KAREN A. MARRONGELLE, PH.D.

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ADMINISTRATIVE EXPERIENCE

NATIONAL SCIENCE FOUNDATION, Alexandria, VA August 2021-present
Chief Operating Officer/Chief Science Officer

Lead the execution of the NSF vision and operational improvements in a ~ $9 billion federal basic science funding agency with over 2000 federal, rotator and contract employees. Oversee eight scientific Directorates and all administrative operations. Serve as the principal advisor to the Director on operations, policy, and strategic initiatives to advance the mission of the Foundation. Regularly coordinate with the White House and Congress to communicate agency priorities and interpret guidance and direction for the Foundation. Responsible for overseeing the agency's annual budget development and implementation, including overall resource management. Represent the agency on the President's Management Council and represent the agency and the United States in a variety of external forums. Hold TS/SCI clearance.

NATIONAL SCIENCE FOUNDATION, Alexandria, VA October 2018-August 2021
Assistant Director, Directorate for STEM Education

Responsible for the vision and direction of the STEM Education Directorate, the largest federal funder of STEM education programs and research. Oversaw ~$1 billion annual budget for research, development, and scholarships to achieve excellence and inclusion in U.S. STEM education. Provided testimony to Congress on issues of STEM education and regularly presented to Congressional and Administration staff on directions and current issues in STEM education. Collaborated with colleagues throughout NSF to broaden participation in STEM, leading NSF's signature broadening participation program, NSF INLUDES. Served as a member of NSF's Senior Management team, providing leadership on budget, policy, and the educational mission of the Foundation. Co-chaired the Federal Coordination in STEM Education Subcommittee of the National Science & Technology Council, leading the coordination of STEM education activities across the federal government and implementing a strategic plan for the nearly $3 billion federal investment in STEM education across 14 federal agencies.

PORTLAND STATE UNIVERSITY, Portland, OR
Dean of the College of Liberal Arts & Sciences June 2014-September 2018
Acting Provost June 2018-September 2018

Provided vision and leadership for Portland State University's largest College, overseeing 24 Departments, 15 Centers, and two Schools spanning the humanities, social sciences, and natural sciences. Managed an annual budget in excess of $65 million and annual research expenditures of approximately $20 million. Oversaw major strategic planning in the College resulting the identification of four College-wide research foci, the restructuring of several College-wide processes, policies, and organization, and a cluster hire of nine faculty across eight departments. Raised over $25 million during Deanship, including major capitol gifts, several student scholarship endowments and faculty endowments. The College had its second and third most successful fundraising years to date, under my leadership. Increased the number of external grant submissions by more than 30% between FY 14 and FY 18. Oversaw the implementation of a new School of Gender, Race, and Nations, a new graduate certificate in Gender, Race, and Nations; Portland State University's first Professional Science Master Degree in Environmental Science and Management; a new undergraduate degree in Conflict Resolution, a new undergraduate degree in Judaic Studies; and a new graduate certificate in Comic Studies. Opened a new Collaborative Life Sciences Building in cooperation with the Schools of Dentistry and Medicine at Oregon Health Sciences University and the School of Pharmacy at Oregon State University. The building houses state-of-the art classrooms, teaching laboratories, and research laboratories for Biology and Chemistry. Launched a fundraising campaign for the renovation of the oldest science building on campus, securing the lead gift, justifying the project to the Oregon Higher Education Coordinating Commission and legislature, and leading through the pre-design phase of planning.

Served as Acting Provost between the outgoing and incoming Provosts. As Acting Provost, finalized FY 19 budget allocations for Portland State's 10 Schools and Colleges and for the Student Affairs division. Oversaw the transition

of Student Affairs into the Provost's Office from Enrollment Management. Represented Portland State University on the statewide Provost's Council.

