**Jana L. Bouwma-Gearhart, PhD**

**Abbreviated Curriculum Vitae**

**June 16, 2020**

**Education Information**

University of Wisconsin-Madison, WI

PhD, Curriculum and Instruction, Distributed Life Sciences Minor, 2008

M.S. in Science Education, 2003

Lawrence University, Appleton, WI

BA in Biology, 1995

BA in Anthropology, 1995

Wisconsin Teaching Certification, 1995

 Biology/Life Sciences and Anthropology

**Positions**

 **Academic Positions**

Associate Dean of Research and Faculty Advancement, College of Education, Oregon State University, 2016-present

Associate Professor, College of Education, Oregon State University, Research Focus on Postsecondary STEM Teaching and Learning and Organizational Means to Improve Education at Research Universities, September 2012-present (tenured Fall 2015 per Provost requirements in OSU faculty position contract in 2012)

Assistant Professor, STEM Education Department/Curriculum and Instruction Department, University of Kentucky, Research Focus on Secondary and Postsecondary STEM Teaching, 2008-2012

 **Other Academic Appointments**

Director, Doctoral Program, Science and Mathematics Education, Oregon State University, 2015-2016

Co-Director, Doctoral Program, Science and Mathematics Education, Oregon State University, 2013-2015

Co-director, STEM Innovation Laboratory, University of Kentucky, 2011-2012

Researcher, Association of Public and Land Grant Universities/Science and Mathematics Teacher Imperative, Focus on Institutional Change and Interdisciplinary Faculty Member Involvement in STEM Education Reform at Research Universities, 2010-2012

Chair/Co-chair Secondary Science Education Program, University of Kentucky, 2008-2012

Assistant Researcher for the Wisconsin Center for Education Research (WCER)/Center for the Integration of Research, Teaching, and Learning (CIRTL) on the Delta Professional Development Initiative for Science, Technology, Engineering, and Mathematics Faculty, Staff, and Graduate Students, University of Wisconsin-Madison, 2006-2007

Research Assistant for WCER/CIRTL on the Delta Professional Development Initiative for Science, Technology, Engineering, and Mathematics Faculty, Staff, and Graduate Students, UW-Madison, 2004-2006

Research Assistant on High School Students’ Learning *via* Inquiry, Modeling for Understanding in Science Education, National Center for Improving Student Learning & Achievement in Mathematics & Science, UW-Madison, 2002-2004

Research Assistant on Undergraduate Students’ Science Learning, Biocore Program, UW-Madison, 2004

Honors Biology Program (Biocore) Teaching Assistant, Discussion (301) and Lab (304) Sections Leader, UW-Madison, 2003-2004

Science Instructor for Pre-College Minority Students, PEOPLE Program, University of Wisconsin-Madison, Summer 2004

Research Assistant on Science Education Periodical Resources, Center for the Integration of Research, Teaching, and Learning Program, UW-Madison, 2003

 **Other Professional Positions**

Evaluator of Online Climate Change Course for Secondary Science Teachers Offered by the Space Science and Engineering Center, University of Wisconsin-Madison, WI, Summer 2008

Project Evaluator for U.S. Department of Education Grant for Mathematics and Science Partnership Professional Development Program for Middle School Science Teachers, Superior School District and Northland College, Ashland, WI, 2005-2008

Project Evaluator for U.S. Department of Education Grant for Enhancing Education through Technology, CESA #12, Ashland, WI, 2006-2008

Analyst of Alignment of Districts’ Science Curricula with State Standards, SCALE Mathematics and Science Partnership, Wisconsin Center for Educational Research, UW-Madison, 2003-2004

High School Science Instructor, Biological Sciences, Biotechnology, Astronomy, Physical Sciences, grades 9-12, Monona Grove High School, Monona, WI, 1999-2004

Fulbright Exchange Teacher for grades 6-13, Caldicot Comprehensive School, Wales, U.K., 2000-2001

Criminalistics/Forensic Biology Instructor for grades 5-10, Sage Ridge School, Reno, NV, 1999

English and Science Exchange D.P.I. Exchange Teacher to Japan, Chiharadai-Minami Junior High School, Ichihara, Japan, 1999

Middle School Physical Science Instructor, Winnequah Middle School, Monona, WI, 1997- 1999

**Scholarship and Creative Activity**

**Publications:** Journal Papers, Book Chapters, and Research Reports (\*\* designates peer reviewed selection process; **st designates former or current graduate student co-author, and pd designates postdoctoral scholars**). The *SCImago Journal Rank* (SJR) is a measure of scientific influence of scholarly journals that accounts for both the number of citations received by a journal and the importance or prestige of the journals where such citations come from, a numeric value indicating the average number of weighted citations received during a selected year per document published in that journal during the previous three years. The SCImago *h-index* expresses the journal's number of articles (h) that have received at least h citations.

**Peer-Reviewed Journal Articles**

**Published**

1. Lenhart, C. st, **Bouwma-Gearhart, J**., Villanueva, I., Youmans, K st., & Nadelson, L. (2020). Engineering faculty perceptions of university makerspaces: Potential affordances for curriculum, instructional practices, and student learning. *The International Journal of Engineering Education 36* (4), 1196-1207*.*

Scimago 2019: Quartile 1, 124/676 journals in Engineering (miscellaneous) SRJ=.448, h-index=47.

1. Hewitt, K. M. st, **Bouwma-Gearhart, J.,** Kitada, H., Mason, R., & Kayes, L. J. (2019). Introductory Biology in Social Context: The Effects of an Issues-Based Laboratory Course on Biology Student Motivation. *CBE—Life Sciences Education*, *18*(3), ar30. Scimago 2019: Quartile 1, 131/1401 journals in Education SRJ=1.173, h-index=60.
2. **Bouwma-Gearhart, J**., Adumat, S. st, Rogan-Klyve, A. st, & Bouwma, A. M. (2019). Modeling Tropical Diversity in the Undergraduate Classroom: Novel Curriculum to Engage Students in Authentic Scientific Practices. *The American Biology Teacher*, *81*(6), 417-422. Scimago 2019: Quartile 3, 666/1401 journals in Education SRJ=.338, h-index=30.
3. Marriott, L. K., Coppola, L. A., Mitchell, S. H., **Bouwma-Gearhart, J. L.,** Chen, Z., Shifrer, D., Feryn, A., & Shannon, J. (2019). Opposing effects of impulsivity and mindset on sources of science self-efficacy and STEM interest in adolescents. *PloS one*, *14*(8), e0201939. Scimago 2019: Quartile 1, 10/145 journals in Multidisciplinary Journals SRJ=1.023, h-index=300.
4. Fisher, K. Q. **pd**, Sitomer, A. **pd**, **Bouwma-Gearhart, J**., & Koretsky, M. (2019). Using social network analysis to develop relational expertise for an instructional change initiative. *International Journal of STEM Education*, *6*, Article 17. The International Journal of STEM Education is a new journal that received a Scimago impact factor **in 2019. Scimago 2019: Quartile 1, 241**/1401 journals in Education. SRJ=.85, h-index=14.
5. **Bouwma-Gearhart, J.,** Lenz, A. st, & Ivanovitch, J. st (2019). The interplay of postsecondary science educators' problems of practice and competencies: Informing better intervention designs. *Journal of Biological Education*, *53*(4), 365–377. Scimago 2019: Quartile 2, 511/1401 journals in Education, SRJ=.456, h-index=36.
6. **Bouwma-Gearhart, J**., Aster, E. st, Ivanovitch, J. st & Bouwma, A. (2018). Exploring postsecondary biology educators' planning for teaching to advance meaningful education improvement initiatives. *CBE-Life Sciences Education, 17*(3), ar37. Scimago 2018: Quartile 1, 110/2200 journals in Education, SRJ=1.162, h-index=48.
7. Pierszalowski, S. st, Vue, R., & **Bouwma-Gearhart, J**. (2018). Overcoming barriers in access to high quality education after matriculation: Promoting strategies and tactics for engagement of underrepresented groups in undergraduate research via institutional diversity action plans. *Journal of STEM Education: Innovations and Research, 19*(1), 1-8*.* This journal is relatively new and not ranked by SCImago.

# Hora, M. T., Bouwma-Gearhart, J., & Park, H. J. st (2017). Data driven decision-making in the era of accountability: Fostering faculty data cultures for learning. *The Review of Higher Education*, *40*(3), 391-426.Scimago 2017: Quartile 1, 53/1287 journals in Education, SRJ=1.610, h-index=56.

# Bouwma-Gearhart, J. & Hora, M. (2016). Supporting faculty in the era of accountability: Facilitating the use of instructional data for continuous improvement to teaching and learning. *The Journal of Higher Education Management, 31*(1), 44-56. The Journal for Higher Education Management is published by and for the American Association of University Administrators and it is not ranked by SCImago. This paper was awarded the 2017 Jerome L. Neuner Award for Excellence in Professional-Scholarly Publication for the best article in the 2016 Journal for Higher Education Management.

# Bouwma-Gearhart, J. & Bouwma, A. (2015). Meeting the next generation science standards: Exploring the tensions between natural and sexual selection through modeling-based inquiry. *The American Biology Teacher, 77*(2), 128-133*.* Scimago 2015: Quartile 3, 601/1251 journals in Education, SRJ=.270, h-index=26.

