Laura A Millay

Research and Evaluation Coordinator
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Professional Preparation:

Brown University	Development Studies	B.A. 2009
University of Maine	Master of Science in Teaching	M.S.T. 2018

Appointments:

2015-Present	Research and Evaluation Coordinator, RiSE Center
2013-2015	Research and Evaluation Coordinator, Maine Physical Sciences Partnership
2012-2013	Provost's Research Fellow to the Maine Governor's STEM Council
2011-2013	Teaching Partner, Maine Physical Sciences Partnership
2007-2010	President, Board of Directors, Food AND Medicine (Maine-based non-profit)
2009-2012	Oversight Committee, Bangor Maine Parks and Recreation
2003-2005	Founding Director of the Educational Network for Global and Grassroots Exchange, (national/international non-profit)
2003	C.V. Starr Fellowship for Public Service, Brown University

Publications:

Millay, L. Teachers' Professional Knowledge and Formative Assessment Practices: An Empirical Study from Middle School Earth Science Instruction in the Context of an Education Improvement Community. Master's Thesis. University of Maine. Orono, Maine. December, 2018.

McKay, S.R. , **Millay, L.**, Allison, E., Byerssmall, E., Wittmann, M.C., Flores, M., Fratini, J., Kumpa, B., Lambert, C., Pandiscio, E.A., and Smith, M.K. Investing in Teachers' Leadership Capacity: A Model from STEM Education. *Maine Policy Review* 27.1 (2018): 54 -63, https://digitalcommons.library.umaine.edu/mpr/vol27/iss1/15.

Millay, L. (2018). Summary Report : Evidence of need for recruitment and retention of qualified middle and high school mathematics and science teachers in rural Maine districts. RiSE Center, University of Maine. Orono, Maine.

Wittmann, M. C., Rogers, A. Z., Alvarado, C., Medina, J., **Millay, L.** (2018). Using multiple survey questions about energy to uncover elements of middle school student reasoning to uncover elements of middle school student reasoning. In *2017 PERC Proceedings.* https://doi.org/10.1119/perc.2017.pr.105

Wittmann, M.C., Alvarado, C., and Millay, L. Teacher awareness of problematic facets of meaningful metaphors of energy. *Latin American Journal of Physics Education.* 11(2), 2327.

Vinson, E. and **Millay, L.** (2017) Faculty Course Modification Incentive Grant – Maine Learning Asssistant Program: 2016-2017 Academic Year Program Report. RiSE Center, University of Maine. Orono, Maine. https://umaine.edu/risecenter/resource/fig-mla-program-report-2016-17/

Alvarado, C., Wittmann, M., Rogers, A., **Millay, L.** (2016) Problematizing "cold" with K12 science teachers. Published Conference Proceeding. Physics Education Research Conference. Sacramento, CA. http://www.per-central.org/items/detail.cfm?ID=14187

Wittmann, M., Alvarado, C., Millay, L. (2016) Teachers' explanations of student difficulties with gravitational potential energy. Published Conference Proceeding. Physics Education Research Conference. Sacramento, CA. http://www.per-central.org/items/detail.cfm?ID=14278

Zoellick, B. and **Millay, L.** (2016) Maine Elementary Sciences Partnership Final Evaluation and Overall Reflection. External Evaluation Report Submitted to Maine Department of Education, October 15, 2016. https://www.researchgate.net/publication/311371140_Maine_Elementary_Sciences_Partnership_Final_Year_Evaluation_and_Overall_Reflection

Wittmann, M., Alvarado, C., **Millay, L.** (2015) Teacher responses to their multiple goals for teaching energy. Published Conference Proceeding. Physics Education Research Conference, College Park, MD. http://www.per-central.org/items/detail.cfm?ID=13912

Axthelm, A., Wittmann, M., Alvarado, C., **Millay, L.** (2015) Idea Use Curves. Published Conference Proceeding. Physics Education Research Conference, College Park, MD. https://www.compadre.org/per/items/detail.cfm?ID=13831

Millay, L., Rueschemeyer, M., Ban, C. (2009) "Transnational Labor Advocacy Networks: Worker Organizing in Thailand's Export-Oriented Garment Industry" Watson Center for International Studies, Brown University. Bachelors Thesis. http://watson.brown.edu/ds/capstone_past.html

