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EDUCATION

Ed.D. in Teacher Education and Curriculum Studies **2018**
University of Massachusetts Amherst

Dissertation Title: "Motivation and Gender Dynamics in High School Science: The Effect of Gender Composition on Motivation in Small Group Inquiry and Engineering Tasks"
Committee: Claire Hamilton (Chair), Elizabeth McEneaney, Martina Nieswandt, Nilanjana Dasgupta

Ed.M. in Education **1997**
Smith College, Northampton, MA

B.A. in Spanish Language and Literature **1995**
Smith College, Northampton, MA

TEACHING AND ACADEMIC COACHING POSITIONS

University of North Dakota, Grand Forks, ND
College of Education and Human Development, August 2017 – present
Title: Assistant Professor
Tenure-track faculty member in the College of Education and Human Development's Teaching Leadership, and Professional Practices Department. Currently teach undergraduate courses TL 470, *Science in the Elementary School* and TL 474, *STEM Concepts in the Elementary Classroom,* as well as graduate courses TL 518, *Science in the Elementary School*, TL 569 Action Research, and TL 579, *Inquiry into Professional Practices*. Designed additional courses for 2020 including TL 404, *Assessment in the Elementary Classroom*, TL 405, *Data Literacy for Teachers,* TL 474, TL 579, and TL 555, *Issues of Motivation and Equity in STEM Education*. Serve as Director of the Elementary Education Program area, co-chair of Innovation Task Force, Coordinator for the

Masters in Teaching and Leadership STEM specialization area, and member of the Essential Studies and Curriculum and Instruction Committees. Conduct research related to the field of STEM education, including gender dynamics, Indigenous STEM education, and models of teacher professional development, as well as in innovative educational practices in public schools. Supervise student teachers from UND in their classroom field placements. Advise masters level and doctoral students in their programs.

University of Massachusetts, Amherst, MA
Co-instructor, Spring 2016, Fall 2017
Taught professional development workshop titled "Using Design-Based Science Activities in Biology" in graduate-level pre-service teacher education course titled "Advanced Principles and Methods of Teaching Science in the Middle and High School", Department of Teacher Education and Curriculum Studies, College of Education, UMass Amherst.

Science Education Online, University of Massachusetts, Amherst, MA
Program Assistant, 2016 - 2017
An online graduate program for elementary and middle school teachers providing inquiry-based, hands-on courses for teachers to improve their science content knowledge and teaching skills.
Coordinator: Professor Martina Nieswandt, Science Education
Responsibilities included communicating with students in the program regarding their coursework and program of study; managing and maintaining program paperwork and student files; communicating with prospective students about the program; acting as a liaison between Professor Nieswandt and course instructors; facilitating communication between the College of Education and current students; updating program information

Vermont Academy, Saxtons River, VT
Math Department Chair and Teacher, 2016 – 2017
Responsibilities include supervising and mentoring all teachers in the mathematics department; researching, recommending, and assisting with implementation of effective curricula and teaching practices; mapping curricula across all high school grades and aligning to standards; facilitating department meetings; planning and leading professional development opportunities; teaching Algebra I and Geometry to 9^{th} and 10^{th} graders.

Dummerston School, Dummerston, VT
Academic Support Coach, 2013 – 2016
Responsibilities included providing enrichment and intervention for grades K – 8; professional development for teacher colleagues in math curriculum, pedagogy, and Common Core State Standards; professional development for teacher colleagues in Next Generation Science Standards (NGSS); teaching model lessons; facilitation of weekly literacy professional development meetings; facilitation of monthly data review meetings; coordination and training in Smarter Balanced Assessment Consortium (SBAC) assessments and AIMSweb assessment system; coordination of Virtual High School (VHS) online courses for middle school students

Dummerston School, Dummerston VT
5th Grade Teacher, 2011 – 2013
Taught all subjects in self-contained 5th grade classroom. Supervised pre-service teachers from the Spark Teacher Education Institute.

Windham Southeast Supervisory Union, Brattleboro, VT
District K – 8 Math Coach, 2010 – 2011
Responsibilities included coaching district teachers in *Investigations in Number, Data, and Space* math curriculum and pedagogy, teaching model lessons, training teachers in use of AIMSweb data management systems, training teachers in use of Kathy Richardson's *Assessing Math Concepts*, facilitating benchmark data meetings in all district schools, evaluating and compiling curriculum materials

Green Street School, Brattleboro, VT
Elementary Teacher, 2001 – 2010
Taught all subjects in self-contained kindergarten, 1st, 2nd, and 5th grade classrooms. Supervised pre-service teachers from Keene State College, Endicott College, Union Institute, and the Upper Valley Teaching Institute

Smith College Campus School, Northampton, MA
Elementary Teacher, 1998 – 2001
Taught all subjects in self-contained, laboratory 2nd grade classroom. Supervised pre-service teachers from Smith College. Participated in Smith College Education Department's research on inquiry science.