1. Adumat, S. **st** & **Bouwma-Gearhart, J.** (2014). Unintended consequences: Pre-service science teachers’ immersion in modeling-based inquiry in tropical ecology. *Journal of Education and Practice, 5*(30), p. 205-209*.*

Audiences of the the Journal of Education and Practice include both researchers and practitioners. Itis not ranked by SCImago. This paper was the result of a student master’s project.

1. **Bouwma-Gearhart, J.,** Collins, J. **st** & Ivanovitch, J. **st** (2014). An exploration of STEM education centers. *Academic Exchange Quarterly, 18*(3), 61-69. This issue of Academic Exchange Quarterly had a 29% acceptance rate. Academic Exchange Quarterly is a multidisciplinary research journal, with focus on education research, with readership in 50 countries. It is not ranked by SCImago.
2. **Bouwma-Gearhart, J.**, Perry, K., and Presley, J.B. (2014). Improving postsecondary stem education:  Strategies for successful interdisciplinary collaborations and brokering engagement with education research and theory. *The Journal of College Science Teaching, 44*(1),40-47. The Journal of College Science Teaching, a journal for postsecondary science education researchers and teachers, had around a 20-30% acceptance rate in 2014. It is not ranked by SCImago.
3. Schmid, S. & **Bouwma-Gearhart, J.** (2014). Grounding a theory of motivation from research pertaining to teaching professional development: A methodological case study. *International Journal of University Teaching and Faculty Development,* 4(2), 69-90. The International Journal of University Teaching and Faculty Development is a was an new online journal with no impact/acceptance rates to report. It is not ranked by SCImago.
4. Spencer, D. **st** & **Bouwma-Gearhart, J.** (2014). Reading strategies for secondary science teachers. *Academic Exchange Quarterly, 18*(3), 50-60. This issue of Academic Exchange Quarterly had a 29% acceptance rate. Academic Exchange Quarterly is a multidisciplinary research journal, with focus on education research, with readership in 50 countries. It is not ranked by SCImago. This paper was the result of a student master’s project.
5. Weber, E., Fox, S. **st**, Levings, S. **st** & **Bouwma-Gearhart, J.** (2013). Teachers’ conceptualizations of integrated STEM. *Academic Exchange Quarterly, 17*(3), 47-53. This issue of Academic Exchange Quarterly had a 38% acceptance rate. Academic Exchange Quarterly is a multidisciplinary research journal, with focus on education research, with readership in 50 countries. It is not ranked by SCImago. This paper was the result of students master’s project.
6. **Bouwma-Gearhart, J.** (2012). Science faculty improving teacher practice: Identifying needs and finding meaningful teaching professional development.*International Journal of Teaching and Learning In Higher Education*, *24*(2), 180-188. The International Journal of Teaching and Learning In Higher Education, a journal for researchers and educators, claims an overall acceptance rate for 2010-2012 of 19.5%. It is not ranked by SCImago.
7. **Bouwma-Gearhart, J.** (2012). Research university STEM faculty members' motivation to engage in teaching professional development: Building the choir through an appeal to extrinsic motivation and ego. *Journal of Science Education and Technology, 21*(5), 558-570.Scimago 2012: Quartile 1, 161/1169 journals in Education, SRJ=.859, h-index=48.
8. **Bouwma-Gearhart, J.** (2012). Understanding frameworks of practitioner inquiry in postsecondary science education*. International Journal of University Teaching and Faculty Development, 3*(1), 39-58. The International Journal of University Teaching and Faculty Development is a was an new online journal with no impact/acceptance rates to report. It is not ranked by SCImago.
9. **Bouwma-Gearhart, J**. (2012). Reflections on a classroom managed through modeling-based inquiry: Moving past non-discipline. *Science Scope, 35*(7), 12-15*.* Science Scope, a journal for middle school science teachers, had about a 25% acceptance rate in 2012. It is not ranked by SCImago.
10. **Bouwma-Gearhart, J.** & Bess, J. (2012). The transformative potential of blogs for research in higher education. *The Journal of Higher Education, 83*(2), 249-275. The Journal of Higher Education was the 1st highest rated journal in the field of higher education in 2012. Scimago 2012: Quartile 1, 58/1169 journals in Education, SRJ=1.705, h-index=74.
11. **Bouwma-Gearhart, J***.* Heterosexual narrative—Querying discipline norms*.* (2011). *Academic Exchange Quarterly, 15*(2), 82-89. This issue of Academic Exchange Quarterly had a 23% acceptance rate. Academic Exchange Quarterly is a multidisciplinary research journal, with focus on education research, with readership in 50 countries. It is not ranked by SCImago.

##### Bouwma-Gearhart, J. & Adumat, S. st (2011). Fostering successful interdisciplinary postsecondary faculty collaborations. International Journal of University Teaching and Faculty Development, 2(3), 207-220. The International Journal of University Teaching and Faculty Development is a was an new online journal with no impact/acceptance rates to report. It is not ranked by SCImago.

##### Bouwma-Gearhart, J. (2010). Pre-service educator attrition informed by self-determination theory: Autonomy loss in high-stakes education environments. Problems of Education In the 21st Century, 26, 30-41. Problems of Education Scimago 2018 (newly ranked): Quartile 4, 58/1169 journals in Education, h-index=3.

1. **Bouwma-Gearhart, J.** Stewart, J. & Brown, K. (2009). Misapplication of a gas-like model to explain particle movement in heated solids:  Implications for curriculum and instruction towards students' creation and revision of accurate explanatory models. *The International Journal of Science Education*, *31*(9), 1157-1174. *The International Journal of Science Education*, *31*(9), 1157-1174. Scimago 2009: Quartile 1, 46/928 journals in Education, SRJ=1.479, h-index=93.
2. Connolly, M., **Bouwma-Gearhart, J.,** & Clifford, M. (2007). The birth of a notion: The windfalls and pitfalls of tailoring an SoTL-like concept to a research-extensive university. *Innovative Higher Education, 32,* 1, 19-34. Scimago 2009: Quartile 3, 382/727 journals in Education, SRJ=.223, h-index=33.

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| **Peer Reviewed Chapters****Accepted**1. **Bouwma-Gearhart, J**. (Accepted). Bridging the disconnect between how we do and teach science: Cultivating a scientific mindset to teach in an era of data-driven education. In P. Short (Ed.),*Cultivating a scientific mindset in the age of inference.*

**Published**1. **Bouwma-Gearhart, J.** (2009). Research University Faculty Members’ Motivation To Engage In Teaching Professional Development. In Bilsel, A. & Garip, M. U. (Eds) *Frontiers in science education research*, Eastern Mediterranean University Press: Farmagusta, North Cyprus.
2. **Bouwma-Gearhart, J.** (2007). A taxonomy of practitioner research: implications for inter-framework collaborations**.** In Fanghanel, J.& Warren, D. (Eds) *International Conference on the Scholarship of Teaching and Learning* (2005 and 2006), London, CEAP, City University.

