Matthew S. Barner
Ph.D., P.E.

Assistant Professor of Civil Engineering
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ACADEMIC APPOINTMENTS

Assistant Professor, Civil Engineering, Donald P. Shiley School of Engineering, University of Portland, July 2022 – Present.

Part-Time Adjunct Professor, St. Martin's University, May 2025 – Present.

Graduate Research and Teaching Assistant, School of Civil and Construction Engineering, Oregon State University, January 2015 – September 2019.

Undergraduate Research Assistant, Department of Civil and Environmental Engineering, Washington State University, August 2012 – August 2013.

EDUCATION

Ph.D., Civil Engineering, Oregon State University, August 2019. Focus on Engineering Education. Dissertation: Conceptual Representations within the Social and Material Contexts of an Engineering Workplace and Academic Environments.

M.S., Civil Engineering, Oregon State University, December 2017. Focus on Engineering Education. Thesis: Pull-Oriented Faculty Development: A Multiple, Descriptive-Explanatory Case Study.

B.A., Physics, Pacific Lutheran University, January 2015. Minor in Mathematics.

B.S., Civil Engineering, Washington State University, December 2014. Focus on Structural Engineering.

RELEVANT PROFESSIONAL EXPERIENCE

Independent Contractor, Oregon State University, Corvallis, OR, July 2024 – September 2025

- Qualitatively analyzed interview data from emergency managers regarding seismic resilience of communities in Oregon.

Structural Engineer II, Mackenzie, Portland, Oregon, September 2019 – August 2022

- Designed, analyzed, and supported construction of new and existing structures primarily related to semiconductor manufacturing.

Intern, Mackenzie, Portland, Oregon, October 2018 – January 2019.

- Assisted in the design, analysis, and construction administration of new and existing structures related to multiple different project types.

Intern/Extra-Hire Field Engineer, Pierce County Public Works and Utilities, Tacoma, Washington, May 2014 – August 2014.

- Performed field inspections of sewage installation projects.

COURSES TAUGHT

University of Portland
Engineering Courses:
- EGR 111 – Engineering Computing with Applications
- EGR 322 – Strength of Materials

Civil Engineering Courses:
- CE 201 – Introduction to Civil Engineering Design Graphics
- CE 302 – Construction Materials
- CE 351 – Structural Analysis I
- CE 353 – Reinforced Concrete Design
- CE 355 – Fundamentals of Construction and Structural Design
- CE 371 – Geotechnical Laboratory
- CE 441 – Structural Steel Design
- CE 491 – Timber Design

Tongji University facilitated by St. Martin's University
Civil Engineering Courses:
- Reinforced Concrete Structures

Oregon State University
Engineering Courses:
- ENGR 211 - Statics

SCHOLARLY WORK

Underline denotes undergraduate author.

Peer-Reviewed Journal Publications
1. Sanchez, D., **Barner, M.**, & Brown, S. (2022). Comparing Engineering Student and Practitioner Performance on the Strength of Materials Concept Inventory: Results and Implications. *Journal of Civil Engineering Education, 148*(3).
2. **Barner, M.**, Brown, S., Bornasal, F., & Linton, D. (2022). Tangibility of Representations in Engineering Courses and the Workplace. *Journal of Engineering Education, 111*(1), 162-184.
3. **Barner, M.** & Brown S. (2021). Design Codes in Structural Engineering Practice and Education. *Journal of Civil Engineering Education, 147*(2).
4. **Barner, M.**, Brown, S., & Linton, D. (2021). Structural Engineering Heuristics in an Engineering Workplace and Academic Environments. *Journal of Civil Engineering Education, 147*(2).

5. Gestson, S., **Barner, M.**, Abadi, M., Hurwitz, D., & Brown, S. (2019). Problem Solving Personas of Civil Engineering Practitioners using Eye Tracking Techniques. *International Journal of Engineering Education, 35*(4), 1074-1093.
6. **Barner, M.**, Brown, S., Lutz, B., & Montfort D. (2018). How Engineering Faculty Interpret Pull-Oriented Innovation Development and Why Context Matters. *International Journal of Engineering Education, 34*(5).

