

# ANN SITOMER

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## PROFESSIONAL PROFILE

Instructional leader in STEM education with significant experience in college teaching; a commitment to postsecondary faculty development; expertise supporting and evaluating effective, evidence-based teaching practices; research and facilitation experience on initiatives to improve student learning in postsecondary introductory STEM courses; and a research program that focuses on adult learning, faculty development and organizational change in the context of educational change initiatives. Active member of national networks of professionals committed to transforming learners' experience in postsecondary classrooms by focusing on ambitious and inclusive classroom teaching practices.

## PROFESSIONAL HIGHLIGHTS

- **Leadership experience** in project team management; guiding the development of a research agenda in community college mathematics education; designing and implementing assessments of students' progress towards learning outcomes; and curriculum development and evaluation.
- **Teaching development experience** as a practitioner dedicated to continuous improvement; as an active member of faculty advisory boards for a Teaching and Learning Center at a two-year college; as a designer of and presenter for faculty development workshops; as a change agent supporting best practices in the evaluation of postsecondary teaching; and as a researcher with a focus on faculty teaching development and organizational change.
- **Facilitation experience** supporting collaborations between faculty members in science, mathematics and engineering to improve student learning through the adoption and adaptation of evidence-based and equitable teaching practices in introductory STEM courses.
- **Postsecondary teaching experience**, including developing curricula and implementing evidence-based practices to support adult learning.
- **Education research experience** and the ability to communicate findings from education research to practitioners.
- **Grant writing experience** to obtain funding to support initiatives in college mathematics curriculum and faculty development, as well as researching the systems in which postsecondary teaching and learning occur.
- **Fiscal experience** developing and overseeing budgets.

## EDUCATION

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**PhD, Mathematics Education**, *Portland State University*, Portland, OR

**MA, Mathematics**, *Arizona State University*, Tempe, AZ

**BA, Mathematics**, *University of Southern Maine*, Portland, ME

**BA, Liberal Arts**, *St. Johns College*, Annapolis, MD

## GRANT EXPERIENCE: EDUCATIONAL DEVELOPMENT AND ORGANIZATIONAL CHANGE

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**Project co-PI**, July 2017 – Present. *Scholarly Leaders Originating as Practicing Educators in Two-Year College Mathematics: Project SLOPE* (National Science Foundation, \$300,000).

- Conduct, with project co-PI, a feasibility study to assess support structures two-year faculty need to engage in the Scholarship of Teaching and Learning (SoTL).
- Design, with project PI, application guidelines and activities for the first cohort of Project SLOPE Fellows through the professional organization of two-year college mathematics faculty.
- Evaluate, with project co-PI, the experiences of Project SLOPE Fellows as they engage in SoTL as two-year college faculty members at their respective institutions in order to make recommendations for scaling up Project SLOPE

**Project PI**, September 2016 – Present. *Designing Environments for Learning about Community College Mathematics Teaching* (Spencer Foundation, \$50,000).

- Design and facilitate, with project co-PI, a yearlong faculty inquiry group to examine teaching and learning in developmental mathematics in a community college setting. Foci of inquiry included the following: attending to learners' status in whole-class discussion and small-group activities; designing group-worthy to support learners' understanding of big mathematical ideas; and using learners' mathematical contributions as a resource for learning.
- Conduct a retrospective analysis of artifacts gathered over the academic year (video-recordings of inquiry group meetings, participants' feedback and journal assignments, and researchers' notes) that will lead to a practical theory of how learning emerged as educators interacted with the designed activities.

**Senior Personnel**, Collaborative research proposal submitted to NSF December 2018. *DIRACC Phase 2: Developing and Investigating a Rigorous Approach to Conceptual Calculus - Scaling Up* (National Science Foundation, \$3 million)

- Conduct research on scaling an innovative and conceptually coherent calculus curriculum in the two-year college setting.

**Director of Research**, Proposal in development. *Teaching for PROWESS: Increasing Student Success in Community College Mathematics through Facilitating Systemic Instructional Change* (National Science Foundation, \$3 million)

- Design a project to support 10 two-year-college mathematics departments as they enact a three-year plan to implement recommendations to improve student learning by engaging college teams in design-based implementation research (DBIR) and by attending to policies, such as requirements to place all students in college-level mathematics, that impact educators at two-year colleges.
- Develop a research plan to use principles of DBIR to partner with participating colleges and develop a theory of how departments adopt recommendations that support student learning and negotiate external pressures.
- Use DBIR as a tool for formative evaluation of the implementation of each college's plan.

## PUBLICATIONS

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- Villanueva, K. A., Brown, S., Pitterson, N., Hurwitz, D., & **Sitomer**, A. (2017). Teaching Evaluation Practices in Engineering Programs: Current Approaches and Usefulness. *International Journal of Engineering Education*, 33(4), 1-18.
- Sitomer**, A. (2017). *Anchoring proportional reasoning in what learners know: It may not be what we expect*. The MathAMATYC Educator, 8(2), 50-59.
- Sitomer**, A., Ström, A., Mesa, V., Duranczyk, I., Nabb, K., Smith, J. & Yannotta, M. (2012). *Moving from Anecdote to Evidence: A Proposed Research Agenda in Community College Mathematics Education*. The MathAMATYC Educator, 4(1): 35-39.
- Bartlo, J., & **Sitomer**, A. (2008). Exploring parents' experiences with standards-based mathematics curriculum. *Adults learning mathematics: An international journal*, 3(2), 6-22.
- Tang, B., **Sitomer**, A., & Jackson, T. (1997). Population dynamics and competition in chemostat models with adaptive nutrient uptake. *Journal of mathematical biology*, 35(4), 453-479.

