

## CURRICULUM VITAE

PLAYA Residency Applicant

February 12, 2019

### Education

Ph.D.	2009	Environmental Sciences & Management	Portland State University
M.S.	2001	Teaching –Science General	Portland State University
B.S	1990	Biology	University of Missouri, Columbia

### Employment

Associate Professor (2017-present). Educational Leadership & Policy; Graduate School of Education; Portland State University.

Assistant Professor (2011-2017). Educational Leadership & Policy; Graduate School of Education; Portland State University.

Assistant Professor/Research Associate (2009-2011). Center for Science Education, University Studies, Environmental Sciences & Management; Portland State University.

Partnership Coordinator, Science Specialist and Teacher (2005-2007). Jefferson Cluster Magnet Project, Portland State University.

Community-Based Science Coordinator (2001-2003). 21<sup>st</sup> Century Community Learning Centers Initiative, Portland State University.

Research Assistant (1999-2001). Center for Science Education, Portland State University.

Aquatic Toxicologist, Microbiology Technician, Quality Assurance & Technical Review Specialist (1993-1999). Coffey Laboratories, Inc., Portland, OR.

### Dissertation

*Investigating engagement, thinking, and learning among culturally diverse, urban sixth graders experiencing an inquiry-based science curriculum, contextualized in the local environment.* (2009). Chair: Dr. William G. Becker, Portland State University, Portland, OR.

### Refereed Publications and Other Creative Achievements

*Chapters:*

[Burns, H.G., PLAYA App., & Williams, D.W.](#) (2016). Cultivating sustainability: A decade of innovation and community partnerships at the Learning Gardens Laboratory in Southeast Portland. In B.D. Wortham, J.H. Allen, & J. Sherman (Eds.) *Sustainable Solutions: Let Knowledge Serve the City*. Sheffield, UK: Greenleaf.

Williams, D.R., PLAYA App., & Sneider, C.I. (in-press). Science in the learning gardens: Designing middle school curriculum integrated with next generation science standards. In M. Barnett, A. Patchen, L. Esthers, & N. Knobloch (Eds.), *STEM Learning through Urban Agriculture and Gardens* (6387 words). New York: Springer.

#### *Articles*

Williams, D. R., Brule, H., **PLAYA App.**, & Skinner, E. A. (2018). Science in the Learning Gardens (SciLG): A study of students' motivation, achievement, and science identity in low-income middle schools. *International Journal of STEM Education*, 5(8), 1-14. DOI: <https://doi.org/10.1186/s40594-018-0104-9>.

Hauk, M., Williams, D.R., BlueHorse Skelton, J., **PLAYA App.**, Gerofsky, S., & Lagerwey, C. (2018). School gardens for all. *The International Journal of Sustainability in Economic, Social, and Cultural Context*, 13(4), 41-63. DOI: <https://doi.org/10.18848/2325-1115/CGP/v13i04/41-63>.

McCourt, S. & PLAYA App. (2016). Assessing the unseen: Using literature and music to access and develop first graders' knowledge of sound waves. *Science and Children*.

Williams, D., Burns, H., & PLAYA App. (2014). A Framework for leadership for sustainability education at Portland State University. *Journal of Sustainability Education*, 6, 1-25.

Saxton, E., Burns, R., Holveck, S., PLAYA App., Prince, D., Rigelman, N., Skinner, E., (2014). A common measurement system for K-12 STEM education: Adopting an educational evaluation methodology that elevates theoretical foundations and systems thinking. *Studies in Educational Evaluation*, 40, 18-35. DOI: <http://dx.doi.org/10.1016/j.stueduc.2013.11.005>.

PLAYA App. (2013). Teacher engagement in STEM for sustainability education: Lessons for teacher educators. *Teacher Education and Practice*, 26(4), 816-831.

PLAYA App., & Williams, D. R. (2013). Teacher professional learning communities for sustainability: Supporting STEM in learning gardens in low-income schools. *Journal of Sustainability Education*, 5, 327-345.

#### *Book Reviews:*

Williams, D.R. & PLAYA App. (2015, March 6). Design, make, play: Growing the next generation of STEM innovators [Review of the book, by M. Honey & D. E. Kanter (Eds)]. *Teachers College Record*, <http://www.tcrecord.org> ID Number: 17885.

#### Non-Refereed Publications and Other Creative Achievements

#### *Articles:*

**PLAYA App.** & Williams, D.R. (2016, Spring). Integrating STEM and sustainability education through learning gardens: A place-based approach to the Next Generation Science Standards. *CLEARING Magazine* (print release), 31-34.

**PLAYA App.** & Williams, D.R. (2014, Oct.). Integrating STEM and sustainability education through learning gardens: A place-based approach to the Next Generation Science Standards. *CLEARING Magazine*, online at <http://clearingmagazine.org/archives/10755>.

*Curriculum:*

PLAYA App., Sneider, C., Lagerwey, C., Williams, D.W., Nathan, N., Utroske, D., Webb, R., Wagner, S., Rixon, K., and others (2018). Science in the learning gardens: NGSS-aligned, garden-based curriculum for middle school. Portland, OR: NSF DRL: 1418270. Available at: <http://learning-gardens.org/#science-in-the-learning-gardens>.

