

WENDY MICHELLE FRAZIER
Associate Professor of Science Education
George Mason University
College of Education and Human Development
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EDUCATION

TEACHERS COLLEGE, COLUMBIA UNIVERSITY, New York, NY.

Ed.D. in Science Education with a specialization in the education of teachers of science, May 2001.

Dissertation: “The Effect of a Science Work Experience Program for Teachers on the Classroom Environment: A Qualitative Program Evaluation”

Advisor: Dr. O. Roger Anderson

UNIVERSITY OF HOUSTON, Houston, TX.

M.Ed. in Curriculum and Instruction, December 1997.

Advisor: Dr. John Ramsey

UNIVERSITY OF TEXAS SCHOOL OF PUBLIC HEALTH, Houston, TX.

57 graduate credits in Health Education/Health Promotion. August 1992 - July 1994.

RICE UNIVERSITY, Houston, TX.

B.A. in Biological Anthropology, May 1992.

TEACHER CERTIFICATION

SLOAN CONSORTIUM, Newburyport, MA.

Sloan-C Online Teaching Certificate with Specialization in Online Tools.

TEXAS EDUCATION AGENCY, Austin, TX.

Lifetime teaching certificates in secondary level education (grades 6 through 12) in the fields of biology, composite science (all science content areas), and health.

HOUSTON POLICE AND THE JUVENILE PROBATION DEPARTMENT, Houston, TX.

Gang awareness training and certification.

PATHWISE INSTRUCTIONAL MENTOR TRAINING, Newport News, VA.

Preparation to serve as a K-12 instructional mentor within Educational Testing Service’s PATHWISE Framework Induction Program.

PATHWISE INSTRUCTIONAL MENTOR – TRAINING OF TRAINERS, Newport News, VA.

Preparation to train K-12 instructional mentors within Educational Testing Service’s PATHWISE Framework Induction Program.

RELATED WORK EXPERIENCES

George Mason University, Fairfax, VA. (August 2004 – present)

TENURED ASSOCIATE PROFESSOR OF SCIENCE EDUCATION (August 2010-present).

ASSISTANT PROFESSOR OF SCIENCE EDUCATION (August 2004 – July 2010).

Roles

- Interim Academic Program Coordinator – M.Ed. in Curriculum and Instruction: Elementary Education (January 2012 – August 2013)
- Interim Program Coordinator of Mason’s Professional Development School Network – Elementary Education (January 2012 – August 2013)
- Co-Principal Investigator – Virginia Initiative for Science Teaching and Achievement, funded by U.S. Department of Education, total project = \$34,135,716 (September 2010 – present)
- Professor-In-Charge – M.Ed. in Curriculum and Instruction: Elementary Education - Teach For America (an alternative certification program with optional master’s degree) (September 2009 – present)
- Principal Investigator – U.S.-Russia Teacher Professional Development, funded by U.S. Department of State, total project = \$546,003 (September 2009 – December 2011)
- Director – New Science Teachers’ Support Network, funded by National Science Foundation, total project = \$841,694 (September 2004 – July 2010)
- Program Director – Career Switchers Alternative Certification Program (October 2004 – August 2005)
- Associate Director – Center for Restructuring Education in Science and Technology (CREST) (August 2004 – present)

Courses Taught (Course evaluation mean for all 56 course sections taught during academic years 2004-2005 to 2012-2013 = 4.79 on a five-point scale)

- *Mathematics and Science for Diverse Young Learners – ECED 514 (Early Childhood PK-3)*
- *Science Methods for the Elementary Classroom – EDCI 553 (Elementary Education: Two-Semester Professional Development School Program, One-Semester Professional Development School Program, Intensive Program, and Teach For America Program)*
- *Teaching Science K-6 in International Schools – EDUC 514 (FAST TRAIN)*
- *Teaching Science in Secondary Schools – EDCI 573 (Secondary Education)*
- *Internship – EDCI 790 (University Supervisor of Elementary and Secondary Student Teaching Interns)*
- *Advanced Science Methods for the Elementary Classroom – EDCI 634 (Elementary Education)*
- *Research in Science Teaching – EDCI 663 (ASTL)*
- *Advanced Methods of Teaching Science in the Secondary School – EDCI 673 (Secondary Education)*
- *Leadership and Organizational Issues in Science Education – EDCI 693 (ASTL)*

Description

- Instruct students in early childhood mathematics and science methods for diverse early childhood educational (PK-3) settings, pre-service teachers in elementary science methods enrolled in the Professional Development Schools Program (PK-6), in-service and pre-service teachers in IB elementary science methods for international settings (PK-6), and in-service teachers in elementary science methods for urban settings