Peer-Reviewed Conference Proceedings

1. **Barner, M.S.** & Gestson, S.L. (June 2026). *Engineering Tutors' Perspectives on How to Increase Engineering Students' Utilization of Peer Tutoring – A Work-in-Progress*. ASEE Annual Conference, Charlotte, North Carolina. (Accepted, not yet published).
2. Gestson, S.L., **Barner, M.S.**, Zipp, R. (June 2026). *Late Policies that Emphasize Professionalism*. ASEE Annual Conference, Charlotte, North Carolina. (Accepted, not yet published).
3. **Barner, M.S.** & Gestson, S.L. (June 2025). *Engaging Mechanics of Materials and Dynamics Students in Designing Curriculum for Statics.* ASEE Annual Conference, Montreal, Quebec.
4. Gestson, S.L. & **Barner, M.S.** (June 2025). *How Engineering Faculty Define and Value the Impact of University Service.* ASEE Annual Conference, Montreal, Quebec.
5. **Barner, M.S.** (April 2025). *Pacific Northwest Civil Engineering Programs Structural Design Courses: Elective or Required?* ASEE Pacific Northwest Section Conference, Moscow, ID.
6. **Barner, M.S.**, Gestson, S.L., & Dewey, A. (June 2024). *Student Led Curriculum Development: Incorporating Mechanics of Materials Students in the Design of Statics Curricula. A Work in Progress.* ASEE Annual Conference, Portland, OR.
7. Gestson, S.L., **Barner, M.S.**, Fitzgerald, R., & Farina, J. (June 2024). *Developing a Learning Innovation for an Undergraduate Mechanical Engineering Course through Faculty, Engineer, and Student Collaboration.* ASEE Annual Conference, Portland, OR.
8. Brown, S., **Barner, M.**, Gestson, S., & Desing, R. (June 2023). *Representation of Engineering Structures Concepts in Academic and Workplace Contexts.* ASEE Annual Conference, Baltimore, MD
9. Sanchez, D., Brown, S., & **Barner, M.** (July 2021). *Comparison of Conceptual Knowledge of Shear Stress in Beams Between Civil Engineering Undergraduates and Practitioners.* ASEE Virtual Annual Conference.
10. **Barner, M.**, Brown, S., & Gestson, S. (June 2019). *Conceptual representations in the workplace and classroom settings: A comparative ethnography.* ASEE Annual Conference, Tampa, FL.
11. Gestson, S., Brown, S. & **Barner, M.** (June 2019). *Factors contributing to the problem-solving heuristics of civil engineering students.* ASEE Annual Conference, Tampa, FL.
12. Brown, S. & **Barner, M.** (June 2019). *Representation of engineering concepts in academic and engineering workplace settings: How situated are engineering concepts in these contexts?* ASEE Annual Conference, Tampa, FL.

13. Gestson, S., Lutz, B., Brown, S., **Barner, M.**, Hurwitz, D. & Abadi, M. (June 2018). *Developing an understanding of civil engineering practitioner problem solving rationale using multiple contextual representations.* ASEE Annual Conference, Salt Lake City, UT.
14. Brown, S. & **Barner, M.** (June 2017). *Extended faculty development effort based on faculty needs.* ASEE Annual Conference, Columbus, OH.
15. Brown, S. & **Barner, M.** (June 2017). *Examining engineering concepts in practice: Is conceptual understanding relevant to practice?* ASEE Annual Conference, Columbus, OH.
16. **Barner, M.** & Brown, S. (October 2016). *Providing meaningful change in the engineering classroom.* FIE Annual Conference, Erie, PA.

Other Publications

1. **Barner, M.**, Brown, S., Bornasal, F., & Linton, D. (Fall 2023). "Concepts in Context." *Prism 33*(1), 22. ASEE.

Invited Presentations

1. Guest Lecture. University of Portland CORE 391X - Portland and the Public Imagination. Burnside Bridge Replacement Project. March 2025.
2. Guest Lecture. Oregon State University Strength of Materials. June 2024.
3. Alumni Panel. Oregon State University Graduate Seminar. November 2023.
4. UPEAC. University of Portland SSOE Advisory Board Meeting. October 2023.
5. The Story Behind the Story: Unpacking the Publication Process for Journal of Engineering Education Articles. ASEE Annual Conference Educational Research and Methods (ERM) Division Special Session, June 2023.
6. Sociomaterial Contexts of Concepts in Academic and Workplace Settings: How and Why Can Aspects of the Workplace be Replicated in Courses. NSF EEC Grantees Conference, September 2022.