*Videos:*

Williams, D., Burns, H., & **PLAYA App.** (2014). Sustainability education thought leaders: Leadership for sustainability education at Portland State University. *Journal of Sustainability Education*, available at <https://www.youtube.com/channel/UCxJ5fv5soN20bpiGXJVod3Q>.

*Conference Proceedings:*

Laurence, W., **PLAYA App.**, Becker, W., Day, S., & Marshall, C. (2006). Time to learn inquiry: Exploring teachers' learning as they refine their practice to include technology-enhanced scientific inquiry. *Proceedings of the Annual Meeting of the Association for Science Teacher Educators*, Portland, OR.

*Reports:*

[Basham, J., PLAYA App., Hara, M., & Prince, D.](#) (2015). The effects of a residential science education program on student success indicators. *Executive summary for the Gray Family Foundation and Outdoor School for ALL Coalition*. Portland, OR.

[Hook, J., PLAYA App., Ketcheson, K., Latiolais, M.P., Weasel, L., Webb, R., Yates, M.](#) (2015). Large STEM classes @ PSU: A preliminary report. Report requested by Associate Dean of CLAS, Drake Mitchell. Portland, OR.

[Fong, A., Hook, J., PLAYA App., Ketcheson, K., Latiolais, M.P., Parra, J., Webb, R., & Yates, M.](#) (2014). Improving the success and flow of STEM students at Portland State University. [Research report for Provost's Challenge: Rethink #161](#). Portland, OR.

Presentations at Professional Meetings

*Peer-Reviewed Presentations*

**PLAYA App.**, Williams, D. R., Dancis, J., Brule, H., & Skinner, E. A. (2018, April). Middle school students' perspectives about how learning gardens facilitate engagement in science. Paper presented at the American Educational Research Association annual conference. New York City, NY.

- Brule, H., Williams, D. R., Dancis, J., **PLAYA App.**, & Skinner, E. A. (2018, April). Do middle schoolers' experiences in a garden-based education program predict changes in their learning, motivation, and achievement in science?. Paper presented at the American Educational Research Association annual conference. New York City, NY.
- Williams, D. R., Brule, H., **PLAYA App.**, & Skinner, E. A. (2017, April). Promise of equity: Low-income minority middle school students' science identity and achievement via learning gardens. Paper presented at the American Educational Research Association annual conference. San Antonio, TX.
- PLAYA App.**, Williams, D.R., Sneider, C., LaCharite, K., Murakami, C.D., Gillich, H., Grimberg, B.I., Menalled, F., Barnett, M., & Patchen, A. (2016, April). Urban agriculture: An untapped context. Symposium presented at the National Association of Research in Science Teaching annual conference. Baltimore, MD.
- [Williams, D.R., Brule, H.A., Skinner, E., PLAYA App., & Lagerwey, C.](#) (2016, April). Science in the learning gardens: Engagement and learning in sixth graders from low-income urban schools. Paper presented at the American Educational Research Association annual conference. Washington, DC.
- Hauk, M., Williams, D.W., BlueHorse Skelton, J., **PLAYA App.**, Gerofsky, S., & Lagerwey, C. (2016, January). School gardens for all: Diversity and inclusion. Workshop presented at the Annual conference on Environmental, Cultural Economic, and Social Sustainability, Portland, OR.
- PLAYA App.** (2015, April). Discussant for *Effects on Student Learning in the Science Classroom* paper session for the Science Teaching and Learning Special Interest Group at the American Educational Research Association annual conference. Chicago, IL.
- PLAYA App.** (2015, April). Discussant for *STEM Education in the Postsecondary and University Classroom* paper session for the Science Teaching and Learning Special Interest Group at the American Educational Research Association annual conference. Chicago, IL.
- [PLAYA App., Williams, D.W., Bogin Curtis, R., & Ferbel-Azcarate, P.](#) (2014, October). *Closing the research to practice loop: University partnerships and research with the local community to address food insecurity, waste reduction, and sustainability education.* Poster presentation at the Association for the Advancement of Sustainability in Higher Education annual conference, Portland, OR.
- Johns, J., Stokamer, S., Burns, H., **PLAYA App.**, Seiter, S., & Reid, D. (2014, October). *Using campus farms to engage students in experiential learning.* Panel presentation at the Association for the Advancement of Sustainability in Higher Education annual conference, Portland, OR.
- [PLAYA App., Williams, D.W., & Lapotin, N.](#) (2014, October). *Integrating STEM and sustainability education through learning gardens.* Workshop presented at the Annual Meeting of the Oregon Science Teachers Association, Portland, OR.
- [PLAYA App. & Williams, D.W.](#) (2014, April). *K-8 teachers' perspectives on integrating science in the learning gardens at low-income schools.* Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