**Ranked Refereed Conference Proceedings** (Ranked proceedings in SciMago Journal Rank (SJR). American Society of Engineering Education Proceedings have a 25-28 H Index in SJR. Frontiers in Education Proceedings have a 35 H Index in SJR.)1. Nadelson, L. S., Villanueva, I., Bouwma-Gearhart, J., Soto, E., Lenhart, C. A.st, Youmans, K. st, & Choi, Y. H.st (2020). *Student perceptions of and learning in makerspaces embedded in their undergraduate engineering preparation programs.*American Society for Engineering Education, Annual Conference Proceedings, Montreal, QU, CA.
2. Nadelson, L., Villanueva, I., Bouwma-Gearhart, J., Lanci, S., Youmans, K. **st**, Lenhart, C. **st**, Van Winkle, A. (2019). *Knowledge in the making: What engineering students are learning in makerspaces.* Presented at the annual meeting of the American Society of Engineering Education Annual Conference and Exposition, New Orleans, Louisiana.
3. Youmans, K. **st**, Villanueva, I., Nadelson, L., **Bouwma-Gearhart, J**., Lenz, A. **st**, & Lanci, S. (2018). M*akerspaces vs engineering shops: Initial undergraduate student perceptions*. Presented at the annual Frontiers in Education Annual Conference*,* San Jose, CA.
4. Villanueva, I., Nadelson, L. S., **Bouwma-Gearhart, J.** Youmans, K. **st**, Lanci, S. & Lenz, A. **st** (2018). *Exploring students’ and instructors’ perceptions of engineering: case studies of professionally-focused and career exploration courses.* Presented at the annual meeting of the American Society of Engineering Education Annual Conference and Exposition, Salt Lake City, UT
5. Lanci, S., Nadelson, L. S., **Bouwma-Gearhart, J.,** Villanueva, I., Youmans, K. **st**, & Lenz, A. **st** (2018). *Developing a measure of engineering students’ makerspace learning, perceptions and interactions.*Presented at the annual meeting of the American Society of Engineering Education Annual Conference and Exposition, Salt Lake City, UT.
6. **Bouwma-Gearhart, J.,** Sitomer, A. **pd**, Quardokus-Fisher **pd**, S., Smith, C. **st**, & Koretsky, M. (2016). *Studying organizational change: Rigorous attention to complex systems via a multi-theoretical research.* Presented at the 2016 American Society for Engineering Education Annual Conference & Exposition. New Orleans, LA.
7. Keeler, J **st**., Ivanovitch, J **st**., **&** **Bouwma-Gearhart, J.** & Koretsky, M. (2016). *A comparative case study of the enactment of active learning in two courses.* Presented at the 2016 American Society for Engineering Education Annual Conference & Exposition. New Orleans, LA.
8. Quardokus-Fisher, K. **pd**, Smith, C. **st**; Sitomer, A. **pd**, Ivanovitch, J. **st**, **Bouwma-Gearhart, J.,** & Koretsky, M. (2016). *Identifying features of engineering academic units that influence teaching and learning improvement.* Presented at the 2016 American Society for Engineering Education Annual Conference & Exposition. New Orleans, LA.
9. Koretsky, M., **Bouwma-Gearhart, J.,** Brown, S., Dick, T. & Brubaker-Cole, S.**,** Sitomer, A. **pd**,Quardokus-Fisher, K. **pd**, Smith, C. st , Ivanovitch, J. st, Risien, J., Kayes, L., Quick, D**.** (2016). *Enhancing STEM education at Oregon State University - Year 2.*Presented at the 2016 American Society for Engineering Education Annual Conference & Exposition**.** New Orleans, LA.
10. Little, D. **pd**, Quardokus-Fisher, K. **pd**, Brown, S., Koretsky, M. & **Bouwma-Gearhart, J.** (2015). [*measuring student perceptions of engineering classroom activities and the use of such measures by engineering faculty*](http://stem.oregonstate.edu/files/stemfiles/ASEE%202015%20-%20Measuring%20Perceptions.pdf). Presented at the 2015 American Society for Engineering Education Annual Conference & Exposition. Seattle, WA.
11. Koretsky, M., **Bouwma-Gearhart, J.,** Brown, S., Dick, T. & Brubaker-Cole, S., Sitomer, A. **pd**, Quardokus-Fisher, K. **pd**, Risien, J., Little, D. **pd**, Smith, C. st , Ivanovitch, J. st.(2015). [*Enhancing STEM education at Oregon State University – Year 1*](http://stem.oregonstate.edu/files/stemfiles/Enhancing%20STEM%20Ed.pdf)*.* Paper presented at the 2015 American Society for Engineering Education Annual Conference & Exposition. Seattle, WA.

**Working papers/Whitepapers/Reports With National Audiences (not peer reviewed)**1. Hora. M. T., **Bouwma-Gearhart, J.,** & Park, H. J. **st** (2014). Exploring data-driven decision-making in the field: How faculty use data and other forms of information to guide instructional decision-making. (WCER Working Paper No. 2014-3). Wisconsin Center for Education Research.
2. Hora, M., **Bouwma-Gearhart, J.**, Oleson, A. **st** & Collins, J. **st** (2013a). Findings from an administration of the ISOP framework at Institution A in the Spring of 2013: Insights into course planning, classroom teaching. Wisconsin Center for Education Research.
3. Hora, M., **Bouwma-Gearhart, J.**, Oleson, A. **st** & Collins, J. **st** (2013b). Findings from an administration of the ISOP framework at Institution B in the Spring of 2013: Insights into course planning, classroom teaching. Wisconsin Center for Education Research.
4. Hora, M., **Bouwma-Gearhart, J.**, Oleson, A. **st** & Collins, J. **st** (2013c). Findings from an administration of the ISOP framework at Institution C in the Spring of 2013: Insights into course planning, classroom teaching. Wisconsin Center for Education Research.
5. **Bouwma-Gearhart, J.** (2012b). Engaging STEM faculty while attending to professional realities: An exploration of successful postsecondary STEM education reform at five SMTI institutions.APLU/SMTI Paper 5. Washington, DC: Association of Public and Land-grant Universities.
6. **Bouwma-Gearhart, J.**, Perry, K., and Presley, J.B. (2012). Improving Postsecondary STEM Education: Strategies For Successful Collaboration and Brokering Across Disciplinary Paradigms*.* Issue 4. Washington, D.C.: Association of Public and Land-grant Universities.
7. **Bouwma-Gearhart, J.L.,** Millar, S. B., Barger, S.S., & Connolly, M. R. (2007). Doctoral and Postdoctoral STEM Teaching-related Professional Development: Effects on Training and Early Career Periods. (WCER Working Paper No. 2007-8). Madison: University of Wisconsin-Madison, Wisconsin Center for Educational Research.
8. Barger, S., **Bouwma-Gearhart, J.,** Connolly, M, & Millar, S. (2007). Footprints of the Delta Program: Findings from the Second Year of the Delta Longitudinal Study.Madison: University ofWisconsin–Madison, Wisconsin Center for Education Research.
9. Millar, S. **Bouwma-Gearhart, J.,** Barger, S. & Connolly, M. (2007). Qualitative Longitudinal Findings on Effects of Teaching-Related Professional Development on STEM Doctoral Students and Postdocs. Research Report, Center for the Integration of Research, Teaching, and Learning.
10. Connolly, M., Clifford, M. & **Bouwma-Gearhart, J**. (2006). Language and change in higher education: “Teaching-as-research” design and variation across a population*.* Madison, University of Wisconsin-Madison, Wisconsin Center for Education Research.
11. Millar, S. & **Bouwma-Gearhart, J.** (2005). Longitudinal study of the impact of the UW-Madison Delta program in research, teaching, and learning: Findings from year one. Research Report, Center for the Integration of Research, Teaching, and Learning.

**Other National Reports (not peer reviewed)**1. **Bouwma-Gearhart, J**., (2011b). An exploration of five institutions of higher education attempting postsecondary STEM education improvement: Factors influencing and resulting from organizational change. Report presented to the Association of Public and Land Grant Universities/Science and Mathematics Teacher Imperative.

**Invited Publications (not peer reviewed)**1. **Bouwma-Gearhart, J.** (2012e). Challenging the conference-going norms of the academic elite: the potential of blogs towards expanding participation in the invisible college. Invited article commissioned by the Higher Education Development Association (HEDDA) for thematic week focused on social media and higher education. http://uv-net.uio.no/hedda/?p=8737
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**Refereed Conference Presentations and Proceedings (st indicates student co-presenter, previous or current, and pd designates postdoctoral scholars)**