GRANTS AND FELLOWSHIPS

External

1. NSF RFE Award Winner (Co-author and graduate student researcher of grant proposal). Representation of engineering concepts in academic and workplace settings: How situated are engineering concepts in these contexts? 2017, $350,000.

Internal

1. Shiley Grant for Faculty Research and Development. Current State of Concept Inventories as Research Instruments and Assessment Tools for Measuring Conceptual Understanding, 2026, $10,500.
2. Butine Faculty Development Grant. Developing a Framework for Explaining the Value of a Liberal Arts Education to Engineering Students. Funded by University of Portland, 2025, $3,253.
3. KEEN Illumination and Elevation Grant, KEEN University of Portland, 2025-2026, $1,500.

4. Inclusive Teaching Scholar Program. Funded by University of Portland, 2024-2025, $1,000.
5. Butine Faculty Development Grant. Identifying and Implementing Strategies for Increasing Student Utilization of Co-Pilot Tutoring. Funded by University of Portland, 2024, $3,000.
6. KEEN Illumination and Elevation Grant, KEEN University of Portland, 2024-2025, $1,500.
7. KEEN Module Development Grant, KEEN University of Portland, 2023-2024, $1,500.
8. Shiley Grant for Faculty Research and Development. Student Curriculum Development. Funded through Shiley School of Engineering, 2024, $11,500.
9. KEEN Module Development Grant. KEEN University of Portland, 2022-2023, $1,100.
10. Shiley Grant for Faculty Research and Development. Student Curriculum Development. Funded through Shiley School of Engineering, 2023, $11,500.
11. Butine Faculty Development Grant. Engaging Strengths of Materials Students in Curriculum Development for Engineering Statics Course. Funded by University of Portland, 2023, $1,987.75

AWARDS AND HONORS

1. William Elgin Wickenden Award, 2022. Awarded annually to the article publish in the *Journal of Engineering Education* that represents the highest standards of scholarly research.
2. ASEE Educational Research and Methods Division (ERM) Best Paper Award, 2019. Awarded to the best ASEE annual conference paper submitted in the ERM Division.
3. Stephen J. Ressler Best Paper Award, 2019. Awarded to the best ASEE annual conference paper submitted in the Civil Engineering Division.

STUDENTS ADVISED

Undergraduate Research Mentor, University of Portland, Portland, OR

1. Ainsley Henry, Spring 2025
2. Rhianna Fitzpatrick, Summer 2023 & Spring 2024
3. Audrey Dewey, Summer 2023

Undergraduate Research Mentor, Oregon State University, Corvallis, OR

1. Lauren Wallace, Fall 2017-Spring 2018
2. Rosalba Brambila, Summer 2015-Summer 2016
3. Moises Valiente, Summer 2015-Summer 2016
4. Alessandra Hossley, Summer 2015-Summer 2016

Senior Capstone Advisor, University of Portland, Portland, OR

1. Civil engineering team, Canby Senior Living Building, partner Ogren Engineering (2025-2026)
2. Civil engineering team, UFSWQD Pump Station, partner UFSWQD (2024-2025)
3. Mechanical engineering team, ASHRAE Design Competition, partner SSOE (2024-2025)

4. Civil engineering team, PDX Terminal Mass Timber Terminal Core and Sourcing Optimization, partner Skanska (2023-2024)
5. Civil engineering team, MCDD Pump Station, partner MCDD (2022-2023)

Research Mentor, Oregon State University
1. Stephanie Adams, M.S. and Ph.D. student (Spring 2025 - present)
2. Dominga Sanchez, Ph.D. student (Spring 2022)

SERVICE

University of Portland
1. Committee on Academic Regulations, 2024-Present
2. Learning Community for Inclusive Teaching Communities of Practice Co-Facilitator, 2026
3. Core Accompanier, 2024 & 2025
4. Honors Mentor, 2024-2025
5. Pilots UP Academic Pages Focus Group, 2025
6. Brand & Web Project Workshop, 2024

