strategies for promoting scientific inquiry among undergraduate students in a physics laboratory setting*, 2023 PERC Proceedings [Sacramento, CA, July 19-20, 2023], edited by D. L. Jones, Q. X. Ryan, and A. Pawl, doi:10.1119/perc.2023.pr.Engblom.

Invited Talks

- **S. W. Engblom** (2026, Feb. 18th) *Same team, different frames: Competing student conceptions of task, collaboration, and agency in introductory physics labs* [Invited Speaker] Michigan State University Physics Education Research Seminar, East Lansing, MI
- **S. W. Engblom** (2025, Nov. 13th), *Identifying and building on Learning Assistants' resources for taking up constructivism-aligned teaching practices* [Invited Speaker] University of Colorado Boulder Physics Education Research Group Meeting, Boulder, CO
- **S. W. Engblom** (2025, Oct. 28th) *Units of Thought, Agents of Mind: Resource Models of Human Cognition* [Invited Speaker] Champaign Public Library Seminar Series, Champaign, IL

Talks & Posters

- **S. W. Engblom**, J. Vargas, M. J. Matos, E. Kuo (2026, July 22-23). *"It's not all sunshine and rainbows: The role of empathy and prior experiences in a learning assistant's teaching practices* [Poster Session]. Physics Education Research Conference 2026, Pasadena, CA, United States.
- **S. W. Engblom**, C. Mamaril, K. Ansell (2026, Jul. 18-22). *Characterizing introductory physics lab groups using a complex systems framework* [Conference Session]. American Association of Physics Teachers 2026 Summer Meeting, Pasadena, CA, United States.
- C. Mamaril, K. Ansell, **S. W. Engblom** (2026, Jul. 18-22). *Using "the group" for the group: A study of two effective introductory physics lab groups* [Conference Session]. American Association of Physics Teachers 2026 Summer Meeting, Pasadena, CA, United States.
- D. Girotti-Hernandez, H. Talafian, **S. W. Engblom**, T. Stelzer (2026, Jul. 18-22). *From Solving Problems to Problem-Solving: Integrating Collaborative Strategies into Introductory Physics Discussion Sections* [Conference Session]. American Association of Physics Teachers 2026 Summer Meeting, Pasadena, CA, United States.
- **S. W. Engblom**, C. Mamaril, K. Ansell (2025, Aug. 2-6). *Barriers to student epistemic agency during collaboration in introductory labs* [Conference Session]. American Association of Physics Teachers 2025 Summer Meeting, Washington, D.C., United States.
- K. Ansell, C. Mamaril, **S. W. Engblom** (2025, Aug. 2-6). *A strengths-based conceptualization of student roles in lab groups* [Conference Session]. American Association of Physics Teachers 2025 Summer Meeting, Washington, D.C., United States.
- H. Talafian, D. Girotti-Hernandez, **S. W. Engblom**, E. Kuo, T. Stelzer (2025, Aug 2-6). *Developing a Scalable Professional Development Program to Support Physics Teaching Assistants* [Poster Session]. Physics Education Research Conference 2025, Washington, D.C., United States.
- C. Mamaril, **S. W. Engblom**, K. Ansell (2025, Aug 6-7). *Writing as a strength: students' perceptions on writing in introductory laboratory group work* [Poster Session]. Physics Education Research Conference 2025, Washington, D.C., United States.
- **S. W. Engblom**, E. Darbro, M. J. Matos, J. Vargas, N. Khera, S. Lewsirirat, E. Kuo (2024, June 20-23). *What counts as responsiveness? Studying a responsive teaching intervention in a LA lab pedagogy course* [Poster Session]. Foundations and Frontiers of Physics Education Research: Puget Sound 2024, Diablo, WA, United States.
- **S. W. Engblom**, M. S. Mahmood, M. J. Matos, J. Vargas (2023, July 15-19). *Examining the teaching practices of LAs in introductory physics labs* [Conference Session]. American Association of Physics Teachers 2023 Summer Meeting, Sacramento, CA, United States.
- M. J. Matos, J. Vargas, **S. W. Engblom**, M. S. Mahmood (2023, July 15-19). *Examining the teaching practices of LAs in introductory physics* [Poster Session]. American Association of Physics Teachers 2023 Summer Meeting, Sacramento, CA, United States.
- J. Vargas, M. J. Matos, **S. W. Engblom**, M. S. Mahmood (2023, July 19-20). *Learning assistants' teaching strategies for promoting scientific inquiry among undergraduate students in a physics laboratory setting* [Poster Session]. Physics Education Research Conference 2023, Sacramento, CA, United States.
- **S. W. Engblom**, M. J. Matos, J. Vargas, E. Kuo (2022, July 9-13). *How an LA's Prior Student Experience Can Ground their Teaching* [Conference Session]. American Association of Physics Teachers 2022 Summer Meeting, Grand Rapids, MI, United States.
- **S. W. Engblom**, M. J. Matos, J. Vargas, E. Kuo (2022, July 13-14). *How an LA's Prior Student Experience Can Ground their Teaching* [Poster Session]. Physics Education Research Conference 2022, Grand Rapids, MI, United States.
- **S. W. Engblom**, E. Kuo (2021, August 4-5). *Studying the Learning Assistant Experience at the University of Illinois Urbana-Champaign* [Poster Session]. Physics Education Research Conference 2021, Virtual.
- **S. W. Engblom**, M. Selen (2020, July 19-22). *They're smarter than us: Algebra-based learning assistants in calculus-based labs* [Conference Session]. American Association of Physics Teachers 2020 Summer Meeting, Virtual.
- **S. W. Engblom**, M. Lundsgaard, M. Selen (2019, July 20-24). *Implementing Undergraduate Learning Assistants in Introductory Physics Labs* [Conference Session]. American Association of Physics Teachers 2019 Summer Meeting, Provo, UT, United States.
- **S. W. Engblom** (2016, Nov. 9-10) *The Third Culture: Rootless, Restless*, PechaKucha Vol. 21, Bozeman, MT, United States
- **S. W. Engblom** (2014, Feb. 4-5) *The Science of Rainbows*, PechaKucha Vol. 10, Bozeman, MT, United States

AWARDS

Scott Anderson Award Urbana, IL
Awarded in recognition of outstanding work by a graduate teaching or research assistant 2024

8 x Ranked as Excellent Physics Instructor by Students Urbana, IL
Awarded based on end-of-semester course evaluations Fa.2017 — Sp.2025

William E. Parkins Scholarship for Excellence in Physics and Engineering Bozeman, MT

Awarded for excellence in undergraduate studies in physics and engineering 2015, 2016

REFERENCES

Prof. Eric Kuo
Associate Professor, Physics, University of Illinois Urbana-Champaign, Urbana, IL
E-mail: ekuo@illinois.edu
Scholar Profiles: University of Illinois Urbana-Champaign - Personal Page — Google Scholar

Prof. Katie Ansell
Teaching Assistant Professor, Physics, University of Illinois Urbana-Champaign, Urbana, IL
E-mail: ansellk@illinois.edu
Scholar Profiles: University of Illinois Urbana-Champaign - Personal Page — Google Scholar

Prof. Tim Stelzer
Professor, Physics, University of Illinois Urbana-Champaign, Urbana, IL
E-mail: tstelzer@illinois.edu
Scholar Profiles: University of Illinois Urbana-Champaign - Personal Page — Google Scholar