- Bogin Curtis, R., **PLAYA App.**, Ferbel-Azcarate, P., Curtis, K., Williams, D.W., Blanchard, L., & Hieserich, B. (2013, October). *Research-to-action: Increasing food access through school garden education, food donation programs & community partnerships*. Work Session presented at the Multnomah Food Justice Summit, Portland, OR.
- Williams, D.W., **PLAYA App.**, Blanchard, L., Hieserich, B., & Zintel, J. (2013, May). *School learning gardens as multicultural hubs for sustainability: PSU-PPS food systems partnerships in outer Southeast Portland*. Presentation at the Research to Action Symposium on Sustainable Neighborhoods: Institute for Sustainable Solutions, Portland, OR.
- [PLAYA App., Minoo, D., & Lapotin, N.](#) (2012, January). *Revitalizing STEM and sustainability education through learning gardens*. Presentation at the Oregon Higher Education Sustainability Conference, Portland, OR.
- Burns, H., **PLAYA App.**, & Williams, D. (2012, October). *Nurturing sustainability leaders: Pedagogical practices and guiding stories*. Presentation at the Association for the Advancement of Sustainability in Higher Education annual conference, Los Angeles, CA.
- PLAYA App.** (2011, September). *Phytoremediation on small scale brownfields--a novel approach for DEQ and local communities*. Presentation at the International Phytotechnology Society annual conference, Portland, OR.
- PLAYA App.** & Cohen, C. (2011, September). *Brownfields to Greenfields & Environmental Justice through urban gardens and local youth: How one community site can educate citizens of all ages*. Presentation at the International Phytotechnology Society annual conference, Portland, OR.
- PLAYA App.**, Miller-Jones, D., & Becker, W. (2009a, April). *Investigating student engagement, thinking, and learning in science: Findings from a yearlong, inquiry-based teaching experience*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching, Garden Grove, CA.
- PLAYA App.**, Miller-Jones, D., & Becker, W. (2009b, April). *Students and teachers navigating cultural conflicts in the classroom to support engagement and learning in science: A grounded theory*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- PLAYA App.**, Miller-Jones, D., & Becker, W., (2008, March). *Theory to practice, practice to theory: Building a substantive grounded theory addressing how inquiry-based learning and teaching impacts students' engagement and learning in science*. Poster presentation at the Annual Meeting of the National Association of Research in Science Teaching, Baltimore, MD.
- Shelton, R., **PLAYA App.**, Becker, W., (2008, March). *Effects of ethnicity and gender on sixth grade students' environmental knowledge and attitudes*. Presentation at the Annual Meeting of the National Association of Research in Science Teaching, Baltimore, MD.
- Laurence, W., **PLAYA App.**, Becker, W., & Day, S. (2007, April). *Navigating critical junctures: Collaborating to support teachers' learning as they refine their practice to include technology-enhanced scientific inquiry*. Paper presented at the Annual Meeting of the American Education Research Association, Chicago, IL.

Laurence, W., **PLAYA App.**, Becker, W., Day, S., & Marshall, C. (2006, January). *Time to learn inquiry: Exploring teachers' learning as they refine their practice to include technology-enhanced scientific inquiry*. Paper presented at the Annual Meeting of the Association for Science Teacher Educators, Portland, OR.

*Invited Presentations:*

PLAYA App., Taylor, S., & Canterberry, S. (2017, March). *Creating healthy environments for children: Barriers and opportunities*. Panel discussion at the Intertwine Children, Nature, and Schools Symposium, Portland, OR.

PLAYA App., Maceli, C., Merrifield, C., Pesis, E., Rixon, K., Utroske, D., & Webb, R. (2017, March). Exploring culturally responsive garden education. Workshop facilitated at the Intertwine Children, Nature, and Schools Symposium, Portland, OR.

Williams, D.W. & **PLAYA App.** (2016, February). *Science in the learning gardens: Factors that support ethnic and racial minority students' success in low-income middle schools*. Presentation in the “Creating an Inclusive Active Learning Culture in Science Education” session at the STEM Smart: Lessons Learned from Successful Schools workshop; National Science Foundation grant #1449550, San Francisco, CA.

[PLAYA App. & Hardin, J.](#) (2015, January). *Assessing the impacts of garden-based learning*. Workshop presented at the second annual Oregon School Garden Summit, Salem, OR.

PLAYA App. (2013, June). *Bridges & Levers: Connecting informal and formal educational systems for transformational change*. Planning session facilitated at the Intertwine Conservation Education Summit, Portland, OR.

PLAYA App., Lapotin, N., & Minoo, D. (2012, November). *A new model for teacher professional learning and collaboration—Bridging the full day*. Presentation at the Oregon Department of Education—21<sup>st</sup> Century Community Learning Centers statewide conference, Salem, OR.

Saxton, E., Hawkins, B., PLAYA App., & Skinner, E. (2012, April). *Office of Research and Assessment: Common Measures*. Breakout session presented at the Portland Metro STEM Partnership's STEMposium, Hillsboro, OR.

### Honors, Grants, and Fellowships

*Fred Fox Distinguished Service to Science Education Award* (2017, October). Oregon Science Teachers Association.

Co-Investigator. (2014, September). *Science in the Learning Gardens: Factors that Support Racial and Ethnic Minority Students' Success in Low-Income Middle Schools*. Dilafruz Williams, Principal Investigator, PLAYA App., Cary Sneider, and Ellen Skinner, Co-Principal Investigators awarded a Discovery Research K-12 Grant from the National Science Foundation Award: \$449,998. DRL: 1418270

Principal Investigator. (2013, December). *Promoting Sustainability and improved educational outcomes through a systemic approach to teaching and learning: Building environmental and STEM literacy through interconnected, place-based experiential learning in SUN Schools, learning gardens, and local habitats*. With Co-Principal Investigators, Dilafruz Williams and Cary Sneider, awarded a Research Stimulus Grant from the Institute for Sustainable Solutions and Office of Research & Sponsored Projects, Portland State University. Award: \$4,978.