Marlboro Elementary School, Marlboro, VT
Elementary Teacher, 1997 - 1998
Taught all subjects in multi-age, 2nd and 3rd grade collaborative, open classroom.

Smith-Northampton Summer School, Northampton, MA
Theater Teacher/Director, Summer 1997
Taught "Foundations of Drama and Theater" course to middle school student as part of summer school program. Directed *Little Shop of Horrors* musical for public performance.

Lake Grove Wendell, Wendell, MA
High School Teacher, 1995 - 1996
Taught all 10th grade curriculum in private boarding school for court-adjudicated boys.

RESEARCH EXPERIENCE

University of North Dakota, Grand Forks, ND
Co-Principal Investigator, current

Currently conducting research on culturally relevant engineering professional development and education in Native-serving elementary and middle schools in North Dakota as part of an NSF-funded DRK-12 grant. Responsibilities include serving as co-principal investigator, design and delivery of teacher professional development, data collection, management, analysis, and dissemination of findings through publications and conference presentations.

University of North Dakota, Grand Forks, ND
Researcher, current
Currently conducting research and developing grant proposals on innovative approaches to education in North Dakota schools, including proficiency-based instruction, customized digital learning environments, and a phenomenon-based approach to STEM for increasing participation of under-represented groups. Responsibilities include serving as principal investigator, data collection, management, analysis, and dissemination of findings through publications and conference presentations.

University of Massachusetts, Amherst, MA
Research Assistant, 2014 - 2016
Responsibilities included data collection, data analysis, assisting in curriculum development and teacher professional development, and dissemination of research findings by conference presentations for NSF- funded project titled "Managing Small Groups to Meet Psychological and Social Demands of High School Science" (Project REESE, DRL-125233), PI: Dr. Martina Nieswandt, Co- PI: Dr. Elizabeth H. McEneaney.

PUBLICATIONS

Robinson, J. & Hammack, R. (under review). Engaging preservice teachers in collaborative inquiry projects during remote instruction. *Innovations in Science Teacher Education*.

Robinson, J., Hunter, J., & Mackey, H. (in press). Creating bridges instead of borders: Fostering student resilience through integrated, play-based watershed curriculum. In Indigenous Science Knowledge Book Series: Book 1 *Stories for sustainable and resilient communities: STEM education from Indigenous perspectives.*

Robinson, J., McEneaney, E., & Nieswandt, M. (preparing for submission). Gender and engineering: Using template analysis to explore manifestations of motivation in small high school engineering groups. *International Journal of Science Education*.

Mackey, H., Luecke, D., **Robinson, J.,** and Rino, R. (2021). Partnership through story: promising practices for meaningful research. *Tribal College Journal of American Indian Higher Education*. *33*(2).

Robinson, J. (in press). Making C-E-R "attractive" for elementary teacher candidates. *Science and Children*.

Gonzales, A.C., Purington, S., **Robinson, J.,** & Nieswandt, M. (2019). Teacher interactions and effects on groups' triple problem solving space. *International Journal of Science Education, 41*(13)*,* 744 – 763.

Robinson, J., Nieswandt, M., & McEneaney, E. (2018). Motivation and gender dynamics in high school engineering groups. Proceedings of the 2018 American Society for Engineering Education (ASEE) CoNECD conference, Crystal City, VA.

Affolter, R., **Robinson, J.,** Lord, B., & Nieswandt, M. (September, 2017). Iteration is at the heart of science and engineering. *The Science Teacher*, *84*(6), 50 – 55.

CONFERENCE PRESENTATIONS

Robinson, J. & Hammack, R. (under review). *Pre-Service Teachers' Engagement in Collaborative Inquiry Projects During Remote Instruction*. Paper to be presented at the 2022 Association for Science Teacher Education (ASTE) International Conference, Greenville, SC.

Robinson, J. (under review). *Indigenizing the Processes of Science and Engineering – Increasing Inclusivity with Implementation of the SEP's*. Symposium to be presented at the National Research in Science Teaching (NARST) Annual Conference, Vancouver, BC, Canada.

Ozturk, E., Bowman, F., & **Robinson, J.** (under review). *Teachers' Perceptions on Culturally Relevant Engineering Design: Reflections from Professional Development*. Paper to be presented at the American Educational Research Association (AERA) Annual Meeting, San Diego, CA.