OREGON UNIVERSITY SYSTEM, Portland, OR March 2013-June 2014
Vice Chancellor for Academic Strategies

Exceled in a challenging role coordinating academic policies for 7 diverse public institutions part of the Oregon University System, including an AAU institution, the public land-grant institution, an urban research institution, three regional universities and one technical university. Led the transition of academic affairs from an 86-year old Office of the Chancellor to a newly created Higher Education Coordinating Commission. Regularly interacted with the legislature and governor's offices, serving as a conduit between campuses, academic policies, and the Oregon State Board of Higher Education. Co-convened the Provosts' Council, consisting of 8 institutions to facilitate approval of new programs, and coordinate approaches to state and national higher education issues. Led efforts to respond to legislation and national trends in education. Motivated and managed 9 direct and over 30 indirect reports, and allocated a biannual appropriation in excess of $670M. Managed the divisions of academic affairs, student affairs, international collaborations, institutional research, and business/industry partnerships.

OREGON UNIVERSITY SYSTEM, Portland, OR August 2011-March 2013
Assistant Vice Chancellor for Academic Standards and Collaborations

Supported P-20 alignment in Oregon, including establishing connections between community colleges and K-12 system to campuses in the university system. Facilitated partnerships with early education providers to encourage students to pursue degrees at in-state colleges and universities. Coordinated the Deans of Education and represented the Oregon Universities to the Oregon Department of Education and the Oregon Teacher Standards and Practices Commission (teacher licensing board). Led statewide coordination policy of liberal/general education.

PORTLAND STATE UNIVERSITY, Portland, OR 2010-2011
Assistant Dean for Research – College of Liberal Arts & Sciences

As first Assistant Dean for Research, conducted cost, gap, and productivity analyses of college-wide grant activity. Assisted faculty in identifying funders, collaborators, as well as, developing funding plans. Worked with college and university development offices on foundation funding and donor opportunities.

NATIONAL SCIENCE FOUNDATION (NSF), Arlington, VA 2007-2009
Program Director – Education and Human Resources Directorate, Division of Research on Learning

Awarded grants and issued grant recommendations on behalf of this United States government agency that supports fundamental research and education in all non-medical fields of science and engineering. Oversaw program budgets in excess of $50M in collaboration with other senior staff.

ACADEMIC APPOINTMENTS, PORTLAND STATE UNIVERSITY

Fariborz Maseeh Dept. of Mathematics & Statistics, **Affiliated Faculty**	2022-present
Fariborz Maseeh Dept. of Mathematics & Statistics, **Tenured Professor**	2012-2022
Fariborz Maseeh Dept. of Mathematics & Statistics, **Tenured Associate Professor**	2007-2012
Fariborz Maseeh Dept. of Mathematics & Statistics, **Assistant Professor**	2001-2007

EDUCATION

UNIVERSITY OF NEW HAMPSHIRE, **PH.D. Mathematics Education** 2001
(Department of Mathematics, College of Engineering & Physical Science)
Dissertation: *Physics Experiences and Calculus: How Students Use Physics to Construct Meaningful Conceptualizations of Calculus Concepts in an Interdisciplinary Calculus/Physics Course*, 2001, Dr. Karen Graham, Director.

LEHIGH UNIVERSITY, **Master of Science in Mathematics** 1997
ALBRIGHT COLLEGE, **Bachelor of Science in Mathematics & Philosophy** 1995

BOARD AND COMMITTEE MEMBERSHIPS

Trustee, Albright College, March 2020-present

Member, Advanced Placement Higher Education Advisory Committee, The College Board, 2014-2018

Member, Board of Directors, Teachers Development Group, 2003-2014.

Chair, Committee on SIGMAAs, Mathematical Association of America, 2012-2015.

Local Organizer, Conference on Research in Undergraduate Mathematics Education, 2011, 2012.

Chair, Committee on Emerging Issues, National Council of Teachers of Mathematics, 2011-2013.

Member, Committee on Emerging Issues, National Council of Teachers of Mathematics, 2010-2013.