Principal Investigator. (2013, February). *Advancing Learning in Science, Technology, Engineering, and Math: Aligning System Structures to Support Learners In and Out of School*. Research Stimulus Grant awarded by the Office of Research and Sponsored Projects, Portland State University. Award: \$4,985.

Co-Investigator. (2012, March). *Learning Science in School Gardens: Factors that Support Racial and Ethnic Minority Students for STEM in Grades 6-8*. Dilafruz Williams, Principal Investigator, and PLAYA App., Co-Principal Investigator awarded a Faculty Enhancement Grant from the Office of Research and Sponsored Projects, Portland State University. Award: \$14,744.

Doctoral Fellow. (2003-2009). Awarded a National Science Foundation fellowship through the Center for Learning and Teaching in the West, Portland State University.

Co-Investigator. (2011, September). Dunya Minoos, Principal Investigator, and **PLAYA App.**, Co-Principal Investigator, awarded a grant from the Oregon Department of Education's 21<sup>st</sup> Century Community Learning Centers STEM Initiative. Award: \$20,000 to Portland Public Schools, 21<sup>st</sup> Century SUN Schools.

Principal Investigator (2002, May). With Co-Investigators from the City of Portland Clean Rivers Program and the Columbia Slough Watershed Council, **PLAYA App.**, Principal Investigator, wrote foundational grant to the Oregon Watershed Enhancement Board. This award established *Slough School*, the educational program of the Columbia Slough Watershed Council. Award: \$83,000.

Principal Investigator. (2001, May). **PLAYA App.**, Principal Investigator, and Rachel Felice, Co-Investigator, developed a grant proposal to develop *Nature in the Hood*, a summer environmental science program, supported through Portland Public Schools 21<sup>st</sup> Community Learning Centers Initiative. Award: \$12,000.

#### Other Research and Creative Activities

Principal Investigator. (2016, July). [\*CAREER: Describing complex, interconnected learning progressions of K-8 classroom teachers and informal educators as they develop from novice to expert STEM education professionals\*](#). **PLAYA App.**, Principal Investigator, for NSF Early CAREER program (DRL 1652570). \$739,621—pending.

Principal Investigator. (2015, April). *Supporting K-8 Teachers and Students in Developing Deep Understandings in the Core Ideas of Environmental Science*. **PLAYA App.**, Principal Investigator, for PSU Faculty Enhancement Grant program. \$14,981—not funded.

Principal Investigator. (2014, July). [\*CAREER: Increasing STEM and environmental literacy using learning gardens, systemic approaches, and teacher training to reinvigorate children's inherent love of learning.\*](#)  
**PLAYA App.**, Principal Investigator, for NSF Early CAREER program (DRL 1452643).  
 \$523,038—not funded.

Principal Investigator (2010, December). **PLAYA App.**, Principal Investigator, with Co-Investigators, Heather Burns and Stephanie Wagner, submitted *Pathways and partnerships: Building capacity of informal science educators* proposal to the National Science Foundation: Informal Science Education Program. \$250,000—not funded.

Co-Investigator (2010, May). Christina Hulbe, Principal Investigator, and **PLAYA App.** and other Co-Principal Investigators, developed *The Oregon climate literacy network: Building a climate literate population*, a grant proposal submitted to the National Science Foundation: Climate Change Education Partnerships Program. \$941,000—not funded.

### Teaching, Mentoring and Curricular Achievements

<b>Leadership for Sustainability Education</b>	<b>Terms</b>	<b>Range of Students</b>	<b>Mean Score from Course Evaluations</b>
ELP 550 Advanced Leadership for Sustainability (4 cr)	F15, F16	17-23	3.84
ELP 548 Advanced Global Political Ecology (4 cr)	W12, W13, W14, W16	11-16	3.64
ELP 440/540 Urban Farm Education (4 cr)	S16	16	3.60
ELP 510 Urban Farm Education (4 cr)	F11, S13, S14	7-8	3.66
ELP 510 Integrating STEM & Sustainability Education through Learning Gardens (4 cr)	Su13, Su14	11-24	N/A
ELP 510 Theory to Practice in School Gardens (3 cr)	Su12, Su13	21-27	N/A
ELP 510 Connect to Science through Learning Gardens (3 cr)	Su12	31	N/A
ELP 506 LSE Comprehensive Examination (4 cr)	S12, F12, S14, F14, S16, F16	4-14	3.40
ELP 506 LSE Leadership Seminar & Comps Preparation (1 cr)	S13, S14, S15, S16	14-21	3.59
ELP 506 LSE Special Projects (various topics and credits)	S12 (5cr), S15 (1cr), W16 (1cr), S16 (2cr), Su16 (1cr)	7 students total	
ELP 505 Readings & Conference	S15 (2cr)	1 student	
ELP 503 Thesis	Su15 (1cr), F15 (1cr)	1 student	
ELP 509 Practicum: Garden Studies	F12 (1cr)	1 student	