Shiley School of Engineering
1. ASCE Student Chapter Faculty Advisor, 2024-Present
2. Shiley Scholarship Dinner Volunteer, February, 2026
3. Academic Preview Day Volunteer, November, 2025
4. Assisting Adjunct Professor Scott Ogren with teaching CE 201 Fall 2025
5. ASCE Steel Bridge Competition Team Technical Advisor, 2023-2024 & 2024-2025 Teams
6. KEEN Fellow: Civil Engineering, 2023-Present
7. Engineering Faculty Representative, Weekend on the Bluff, April 2023-2026
8. Engineering Faculty Representative, First/Second Year Family Weekend, February 2023 & 2024
9. Engineering Faculty Representative, Junior/Senior Year Family Weekend, November 2022 & 2023

Professional
1. Associate Editor: *Journal of Civil Engineering Education*, 2025-Present
2. ASEE Campus Representative, 2025-Present
3. KEEN National Conference Planning Committee, 2025-Present
4. KEEN Community Catalyst, 2024-2025
5. KEEN EUFD Pilot Tester, 2024-2025
6. Peer Reviewer: *Journal of Engineering Education,* 2024-Present
7. Peer Reviewer: *Studies in Engineering Education,* 2020-Present
8. Editorial services for ASCE's *Journal of Civil Engineering Education*, 2020-2025
9. Peer Reviewer: *Journal of Civil Engineering Education,* 2020-Present
10. Peer Reviewer: ASEE National Annual Conference Proceedings, 2019-Present

11. NSF IUSE Mentor for Contextualized Scaffolding for Engineering Faculty to Facilitate the Adoption of EBIPS, Spring 2024
12. Treasurer, ASEE Student Chapter, Oregon State University, 2015-2018
13. Judge, Honors Statics Design Competition, Oregon State University, Fall 2017
14. Paper Reviewer: FIE National Annual Conference Proceedings, 2016.
15. Chair, FIE Peer Tutoring and Mentoring Session, 2016

Community

1. Judge, Oregon Science Olympiad, University of Portland, March 2026
2. Volunteer, ASCE High School Regional Bridge Competition, University of Portland, March 2026
3. Educator, Saturday Academy Urban Engineers, University of Portland, Winter 2024
4. Educator, Saturday Academy STEAMscapes Creations, University of Portland, Fall 2023
5. Mentor, ACE Mentor Program of Oregon, Portland, OR, 2020-2023
6. Design Professional, AFO Architects in Schools, Portland, OR, 2022
7. Volunteer, ITE Student Chapter Highway 34 road cleanup, Oregon State University, 2015-2019

PROFESSIONAL CREDENTIALS AND MEMBERSHIPS

Professional Engineer, Oregon, License 99678PE.
Engineer-in-Training, Washington, License 34268.
American Society of Civil Engineers (ASCE)
American Society for Engineering Education (ASEE); Divisions: Educational Research and Methods, Faculty Development
American Concrete Institute (ACI)
American Institute of Steel Construction (AISC)

OTHER PROFESSIONAL DEVELOPMENT

1. Learning Community for Inclusive Teaching, University of Portland, Fall 2024-Spring 2026.
2. Constructive Dialogue Institute, University of Portland, Spring 2026.
3. KEEN National Conference, Oklahoma City, OK, January 2026
4. KEEN Leader Meeting, Milwaukee, WI, September 2025
5. KEEN National Conference, Austin, TX, January 2025
6. AI & Ethics Workshop, University of Portland, June 2024 & January 2025
7. ASEE Beginning Research in Engineering Education: Designing Quantitative and Qualitative Studies Workshop, Virtual, November 2024
8. ASEE Essentials of Effective Manuscript Preparation Workshop, Virtual, October 2024
9. KEEN Leader Meeting, Milwaukee, WI, September 2024
10. KEEN Leader Orientation Workshop, Milwaukee, WI, June 2024
11. Grading Conference, Virtual, June 2024
12. NSF CAREER Workshop, Virtual, May 2024
13. Leadership Fellows Formation Program, University of Portland, December 2023

14. Green Dot Training College Curriculum, University of Portland, August 2023
15. KEEN EUFD Entrepreneurial Mindset in Civil Engineering (EMCE), St. Louis, MO, August 2023
16. National Effective Teaching Institute (NETI) – 1 Workshop, University of Portland, May 2023
17. Inclusive Teaching Working Group, University of Portland, March-April, 2023.
18. KEEN Engineering Unleashed Faculty Development (EUFD) ICE 1.0, Tempe, AZ, January 2023