Member, Committee on SIGMAAs, Mathematical Association of America, 2010-2012.

Member, Oregon Mathematics Education Council, 2004-2007.

Coordinator, Mathematical Association of America Special Interest Group on Research in Undergraduate Mathematics Education, 2007-2011.

REFEREED PUBLICATIONS

BOOKS

Li, P. & **Marrongelle, K**., (2012). *Having success with the NSF: A practical guide*. Hoboken, NJ: John Wiley & Sons.

BOOK CHAPTERS

Larsen, S., **Marrongelle, K**., Graham, K., & Bressoud, D. (2017). Understanding the concepts of calculus: Frameworks and roadmaps emerging from educational research. In Cai, J. (Ed.), *Third Handbook of Research on Mathematics Teaching and Learning* (pp. 526-550). Reston, VA: National Council of Teachers of Mathematics.

Marrongelle, K. (2008). Enhancing meaning in mathematics: Drawing on what students know about the physical world. In P. Elliott & C. Garnett (Eds.), *Getting into the Mathematical Conversation* (pp. 283-298). Reston, VA: National Council of Teachers of Mathematics.

Reyes, B., Lloyd, G., **Marrongelle, K.,** & Winsor, M. (2008). Induction of doctoral graduates in mathematics education into the profession. In R. Reys & J. Dossey (Eds.), *U.S. Doctorates in Mathematics Education: Developing Stewards of the Discipline* (Conference Board of the Mathematical Sciences issues in mathematics education v. 15). Providence, RI: The American Mathematical Society.

Marrongelle, K. & Rasmussen, C. L. (2008). Research-based strategies for teaching: Linking student thinking with mathematical ideas. In M. Carlson & C. Rasmussen (Eds.), *Making the Connection: Research and Teaching in Undergraduate Mathematics* (pp. 167-178). Washington, DC: Mathematical Association of America.

Marrongelle, K., Meredith, D., & Black, K. (2003). Studio calculus/physics: Interdisciplinary mathematics with active learning. In, McGraw, S. A. (Ed.), *Integrated mathematics: choices and challenges* (pp. 103-115). Reston, VA: National Council of Teachers of Mathematics.

JOURNAL ARTICLES

Rasmussen, C., **Marrongelle, K.**, Kwon, O., & Hodge, A. (2017) Four goals for instructors using inquiry-based learning. *Notices of the American Mathematical Society*, *64*(11), 1308-1311.

Rasmussen, C., **Marrongelle, K.,** & Borba, M. (2014). Research on calculus: What do we know and where do we need to go? *ZDM: The International Journal on Mathematics Education, 46*(4), 507-515.

Marrongelle, K., Sztajn, P., & Smith, M. S. (2013). Scaling up professional development in an era of common state standards. *Journal of Teacher Education*, *64*(3), 202-211.

Kwon, O., Ju, M., Rasmussen, C., Ju, Mi Kyung, **Marrongelle, K.,** and others (2008). Utilization of revoicing based on learners' thinking in an inquiry-oriented differential equations class. *The Seoul National University Journal of Education Research, 17, 111-134.*

Meredith, D. & **Marrongelle, K.** (2008). How Students Use Mathematical Resources in a Physics Context. *American Journal of Physics, 76,* 570-578.

Marrongelle, K. (2007). The function of graphs and gestures in algorithmitization. *The Journal of Mathematical Behavior.26*, 211-229.

Rasmussen, C. L. & **Marrongelle, K.** (2006). Pedagogical content tools: Integrating student reasoning and mathematics instruction. *Journal for Research in Mathematics Education,37*(5), 388-420.

Rasmussen, C., Kwon, O., Allen, K., **Marrongelle, K.,** & Burtch, M. (2006). Capitalizing on advances in K-12 mathematics education in undergraduate mathematics: An inquiry-oriented approach to differential equations. *Asia Pacific Education Review, 7*(1), 85-93.