1. Lenhart, C. **st**, **Bouwma-Gearhart, J.,** Giordan, J. & Carter, R. (2020). STEM Graduate Students’ Development at the Intersection of Research, Innovation, and Leadership. Presented at the meeting of the National Association for Research in Science Teaching (presented online due to COVID-19-based cancellation of in-person conference).
2. Pierszalowski, S. **st** & **Bouwma-Gearhart, J.** (2019). *Student and faculty perceptions of barriers to accessing undergraduate research for students from historically underrepresented groups in engineering***.** Presented at the annual meeting of The Association for the Study of Higher Education, Portland, OR.
3. Aster, E. **st**, **Bouwma-Gearhart, J.** & Quardokus Fisher, K. **pd** (2019). C*ontextualizing and configuring conversations: Exploring stem faculty members’ teaching-related social networks*. Presented at the annual meeting of The Association for the Study of Higher Education, Portland, OR.
4. Lenhart, C. **st**, & **Bouwma-Gearhart, J**. (2019, April). *STEM faculty perceptions of successful students: Uncovering invisible barriers.* Presented at the annual meeting of the American Education Research Association, Toronto, Canada.
5. Aster, E. M. **st**, **Bouwma-Gearhart, J**., & Lenz, A. **st** (2019, April). *Exploring potential for teaching-related learning in science departments: Informing initiatives and organizational change research.* Presented at the meeting of the American Educational Research Association, Toronto, ON, CA.
6. Choi, YoonHa. **st**, **Bouwma-Gearhart, J.** & Ernis, G. **st** (2019, April). *Identity development in doctoral education: Literature review and implications.*Presented at the meeting of the American Educational Research Association, Toronto, ON, CA.
7. **Bouwma-Gearhart, J**., Aster, E. M. **st**, Lenhart, C. A. **st**, & Ramos, S **st**. (2019, April). *Ontological framework for exploring postsecondary STEM education comprehensive change initiatives.* Presented at the meeting of the National Association for Research in Science Teaching, Baltimore, MD.
8. Lenhart, C. **st**, & **Bouwma-Gearhart, J**. (2019, April). *STEM faculty motivations for using learning data: Implications for accountability for student learning.* Presented at the meeting of the National Association for Research in Science Teaching, Baltimore, MD.
9. Youmans, K. **st**, Villanueva, I., Nadelson, L., Bouwma-Gearhart, J., Lenz, A. **st**, & Lanci, S. (2018). *Engineering students’ perceived value of campus makerspaces for future career preparation.* Presented at the International Symposium on Makerspaces, Stanford, CA.
10. Villanueva, I., Nadelson, L. S., **Bouwma-Gearhart, J.** (2018). *The "soft" argument for engineering professional identity courses: A case study.*Presented at the annual meeting of the American Educational Research Association, New York, NY.
11. Lenz, A. **st** & **Bouwma-Gearhart, J.** (2018). *Perceived features affecting STEM teaching faculty and their resulting implications for change.*Presented at the annual meeting of the American Educational Research Association, New York, NY.
12. Collins, J. **st** *&* **Bouwma-Gearhart, J.** (2017). *Examining STEM faculty participation in professional development: Implications for instructional change at research universities.* Presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
13. Collins, J. **st** *&* **Bouwma-Gearhart, J.** (2016).*Considering students’ perspectives: perceived constraints and affordances regarding STEM teaching and learning.* Presented at the annual meeting of The Association for the Study of Higher Education, Columbus, OH.
14. **Bouwma-Gearhart, J.**, Hora, M. & Park, H. st (2016). *Data driven decision-making in STEM departments: A field study of faculty engagement in continuous improvement systems for teaching.*Presented at the American Association for the Advancement of Science’s (AAAS) meeting Envisioning the Future of Undergraduate STEM Education: Research and Practice. Washington, DC.
15. Koretsky, M., **Bouwma-Gearhart, J**., Brown, S., Brubaker-Cole, S., and Dick. T. (2016). *Enhancing STEM education at Oregon State University.* Presented at the American Association for the Advancement of Science’s (AAAS) meeting Envisioning the Future of Undergraduate STEM Education: Research and Practice. Washington, DC.
16. Hora, M., **Bouwma-Gearhart, J**., & Park, H. **st** (2016). *How do data driven decision-making policies impact faculty planning and teaching activities?* Presented at the annual meeting of the American Educational Research Association, Washington, DC.
17. **Bouwma-Gearhart, J**., Hora, M. & Park, H. **st** (2016). *Faculty perceptions of affordances to data driven decision-making: exploring intersections among policy, context, and practice.* Presented at the annual meeting of the American Educational Research Association, Washington, DC.
18. **Bouwma-Gearhart, J**. (2016). *Active learning in college science classrooms.* Presider at the annual meeting of the National Association for Research In Science Teaching, Baltimore, MD.
19. **Bouwma-Gearhart, J**., Sitomer, A. **pd**, & Quardokus-Fisher, K. **pd**, Ivanovitch, J., **st** & Smith, C., **st** (2016). *Studying organizational change and learning: Rigorous attention to complex systems via a multi-theoretical research model.* Presented at the annual meeting of the National Association for Research In Science Teaching, Baltimore, MD.
20. Quardokus-Fisher, K. **pd**, Sitomer, A. **pd**, & **Bouwma-Gearhart, J.** (2016). *Institution-based instructional improvement: establishing relational expertise through disciplinary unit social network analysis.* Presented at the annual meeting of the National Association for Research In Science Teaching, Baltimore, MD.
21. **Bouwma-Gearhart, J**., Hora, M. & Park, H. **st** (2015). *Supporting faculty in the accountability era: fostering instructional data use for STEM improvement.* Presented at the annual Crossing Boundaries: Transforming STEM Education of the AAC&U. Seattle, WA.
22. **Bouwma-Gearhart, J**., Sitomer, A. **pd**, & Smith, C. **st** (2015). *Crossing theoretical boundaries: Frameworks to promote STEM education organizations and improvement.* Presented at the annual Crossing Boundaries: Transforming STEM Education of the AAC&U. Seattle, WA.
23. Hora, M., **Bouwma-Gearhart, J**., & Park, H. **st** (2015). *Data driven decision-making in stem departments: A field study of faculty engagement in continuous improvement systems for teaching.*Presented at the annual meeting of The Association for the Study of Higher Education, Denver, CO.
24. **Bouwma-Gearhart, J**.& Collins, J. st (2015). *What we know about data-driven decision making in higher education: Informing educational policy and practice.* Presented at the 19th International Academic Conference, Florence, Italy, p. 89-131.
25. **Bouwma-Gearhart, J**., Sitomer, A. **pd**, Quardokus-Fisher, K. **pd**, Little, D. **pd**, Ivanovitch, J., **st** Smith, C., **st** Koretsky, M. (2015). *Design-based implementation research to study and drive an undergraduate STEM education improvement project at oregon state*. Presented at the annual meeting of the APLU’s Science and Mathematics Teacher Imperative, June, New Orleans, LA.
26. **Bouwma-Gearhart, J**. (2015). *Building understanding and collaboration on the study of organizational change associated with undergraduate STEM*. Presented at the annual meeting of the APLU’s Science and Mathematics Teacher Imperative, June, New Orleans, LA.
27. Collins, J. **st** & **Bouwma-Gearhart, J.** (2014). *A motivational approach to examining reasons why STEM faculty engage in teaching professional development.* Presented at the annual meeting of the National Association for Research In Science Teaching, Chicago, Il.
28. **Bouwma-Gearhart, J.** & Collins, J. **st** (2014). *A* *literature review on data-driven decision making in higher education: Implications for educational policy and improving instructional practice.* Presented at the annual meeting of The Association for the Study of Higher Education, Washington, DC.
29. **Bouwma-Gearhart, J.** & Ivanovich, J. **st** (2014). *Postsecondary biology instructor class planning and classroom practice: The centrality of disciplinary epistemological rationale.* Presented at the annual meeting of the Association for the Study of Higher Education, Washington, DC.
30. Hora. M. T., **Bouwma-Gearhart, J.,** & Park, H. J. **st** (2014). *exploring data driven decision-making in higher education: The central role of reflection on multiple source of teaching-related information.* Presented at the annual meeting of The Association for the Study of Higher Education, Washington, DC.
31. Rogan-Klyve, A. **st** & **Bouwma-Gearhart, J.** (2014). *What can crickets teach ss about evolution?: An introduction to modeling-based inquiry.* Presented at the annual meeting of the Oregon Science Teachers’ Association, Gresham, OR, October, 2014.
32. Westneat, D., **Bouwma-Gearhart, J**., Xiang, L. (2014). *Kentucky’s “Suburban Ecology and Invasive Species:” Mechanisms for successful mentorship.* Presented at the he National Science Foundation’s 2014 BIO REU Workshop: Using Evidence-Based Approaches to Enhance and Strengthen the REU Experience. Arlington, VA.
33. Hewitt, K.M. **st**, Kitada, H., Kayes, L., Mason, R., **Bouwma-Gearhart, J**. (2013). *Introductory biology in social context: The effects of an issues-based laboratory course on biology student motivation.* Presented at the annual meeting of the National Association for Biology Teachers, Atlanta, GA.
34. Hewitt, K.M. **st**, Kayes, L., Mason, R., **Bouwma-Gearhart, J**. (2013). *Linking science to society: Investigating the effects of a socio-scientific issues-based curriculum on biology student motivation.* Presented at the AAAS Vision and Change in Undergraduate Biology Education Conference: Chronicling Change, Inspiring the Future. Washington D.C.
35. Hewitt, K.M. **st**, Kayes, L., Mason, R., **Bouwma-Gearhart, J**. (2013). Creating Motivating Environments for University Biology Students: The Design and Implementation of a Socio-scientific Issues-Based Laboratory Curriculum. The Society for Biology Education Research National Meeting, Minneapolis, MN.
36. **\*Bouwma-Gearhart, J.** (2013). Transforming STEM Education At Research Universities Through Faculty Interdisciplinary Work:  An Exploration of Multiple Models of Change. Presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
37. **Bouwma-Gearhart, J.**, Adumat, S. **st**, Krall, R., Bouwma-Gearhart, A., Xiang, L. & Rogan-Klyve, A. **st** (2013). Beyond Content Knowledge: Improving Postsecondary Learners’ Metacognition, Felt Competencies and Affect Towards Inquiry Through Inquiry. Presented at the annual meeting of the National Association for Research In Science Teaching, Rio Mar, PR.
38. Xiang, L., Osborn, J., & **Bouwma-Gearhart, J.** (2013). Effects of Problem-Based Learning on Biology Students’ Conceptual Understandings About Animal Physiology and Student Perceptions. The annual meeting of the National Association for Research In Science Teaching, Rio Mar, PR.
39. Adumat, S. **st**; **Bouwma-Gearhart, J**., Krall, R., & Rogan-Klyve, A. **st** (2013). Unintended Consequences: Pre-Service Science Teachers’ Immersion In Modeling-Based Inquiry in Tropical Ecology. The annual meeting of the National Association for Research In Science Teaching, Rio Mar, PR.
40. **Bouwma-Gearhart, J.** (2012). Faculty Agency and Organizational Change Towards Postsecondary STEM Education Improvement. The annual meeting of the Professional and Organizational Development Network in Higher Education, Seattle, WA.
41. **Bouwma-Gearhart, J.** (2012). Investigating Change: An Exploration of Five SMTI Institutions Attempting STEM Education Improvement Through Interdisciplinary Collaborations. The annual meeting of the Science and Mathematics Teacher Imperative, Washington, DC.
42. **Bouwma-Gearhart, J.** & Perry, K. (2012). Brokering Successful Professional Development of STEM Faculty and Instructors Regarding Education Research and Theory. The annual meeting of the American Educational Research Association, Vancouver, BC, 2012.
43. Schmid, S., **Bouwma-Gearhart, J.** & Collins, J. **st** (2012). STEM Faculty Motivations to Engage In Teaching Professional Development: Final Phase Findings In a Mixed-Methods Study. The annual meeting of the American Educational Research Association, Vancouver, BC.
44. Perry, K., **Bouwma-Gearhart, J.,** McCrary, N. & Mallozzi, C. (2012). [Educational Access for Adult Refugees in the United States: Countering a Deficit Approach](http://convention2.allacademic.com/one/aera/aera12/index.php?click_key=1&cmd=Multi+Search+Search+Load+Publication&publication_id=533373&PHPSESSID=f964e713259b5652178161aca0d639b5). The annual meeting of the American Educational Research Association, Vancouver, BC.
45. **Bouwma-Gearhart, J.** (2012g). Developing the Grass-Roots Choir: STEM Faculty Agency In Undergraduate Reform. The annual meeting of theNational Association for Research In Science Teaching, Indianapolis, IN.
46. **Bouwma-Gearhart, J.** Collins, J. **st** & Perry, K. (2012). Successful Interdisciplinary Endeavors to Improve STEM Education at Research Universities. STEM Education Symposium, Lexington, KY.
47. Perry, K., **Bouwma-Gearhart, J.,** McCrary, N. & Mallozzi, C. (2012). Refugee Realities and STEM Higher Education : Research, Outreach, and Implications for Organizational Practices. STEM Education Symposium, Lexington, KY.
48. McCrary, N. & **Bouwma-Gearhart, J.** (2012). Discussing Issues of Sexuality in the Classroom – The Job of STEM Educators Too! STEM Education Symposium, Lexington, KY.
49. Mohr-Schroeder, M., Jackson, C., & **Bouwma-Gearhart, J**. (2012). Tapping the Potential of Struggling Learners: The See Blue Mathematics Clinic. STEM Education Symposium, Lexington, KY.
50. Adumat, S. **st**, Little, D. **st**, Bouwma-Gearhart, A., & **Bouwma-Gearhart, J.** (2012). Modeling-Based Curriculum for STEM Undergraduate Classrooms: Unifying Mathematics and Biology through Jungle Mathematics. STEM Education Symposium, Lexington, KY.
51. Logsdon, T., **Bouwma-Gearhart, J.,** Krall, R., & Helm, D. (2012). STEM and Our Environment. STEM Education Symposium, Lexington, KY.
52. **Bouwma-Gearhart, J.,** Bouwma-Gearhart, A., & Fisher, M. (2011). Meeting the New Science Standards: Engaging Students In Modeling-Based Inquiry Collaboration and Communication Via Instructional Technology. AdvancED/UK College of Education Innovation Summit, Lexington, KY.

