Henriette D. Burns
Curriculum Vitae
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Professional Preparation

Washington State University	Pullman	Math/Science Ed.	Ph.D.	2020
Washington State University	Vancouver	Math Ed.	MiT	2012
University of Oregon	Eugene	Org. Behavior/Mktg.	M.B.A.	
Northwestern University	Evanston	Material Sc./ Bio-medical Eng.	B.S.	

Appointments

STEM Fellow, STEM Center, Southern Illinois University	2018-present
Science Methods Instructor and NSF Researcher	
WA State STEM Director/R.A., Washington State University	2010-2016
Coding/Critical Thinking, Math Instructor, Seattle Archdiocese	2014-2015
Math/Coding Curriculum Dev/Teacher, Native American Youth Assc.	2014
Excel Math/Special Ed/ELL Instructor, Evergreen School District	2012-2018
WA STATE STEM Program Manager, Coordinator, AHAS Teacher, R.A	2010-2016
Owner/Tutor Design Thinking, *STEM to Branches, Inc.*	2010-current
Business Operations Manager, Hewlett-Packard	2002-2009
Mfg. Engineer/Project Manager, Hewlett Packard	1997-2002
Project Manager/Staff Engineer, Fru-Con Construction	1996-1997
Senior R&D Engineer, Monsanto	1992-1997
Senior Corporate Staff Engineer, Tenneco	1989-1992

Other Positions

Senior R&D Engineer/Project Manager and Project Management Instructor, Baxter-Healthcare
New Business R&D Project Engineer, Abbott Labs
Mfg. Engineer/Project Manager, Johnson & Johnson

Academic and Professional Honors

STEM Institute	Harpeth Hall Summer Scholarship	2017
NARST	Abell International Doctoral Scholar	2017
Washington State	WSU Alum Foundation Scholarship, WSU School of Education Scholarship, Arnold-Martha Graduate Scholarship, Kegel Graduate Fellowship, Deborah T. Killinger Scholarship, Bill Wilson Scholarship	2012-2018
YWCA Washington	Community Reach Award	2006
Hewlett Packard Corp.	Top 20 Corporate Hispanic Leaders	2006
University of Oregon	Faculty Excellence Award-Marketing, & Organizational Behavior, Diversity Mentor Scholar	2002

Institute of Packaging Professionals	*Ameri-Star* Engineering Design	1991
Northwestern University	NU Foundation Scholar-Four Year Scholarship	

Publications

Burns, Burns, H., Johnson, M., Wilson, C., McKinney, M., Bracey, G., Vogel, A., & Locke, S. (June, 2020). Mitigating the fear of failure in a STEM + computational thinking program for minority girls. *ASEE 2020: American Society for Engineering Education Annual Conference & Exposition.* Montreal, Canada.

Burns, H. (2018, September). Do middle school students believe girls belong in engineering? Proceedings from *FIE 2018: Frontiers in Education Conference*. San Jose, CA

Burns, H. & Rice, S. (2018, June). Believing girls belong in engineering: So, what? Proceedings from *ASEE 2018: American Society for Engineering Education Annual Conference & Exposition.* Boise, ID.

Burns, H. & Lesseig, K. (2017, October). Empathy in middle school engineering design process. Proceedings from *FIE 2017: Frontiers in Education Conference*. Indianapolis, IN

Burns, H. & Lesseig, K. (2017, June). Infusing empathy into engineering design: Supporting under-represented student interest and sense of belongingness. Proceedings from *ASEE 2017: American Society for Engineering Education Annual Conference & Exposition*. Columbus, OH.

Burns, H. (2017, April). Middle school students understanding of engineering empathy. Proceedings from *2017: American Society of Engineering Educator-PNW Chapter*, Seattle, WA.

Burns, H., Lesseig, K., & Staus, N. (2016, October). Girls' interest in STEM. Proceedings from *FIE 2016: Frontiers in Education Conference*. Erie, PA

Burns, H. & Lesseig, K. (in final review). Infusing empathy in k-12 STEM. *School Science and Mathematics.* Wiley-Blackwell, Oxford, United Kingdom.