Marrongelle, K. (2005). Enhancing meaning in mathematics: Drawing on what students know about the physical world. *The Mathematics Teacher, 99*, 162-169.

Marrongelle, K. (2004). Context, examples, and language: Students uses of physics to reason about calculus. *School Science and Mathematics, 10*(6), 258-272.

TECHNICAL REPORTS

Sztajn, P., **Marrongelle, K.,** Smith, P., & Melton, B. (2012). *Supporting implementation of the Common Core State Standards for Mathematics: Recommendations for professional development*. Raleigh, NC: Friday Institute for Educational Innovation at North Carolina State University.

EDITORIAL POSITIONS

International Journal for Research in Undergraduate Mathematics Education. Founding Editor (2014-2019): **Karen Marrongelle**, Chris Rasmussen, and Michael Thomas. Springer Publishers.

PRESENTATIONS

SELECTED INVITED PRESENTATIONS

A Conversation with Dr. Karen Marrongelle at POLITICO's Women Rule, October 30, 2024, https://www.politico.com/video/2024/10/30/a-conversation-with-dr-karen-marrongelle-at-politicos-women-rule-00186290.

Marrongelle, K. (2022, August). Teaching Mathematics for the Future: Centering Student Thinking to Diversify STEM. Mathematical Association of America MathFest, Philadelphia, PA.

Marrongelle, K. (2022, March). Systemic Change in Undergraduate Mathematics: Creating Visible Pathways for Diversity in STEM. Critical Issues in Mathematics Education 2022: Initiating, Sustaining, and Researching Mathematics Department Transformation of Introductory Courses for STEM Majors. Mathematical Sciences Research Institute, Berkeley, CA.

Marrongelle, K. (2020, March). The Future of Teaching and Teaching for the Future: Advancing Discoveries in Education to Drive the Scientific Enterprise. The Summit on Teaching in the 21st Century, University of California, Irvine.

Marrongelle, K. (2019, April). The Future of Education and Education Research. American Educational Research Association Annual Meeting, Toronto, Canada.

Marrongelle, K. (2018, September). Research on the concepts of calculus: Examining the past and looking ahead. MatRIC Conference, Oslo, Norway.

Marrongelle, K. (2017, July). *Research on the concepts of calculus: Our history and our future*. Proceedings of the 2017 National Institute for Mathematical Sciences & The Korean Society of Mathematical Education International Workshop on Mathematics Education, Daejeon, Korea.

Marrongelle, K. (2013, October). *The time is now: The critical role of mathematics education research in Two-Year colleges*. Association of Mathematics at Two Year Colleges Research Pre-session, Anaheim, CA.

Marrongelle, K. (2013, April). *Re-envisioning calculus: Issues in the transition from high school to college*. National Council of Teachers of Mathematics Annual Meeting, Indianapolis, IN.

Marrongelle, K. (2011, February). *Exploring mathematical knowledge for teaching calculus for understanding*. Teachers Development Group 2011 Leadership Seminar on Mathematical Professional Development, Portland, OR.

Marrongelle, K. (2010, November). *Linking classroom discourse and student learning in differential equations*. Michigan State University Mathematics Education Colloquium, East Lansing, MI.

Marrongelle, K. (2010, June). *Knowledge for teaching and teaching knowledge: How much is 'what to do in the classroom?' discipline-specific*. Transforming Research in Undergraduate STEM Education Conference, Orono, ME.

Marrongelle, K. (2009, October). *Research in Undergraduate Mathematics Education: A look at the past, present, and future of the field*. University of Oklahoma Karcher Colloquium, Norman, OK.

Marrongelle, K., Larsen, S., & Shaughnessy, M. (2007, March). *Developing and implementing mathematics courses for K-12 teachers: Merging professional development and course design*. Workshop on Mathematics Courses for Teacher Education, Tucson, AZ.