## **Bouwma-Gearhart, J.** & Adumat, S. **st** (2011). Successful Interdisciplinary Faculty Collaborations Between STEM and Education Faculty At Research-Focused Universities: Bridging the Campus Divide. Annual meeting of The Association for the Study of Higher Education, Charlotte, NC.

1. **Bouwma-Gearhart, J.** & Morrow, C. (2011). STEM Teaching in the Face of Faculty Realities. Annual meeting of the Science and Mathematics Teacher Imperative, Portland, OR.
2. **Bouwma-Gearhart, J.** (2011). Motivating STEM Faculty In Postsecondary STEM Education Reform. University of Kentucky STEM Education Symposium, Lexington.
3. **Bouwma-Gearhart, J.,** Fisher, M. & Schnittka, C. (2011). The UK STEM Education Lab: An Invitation To Inform Future Direction Through New Collaborations. University of Kentucky STEM Education Symposium, Lexington, KY.
4. Adumat, S. **st**, **Bouwma-Gearhart, J.**, Little, D. **st**, & Bouwma, A. (2011). Modeling-Based Curriculum and Instruction in the Undergraduate Classroom: Engagement of Students as Communities of Scientists. Annual meeting of the American Educational Research Association, New Orleans, LA.
5. **Bouwma-Gearhart, J**., Adumat, S. **st**, & Bouwma-Gearhart, A. (2011). Effective Use of Technology In Modeling-based Inquiry Science Education. National Science Teachers’ Association’s 2011 Research Dissemination Conference On Highly Effective Science Education: Integrating Science and Educational Technology In the Science Classroom, San Francisco, CA, 2011.
6. **Bouwma-Gearhart, J.** & Schmid, S. (2010). Grounding A Theory Of Motivation Through Research Into Teaching Professional Development Experiences Of STEM Faculty. Annual meeting of The Association for the Study of Higher Education, Indianapolis, IN.
7. **Bouwma-Gearhart, J.,** Schmid, S., & Collins, J. **st** (2010). A Mixed Methods Investigation Into Motivations Of STEM Faculty To Engage In Teaching Professional Development Across Research Institutions. Annual meeting of The Association for the Study of Higher Education, Indianapolis, IN.
8. **Bouwma-Gearhart, J.,** Adumat, S. **st**, Little, D. **st** & Bouwma-Gearhart, A. (2010). Engaging Aspiring Educators In Inquiry Curriculum Creation and Implementation Through An Interdisciplinary Field Course. Robert Noyce Teacher Scholarship Program Annual Conference: Building Excellence in STEM Teaching, Washington, DC.
9. **Bouwma-Gearhart, J**. (2010). A Grounded Theory of Motivation Informed by Inquiry Into STEM Faculty Members’ Experience with Teaching Professional Development at Research Universities. The International Conference of the Learning Sciences, Chicago, IL.
10. **Bouwma-Gearhart, J.** & Adumat, S. **st** (2010). Fostering Effective STEM Faculty—Education Faculty Collaborations Concerning STEM Education Reform. The Science and Mathematics Teacher Imperative National Conference, Cincinnati, OH.
11. **Bouwma-Gearhart, J.,** Schmid, S., & Mohr-Schroeder, M. (2010). Mixed-Methods Study Investigating Research University STEM Faculty Motivation to Engage in Teaching Professional Development. American Educational Research Association, Denver, CO.
12. **Bouwma-Gearhart, J.,** Mohr-Schroeder, M. & Bouwma-Gearhart, A. (2010). Modeling Based Inquiry In Postsecondary STEM Classrooms. Conference On STEM Education Of the Partnership Institute for Mathematics and Science Education Reform, Lexington, KY.
13. **Bouwma-Gearhart, J.,** Mohr-Schroeder, M. & Wilhelm, J. (2010). Successful Collaborations Between STEM and STEM Education - Forging New Paths Towards Securing Top 20 Status. Conference On STEM Education Of the Partnership Institute for Mathematics and Science Education Reform, Lexington, KY.
14. **Bouwma-Gearhart, J.** & Bouwma-Gearhart, A. (2009). Modeling-Based Curriculum and Instruction in the Undergraduate Classroom: Engaging Students as Community of Scientists Through Their Scientific Model Construction of Natural Selection Phenomena. The 29th International Lilly Conference On College Teaching, Oxford, OH.
15. **Bouwma-Gearhart, J.** & Bess, J.L. (2009). Blogging as a Research Tool in Higher Education: Pitfalls and Potentials. Annual meeting of the Association for the Study of Higher Education, Vancouver, BC.
16. **Bouwma-Gearhart, J.**  & Bouwma-Gearhart, A. (2009). Modeling-Based Curriculum And Instruction To Construct Meaningful Disciplinary Understanding Through The Engagement Of Students As Communities Of Investigator-Learners. The Lilly Conference On College and University Teaching, Traverse City, MI.
17. **Bouwma-Gearhart, J.,** Coy, G. **st**, & Mohr-Schroeder, M. (2009). Using Inquiry in Math and Science. Robert Noyce Teacher Scholarship Program Annual Conference: Building Excellence in STEM Teaching, Washington, DC.
18. Mohr-Schroeder, M., Gifford, K. **st** & **Bouwma-Gearhart, J.** (2009). Integrating Digital Literacies into STEM Education. Robert Noyce Teacher Scholarship Program Annual Conference: Building Excellence in STEM Teaching, Washington, DC.
19. **Bouwma-Gearhart, J**. (2009). Research University Faculty Members’ Motivation To Engage In Teaching Professional Development. Annual Meeting of Frontiers in Science Education Research, Farmagusta, North Cyprus.
20. Connolly, M., Barger, S., & **Bouwma-Gearhart, J**. (2008). Effects of a Future-Faculty Development Program on Doctoral Students and Postdocs in Science, Technology, Engineering, and Math: Findings from a Three-Year Longitudinal Study. Preparing for Academic Practice: Disciplinary Perspectives, Oxford, England.
21. Connolly, M., Barger, S., & **Bouwma-Gearhart, J**. (2008). Effects of a Future-Faculty Professional Development Program on Doctoral Students and Postdocs in Science, Technology, Engineering and Math: Findings from a Three-Year Longitudinal Study. CIRTL Forum, Madison, WI.
22. **Bouwma-Gearhart, J.** & Bess, J.L. (2007). Ad Hoc, Real Time Academic Community Involvement in Formative Stages of Research and Writing: The Transformative Potential of Blogs for the Higher Education Research Profession. Annual meeting of theAssociation for the Study of Higher Education, Louisville, KY.
23. Connolly, M. & **Bouwma-Gearhart, J**. (2007). Effects of Future-Faculty Teaching Professional Development on Doctoral Students and Postdocs in Science, Technology, Engineering & Math (STEM) Fields. Lawrence University Teagle Conference, Appleton, WI.
24. Millar, S. & **Bouwma-Gearhart, J.** (2007). Qualitative Longitudinal Findings on Effects of Teaching-Related Professional Development on STEM Doctoral Students and Postdocs. Annual meeting of the American Educational Research Association, Chicago, IL.
25. **Bouwma-Gearhart, J.** (2006).Research University STEM Faculty: Views About Teaching Professional Development. Annual meeting of the Professional and Organizational Development Network in Higher Education, Portland, OR.
26. Millar, S., **Bouwma-Gearhart**, J., Connolly, M. & Barger, S. (2006). Longitudinal Impact of Pedagogical Professional Development on (Future) STEM Faculty. Annual meeting of the Professional and Organizational Development Network in Higher Education, Portland, OR.
27. Millar, S., **Bouwma-Gearhart, J.** (2006). Long-term Impact of a SOTL-like Endeavor on STEM Graduate Students and Postdocs at a Research-Extensive University. **Colloquium on the Scholarship of Teaching and Learning**,Madison, WI.
28. Connolly, M., **Gearhart, J**. & Clifford, M. (2005). The Birth of a Notion: The Windfalls and Pitfalls of Tailoring an SOTL Concept to a Research-Extensive University. Annual meeting of the Association for the Study of Higher Education, Philadelphia, PA.
29. **Gearhart, J.** Connolly, C., & Clifford, M. (2005). Tailoring SOTL for STEM Fields at a Research-One Institution” Annual meeting of the Professional and Organizational Development Network in Higher Education, Milwaukee, WI.
30. Connolly, M., Millar, M., Berger, S., & **Gearhart, J**. (2005). Examining the Contributions of an SOTL-like Concept “Teaching as Research” to the Professional Development of Doctoral Students and Postdoctoral Researchers in Science, Technology, Engineering, and Mathematics. International Society for the Scholarship of Teaching and Learning, Vancouver, BC.
31. **Gearhart, J.** (2005). A Taxonomy of Practitioner Research: Implications for Inter-framework Collaborations. International Conference on the Scholarship of Teaching and Learning, London, England.
32. Connolly, M., **Gearhart,** **J**. & Clifford, M. (2005). Windfalls and Pitfalls of Tailoring SoTL Concepts to a Campus. The Carnegie Foundation for the Advancement of Teaching’s Colloquium on the Scholarship of Teaching and Learning, Conference of the American Association of Higher Education, Atlanta, GA.
33. **Gearhart, J.** (2004). Student Misapplication of a Gas-Like Model to Explain Particle Movement in Heated Solids. Annual meeting of the National Association for Research in Science Teaching, Vancouver, BC.
34. Cartier, J., Passmore, C., Barton, A., Cheyne, M., & **Gearhart, J.** (2003). Supporting Teachers' Efforts to Implement Inquiry in K-12 Science Classrooms.Annual meeting of theNational Association for Research in Science Teaching, Philadelphia, PA.
35. Barton, A., **Gearhart, J**. & Johnson, S. (2000). Student Modeling in Science. Wisconsin Society of Science Teachers Convention, La Crosse, WI.
36. **Gearhart, J.,** Willauer, J., Zebell, R., & Barton, A. (2000). Celestial Reasoning: Building a Model of Celestial Motion. Madison Area Science Forum, Madison, WI.