### **Graduate Teacher Education Program— Secondary**



CI 514 Multicultural and Urban Education (3 cr)	F11	21	3.64
<b>Graduate Teacher Education Program— Elementary</b>			
IITP 542 Elementary Science Methods (2 cr)	W15 (2 sections), F15, Su16 (2 sections)	19-28	3.51
IITP 517 Integrated Methods & Instructional Design (1 cr)	Su14 (2 sections)	21-26	3.06
CI 517 Integrated Methods: Health & Science (3 cr)	W12 (2 sections), W13 (2 sections), W14	19-28	3.39
<b>Graduate Teacher Education Program— Bilingual Teacher Pathway Program</b>			
IITP 442/542 Elementary Science Methods (2 cr)	F14, F15	13-17	3.67
CI 417/517 Integrated Methods: Health & Science (3 cr)	F12, F13	10-11	3.85
<b>Graduate Teacher Education Program— Other Courses</b>			
CI 510 Topics: Teaching & Learning in School Gardens (1 cr)	Su13	11	N/A
CI 810 Topics: Various	W14, Su14	4-7	N/A
<b>Center for Science Education—Masters of Science Teaching Program</b>			
SCI 510 Teaching Science as Inquiry (4 cr)	F09, F10	9-12	N/A
SCI 510 Topics: Bridging STEM to K-12 Literacy (3 cr)	Su12	22	N/A
SCI 503 Thesis	F10, W11, F11	1-2	N/A
SCI 501 MST Research	S11, W11, F11	2-3	N/A
<b>University Studies</b>			
UNST 179 Senior Inquiry: Mind, Mask & Myth (5 cr)	F09, W10, S10, F10, W11, S11	15-18	N/A
<b>Environmental Science &amp; Management</b>			
SCI 311 Teaching Everyday Science (4 cr)	S10, S11	35-41	N/A

NOTE: N/A indicates insufficient data (e.g., <10% response rate) or no evaluations submitted

### ***Course Development: Leadership for Sustainability Education***

ELP 440/540: *Urban Farm Education: Leveraging Policy and Research to Cultivate Garden-Based Education in Practice*. Significantly revised course syllabus and aligned course goals in process to convert from an experimental to a permanent course. In this course, students explore the policy and research context surrounding garden-based education in schools and communities with a focus on instructional design and assessment. Added undergraduate section in Spring, 2016.

ELP 506: *LSE Leadership Seminar & Comps Preparation*. This one-credit seminar was developed to support Master’s students in the Leadership for Sustainability Education program. The purpose of the course is to maintain cohesiveness within the current cohort, and to help students begin preparation for their comprehensive papers.

ELP 510: *Integrating STEM & Sustainability Education through Learning Gardens*. This course combined the goals and activities of *Theory to Practice in School Gardens* and *Connect to Science through Learning Gardens* into one 4-credit course. This revised course will be converted to a discrete number in during the 2014-15 academic year.

ELP 510: *Theory to Practice in School Gardens*. Course brings together educators from various contexts and in various stages of professional development (in-service teachers, pre-service teachers, extended-day/SUN school teachers, informal science educators, etc.) to collaborate and co-teach a STEM-focused, garden-based learning experience for K-8 students.

ELP 510: *Connect to Science through Learning Gardens*. In this course, a diverse group of educators (in-service and pre-service teachers, extended-day teachers, informal science educators, etc.) collaborate to design STEM-focused, garden-based instructional units that are aligned with state and national standards and incorporate formative assessments strategies.

***Course Development: Graduate Teacher Education Program; Elementary***

IIP 439/539: *Elementary Science Methods*. Course emphasizes effective methods and practices for developing integrated, interdisciplinary units of instruction, and explores approaches to teaching science using an integrated approach.

CI 417/517: *Integrated Methods and Curriculum Design*. Course emphasizes inquiry processes, and place-based, project-based approaches to teaching and learning in grades PreK-8. Students explore cross-disciplinary content and processes from social studies, art, music, and movement.

***Course Development: Bilingual Teacher Pathway Program***

Continue to collaborate with BTP faculty to develop an integrated STEM course for BTP teacher candidates. (2013, November-Present).

***Student Support: Leadership for Sustainability Education—Master’s Program***

<b>Role</b>	<b>Year/Term</b>	<b>Number of Students</b>
Faculty Advisor	Fall, 2016 Cohort	7 Student Advisees
	Fall, 2015 Cohort	6 Student Advisees
	Fall, 2014 Cohort	7 Student Advisees
	Fall, 2013 Cohort	8 Student Advisees
	Fall, 2012 Cohort	9 Students Advisees
	Fall, 2011 Cohort	9 Students Advisees
	<b>Total</b>	<b>46 Student Advisees</b>

LSE Comprehensive Exam: First Reader	Fall, 2016	7 Students
	Spring, 2016	14 Students
	Fall, 2014	4 Students
	Spring, 2014	12 Students
	Fall, 2012	8 Students
	Spring, 2012	7 Students
	<b>Total</b>	<b>52 Students</b>
LSE Comprehensive Exam: Second Reader	Fall, 2015	6 student papers
	Spring, 2015	5 student papers
	Fall, 2013	2 student papers
	Spring, 2013	6 student papers
	Fall, 2011	3 student papers
	<b>Total</b>	<b>22 Student papers</b>

***Master of Science Thesis Advisor: Graduate School of Education***

Jennifer Basham. (2012-2015). *The effects of an overnight environmental science education program on students' attendance rate change for middle school years*. Leadership for Sustainability Education; Educational Leadership & Policy, Portland State University.