Mackey, H., Robinson, J., & **Hunter, J.** (under review). *Creating Bridges Instead of Borders*. Paper to be presented at the American Educational Research Association (AERA) Annual Meeting, San Diego, CA.

Mackey, H., Luecke, D., **Robinson, J.,** Biggane, E., & Rino, R. (under review). *Partnerships through Story*. Paper to be presented at the American Educational Research Association (AERA) Annual Meeting, San Diego, CA.

Smart, K. & **Robinson, J.** (2021, July). *Action Research for Teachers: A Novel Approach to Scaffolding & Supporting Teachers in Learning the Research Process*. Paper presented at the National Social Science Association (NSAA) Virtual Conference.

Robinson, J. (2020, May). *Exploring student motivation in a digital, personalized learning environment.* Paper presented at the virtual International Conference on Motivation (Sig 16).

Bowman, F., **Robinson, J.,** Klemetsrud, B., and Lacina, E. (2021, May). *Exploring Culturally Relevant Engineering Education Design.* STEM for All Video Showcase.

Robinson, J., Hunter, J., Bladow, J., Schlenker, J. and Dodson, J. (2021, April). *Collaborative Learning Gardens: Establishing Community Connections between UND's College of Education and Human Development and Valley Middle School.* Poster presented at the virtual Pre-Place-Based Education Symposium Poster Session.

Smart, K., Gourneau, B., & **Robinson, J.** (2021, March). *A Year into the Pandemic: Survey of Education Students' Well-Being.* Paper presented at the National Social Science Conference. Virtual.

Gourneau, B., Smart, K., & **Robinson, J.** (2021, March). *Face to Face and Distance Learning for First Year Teachers.* Paper presented at the National Social Science Conference. Virtual.

Hammack, R. & **Robinson, J.** (2020, December). *Engaging Pre-Service Teachers in Collaborative Inquiry Projects During Remote Instruction*. Paper presented at the NW-ASTE unConference. Virtual.

Robinson, J. (2020, September). *Exploring student motivation in a digital, personalized learning environment*. Poster to be presented at the International Conference on Motivation (Sig 8 meets Sig 16), Dresden, Germany. (cancelled due to COVID-19)

Robinson, J., Hunter, J., Gourneau, B., & Bahnson, A. (2021, April). *Developing Indigenous students' STEM identities through a phenomenon-based approach: integrating a STREAM curriculum in the elementary classroom*. Paper to be presented in the Indigenous Science Knowledge Research Interest Group. Administrative session at the National Association for Research in Science Teaching (NARST) Annual Conference, Orlando, FL.

Robinson, J. & Young, T. (2020, March). *Future City Series*. Workshop series presented at the North Dakota Science Teachers' Association (NDSTA) STEM Conference, West Fargo, ND. (Cancelled due to COVID-19)

Robinson, J., Nieswandt, M., & McEneaney, E. (2019, April). *The effect of gender composition on motivation in small high school biology groups*. Paper presented at the National Association for Research in Science Teaching (NARST) Annual Conference, Baltimore, MD.

Robinson, J. (2018, August). *Small group design: the effect of gender composition on student*

motivation in STEM. Poster presented at the International Conference on Motivation (Sig 8 ICM), Aarhus, Denmark.

Robinson, J., Nieswandt, M., & McEneaney, E. (2018, April). *Motivation and gender dynamics in high school engineering groups*. Paper presented at the American Society for Engineering Education (ASEE) CoNECD Conference, Crystal City, VA.

Robinson, J. (2018, March). *There's no crying over spilled oil*. Workshop presented at the NDCTM (North Dakota Council of Teachers of Mathematics)/NDSTA (North Dakota Science Teachers Association) STEAM Conference, Valley City, ND.

Guo, M. & **Robinson, J.** (2017, June). *Engineering design in a high school classroom: an improved oil spill activity as a model for design-based science*. Workshop presented at the American Society for Engineering Education (ASEE) Annual Conference & Exposition, Columbus, OH.

Robinson, J. (2017, April). *The Effect of Gender Composition on Small Groups in High School Science*. Paper presented at the National Association for Research in Science Teaching Annual Conference (NARST), San Antonio, TX.

Guo, M. & **Robinson, J.** (2017, March). *Oil spill clean-up: A model for design-based learning and teaching*. Workshop presented at the Integrated STEM Education Conference (ISEC), Princeton, NJ.

Robinson, J. & Guo, M. (2016, April). *Looking through different lenses into small groups in science.* Invited lecture at The College of Education's Fortnightly Lecture Series, University of Massachusetts, Amherst, MA.