# Invited Research Talks

1. **Bouwma-Gearhart, J.** (2016). Postsecondary STEM education research highlights. Presentation to the Board of Trustees, Oregon State University.
2. Hora, M. & **Bouwma-Gearhart, J**. (2014). The Teaching Dimensions Observation Protocol. Session presented at the Discipline-Based Educational Research Seminar Series. University of Colorado-Boulder.
3. **Bouwma-Gearhart, J**. (2013). Building, Sustaining, and Selling Commitment To the Challenging Interdisciplinary Work of Undergraduate STEM Education Improvement. The Science Literacy Program Speaker Series, University of Oregon.
4. **Bouwma-Gearhart, J**. (2012). Research-University-based Centers of STEM Education:  Fad, Fictions, Failures and Fulfillment (or, why would anyone want to get involved with this?!). The Lifelong STEM Learning Seminar and Forum Series, Oregon State University.
5. **Bouwma-Gearhart, J**. (2012). Lessons Learned In the Leadership Collaborative. Learning From Success At SMTI Institutions: Postsecondary STEM Education Improvement Via Interdisciplinary Collaborations. Plenary session at the annual meeting of the Science and Mathematics Teacher Imperative, APLU, Washington, DC.
6. **Bouwma-Gearhart, J.** & Morrow, C. (2011). STEM Teaching Reform and Faculty Rewards. Plenary session at The Leadership Collaborative of the Science and Mathematics Teacher Imperative, Portland, OR.
7. **Bouwma-Gearhart, J.** (2009). Encouraging Faculty To Engage In Teaching Professional Development At Research Universities. Mind Matters Seminar Series, University of Kentucky.

**Grants Awarded**

 **Federal Grants (over $8M), with student and postdoctoral funding noted**

1. NSF-IUSE (Improving Undergraduate STEM Education) Grant. Project **External Researcher/Evaluator**. Total Award: $1,414,765. (OSU portion: $336,239). 10/01/2019-09/30/2024. PI: David Szymanski, Bentley University. 1 student funded.
2. NSF-CNS (Special Projects in Division of Computer and Network Systems) Grant. **Co-Principal Investigator.** Total Award: $438,440. 09/01/2019-08/31/2021. PI: Rich Carter, OR State U. 2 students funded.
3. NSF-UBE/IUSE (Undergraduate Biology Education/Improving Undergraduate STEM Education) Grant. **Senior Personnel**. Total Award: $472,898. 09/01/2018-08/31/2022. PI: Michelle Withers, Binghamton University.
4. NSF-RFE (Research on the Formation of Engineers) Grant. **Principal Investigator**. Total Award: $250,623. 07/01/2017-12/31/2020. 2 students funded.
5. NRT-IGE (Innovative Graduate Education) Grant. **Co-Principal Investigator**. Total Award: $500,000. 09/15/2016 - 08/31/2020. PI: Rich Carter, OR State U. 1 student funded.
6. NSF WIDER (Organizational Change) Grant. **Co-Principal Investigator**. Total Award: $1,999,987; 01/01/14-12/31/18. PI: Milo Koretsky, OR State U. 3 students and 3 postdoctoral scholars funded.
7. NSF NOYCE (Teacher Training) Phase II Grant. **Co-Investigator/Evaluator** (voluntary status change when left U of KY)**.** Total Award: $800,000; 09/01/12-08/31/17. PI: Margaret Mohr-Schroeder, U of KY. 20-25 students funded.
8. NSF TUES (Transforming Undergraduate Education) Type II Grant. **Co-Principal Investigator**. Total Award: $593,844; 09/01/12-12/31/15.PI: Richard Halverson, U of WI-Madison. 2 students funded.
9. NSF REU (Research Experiences for Undergraduates) Grant. **Principal Investigator/Co-Investigator** for grant supporting education research(voluntary status change when left U of KY). Total Award: $316,494; 08/01/12-07/31/16. 15-20 students funded.
10. NSF REU (Research Experiences for Undergraduates) Grant. **Co-Principal Investigator** for grant supporting biology research. Total Award: $373,969; 08/01/11-07/31/14. PI: David Westneat, U of KY. 20-25 students funded.
11. NSF NOYCE (Teacher Training) Grant. **Co-Principal Investigator**. Total award: $748,625; 08/01/07-07/31/12. PI: Margaret Mohr-Schroeder, U of KY. 15-20 students funded.
12. U.S. Department of Education for Enhancing Education through Technology. **Project Evaluator**. Funded 2006. Total award: $100,000. PI: Wisconsin Department of Public Instruction Grant.
13. U.S. Department of Education/ Grant for Mathematics and Science Partnerships. **Project Evaluator**. Funded 2005. Total award: $148,330. PI: Wisconsin Department of Public Instruction.

**State Grants (over $100k)**

1. Oregon Department of Education. **Principal Investigator.** Grant to support Oregon STEM Hub research and evaluation. Submitted, 2016. Total Award: $99,903. 06/01/2016-06/30/2017.
2. Kentucky Senate Bill 1 Summer Sub Grant. **Principal Investigator** on education abroad course revision towards secondary STEM teachers’ development as globally engaged environmental educators through interdisciplinary field-based inquiry. Funded 2011. Total Award: $3000; 06/01/11-08/01/11.

**Institutional Grants Funding Doctoral Students (around $300k)**

1. OSU Provost’s Distinguished Fellowship. **Writer.** To support doctoral students. Total Award for three students: $30,000/year stipend plus tuition relief; 09/15/2015-08/14/2016; 09/15/2017-08/14/2018, and 09/15/2020-08/14/2021. 3 students funded.
2. OSU Laurels Block Grant. (Co)**Writer.** To support doctoral students.Total Awards: $131,000, 2020 distribution; $24,678, 2018 distribution; $50,000, 2016 distribution; $35,000, 2015 distribution. Multiple students funded.