***Doctor of Education, Dissertation Committee Membership: Graduate School of Education***

Benz, B.R.. (2017, September). *Knowledge Gaps in Environmental Education: Examining the Professional Development of High School Educators in Douglas County, Oregon*. Core Comprehensive Examination Paper defended on October 6, 2017. Position: Faculty Reader.

Amoroso, L. (2017, October). *Nature-Based, Somatic Learning as a Critical Component of K-12 Education*. Core Comprehensive Examination Paper defended on October 5, 2017. Position: Faculty Reader.

Cardiel, C. (2017, September). *Mapping Agentic Learner Motivations and Self-Efficacy in STEM Education Ecosystems*. Core Comprehensive Examination Paper defended on September 28, 2017. Position: Faculty Reader.

LoFaro, K. (2017, September). *Challenges of Preparing Science Teacher Candidates to Implement the NGSS in ways that are Culturally Sustaining for Traditionally Underserved Learners*. Core Comprehensive Examination Paper defended on September 28, 2017. Position: Faculty Reader.

Bridges, J.P. (2016, June). *Preparing Historically Underserved Students for STEM Careers: The Role of an Inquiry-based High School Science Sequence Beginning with Physics*. Dissertation defended on April 7, 2017. Position: Committee member.

Bridges, J.P. (2016, June). *Preparing Historically Underserved Students for STEM Careers: The Role of an Inquiry-based High School Science Sequence Beginning with Physics*. Dissertation proposal defended on June 10, 2016. Position: Committee member.

Webb, D. (2015, May). *Engineering professional development: Elementary teachers' self-efficacy and sources of self-efficacy*. Dissertation defended on May 7, 2015. Position: Committee member.

Webb, D. L. (2014). *Engineering professional development: Elementary teachers' self-efficacy and sources of self-efficacy*. Dissertation proposal defended on June 27, 2014. Position: Committee member.

Wells, J.G. (2013). *Negotiating the inclusion of nanoscience content and technology in science curriculum: An examination of secondary teachers' thinking in a professional development project*. Defended on June 14, 2013. Position: Committee member.

### ***Doctor of Philosophy, Dissertation Committee Membership: Outside the Graduate School of Education***

Currie, C. T. (2017, November). *Student motivation profiles as a diagnostic tool to help teachers provide targeted support*. Dissertation defended on November 27, 2017. Position: Graduate Office Representative and Committee member.

Currie, C. T. (2017, May). *Student motivation profiles as a diagnostic tool to help teachers provide targeted support*. Dissertation proposal. Position: Graduate Office Representative and Committee member.

Braun, S. (2015, April). *The localized ecological and educational effects of environmental service-learning in Portland, Oregon*. Dissertation defended on April 27, 2015. Position: Graduate Office Representative and Committee member.

Braun, S. (2013, May). *The localized ecological and educational effects of environmental service-learning in Portland, Oregon*. Dissertation proposal. Position: Graduate Office Representative and Committee member.

### ***Master of Science Thesis Advisor: Outside the Graduate School of Education***

Stagner, R.M., (2013, October). *Effects of ethnicity and gender on sixth-grade students' environmental knowledge and attitudes after participation in a year-long environmental education program*. Center for Science Education, Portland State University.

Stair, C.R. (2011, December). *Using brownfields to think green: Investigating factors that influence community decision-making and participation*. Center for Science Education, Portland State University.

Tremel, S.L. (2011, May). *Investigating student understanding of the law of conservation of matter*. Center for Science Education, Portland State University.

### ***Master of Science Committee Member: Outside the Graduate School of Education***

Poole, M.B., (2015, August). *Growing STEM education on the playground: A case study of the factors that influence teachers' use of school gardens*. Center for Science Education, Portland State University.

Cressman, R., (2012, April). *Gardening skills, self-efficacy and science achievement: Case studies of garden related education in two high schools*. Center for Science Education, Portland State University.

Sheaffer, C. (2012, July). *Patterns in nature forming patterns in mind: Evaluation of an introductory physics unit*. Center for Science Education, Portland State University.

### ***Master of Science Committee Member: Outside Portland State University***

Martin, A. L., (2017, May). *Cultivating motivated and engaged learners: an exploratory study of the relationships among middle school students' food and garden experiences and their engagement and motivation*. Purdue University, West Lafayette, Indiana.

### ***Other Advising and Mentoring***

Research Mentor (2013-2016). Led Master's student Lindy Wortman in a collaborative research project with faculty and staff in Environmental Sciences & Management, researching the impacts of an NSF funded GK-12 program: Cascades to Coast.

Research Mentor (2012-2014). Co-led team of graduate students with Dilafruz Williams. Team has been researching the impacts of garden-based education on student learning and engagement, and teacher professional development and self-efficacy teaching STEM .

Research Mentor (2012-2013). Led Master's students Virginia Luka and Lauren Rosenstein in a collaborative research project with faculty and staff in Environmental Sciences & Management, researching the impacts of an NSF funded GK-12 program: Cascades to Coast.