Marrongelle, K. & Larsen, S. L (2006, February). *The many jobs of mathematics educators: Is there more to do than teach?* Invited presentation to the Lewis and Clark Department of Mathematics, Computer Science and Statistics.

Marrongelle, K., Larsen, S. L., Leonard, P., & Pfaendler, K. (2006, February). *Generating mathematical discourse among teachers: The role of professional development resources*. Teachers Development Group 2006 Leadership Seminar on Mathematics Professional Development, Portland, OR.

Marrongelle, K. (2005, July). *How Students Use Calculus in Physics Contexts*. Invited presentation at Busan National University, South Korea.

Marrongelle, K. (2005, July). *Research in Mathematics Education: An Introduction and Example from Calculus*. Invited presentation at Silla National University, South Korea.

Marrongelle, K. (2002, April). *Non-Euclidean Geometry*. Clackamas Community College Pi and Ice Cream Series, Clackamas, OR.

RESEARCH PRESENTATIONS AT INTERNATIONAL MEETINGS

Marrongelle, K., Sztajn, P., & Smith, P. (2013, July). *Providing Professional Development at Scale: Recommendations from Research to Practice.* Proceedings of the 37th Annual Meeting of the International Group for the Psychology of Mathematics Education, Kiel, Germany.

Wood, T., Staples, M., Larsen, S., **Marrongelle, K.** (2008, March). *Why are Disciplinary Practices in Mathematics Important as Learning Practices in School Mathematics?* Proceedings of the ICMI Symposium on the Occasion of the 100th Anniversary of ICMI. Rome. Retrieved from <http://www.unige.ch/math/EnsMath/Rome2008/partWG1.html>.

Marrongelle, K. & Larsen, S. (2006, November). *Generating mathematical discourse among teachers: The role of professional development resources*. Proceedings of the 28th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Merida, Mexico.

Marrongelle, K. & Meredith, D. (2004, July). *The roles of calculus in physics problem solving*. Proceedings of the 10th International Congress on Mathematical Education, Copenhagen, Denmark.

Marrongelle, K. & Keller, B. (2003, July). *Integrated Mathematics and Science: Setting a Research Agenda*. Coordinator of Discussion Group at the 27th Annual Meeting of the International Group for the Psychology of Mathematics Education, Honolulu, HI.

Marrongelle, K. (2002, July). *The role of physics in students' conceptualizations of calculus concepts: Implications of research on teaching practice.* Proceedings of the 2nd International Conference on the Teaching of Mathematics (at the undergraduate level), Hersonissos, Crete.

Kerouac, P. & **Marrongelle, K.** (2013, February). *Challenging the Status Quo – Inspiring Innovation and Trust in a Common Purpose*. Presentation at the Association of American Colleges & Universities Meeting on General Education and Assessment: A Sea Change in Student Learning.

RESEARCH PRESENTATIONS AT NATIONAL MEETINGS

Rasmussen, C., **Marrongelle, K.,** & Kwon, O. (2018, February). *The instructor's role in promoting argumentation in an inquiry-oriented mathematics classroom*. Paper presented at the Twenty-First Conference on Research in Undergraduate Mathematics Education, San Diego, CA.

Marrongelle, K., Gummer, E., Fantz, T., Cohen, J., Enoch, S., & Gates, C. (2011, April). *Documenting mathematical learning objectives: A barrier to effective lesson planning?* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Gummer, E., Fantz., T., & **Marrongelle, K.** (2011, April). *Examining teachers' practices providing written feedback in mathematics problem-solving classes.* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Marrongelle, K., Larsen, S., Thanheiser, E., Staples, M., Casa, T., Gresalfi, M., (2011, April). *Learning about mathematical justification and its role in the classroom*. National Council of Teachers of Mathematics Annual Meeting, Indianapolis, IN.