**Mentoring/Instructional Experiences**

 **Graduate Students and Postdoctoral Trainees**

PHD Committees [**Chair(ed)/(ing)** **(13)** /Committee Member (9)]

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Degree/ Unit | Student | Total |
| 2011-2012 | PhD/BiologyPhD/SEM | Jason Collett - committee member, U of KY (Postdoctoral Fellow, Department of Cellular and Integrative Physiology, Indiana University-Purdue University Indianapolis)David Little - committee member, U of KY (position unknown) | 2 |
| 2014 | PhD/SME | **Krissi Hewitt** – **chair, Oregon State****(**Director of Institutional Research and Strategic Initiatives at North Carolina School of Science and Mathematics Chapel Hill, North Carolina) | 1 |
| 2015 | PhD/SME | **Jennifer Collins – chair, Oregon State****(**Research Scientist, Department of Chemistry and Biochemistry, Ohio State University) | 1 |
| 2016 | PhD/SME | **John Ivanovich** – **chair, Oregon State**(deceased)**Allyson Rogan-Klyve** – **chair, Oregon State****(**Assistant Professor, Science Education, Central Washington University)Aaron McKim – committee member, Oregon State(Assistant Professor, Department of Community Sustainability, Michigan State University)Tyson Sorensen – committee member, Oregon State**(**Assistant Professor, Agricultural Systems Technology & Education, Utah State University) | 4 |
| 2017  | PhD/SME | Allison Dorko – committee member, Oregon State(Assistant Professor, Mathematics, Oklahoma State University) | 1 |
| 2019 | PhD/EDU | **Ellen Aster – chair, Oregon State**(Graduate Program Coordinator, Mechanical Engineering, Colorado State University)Haley Clement– committee member, Oregon State(Assistant Professor, Agriculture Education, Oregon State University)**Sophie Pierszalowski** – **chair, Oregon State****(**Associate Director of Undergraduate Research, Oregon State University)  | 3 |
| Current | PhD/EDU | Grant Ermis– committee member, Oregon StateKarla Hale – committee member, Oregon State**Cindy Lenhart – chair, Oregon State****Adam Lenz** – **chair, Oregon State****Stephanie Ramos** – **chair, Oregon State****Casey Patterson** – **chair, Oregon State****Amy Strong** – **chair, Oregon State****Alexis Anderson – chair, Oregon State****Caitlin Kepple – chair, Oregon State** | 72 |

Postdoctoral Scholar Trainees [**Supervised/Mentored (3)]**

|  |  |  |  |
| --- | --- | --- | --- |
| 2013-2014 | Supervisor/mentor | **David Little** (position unknown)  | 3 |
| 2013-2016 | Supervisor/mentor | **Ann Sitomer****(**Senior Researcher, STEM Research Center, Oregon State University)**Kathleen Quardokus-Fisher**(Assistant Professor, Earth and Environment, Florida International University) | 2 |

Masters Major Professor [**Chaired** **(27)** /Served (9)]

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Degree Unit | Student | Total |
| 2009 | MS Advisor /project/Chair Written and Oral Exams | **Garnett Coy, Adam Reid, Matthew Turner, U of KY**(Secondary Science Educators) | 3 |
| 2010 | MS Advisor /project/Chair Written and Oral Exams | **Kelly Austin, Amanda Best, Derek Brown, Leslie Campbell, Elizabeth Coleman, Jesse Howell, Stephen Kidd, Jessica Laswell, Mary Elizabeth McKnight, Patrick Thomas, Masa Welch, U of KY**(Secondary Science Educators) | 11 |
| 2011 | MS Advisor /project/Chair Written and Oral Exams | **Kayla Hill, Jason Hurst, Andrea Hutchins, Colin Shane Kirby, Jonathan Rogers, Willie Turner, Brett White, U of KY**(Secondary Science Educators) | 7 |
| 2012 | MS Advisor /project/Chair Written and Oral ExamsMS Advisor prior to leaving U of KY | **Jason Bridgeman, Caroline Williams, Claire Wolken, U of KY**(Secondary Science Educators)Audrey Bebense, Sarah Brown, Jeffrey Castro, Christopher Cunningham, Kristin Howell, James Thomas Lewis, Taylor Lloyd, Heather Sanders, Amy Zollars, U of KY(Secondary Science Educators) | 39 |
| 2013 | MS Advisor/Chair Written and Oral | **Shane Fox, Sydney Levings, Oregon State**(Secondary Science Educators) | 2 |
| 2014 | MS Advisor/Chair Written and Oral | **Deidra Spencer, Oregon State** (Secondary Science Educator) | 1 |

**Courses Taught**

University of Kentucky

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Courses | Credits | Students |
| 2008-2009 | EDC 348, Teaching Science In the Middle School | 3 | Undergraduate middle school science teacher licensure students |
|  | EDC 746, Subject Area Instruction In the Secondary School | 9 | Masters secondary school science teacher licensure students |
| 2009-2010 | EDC 348, Teaching Science In the Middle School | 3 | Undergraduate middle school science teacher licensure students |
|  | EDC 746, Subject Area Instruction In the Secondary School | 9 | Masters secondary school science teacher licensure students |
|  | A&S 500, Exploring Nature of Science Through Tropical Field Ecology | 4 | Masters secondary school science and mathematics teacher licensure students and undergraduate biology students |
| 2010-2011 | EDC 634, Science Pedagogy In the Secondary School | 3 | Masters and STEM Education doctoral students |
|  | EDC 770, STEM Education Research Seminar | 3 | STEM Education doctoral students |
|  | EDC 781, Independent Study In Curriculum and Instruction | 3 | STEM Education doctoral students |
|  | EDC 746, Subject Area Instruction In the Secondary School | 9 | Masters secondary school science teacher licensure students |
|  | EDC 781, Independent Study In Curriculum and Instruction | 2 | STEM Education doctoral students |
|  | EDC 575, Modern Educational Problems: Inquiry In the Life Sciences | 3 | Masters secondary school science teacher licensure students |
| 2011-2012 | SEM 706, Research In STEM Education | 3 | STEM Education doctoral students |
|  | SEM 746, Subject Area Instruction In the Secondary School | 9 | Masters secondary school science and mathematics teacher licensure students |
|  | SEM 781, Independent Study In STEM Education-Research Writing Group | 1 | STEM Education doctoral students |
|  | A&S 500/SEM 770, Exploring Nature of Science Through Tropical Field Ecology | 4 | Masters secondary school science and mathematics teacher licensure students, undergraduate biology students, STEM Education doctoral students |
|  | SEM 781, Independent Study In STEM Education | 3 | Masters secondary school science teacher licensure students |
|  | SEM 770, Special Topics In STEM Education: Communication Via Science Education | 3 | Masters secondary school science teacher licensure students |

Oregon State University

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Courses | Credits | Students |
| 2012-2013 | SED-601, Research (3 quarters) | 2-8 | Science And Mathematics Education doctoral students |
|  | SED-603, Dissertation (2 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | SED 413, Inquiry In Science and Science Education | 3 | Education Double Degree or other undergraduates (considering) initial certification in secondary science |
|  | SED 513, Inquiry In Science and Science Education | 3 | Masters students in Professional Teacher Education In Science or Mathematics |
|  | SED-577, Science Pedagogy and Technology II | 3 | Masters students in Professional Teacher Education In Science or Mathematics |
|  | SED-615, Practicum In Mathematics and Science College Teaching | 3 | Science And Mathematics Education doctoral students |
| 2013-2014 | SED-601, Research (3 quarters) | 2-8 | Science And Mathematics Education doctoral students |
|  | SED-603, Dissertation (3 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | SED 473, Science Pedagogy and Technology I | 3 | Education Double Degree undergraduate students seeking initial secondary teaching certification |
|  | SED 573, Science Pedagogy and Technology I | 3 | Masters students in Professional Teacher Education In Science or Mathematics |
|  | SED-577, Science Pedagogy and Technology II | 3 | Masters students in Professional Teacher Education In Science or Mathematics |
|  | SED-615, Practicum In Mathematics and Science College Teaching | 3 | Science And Mathematics Education doctoral students |
| 2014-2015 | SED-601, Research (1 quarter) | 2-8 | Science And Mathematics Education doctoral students |
|  | SED-603, Dissertation (3 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | SED-699, Studying Change In Education Organizations | 3 | Science And Mathematics Education doctoral students |
|  | AHE-653, Instructional Leadership I | 4 | Community College Leadership doctoral students |
|  | TCE-542, Teacher Leadership | 3 | 12Master’s students inProfessional Teacher and Counselor Education online |
| 2015-2016 | SED-601, Research (3 quarters) | 2-8 | Science And Mathematics Education doctoral students |
|  | SED-603, Dissertation (4 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | AHE-653, Instructional Leadership I | 4 | Community College Leadership doctoral students |
|  | SED-615, Practicum In Mathematics and Science College Teaching | 3 | Science And Mathematics Education doctoral students |
| 2016-2017(Began .5 FTE as Asso-ciate Dean) | SED-601, Research (3 quarters) | 2-8 | Science And Mathematics Education doctoral students |
|  | SED-603, Dissertation (4 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | SED-607, Looking at Data (3 quarters) | 1 | Science And Mathematics and Agricultural Education doctoral students |
|  | SED-699, Mixed Methods Research | 3 | Science And Mathematics Education doctoral students |
| 2017-2018 | SED-601, Research (3 quarters) | 2-8 | Science And Mathematics Education doctoral students |
|  | SED-603, Dissertation (4 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | SED-607, Looking at Data  | 1 | Science And Mathematics and Agricultural Education doctoral students |
|  | SED-605, Reading and Conference | 2 | Science And Mathematics Education doctoral students |
|  | SED-615, Practicum In Mathematics and Science College Teaching | 3 | Science And Mathematics Education doctoral students |
|  | SED-699 Studying Change in Education Organizations | 3 | Science And Mathematics Education doctoral students |
| 2018-2019 | SED-603, Dissertation (3 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | SED-605, Reading and Conference | 1 | Science And Mathematics Education doctoral students |
| 2019-2020 | SED-603, Dissertation (3 quarters) | 1-12 | Science And Mathematics Education doctoral students |
|  | SED-615, Practicum In Mathematics and Science College Teaching | 3 | Science And Mathematics Education doctoral students |
|  | SED-607, Seminar | 1 | Science And Mathematics Education doctoral students |