### **Community Outreach Achievements**

Research Team Member. (2012, Spring-Present). Working with an interdisciplinary faculty team on the *PSU STEM Council Research Team* to identify research questions related to student success in STEM education at Portland State University.

Oregon Environmental Literacy Program Council. (2013, November-2015, February). Program Council responsible for guiding the statewide implementation of the Oregon Environmental Literacy Plan.

Oregon Environmental Literacy Program Council—Research and Assessment Focus Area Team. (2013, November-2015, February). Co-Chair of team focusing on developing a research framework and strategies to document changes in environmental literacy statewide.

Pedagogical Content Knowledge Committee. (2013-2014). Committee focused on developing PCK measurement strategies and tools for the common measurement system for the Portland Metro STEM Partnership.

Research Advocacy for Outdoor School (January, 2014). Communicated and advocated to state legislators for the Conservation Education Coalition.

Team Member (2013, November-Present). Participating on Project Learning Tree's *Next Generation Preservice Team* to assist in guiding the development *PLT's Next Generation* educational materials.

Regional Team Leader. (2013, November-2014, September). *Oregon Environmental Literacy Toolkit* development. With other regional team leaders, plan and implement regional meeting to communicate the OELP to stakeholders and gather information that will help in the development of the toolkit.

Planning Team Member. (2013, July-April, 2015). Planning and developing goals and outcomes, as well as workshop activities, for the first annual *Oregon School Garden Summit*.

Invited Presenter. (2013, April). Led workshop related to STEM education and formative assessment for students in the Bilingual Teacher Pathway Program at a *Futures Project*, quarterly professional development day.

Academic Partner. (2013, May-2014, June). Dunya Mino, Principal Investigator and Portland Public Schools awarded a grant from the Oregon Department of Education; 21<sup>st</sup> Century Community Learning Centers program. **PLAYA App**. serving as an academic partner to support STEM learning in school gardens. (2013-2018).

Working Group Member. (2012, Fall-2015, Spring). The Institute for Sustainable Solutions has been convening a cross-disciplinary team of faculty for the *Food Systems Working Group*. This committee has been collaborating to develop an undergraduate and graduate Food Systems Certificate program, and to identify areas for collaborative research projects.

Common Measurement Committee. (2011-2013). Committee developed common measurement system for the Portland Metro STEM Partnership.

Team Member. (2012, June). Oregon Science Education Review team. Reviewed Next Generation Science Standards for career and college readiness outcomes.

Task Force Member. (2011). Served on the Intertwine Conservation Education Task Force to outline goals and outcomes for conservation education network (January-June, 2011).

Founder, Liaison, and Site Manger. (2008-2013). Initiated and developed the Emerson Street Garden, including educational programming, organizational development, community involvement, and management of garden site.

### Scholarly Works in Progress

**PLAYA App.** & Williams, D.W. (in progress). Teachers learn STEM with students in the learning gardens: Professional development that enhances confidence and self-efficacy. December, 2016; Potential publication—*Teachers and Teaching: Theory and Practice*.

**PLAYA App.**, Edwards, P., Wortman, L., & George, L. (in progress). Impacts of a GK-12 science education partnership on students, teachers, and doctoral fellows. November, 2016; Potential publication—*School Science and Mathematics*.

Burns, H., Spalding, H., & **PLAYA App.** (In-progress). Teaching sustainability: Recommendations for best pedagogical practices. October, 2016; Potential publication—*College Teaching*.

### Significant Professional Development

NARST Equity & Ethics Committee (2016, April). *Toward Equity & Justice: Scientific Literacy as a Human Right*. Participated in workshop focused on equity and justice in research.

NSF Day (2015, April). Participated in daylong seminar for prospective Principal Investigators.

CITI Training. (2014, January). Completed online training and certificate for conducting research involving human participants.

CITI Training. (2014, January). Completed online training and certificate for members of Institutional Review Boards.

National Science Teachers Association Northwest Conference. (2013, October). Attended sessions and networked with STEM education colleagues from around the Northwest Region at the annual conference, Portland, OR.

Environmental Education Association of Oregon Conference. (2013, August). Attended sessions and participated in workshops and networking activities at the annual conference, Corvallis, OR.

### Governance and Other Professionally Related Service

#### Governance Activities for the University, College, Department

##### ***Service to Portland State University***

STEM Equity & Education Institute—Steering Committee member. (June, 2015-Present). Serving as steering committee member to establish organizational and institutional structures for the Institute (approved by Faculty Senate in 2015), including the development of a logic model, business plan, and programmatic activities.

Faculty Senate—Substitute (March & June, 2014). Substituted as faculty senator for colleague on maternity leave.

IRB Committee Member. (2013, January-Present). Faculty representative on PSU's Institutional Review Board selected to review research protocols to ensure protection of human participants in PSU initiated research projects.

Application Review Team. (2012, September). Reviewed application materials for Food Systems Graduate Research Assistant position through the Institute for Sustainable Solutions.

Council Member. (June, 2012-June, 2015). Member of PSU's STEM Council, building on the work commenced by the Provost's STEM Committee, developed vision, goals, strategies, and research plans for STEM education at Portland State University.