Millay, L., Loring, D., Miller, E. (July/August 2006) "Building a farmer-labor alliance: Solidarity Harvest and Union Supported Agriculture." Dollars and Sense. Issue 266. http://www.dollarsandsense.org/archives/year/2006/

Presentations and Posters:

Millay, L. and Templeton, S. Using Data to Identify Challenges and Measure Progress Toward Equity in STEM Education. Invited Workshop. Maine STEM Partnership Fall Summit: Strengthening Research-Guided STEM Teaching and Learning for Maine Students: Community-based strategies to support educators. Northport, Maine. November 17, 2018.

Millay, L. Assessment Knowledge for Teaching. Contributed Presentation. Northeast Educational Research Association (NERA) 49th Annual Conference. Trumbull, CT. October 17-19, 2018.

Millay, L. and Swalec, L. Minding the Gaps: What does Maine data say about how all K-12 students are learning in science and mathematics? Invited Workshop. RiSE Center June Conference: Integrating Research and Practice: Using STEM Disciplines to Buid 21st Century Workplace Skills. Orono, Maine. June 24-26, 2018.

Rogers, A. and **Millay, L.** Using Data to Revise Content Surveys in the Maine STEM Partnership. Poster. RiSE Center June Conference: Integrating Research and Practice: Using STEM Disciplines to Buid 21st Century Workplace Skills. Orono, Maine. June 24-26, 2018. The same poster was also presented at the RiSE Center Teaching Symposium: Strategies for Engaged Student Learning in Undergraduate STEM Courses. Orono, Maine. June 27, 2018.

Millay, L. Assessment Knowledge for Teaching: Clarifying the Theoretical Construct of Assessment Knowledge by Studying Middle School Science Assessment Practices. Contributed Talk. UMaine Student Symposium: Research and Creative Activity. Cross Center. Bangor, Maine. April 17, 2018.

Millay, L. and Rogers, A. (2017) Assessing Student Learning of Science Content: Designing and Interpreting Tests. Invited Workshop. RiSE Summer Conference: Helping Every Student Succeed: Strategies for Engagement, Deepening Understanding, and Addressing Student Difficulties. Orono, ME.

Millay, L. and Zoellick, B. (2016) Findings from the Maine Elementary Sciences Partnership and Implications for Science Teaching and Learning in Maine. Invited Workshop. Maine STEM Partnership Summit, Northport ME, November 2016.

Vinson E., Bruce M., **Millay L.**, McKay S., Smith M., Speer N., Stetzer, M. (2016) Promoting Change and Evidence-Based STEM Instructional Strategies with the University of Maine's Faculty Course Modification Incentive Grant and Maine Learning Assistant Program. Contributed Poster. International Learning Assistant Conference, Boulder CO.

Bruce, M., Eaton, C., Sinha, S., **Millay, L.**, Bruce, A. (2016) Teacher Professional Development Using Iterative Inquiry-Based Chemistry Activities. Contributed Paper and Presentation. 2016 NARST (National Association of Research in Science Teaching) Annual International Conference, Renaissance Baltimore Harborplace, Baltimore.

Virgilio, S., Eaton, C., Bruce, M.R., Sinha, S., **Millay, L.** (2015) Students' Understanding of Middle School SEPUP Chemistry Curriculum. Contributed Poster. RiSE Center International Conference, Orono, Maine.

Alvarado, C., Wittmann, M., **Millay, L.** (2015) Change in Teachers' Views about Energy in the MainePSP. Contributed Poster and Talk. PhysTEC, Seattle, WA.

Axthelm, A., Wittmann, M., Alvarado, C., **Millay, L.** (2015) Exploring Student Reasoning Using Item Response Curves. Contributed Poster and Talk. AAPT Summer Meeting, College Park, MD.

Axthelm, A., Wittmann, M., Alvarado, C., **Millay, L.** (2015) Idea Use Curves. Contributed Poster and Talk. Physics Education Research Conference, College Park, MD.

Alvarado, C., Wittmann, M., **Millay, L.** (2015) Teachers Analyzing Teacher Responses: Refinement in Their Content Knowledge and Their Analysis. Contributed Poster and Talk. Physics Education Research Conference, College Park, MD.