**Service**

 **College/Department (the OSU College of Education does not have departments)**

Member, Search Committee for two tenure-line positions, College of Education, Oregon State University, 2017-2018

Member, OSU/U of O STEM Education program synergies, College of Education, Oregon State University, 2017-2018

Member, Search Committee for College of Education Dean, Oregon State University, 2016-2017

Creator of College 5-year Strategic Plan for Research, January, 2016

Chair, Third Year Review Committee for Dr. Michael Giamellaro, 2016

Director, Doctoral Program, Science and Mathematics Education, Oregon State University, 2015-2016

Chair, College of Education Personnel Committee, Oregon State University, 2015-2016

Member, College of Education ad hoc Policy Committee, Oregon State University, September 2015-2016

Member, College of Education Personnel Committee, Oregon State University, September 2013-2015

Co-Director, Doctoral Program, Science and Mathematics Education, Oregon State University, August 2013-2015

Science Education Faculty Chair, Master’s Program, Oregon State University, September 2012-2014

Chair/co-chair secondary science program faculty, University of KY, 2008-2012

Middle school science program faculty member, University of KY, 2008-2012

Co-director of the STEM Education Innovation Laboratory, University of KY, 2011-2012

Co-founder of STEM Education Department, University of KY, established 2011

Middle school education search committee member, University of KY, 2009-2010

STEM education search committee member, University of KY, 2008-2011

 **University**

Member, Search Committee for the Lead OSU HRPP Administrator, Oregon State University, 2020

Member, Taskforce on Learning Analytics Needs of OSU Faculty and Advisors, 2018

Member, Learning Innovations Task Force, Oregon State University, 2017-2018

Member, Council of Associate Deans of Research, Oregon State University, 2016-present

Member, Search Committee for College of Education Dean, Oregon State University, 2016-2017

Member, NSF-ADVANCE, Oregon State University, 2015-present

Member, Research Council of the Faculty Senate, Oregon State University, 2014-2017

Member, Discipline-level Tenure Committees. 2017, 2015

Guest Lecturer, Humanitarian Engineering Program, Oregon State University, 2017

Member, Search Committee for the Marine Studies Initiative (MSI) Executive Director, Oregon State University, 2016

Guest Speaker and Mentor, Postdoctoral Group, Oregon State University, 2016

Member, Research Office Red Team Review Panel, Oregon State University, 2016

Developer, Sample Postdoctoral Mentoring Plan for Faculty Applications for External Funding, Oregon State University, 2016

Member, Faculty Governance Working Group for the Marine Studies Initiative (MSI), Oregon State University, Fall 2014-2015

Reviewer/Interviewer for Fulbright Student Grants, Oregon State University, 2014

Research Affiliate, STEM Research Center (formerly Center for Research on Lifelong STEM), Oregon State University, 2012-present

Planning Member, Undergraduate Success Initiative, Oregon State University, September 2012-2015

Technology Research Fund Task Force Member, Oregon State University, Spring, 2014

Research Team Member, The Large Classroom Research Project, Oregon State University, 2012-2014

Executive board member for University of Kentucky arm of the Science and Mathematics Teacher Imperative (SMTI), a consortium of 116 APLU institutions, 2009-2012

Faculty administrator for Education Abroad, University of KY, 2009-2012

Co-director of teacher training and recruitment division of the Partnership Institute for Mathematics and Science Education Reform, University of KY, 2008-2012

Planning committee member for annual STEM Education Conference, University of KY, 2010-2012

Reviewer/Interviewer for Fulbright Student Grants, University of Kentucky, 2011

University of Kentucky House Calls program to promote undergraduate student retention, 2009

Invited speaker regarding science teaching careers, AMSTEMM minority STEM recruitment program and the Biology department, University of KY, 2008-2010

Consultant for Research Tools Development to Assess Introductory Zoology Student Learning, UW-Madison, 2003

**Service to the Profession**

Editor, *CBE-Life Sciences Education*, 2019-present

Chair/Co-Chair, Strand 5 (College Science Teaching and Learning), National Association for Research In Science Teaching, 2018-present

Consultant on NSF-funded Grant Networking Postsecondary Life Sciences Education Improvement Initiatives Towards Enhanced Coordination and Collaborative Impact, 2018-present

## Board Member, Journal for the Study of Postsecondary and Tertiary Education, 2017-present

Senior Advisory Board Member, NSF-IUSE grant, Dr. Andrea Beach, PI, 2016-2019

Reviewer, American Association of University Women’s Career Development Grant Social Sciences Sub-Panel, 2018

Reviewer, American Association of University Women’s International Fellowships Social Sciences Sub-Panel, 2011-2017

Reviewer of NSF grants, 2019, 2017, 2013, 2009

Chair, American Association of University Women’s International Fellowships Social Sciences Sub-Panel, 2012-2016

Presider, Annual meeting of the National Association for Research In Science Teaching, 2016

Consultant, Institutional Research and Postsecondary STEM Education Innovation Working Group, The National Academies Summer Institutes Leadership Summit, Madison, Wisconsin, 2012-2013

Meeting Facilitator, Association of Public and Land Grant Universities/Science and Mathematics Teacher Imperative, 2011

Working Group Member, Association of Public and Land Grant Universities/Science and Mathematics Teacher Imperative, Involving More STEM Faculty Members at Research Universities in STEM Education Reform, 2010-2012

Chair for AERA Division C Graduate Student Awards Committee, 2010-2011

Vice Chair for AERA Division C Graduate Student Awards Committee, 2009-2010

Reviewer of manuscripts, American Educational Research Journal, American Society for Engineering Education, British Journal of Educational Psychology, CBE - Life Sciences Education, The International Journal of Educational Research, The International Journal of Engineering Education, The International Journal of Science Teaching, International Perspectives in Psychology: Research, Practice, Consultation, The Journal of Engineering Education, Journal for the Study of Postsecondary and Tertiary Education, Journal of Higher Education, The Journal of Research In Science Teaching, The Journal of Science Education and Technology, Research In Science Education, Science Education, Studies in Higher Education, Teachers College Record, Trends In Microbiology, various years

Reviewer of conference proposals, the American Education Research Association, American Society for Engineering Education, the Association for the Study of Higher Education, Frontiers in Education, the National Association for Research in Science Teaching, various years

**Service to the Public (professionally related)**

Testifier, State of Oregon, Human Services Subcommittee, 2017

Member, Oregon Education Investment Board, Cross-institutional STEM Education Research Consortium, 2014-2016

Volunteer, mathematics and literacy aid, Adams Elementary School, 2013-2015

Volunteer, OMSI in Corvallis, Super Science Saturday, Corvallis, OR, 2015

Kentucky Teaching Internship University Educator Supervisor, 2009-2011

Reviewer of grants, the State of Illinois No Child Left Behind Improving Teacher Quality Grant, 2007

Secretary-Treasurer, Organization for the Role and Status of Women in the Biological Sciences, 2002-2003

Regional Interviewer, the Fulbright Teacher Exchange Program, 2001

District Science Alignment Committee Member, Monona Grove School District, 2001-2003

K-12 Science Educator Professional Development Leader, Monona Grove School District, WI, 1999-2003

Science Inquiry Curriculum Developer, UW-Madison’s Project MUSE and Monona Grove School District, WI, 1999-2003

**Awards**

Fellow, One of twenty STEM-focused faculty chosen nationally for NSF-funded IAspire Leadership Program, 2020-2021

Jerome L. Neuner Award for Excellence in Professional-Scholarly Publication for the best article in the 2016 Journal for Higher Education Management, 2017

NSF-funded Early Career Workshop Award, one of 20 international scholars selected to present research the International Conference of the Learning Sciences, 2010

U.S. State Department Fulbright Teacher Exchange*,* one of approximately 200 national teachers selected to participate in international teaching exchange, 2000-2001

Teacher Ambassador for the Wisconsin Department of Public Instruction, one of ten state teachers selected for Chiba, Japan-Wisconsin, U.S. exchange, 1999