## REFEREED CONFERENCE PROCEEDINGS AND PAPER PRESENTATIONS

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- Sitomer**, A. Quardokus Fisher, K. & Breit-Goodwin, M.. (Accepted). *Scholarship of Teaching and Learning Reconsidered in the Two-Year College Setting*. Paper to be presented at the Council for the Study of Community Colleges, San Diego, CA.
- Pitterson, N., Brown, S., Villanuevo, K. & **Sitomer**, A. (2016). *Investigating current approaches to assessing teaching evaluation in engineering departments*. Paper presented at 2016 Frontiers in Education conference, New Orleans, LA.
- Bouwma-Gearhart, J., **Sitomer**, A., Quardokus Fisher, K., Ivanovitch, J. & Smith, C. (2016). *Studying Organizational Change: Rigorous Attention To Complex Systems Via A Multi-theoretical Research Model*. Paper presented at 2016 American Society for Engineering Education Annual Conference, Erie, PA.

- Quardokus Fisher, K., Smith, C., Koretsky, M., **Sitomer, A.**, & Bouwma-Gearhart, J. (2016). *Identifying Features of Engineering Academic Units that Influence Teaching and Learning Improvement*. Paper presented at 2016 American Society for Engineering Education Annual Conference, New Orleans, LA.
- Staples, M. & **Sitomer, A.** (2015). *Teaching, Discourse and Noticing in Mathematics Classrooms*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Sitomer, A.** (2013). *Adult Students' Mathematical Ways of Thinking Within the Developmental Mathematics Curriculum: The Case of Percentages*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Sitomer, A.** (2010). *Exploring the influence of life and school on mathematical problem solving*. Proceedings of Adults Learning Mathematics XVII, Oslo, Norway.
- Staples, M., Thanheiser, E., Bartlo, J., Heim, K. & **Sitomer, A.** (2010). *Justification in Middle School Classrooms: How Do Middle School Teachers Define Justification and Its Role in the Classroom*. Proceedings of the 32nd Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH

## APPOINTMENTS

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**Senior Researcher**, Center for Research on Lifelong STEM Learning, Oregon State University, 2019 – present.

- Coordinate the HHMI-funded initiative, InclusiveExcellence@OSU, which supports STEM instructors' learning about equitable teaching practices that create inclusive learning environments for underrepresented communities in STEM.
  - Develop, with members of the project team, a one-week academy for STEM faculty to explore equitable teaching practices

**Visiting Assistant Professor of Mathematics Education**, Portland State University, Portland, OR. 2017 – 2018.

- Revise precalculus and calculus courses based on educational research about the conceptual development of core ideas in these courses.
- Develop strategies for scaling curricula and teaching practices that support student success.
- Transform the role of course coordination in the mathematics department.
- Collaborate with colleagues in PSU's Office of Academic Innovation to provide support for the graduate teaching assistants who teach precalculus and calculus.

**Postdoctoral Scholar**, Oregon State University, Corvallis, OR. 2014 – 2016.

- Developed relationships and supported collaborations between faculty members engaged in innovative practices in mathematics, physics, biology, chemistry and engineering.
- Collaborated on initiatives to raise the profile of the work graduate teaching assistants.
- Supported faculty-researchers, who engaged in the Scholarship of Teaching and Learning in order to support student learning.
- Co-facilitated workshops with colleagues from OSU's Center for Teaching and Learning on the implementation of active learning practices and the facilitation of cooperative learning.
- Served as the Treasurer for OSU Postdoctoral Association.

**Instructor**, Portland Community College, Portland, OR, June 1995 – August 1997, September 1999 – August 2013

- *Chair of many departmental curriculum, assessment and program review committees*  
Experience setting project goals, setting agendas, leading meetings, building consensus, and documenting findings and/or report writing.
- *Instructor of mathematics courses from arithmetic through differential equations and linear algebra*  
Experience designing environments that support all participants in the learning community; listening to and inquiring into others' ideas; asking questions to move collaborative work forward; and making decisions in the moment in response to others' needs and ideas.
- *Curriculum development and curricular decision making*  
Experience designing environments to support the development of the understanding of mathematical concepts and making curricular decisions grounded on research findings.
- *Synergistic task-force and committee participation*

**Completion Investment Council**, 2012-2013

- Selected as a representative by the Executive Council of the Federation of Faculty and Academic Professionals to collaborate across the institution with faculty members, student services professionals and administrators to inquire into barriers to completion of degrees and certificates at the college.