Finley, S. & Burns, H. (in preparation). The politics of belonging: Improving the odds for authentic engagement in STEM education of U.S. students who live in poverty. *International Journal of Qualitative Studies in Education.*

de Rozario, H. *Geodesic domes and virus structures*. Northwestern University Press, Evanston, Illinois.

Presentations

Burns, H., Johnson, Watson, C., McKinney, M., Bracey, G., Vogel, A., & Locke, S. (March, 2020). Group Discussion on STEM curriculum for a minority girls' after-school program. *NARST 2020: National Association of Research in Science Teaching (NARST).* Portland, OR.

H., Burns, H. (2019, March). Educators and empathy in the design process. Paper presented at *2019 National Association of Research in Science Teaching (NARST).* Baltimore, MD.

Burns, H. (2017, October). Understanding and Applying Empathy in the Engineering Design Process in STEM. Paper presented at *2017 National STEM Education Research and Practice Summit,* Purdue University, West Lafayette, IN.

Burns, H. (2017, February). Empathy and under-represented student STEM interest. Paper presented at *2017 Globalization Conference*, Washington State University, Spokane, WA.

Other Presentations

2020 Washington State University, *At Home at School (AHAS) Revisioning AHAS in an Increasingly Diverse World*, January, 2020, section leader.
2019 Southern Illinois University, faculty presentation.
2019 University of Georgia, visiting professor presentation.
2017 Washington State University Vancouver, Research Showcase on Dissertation.
2017 Washington State University, Vancouver, Three Minute Dissertation.

Posters

Burns, H., Murphy, S., Johnson, M., Bracey, G., McKenney, M., Vogel, A. (2019, June). STEM Curriculum for a Minority Girls' After-School Program. Poster presented at *ASEE 2019:American Society for Engineering Education Annual Conference & Exposition* (ASEE). Tampa, FLA.

Burns, H. (2018, March). Unveiling student STEM interest, belongingness and empathy. Poster presented at *Abell Doctoral Scholars 2018 National Association of Research in Science Teaching* (NARST). Atlanta, GA.

Burns, H., & Lesseig, K. (2017, April). Math interest: Mediating and moderating effects in STEM. Poster presented at *2017 National Conference of Teachers of Mathematics* (NCTM), San Antonio, TX.

Burns, H., Lesseig, K., Staus, N. & Lamb, R. (2016, November). STEM interest: Science as a Moderator. Poster presented at *2016 National Science Teachers Association Regional Conference*, Portland, OR.

Nelson, T. H., Slavit, D., Burns, H. & de Vincenzi, A. (2013). Implementing project-based learning in a new, inclusive STEM-focused secondary school. Poster presented at *2013 WSU Technology Fair.*

Research Activities

2020- current
Co-PI Computational Thinking and Discrete Math in k-8. Southern Illinois University Edwardsville, Innovation Grant.

2019- current
Primary Investigator (PI), Games and Empathy. Southern Illinois University Edwardsville, Innovation Grant.

2018- current
Co-PI, Primary Educational Researcher, NSF Grant No. 1741999, STEM + Computational Thinking Integrated Curriculum for Minority Girls at Southern Illinois University Edwardsville.

2018- current
Co-PI, with Clark College School of Engineering. Improving Non-Typical Student Retention in Engineering, Designing and Teaching Girl Friendly Robotics.

2015- 2018
Co-PI, with Lesseig, K. STEM Interest. In partnership with one corporation, one college engineering outreach program (*NerdGirls*), and two middle schools in two school districts. This mixed method study focuses on underrepresented populations, particularly

girls in corporations and colleges, and middle school after-school maker programs (unfunded research).

2013- 2019

Evaluator, Hrdina, V., National Girls Collaborative Project, *nPower Girls*. Program seeks to broaden the participation of girls and women in all fields of science, technology, engineering, and mathematics (STEM) education by supporting research, dissemination of research, and extension service in education that will lead to a larger and more diverse domestic science and engineering workforce. NSF Grant No. HRD-1532643.

2013-2015

Research Assistant, Lesseig, K. Increased STEM Achievement through multi-level Learning Inquiry Teams (*STEM-LIT*). In partnership with ESD-112, this project Focused on deepening middle school teachers' content knowledge in math and science through the development and implementation of STEM Design Challenges that align with Common Core State Standards for Mathematics and Next Generation Science Standards. Funding: National Science Foundation Math Science Partnership $750,000. Responsibilities were primarily observing classes and conducting interviews/focus groups with *StudioCode* software and coding videos.