Elliott, R., Mumme, J., **Marrongelle, K.,** Baldinger, E., Borko, H., Koellner, K., Chapin, S., & Anderson, N. (2011, April). *Teachers' specialized knowledge: Task use in classrooms and professional education*. National Council of Teachers of Mathematics Annual Meeting, Indianapolis, IN.

Gummer, E., Gates, C., **Marrongelle, K.,** Cohen, J., Enoch, S., & Franz, T. (2010, April). *Feedback essentials: Evidence from practice of what teachers know and do*. Paper presented at the Research Pre-session of the National Council of Teachers of Mathematics, San Diego, CA.

Enoch, S., Gummer. E., **Marrongelle, K.,** & Cohen, J. (2010, April). *Planning discourse around students' solutions: A data analysis framework.* Paper presented at the Research Pre-session of the National Council of Teachers of Mathematics, San Diego, CA.

Marrongelle, K. (2010, March). *Using student reasoning in mathematics instruction*. Presentation at the American Physical Society Annual Meeting, Portland, OR.

Marrett, C., Earle, J., Ferrini-Mundy, J., & **Marrongelle, K. (**2009, April). *The circle of knowledge meets the cycle of innovation.* Presidential Session presentation at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Rasmussen, C., Kwon, O., & **Marrongelle, K.** (2009, April). *A framework for interpreting inquiry-oriented teaching: Opportunities for student and teacher learning.* Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Earle, J., **Marrongelle, K.,** & Ferrini-Mundy, J. (2009, April). *The cycle of innovation: A framework for linking research to practice.* National Council of Teachers of Mathematics Annual Meeting, Washington, DC.

Marrongelle, K. & Enoch, S. (2008, April). *Problem solving as formative assessment: Making instructional decisions in middle school mathematics*. National Council of Teachers of Mathematics Annual Meeting, Salt Lake City, UT.

Rasmussen, C., Kwon, O., & **Marrongelle, K.** (2008, February). *A framework for interpreting inquiry-oriented teaching*. Paper presented at the Eleventh Conference on Research in Undergraduate Mathematics Education, San Diego, CA.

Park, J., Kwon, O., Ju, M., Rasmussen, C., & **Marrongelle, K.** (2007, February). *Roles of revoicing in the inquiry-oriented mathematics class: The case of undergraduate differential equations*. Paper presented at the Tenth Conference on Research in Undergraduate Mathematics Education., San Diego, CA.

Marrongelle, K. & Larsen, S. (2007, February). *Record-of/Tool-for Transitions: Significant shifts in the way students use notational systems*. Paper presented at the Tenth Conference on Research in Undergraduate Mathematics Education, San Diego, CA.

Marrongelle, K. & Larsen, S. (2007, January). *The role of professional development resources in generating mathematical discourse*. Annual Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA.

Marrongelle, K. (2006, April). *The role of graphs and gestures in students' algorithmatization*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Higgins, K., **Marrongelle, K.,** & Rigelman, N. (2006, February). *Building mathematics leadership through a partnership between K-12 and higher education institutions*. Ninth Annual Conference of the Oregon Association of Teacher Educators, Portland, OR.

Dick, T. P. & **Marrongelle, K.** (2006, January). *Building K-12 mathematics leaders: Experiences of the Oregon Mathematics Leadership Institute Partnership Project in enhancing mathematics content knowledge for teaching. Annual* Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, San Antonio, TX.

Marrongelle, K. & Horst, E. (2005, February). *Comparing student achievement in constructing differential equations models*. Paper presented at the annual conference of the Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education, Phoenix, AZ.

Marrongelle, K. & Rasmussen, C. (2004, April). *The functions of graphs and gestures in algorithmatization*. Paper presented at the Research Pre-session of the National Council of Teachers of Mathematics, Philadelphia, PA.

Rasmussen, C., **Marrongelle, K.,** & Keynes, M. (2003, April). *Incorporating student thinking in instruction: The use of pedagogical tools in the classroom.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Marrongelle, K. (2003, April). *A framework for examining integrated calculus/physics students' reasoning about calculus concepts*. Paper presented at Research Pre-session of the National Council of Teachers of Mathematics, San Antonio (session organizer).