Robinson, J. (2016, March). *Gender dynamics in high school science*. Poster presented at Annual New England Doctoral Students Conference (NEDSC), Rivier University, Nashua, NH.

Robinson, J. (2016, March). *Gender dynamics in high school science*. Poster presented at Doctoral Students' Gallery Walk, University of Massachusetts, Amherst, MA.

Robinson, J. (2013, October). *Adolescent girls' engagement with science class: a review of the literature*. Paper presented at the Northeastern Educational Research Association Conference (NERA), Rocky Hill, CT.

Robinson, J. (2012, October). *The experience of middle school girls in their science classroom*. Poster presented at the Northeastern Educational Research Association Conference (NERA), Rocky Hill, CT.

Robinson, J. (2009, May). *Student resilience and attention*. Paper presented at the first annual Teachers as Researchers Conference, University of New Hampshire, Manchester, NH.

GRANTS, SCHOLARSHIPS, AND FUNDED PROJECTS

NSF ITEST Grant, Cultivating STEM Career Interest in ND Middle School Students with UAS. W. Hung (Principal Investigator), **J. Robinson** (Co-Principal Investigator), N. McGaughey (Co-Principal Investigator), T. Stokke (Co-Principal Investigator). $1,500,000. **Under review.**

Rural Schools Collaborative Catalyst Grant, A Strengths-Approach to Rural Collaborations: Identifying and collaborating in the recruitment and retention of teachers in diverse rural settings. Hunter, C. (Principal Investigator), D'Amico, D., Gourneau, B., Summers, R., **Robinson, J.**, Hunter, J., Johnson, C., & Carol, S. (Co-Principal Investigators). $25,000. **Funded 2021.**

U.S. Department of Education Grant, Indian Professional Development Program. De Silva, R. (Principal Investigator), Hunter, J. (Co-Principal Investigator), & **Robinson, J.** (Co-Principal Investigator). $1,440,000. **Funded 2021.** Award: S299B210021.

NSF DRK-12 Grant, River of Dreams: Developing teachers' STEAM self-efficacy through a phenomenon-based approach to exploring local watersheds, $380,743, Principal Investigator. Not funded, revising **for submission OCT 2021**

National Science Foundation, Discovery Research, Late stage design and development K-12. $3,000,000. Modest Supports in Rural Schools: A multi-state approach to NGSS teacher professional learning. R. Summers (Principal Investigator), R. Hammack, M. Inouye, A. Iveland, & C. Ringstaff (Co-Principal Investigators), **J. Robinson (Senior Personnel).** Not funded, revising **for submission OCT 2021**

NDSU Jr. Gardener Grant. $400. **Funded 2021.**

NSF DRK-12 Grant, Exploring changes in elementary teachers' engineering design self-efficacy and practice through ongoing, collaborative professional development, $449,868, Bowman, F. (Principal Investigator), **Robinson, J.,** Klemetsrud, B., & Lacina, E. (Co-Principal Investigators). **Funded 2020.** NSF Award: 2010269.

NSF EPSCoR Track II – FEC, Machine Learning for Complex Biomass Pyrolysis Networks, $5,766,762, Kubatova, A. (Principal Investigator), Navarro, R., Smirnova, A., & Kozliak, J. (Co-Principal Investigators), Summers, R., **Robinson, J.**, & Loh, Y. (Senior Personnel). **Not funded**

University of North Dakota Post-Doctoral Seed Funding Program, $140,000, **Robinson, J.** (Principal Investigator) & Bowman, F. (Co-Principal Investigator). **Funded 2020.**

North Dakota Career and Technical Education Department. Future City in North Dakota. $50,000, Young, T. (Principal Investigator), Summers, R., **Robinson, J.**, Gilmore, M., Ji, Y., Haeselin, D., & Pearson, D. (Science Educators). **Funded 2019.**

EHD X + Y Faculty Salary Initiative, University of North Dakota. **Funded 2019 - 2021.**

EHD Summer Grant-Writing Award, University of North Dakota. $2500. **Funded 2019.**

EHD RFD Travel and Equipment Grant, University of North Dakota. **Funded 2019.**

NSF ATM Grant, Carbonaceous tracers in thermal desorption and pyrolytic organic particulate matter, $581,975, Kubatova, A. (Principal Investigator), Kozliak, E., Simmons, R., **Robinson, J.,** Bowman, F., & Darby, B. (Co-Principal Investigators). **Submitted SEPT 2018, revising**