2012-2014

Research Assistant, Slavit, D. & Nelson, T. WSU STEM Education Partnership. Four-campus, seven college partnerships focused on STEM educational research and engagement (unfunded research). Responsibilities included observing science classes in new STEM schools and conducting interviews with video and coding data, and writing grants.

2010-2018

Research Assistant, Finley, S. *At Home at School Program (AHAS). AHAS* provides educational support to students who are "low status": e.g., homeless, in transitional and other subsidized low-income housing, free and reduced lunch, foster care, etc., (and includes children of volunteers who provide 75 hours.) 2) *AHAS@Work* is the site of community-based field inquiry education provided in fulfillment of WSUV's charge of preparing new teachers to work in an increasingly diverse society; and 3) *AHAS@Work* is the site for ongoing research about teaching, learning, and issues of social justice and equity in education. WSU and Volunteer Match grant funded.

Synergistic Activities

- Community Leader in greater St. Louis area to establish and maintain a local *Women of Color in STEM* network organization. Meet & Greets occur quarterly Southern Illinois University Edwardsville with additional events at student sites in the area.
- *Abell* Doctoral Scholar for the National Association of Research in Science Teaching for work on Empathy and Girls in Engineering.
- Leader in community engagement in multiple endeavors, including as executive officer for *Airway Science for Kids, Inc.*, a non-profit teaching all kids about aeronautics and aviation.
- Director-at-Large, alumni board of University of Oregon Lundquist School of Business.
- Founder, *STEM to Branches*, for profit entity connecting business and government to education, w/focus on under-represented and low-income populations.
- Northwestern University Alumni Admissions Council. Portland NU Alum President, Treasurer.

- Engineering Industry Advisory Boards for Northwestern University McCormick School of Engineering and University of Missouri, School of Mines. Initiated the student organizations for Latino (SHPE), Native American Engineering (AISES), and MBAs (SHMBA) at NU. Monsanto representative for Midwest Agricultural Council Board. Technical and diversity college recruiter for Monsanto and HP.
- Founder, *STEM to Branches*, non-profit entity connecting business and government to education, w/focus on under-represented and low-income populations,
- Founder & Chairmen, *Women of the Oregon Executive MBA*, a network supporting needs of underrepresented local small businesses and business students advising on loans, writing business plans, resume writing and interview skills.
- Cofounder, *NoLines*, a consortium of education, law and medical school graduate current students in the PNW who helps connect professionals who help immigrants in crisis.
- Creator and lead of *Vancouver Business Men/Women* and the Unity Festival at HP focused on diversity in the PNW. HP representative for Society of Women Engineers (board member), SHPE, AISES, and SHMBA. Her appointment to the SWIFT (SWW leading philanthropic group) board as an HP representative offered experience in reviewing grants. VP HP People of Color Network.

Service

- NSF Review Panel: 2020
- J-PEER Journal Reviewer: 2020
- NARST Community Engagement Annual Event and Book Drive creator and lead-2019, 2020
- NARST External Policy and Relations Committee-2020
- *School Science and Mathematics (SSM)*-Journal Reviewer: 2018, 2019, 2020.
- National Association of Research on Science Teaching (NARST)-Conference Paper Reviewer: 2018, 2019, 2020; K-12 Pre-Engineering Committee, Diversity Committee, 2019, 2020.
- American Society of Engineering Education (ASEE)-Education Research and Methods (ERM), Minorities (MIND), Prek-12, Graduate Students, Diversity, Women in Engineering, Community Outreach and Ethics Committees. Conference Session Chair: 2016, 2017, 2018, 2019, 2020. Conference Paper Reviewer: 2017, 2018, 2019, 2020. ASEE/CoNECD paper reviewer, 2019, 2020.
- Frontiers in Education (FIE)-Conference Paper Reviewer: 2015, 2016, 2017, 2018. Conference Session Chair: 2016, 2017.
- EDA/INCULT Conference-Conference Paper Reviewer: 2016.