Committee Member. (January-June, 2012). Member of Provost's STEM Education committee, charged to outline a research initiative(s) and/or project plans to foster cross-campus collaboration and partnership development with local schools.

### ***Service to the Graduate School of Education***

GSE Building Advisory Committee (October, 2016-Present). Departmental representative on the building committee to advocate for faculty, staff, and student input for the new building design.

Program & Policy Committee (2015-present). Active member of Program and Policy committee.

Scholarship Review Committee. (2011-2012). Reviewed student scholarship applications.

Partnership Development. (2011-Present). Work to develop functional and lasting partnerships between programs in the Graduate School of Education with faculty and departments across campus and in the Portland Metropolitan.

### ***Service to the Curriculum & Instruction Department***

Elementary Team Member (2011-2013). Contributed to the revision of the Elementary Graduate Teacher Education Program, particularly in the development of integrated science methods and instructional design courses.

### ***Service to the Educational Leadership & Policy Department***

Ballot Committee Member (April-May, 2013). Developed procedures and coordinated departmental elections for Department Chair and for representatives of the Promotion & Tenure Committee.

Diversity Presentation. (2012, February). In collaboration with Heather Burns, represented the Educational Leadership & Policy Department by sharing the partnership and programming at the Learning Gardens Laboratory in SE Portland.

### ***Service to the Leadership for Sustainability Education Program***

Program Development & Improvement (2011-Present). With colleague Heather Burns, engaged in ongoing strategic planning and program improvement process. Activities include planning



for an additional cohort in Fall, 2014, revising program goals and rubric for Comprehensive Paper, and developing and analyzing a mid-program assessment.

Reviewer (2012, 2013, Spring). Reviewed applicants to the Leadership for Sustainability Education Program.

#### Professionally-related Service

**PLAYA App.**, Moore, D., Studer-Spivak, N., & Gioseffi. (2017, March). Session Moderator for *How can nature make a difference for underserved schools*. Presentation at the Intertwine Children, Nature, and Schools Symposium, Portland, OR.

**PLAYA App.** & Lagerwey, C.L. (2016, June). Professional Development Facilitation. Developed and implemented weeklong professional development and curriculum planning activities for middle school teachers and garden-based educators engaged with the Science in the Learning Gardens project.

**PLAYA App.** (2016, April). Session Presider for *Questions of Curriculum* paper session for the Environmental Education Strand at the National Association of Research in Science Teaching annual conference. Baltimore, MD.

**PLAYA App.** (2016, April). Session Chair for *Food Communities, Garden Communities: Underlying Lessons, Limits, and Liminality* roundtable session for the Environmental Education Special Interest Group at the American Educational Research Association annual conference. Washington, DC.

**PLAYA App.** & Lagerwey, C.L. (2015, June). Professional Development Facilitation. Developed and implemented weeklong professional development and curriculum planning activities for middle school teachers engaged with the Science in the Learning Gardens project.

**PLAYA App.** (2015, April). Session Chair for *Effects on Student Learning in the Science Classroom* paper session for the Science Teaching and Learning Special Interest Group at the American Educational Research Association annual conference. Chicago, IL.

**PLAYA App.** (2015, April). Session Chair for *STEM Education in the Postsecondary and University Classroom* paper session for the Science Teaching and Learning Special Interest Group at the American Educational Research Association annual conference. Chicago, IL.

**PLAYA App.** (2015, April). Session Chair for *Science Education Pedagogies* roundtable session for the Science Teaching and Learning Special Interest Group at the American Educational Research Association annual conference. Chicago, IL.

**PLAYA App.** (2015, April). Session Chair for *Teacher and Teacher Education Research in Environmental Education* roundtable session for the Environmental Education Special Interest Group at the American Educational Research Association annual conference. Chicago, IL.

**PLAYA App.** (2014, April). Session Chair for *Preservice Science Teaching* paper session for the Science Teaching and Learning Special Interest Group at the American Educational Research Association annual conference. Philadelphia, PA.

Reviewer (2016, August). Reviewed 4 paper proposals and 2 related paper sessions submitted to the Environmental Education SIG of the American Educational Research Association for inclusion in the 2017 annual conference.

Reviewer (2015, September). Reviewed 5 proposals submitted to the National Association for Research in Science Teaching for inclusion in the 2016 annual conference.

Reviewer (2015, August). Reviewed 5 proposals submitted to the Association for Science Teacher Educators for inclusion in the 2016 annual conference.

Reviewer (2014, August). Reviewed 8 proposals submitted to the Environmental Education SIG of the American Educational Research Association for inclusion in the 2015 annual conference.

Reviewer (2014, July). Reviewed 5 proposals submitted to the Association for Science Teacher Educators for inclusion in the 2015 annual conference.

Reviewer (2013, April). Reviewed manuscript submitted to a special edition of the *Journal of Sustainability Education* focused on experiential learning.

#### Memberships in Professional Societies

National Association of Research in Science Teaching	2005-Present
American Educational Research Association	2005-Present
Association of Science Teacher Educators	2006-Present
National Science Teachers Association	2009-Present
Oregon Science Teachers Association	2014-Present
Sigma Xi	2009-Present
Association for the Advancement of Sustainability in Higher Education	2011-Present
Environmental Education Association of Oregon	2013-Present