***Oregon Career to College***, 2012-2013

- Represented campus on a statewide committee of mathematics faculty engaged in discussions around the Common Core State Standards in Mathematics, college readiness, and assessment of college readiness using the Smarter Balanced assessment, which was in development at the time.

***Executive Council, Federation of Faculty and Academic Professionals***. Vice President for Full-Time Faculty Cascade Campus, 2010-2011; Treasurer, 2012-2013

- Supported faculty and academic professionals across the institution around workload and pay equity issues.

***Steering Committee, Teaching and Learning Center***, 2003-2013

- Collaborated with center directors at the institution and other steering committee members to establish a vision for professional learning over the course of each academic year.
- Developed and presented demonstrations of student-centered learning at the New Faculty Institute, organized by the Teaching and Learning Center, 2008, 2009.

**Instructor**, Grossmont College, El Cajon, CA. 1997-1999

- Facilitated learning from introductory algebra through calculus courses.
- Collaborated on the adoption of a calculus curriculum developed by the Calculus Consortium.
- Collaborated with a physics instructor to better align the calculus and physics sequences.

**FACILITATED TEACHING DEVELOPMENT WORKSHOPS**

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*Teaching precalculus for meaning*. (2018). Workshop facilitated for high school teachers teaching in a dual enrollment program at Clackamas Community College, Oregon City, OR.

*Constructivist teaching: Designing activities that engage students in collaborative work*. (2018). Workshop facilitated at the Winter Mini-Conference for Preparing Future Faculty, Portland State University, Portland, OR.

*The Scholarship of Teaching and Learning (SoTL) in College Mathematics* (2017). Three-part workshop co-designed and facilitated at the annual meeting of the American Mathematical Association of Two-Year Colleges (AMATYC), San Diego, CA

*Building on learners' understanding: Ratios, rates and proportions*. (2017). Workshop presented at the annual conference of the Oregon affiliate of the American Mathematical Association of Two-Year Colleges (AMATYC), Lincoln City, OR

**FUTURE TEACHING DEVELOPMENT WORKSHOPS**

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*That's not right! Strategies for building on learners' mathematical contributions to whole-class discussions*. (March 2019). Workshop for members of three Lesson Study groups focused on developing activities for a quantitative reasoning course offered at Oregon two-year colleges to be facilitated at Clackamas Community College, Oregon City, OR.

*Pre-College Mathematics Perspectives* (April 2019). Workshop for STEM faculty at Columbia George Community College, The Dalles, OR.

**PROFESSIONAL SERVICE**

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American Mathematical Association of Two-Year Colleges (AMATYC)

*Executive Committee, Research in Mathematics Education at Two-Year Colleges*, 2009-present

- Collaborate within a national network of community college and university researchers to develop and refine a research agenda for community college mathematics teaching and learning.
- Collaborate within a national network of colleagues to disseminate research findings on community college mathematics teaching and learning.
- Co-organize the working group on research on community college mathematics education held at the annual meeting of Research on Undergraduate Mathematics Education 2011, 2012, 2015.
- Organize the Research Session at the annual meeting of AMATYC, 2018-present
- Collaborate with members of AMATYC leadership in strategic planning for the organization.

## RECENT PROFESSIONAL DEVELOPMENT

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- *Faculty Learning Communities Institute*, Traverse City, MI. June 18-20, 2018. Learned about best practices in a hybrid learning community. (16 continuing education hours)
- *Scholarship of Teaching and Learning with an Equity Mindset*, Evergreen College, Olympia, WA. August 22-24, 2017. Developed a SoTL project to understand students' racialized experience in my mathematics classroom. (20 continuing learning hours)
- *Improving the Preparation of Graduate Students to Teach Undergraduate Mathematics*, University of Maine, Orono, ME, June 8-10, 2016. Attended with a colleague to design teaching development activities for graduate students in chemical, biological and environment engineering. (20 continuing education hours)
- *Checking your Normal in the Classroom: Culturally Competent Teaching Activities*, Oregon State University, Corvallis, OR, April 22, 2016. (4 continuing education hours)
- *Leadership Collaborative I Mentor*, Oregon State University, Corvallis, OR, October 2015 – April 2016. Selected to mentor emergent leaders at Oregon State University. (32 continuing education hours)
- *Design-Based Implementation Research Workshop*, University of Colorado, Boulder, CO, July 16-18, 2015. Developed expertise in developing research-practitioner to supports collaborative work between multiple stakeholders to address scaling up research-based educational innovations. (16 continuing education hours)
- *Leadership Collaborative I*, Oregon State University, Corvallis, OR, April 2015–July 2015. Obtained experience with a variety of tools to develop leadership skills while performing my assigned professional duties. (24 continuing education hours)
- *Journey into Leadership*, Oregon State University, Corvallis, OR, December 2014–March 2015. Participated in seven workshops facilitated by educational leaders and developed understanding of effective leadership styles. (30 continuing education hours)

## PROFESSIONAL AFFILIATIONS

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- **American Educational Research Association (AERA)**
- **American Mathematical Association of Two-Year Colleges (AMATYC)**
- **Council for the Study of Community Colleges (CSCC)**
- **Mathematical Association of America (MAA)**