Marrongelle, K.A. (2002, October). *Using physics as a transitional tool in the learning of calculus.* Paper presented at the 24th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Athens, GA.

Marrongelle, K. (2002, October). *Interdisciplinary Calculus/Physics: Learning from the development and evaluation of one program.* 41st Annual Northwest Mathematics Conference, Portland, OR.

Marrongelle, K., Keynes, M., Rasmussen, C. (2002, July). *Pedagogical Tools: A Conceptual Resource for Teaching.* Sixth Conference on Research in Undergraduate Mathematics Education, Burlington, VT.

Marrongelle, K. (2002, June). *Physics experience and calculus: How students use physics to construct meaningful calculus concepts.* Joint meeting of the Western Section of the American Mathematical Society and the Pacific Northwest Section of the Mathematical Association of America, Portland, OR.

Marrongelle, K. & Benson, S. (2002, April). *Mathematical Olympians: Who are they, where are they from, how did they get where they are?* National Council of Teachers of Mathematics annual meeting, Las Vegas, NV.

Marrongelle, K. & Benson, S. (2002, January). *Our summer on Mount Olympus: The Mathematical Olympiad summer program and the International Mathematical Olympiad.* Annual Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, San Diego, CA.

Marrongelle, K., Black, K., Meredith, D. (2001, January). *The outcomes of direct problem solving instruction in an integrated calculus and physics program.* Annual Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA.

Marrongelle, K. (2000, November). *When calculus and physics meet: The In Search of Newton program.* National Council of Teachers of Mathematics Eastern Regional Conference, Springfield, MA.

Marrongelle, K. (2000, October). *Teaching and learning in an interdisciplinary calculus and physics setting: Results after two years*. National Council of Teachers of Mathematics Eastern Regional Conference, Philadelphia, PA.

Berk, D. M. & **Marrongelle, K.** (2000, September) *Journal writing in the mathematics classroom.* Poster presented at the fifth annual conference on Research in Undergraduate Mathematics Education, Chicago, IL.

Marrongelle, K., Black, K., & Meredith, D. (2000, January). *The effects of an interdisciplinary calculus/physics program on student performance and attitude toward mathematics.* Annual Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, Washington, DC.

Marrongelle, K., Black, K., & Meredith, D. (1999, September). *In search of Newton: A description and evaluation of an interdisciplinary calculus and physics program.* Paper presented at the fourth annual conference on Research in Undergraduate Mathematics Education, Chicago, IL.

Meredith, D., Black, K., & **Marrongelle, K.** (1999, July). *In search of Newton.* Annual meeting of the Association of Physics Teachers, San Antonio, TX.

Black, K., **Marrongelle, K.,** & Meredith, D. (1999, March). *In search of Newton.*35th Annual Meeting of the New Hampshire Section of the Association of Teachers of Mathematics in New England, Plymouth, NH.

HONORS, GRANTS & FELLOWSHIPS

POST GRADUATE AWARDS

Columbia-Willamette Chapter of Sigma Xi **Outstanding Researcher Award in Mathematical Sciences,** 2006.

Portland State University College of Liberal Arts & Science John Eliot **Outstanding Teaching Award,** 2003-2004.

Mathematical Association of America **Leitzel Project NExT Fellow,** 2002-2003.

Center for Learning and Teaching in the West **Faculty Fellow,** 2001-2003.

Oregon Collaborative for Excellence in the Preparation of Teachers **Faculty Fellow,** 2001-2002.

EXTERNAL GRANTS FUNDED

Secured approximately $4M in funding from the National Science Foundation from 2005-2015 to support research on undergraduate physics learning and curriculum design; undergraduate mathematics curriculum development; K-12 mathematics teacher professional development; algebraic reasoning; and middle school mathematics problem solving. Received funding from the Korean Research Foundation to support research on the learning and teaching of undergraduate differential equations.