STEAM Energy!, North Dakota Department of Public Instruction. ND-DPI, Mathematics and Science Partnership Grant Program, STEAM Energy!, $50,000; Young, T. (Principal Investigator), Summers, R., **Robinson, J.**, Gilmore, M., Haeselin, D., DeMuth, D. (Science Educators). **Funded 2018.**

Open Educational Resources (OER) Grant, University of North Dakota. $3000. **Funded 2018.**

North Dakota Space Grant Consortium Summer Faculty Fellowship, University of North Dakota. $4500. **Funded 2018, 2020.**

EHD RFD Travel and Equipment Grant, University of North Dakota. **Funded 2018.**

EHD RFD Mini-Grant, University of North Dakota. $3000. **Funded 2018.**

Dissertation Writing Retreat, University of Massachusetts Amherst. **Accepted 2017.**

Dissertation Writing Retreat, University of Massachusetts Amherst. **Accepted 2017.**

Dissertation Research Grant, University of Massachusetts Amherst. $500. **Funded 2016.**

Smith College Graduate Teaching Fellowship. **Awarded 1996 - 1997.**

SERVICE TO THE PROFESSION

Robinson, J. (2021 – present) Treasurer, elected, Indigenous Science Knowledge Research Interest Group, NARST.

Robinson, J. (2020) Expert Panel, Draw an Engineer and Applications of Math and Science (DEAMS) Instrument and Rubric.

Robinson, J. (2019, Feb.) Navigating Science Standards: Invited lecture, Joshua Hunter's Foundations of Environmental Education Course (RLS 362), University of North Dakota, Grand Forks, ND.

Robinson, J. & Summers, R. (2019, June). Establishing a Research-Practice Partnership Between Jaguar Academy and UND Teacher Education: Invited lecture, Pauline Stonehouse's Special Topics in Educational Leadership Course (EDL 579), University of North Dakota, Grands Forks, ND.

Robinson, J. & Summers, R. (2019, April and Nov.). Reading in Science: Invited lecture, Aimee Rogers' Reading in the Content Areas (TL 409), University of North Dakota, Grand Forks, ND.

Robinson, J. (2017 & 2018, Sept.; 2018 & 2019, March). Science in the Early Childhood Classroom: Invited lecture, Michael Gallo's Introduction to Early Childhood Education (TL 310), University of North Dakota, Grand Forks, ND.

Graduate research judge, UND, **2018 - 2021**.

Judge, Future City Competition, **2021**.

Peer reviewer, *Science and Children,* **current**.

Peer reviewer, *International Journal of Science Education*, **current**.

Presentation reviewer, New England Doctoral Students' Conference, **2016**.

Peer reviewer, *Journal of Curriculum Studies,* **2014**.

DISSERTATION COMMITTEES

Nolby, Caitlin. Committee member.

Peterson, Samantha. Committee member.

Arnold, Patricia. *Shifting the paradigm: The impact of three dimensional instruction on pre-service elementary teachers' perceptions of self-efficacy in teaching science*. Committee Chair, to be defended October, 2021.

Berosik, M. *Curators of place: farmers' narratives of sense of place and learning*. Committee member, defended November 20, 2019.

K- 12 PROFESSIONAL DEVELOPMENT EXPERIENCE

Led 3-day STEM workshop for K – 8 teachers from Rock Creek Grant School, Standing Rock Nation, Bullhead, SD, **2021**.

Led engineering and math modules as part of UND's STEAM Energy Workshop for K – 12 teachers, Bismarck, ND, **2018**.

Designed and led 8-session training for new teachers at Vermont Academy entitled "Mentor Mondays", which examined issues of pedagogy, instruction, assessment, and differentiation, **2016 – 2017**.

Led 14-session training for teachers at Dummerston School in Common Core State Standards in Mathematics, **2013 – 2015**.

Led study group for K – 4 teachers on Writing for Understanding at Dummerston School, **2014 – 2015**.

Designed and led workshop for WSESU district teachers in Kathy Richardson' *Assessing Math Concepts* assessment system, **2011**.

Taught workshop on inquiry science in the elementary grades for teachers at Green Street School, **2004**.

Co-taught inquiry science summer course for elementary teachers in Windham Southeast Supervisory Union, **2003**.

K – 12 PROFESSIONAL ACTIVITIES AND SERVICE

Chair, Leadership Team, Dummerston School, Dummerston, VT, **2014 – 2016.**

SBAC Assessment Coordinator, Dummerston School, Dummerston, VT, **2014 – 2016.**

Chair, Parenting and Learning at Home (PALH) Committee, Green Street School, Brattleboro, VT, **2008 – 2010**.