Axthelm, A., Wittmann, M., Alvarado, C., **Millay, L.** (2015) Resource-based Item Response Curves. Contributed Poster and Talk. AAPT Summer Meeting, College Park, MD.

Alvarado, C., Wittmann, M., **Millay, L.** (2015) Professional Development Promotes Deeper Understanding by Teachers Analyzing Teacher Responses. Contributed Poster and Talk. AAPT Summer Meeting, College Park, MD.

Wittmann, M., Alvarado, C., **Millay, L.** (2015) Teacher growth in Pedagogical Knowledge of energy in the MainePSP. Contributed Poster and Talk. AAPT Summer Meeting, College Park, MD.

Sinha, S., Eaton, C., Virgilio, S., Bruce, M., **Millay, L.** (2015) Teacher Growth During Chemistry Professional Development and Middle School Student Learning of Chemistry Content through Innovative Science Partnerships in the Maine "PSP". Contributed Poster and Presentation. International Teacher-Scientist Partnership Conference. San Francisco, CA

Millay, L. (2013). Beyond Misconceptions: Honoring Student Ideas while Teaching Science. No Question Left Behind: Teaching and Learning in the Context of the Next Generation Science Standards and the Common Core State Standards in Mathematics. Invited Talk. Point Lookout, Northport, ME. http://umaine.edu/center/conferences-workshops/nqlb/nqlb-2013/

Wittmann, M.C., **Millay, L.A.,** Avargil, S., Bruce, M.R.M., and Shemwell, J. (2013) "Opening a can of worms," Contributed Poster. Science Teaching Responsiveness Conference, Seattle, WA. https://www.spu.edu/depts/physics/ResponsivenessConference.asp

Millay, L. (2012) Knowledge for Assessment (K4A): How Do Teachers Use Knowledge When They Design Written Assessments for their Classrooms and Interpret Students' Responses? RiSE 2012 National Summer Conference: Integrating STEM Education Research into Teaching: Knowledge of Student Thinking, Invited Talk, University of Maine. http://umaine.edu/center/files/2012/03/2012-Conference-Guide-FINAL.pdf

Millay, L. (2012) Knowledge for Assessment (K4A): How do teachers use knowledge when they design written assessments for their classrooms and interpret students' responses? Center for Research in STEM Education Invited Colloquium Abstract and Talk. http://umaine.edu/center/files/2012/07/Millay-Abstract.pdf

Synergistic Activities:

- Research and Evaluation Coordinator for the RiSE Center since 2015, a highly productive interdisciplinary STEM Education Research Center. In 2018, 20 RiSE Center faculty, 30 graduate students, and 7 professional staff published 20 peer-reviewed articles, delivered 120 professional presentations at national and international forums, obtained $1.5 million in new grant funding, coordinated statewide professional development for Maine teachers, and spear-headed innovations in STEM education, professional development, and education research.
- Research and Evaluation Coordinator with the Maine Physical Sciences Partnership from 2013-2015, an NSF-funded Math and Science Partnership grant involving the Maine Center for Research in STEM Education at the University of Maine and 48 schools as core partners; funded in 2010; originally 5 years for $12.3 million, extended to 7 years and $14.4 million.
- Research Fellow with the Maine Governor's STEM Council (2012-2013)
- Conducted Masters' Thesis Research in Classroom Assessment and Teacher Knowledge with teachers in the Maine Physical Sciences Partnership (2011-2018).
- Designed and organized multiple successful initiatives including co-founding two non-profits (Education Network for Global and Grassroots Exchange http://globalgrassroots.wordpress.com/about/ and Food AND Medicine http://www.foodandmedicine.org/), organizing and directing a 13-state speaking tour with international speakers http://globalgrassroots.wordpress.com/resources/projects/, state-wide organizing for drafting and passage of the Maine Jobs, Trade, and Democracy Act http://www.mainelegislature.org/legis/statutes/10/title10sec11.html, and founding of two signature local-food and community programs while organizing with Food AND Medicine, the Solidary Harvest http://www.foodandmedicine.org/solidarity-harvest and Union Supported Agriculture http://www.foodandmedicine.org/local-food/union-supported-agriculture.

Presidential Scholar (1997)

National Merit Scholar (1997)