TEACHING, MENTORING & CURRICULAR ACHIEVEMENTS

COURSES TAUGHT

Taught variety of courses in mathematics and mathematics education, including undergraduate courses such as Foundations of Elementary Mathematics I & II, Calculus I, II, III, IV, Applied Differential Equations I, as well as master's and doctoral-level courses. Oversaw a number of individual Reading & Conference, Research, Cooperative Education, and Seminar courses for individual students at undergraduate and graduate levels.

UNDERGRADUATE & GRADUATE ADVISING

Served as McNair Scholars Program faculty advisor and Chiron Studies advisor to undergraduate students. Advised graduate students in the Master of Science in Teaching Program in Mathematics.

DOCTORAL SUPERVISION

Matthew Petersen, Ph.D. – Mathematics Education, 2020.

Ann Sitomer, Ph.D. – Mathematics Education, 2014.

Sarah Enoch, Ph.D. – Mathematics Education, 2013.

Jennifer Noll, Ph.D. – Mathematics Education, 2007.

Rick Anderson, Ph.D. – Mathematics Education, 2006.

PROFESSIONAL DEVELOPMENT

Selected Participant, WICHE Western Academic Leadership Academy, 2018-2019.

Selected Participant, ASSCU/AALI Becoming a Provost Academy, 2014-15.

Selected Participant, SHEEO/Lumina Foundation Academy for State Policy Leadership, August 2012.

Invited Participant, NCES High School Longitudinal Study and Undergraduate Mathematics, May 2011.

Invited Participant, Creating a Research Agenda for Understanding the Influence of the Common Core State Standards in Mathematics, May 2011.

Invited Participant, Mathematics Proficiency for Teaching Conference, March, 2010.

Invited Participant/Keynote, Transforming Research in Undergraduate STEM Education Conference, June 2010.

Invited Participant, National Council of Teachers of Mathematics Research Catalyst Conference, September 2003. Selected as one of 80 international participants in conference designed to improve pre-K-12 mathematics teaching and learning by generating and catalyzing coordinated research in mathematics education.

Mathematical Association of America PREP Workshop on Assessment, Departmental Assessment team representative January 2002 and January 2003.

GOVERNANCE & RELATED ACTIVITIES

Department of Mathematics & Statistics Mathematics Education Doctoral Program, Director, 2006-2011.

Portland State University Faculty Senate, 2010-2013.

Portland State University Child and Family Services Advisory Committee, 2010-2011.

Portland State University Partnering for Student Success P-20 Advisory Group, 2009-2011.

Director, Mathematics Education, Department of Mathematics & Statistics, 2010-2011.

Department of Mathematics & Statistics, Executive Committee, 2004-2005 & 2009-2010.

Department of Mathematics & Statistics Pay, Promotion, and Tenure Committee, chair, 2009-2010.

Department of Mathematics & Statistics Mathematics Education Search Committee, chair, 2005.

Department of Mathematics & Statistics Graduate Teaching Assistant Committee, chair, 2002-2006.

Department of Mathematics & Statistics Graduate Teaching Assistant Committee, 2002-2010.

Department of Mathematics & Statistics Pay, Promotion, & Tenure Committee, 2002-2004, 2009-2011.

Portland State University Undergraduate Achievement Scholarship Selection Committee, 2002.

Center for Learning and Teaching in the West Graduate Fellow Selection Committee, 2002.

Department of Mathematics & Statistics Mathematics Education Committee, 2001-2007.

Department of Mathematics & Statistics Undergraduate Committee, 2001-2002.

PROFESSIONAL SOCIETY MEMBERSHIPS

American Association for the Advancement of Science

American Educational Research Association

American Mathematical Society

Association of Women in Mathematics

National Association of Mathematicians

National Council of Teachers of Mathematics