- (alternative certification with optional master's degree: PK-6).
- Instruction has also included in-service teachers (generalists) in advanced elementary science methods (PK-6), pre-service and in-service teachers in initial and advanced secondary science methods (6-12), and science education leadership teachers (PK-6 generalists and 6-12 content specialists) in their advanced studies.
 - Advised elementary education students, full-time faculty, and adjunct faculty with regards to elementary education program expectations, reporting, and accreditation and drafted accreditation reports based on data from college administration, program faculty, program students, and community stakeholders as interim program coordinator (January 2012 – August 2013); currently provide accreditation leadership for elementary education program in preparation for upcoming NCATE/CAEP/state visit.
 - Advise undergraduate- and graduate-level research, including BIS projects, master-level theses, dissertations, and grant-funded research.
 - Conduct research and obtain grant funding focused on PK-12 teacher preparation infused with teaching and service efforts with an emphasis in STEM.
 - Developed a supervision program as part of an alternative certification program for in-service elementary teachers completing on-the-job internships; currently provide professional development and advise university supervisors to conduct field observations of in-service elementary teachers enrolled in Teach For America in Washington, DC and Prince George's County, Maryland.
 - Led the design and implementation of a hybrid delivery model for an alternative certification and master's program for TFA in-service elementary teachers, which included the redesign of all course syllabi and oversight of faculty during the process to ensure that ACEI/NCATE/CAEP/state standards were met (October 2012 – June 2013); currently evaluating the effectiveness of this hybrid delivery model for TFA course sections and piloting a hybrid version of EDCI 553.
 - Supervised student teaching interns in elementary and secondary schools in Virginia, DC, and Maryland through the college's programs, including the alternative certification (with optional master's degree) program.
 - Serve as a primary affiliate on the Elementary Teacher Education Program committee (2004-present), primary (2013-present) and secondary (2012-2013) affiliate on the Early Childhood Program committee, secondary affiliate of Center for International Education (2010-present), secondary affiliate of FAST TRAIN Program committee (2010-present), primary (2004-2008) and secondary (2008-2011) affiliate of Secondary Teacher Education Program committee, Science Education Leadership (SEL) committee (2004-2010), secondary affiliate of PhD in Education (science education leadership concentration) (2005-2010) and continued service to program (2010-present), CEHD Appeals Committee (2006 – 2008, 2009-2011, 2012-2013), CEHD Council (2013-2014), and CEHD Curriculum Committee (2013-2015).

Old Dominion University, Norfolk, VA. (August 2001 – July 2004)

ASSISTANT PROFESSOR OF SCIENCE EDUCATION.

Courses Taught

- *Elementary Methods in Science Teaching – ECI 434/534 Traditional and One-Way Video/Two-Way Audio Delivery*
- *Secondary Methods in Science Teaching – ECI 454/554*
- *Secondary Methods in Science Teaching – ECI 554 Online Delivery via Blackboard*
- *Elementary and Middle Methods in Science Teaching – ECI 654*

- *Career Switchers Alternative Certification Science Methods (non-degree program)*

Description

- Instructed pre-service and in-service teachers in elementary and secondary science methods via on-campus and distance learning courses in both one-way video/two-way audio and asynchronous environments. Emphasized science content-specific methods, technology applications, science classroom management strategies, and science curriculum development using national and state standards.
- Other duties included directorship of the science teacher preparation program including the scheduling of science teacher preparation coursework, selection of adjunct professors, establishment of partnerships with area resources, and evaluation of the program with respect to standards established by multiple accreditation agencies.
- Faculty duties included collaborative work with area public schools and school districts, supervising practicum student teachers, establishing a student chapter of the National Science Teachers Association, grant-writing, maintaining an active research agenda, advising students' dissertation and thesis research, academic program development at the undergraduate and graduate levels, and advising students in the M.S.Ed. Secondary Science program.

Manhattan Community School District Two, New York, NY.

STAFF DEVELOPER. (January 1999 – June 2001)

Supervised in-service science teachers and long-term substitute teachers of grades 4 through 8 to promote the development and utilization of hands-on, project-based science. Responsibilities included including co-planning instruction, teaching lessons, co-teaching in classrooms, facilitation of teachers' inter-visits, co-planning and co-delivery of professional development with lead staff developer, and co-planning of district-wide support with lead staff developer.

ASSISTANT INSTRUCTOR. (June 2000 – August 2000)

Project-Based Curriculum for Middle School (EDUC 79701.2)

Course offered for 4-8 grade teachers through a partnership between Manhattan Community School District Two and City College of New York.

Teachers College, Columbia University, New York, NY.

PROFESSIONAL DEVELOPMENT SCHOOL INSTRUCTOR. (January – June 2000 & 2001)

Interdisciplinary Middle School Teaching - IND 4700a Spring and IND 4700b Summer

Seminars included multicultural teaching in urban school settings, interdisciplinary curriculum development, lesson planning, classroom management, and assessment (emphasis on fifth/sixth grade instruction).

INSTRUCTOR. (September 2000 – December 2000)

Science Teaching Practicum - SCFC4363

Supervised and instructed pre-service teachers in field placements and class meetings. Emphasized self-reflection, classroom management strategies, and curriculum development.

SCIENCE EDUCATION INTERNSHIP COORDINATOR. (September 1999 – June 2001)

Established student teaching placements; guided the selection, assignment, and monitoring of supervision interns; provided on-site supervision and evaluation of student teachers in science.

ACTION RESEARCH CONSULTANT. (March 1999 – June 1999)

Supervised Professional Development School fifth and sixth grade teachers engaged in action research projects that focused on the promotion of equality and access for all students.

College of Physicians & Surgeons, Columbia University, New York, NY. (January 1999 – June 2001)

PROGRAM EVALUATOR.

Conducted a program evaluation of an NSF funded research program on the impact of teacher participation in Columbia's Summer Research Program for Science Teachers on the classroom environment and student outcomes.

Pasadena Independent School District, Houston, TX. (August 1994 - June 1998)

SCIENCE AND HEALTH TEACHER.

Taught eighth/ninth grade health, ninth grade physical science with an emphasis on chemistry, tenth grade biology, and eleventh/twelfth grade anatomy and physiology.

Higher Achievement Program, Washington, D.C. (June 1996 - August 1996)

SCIENCE TEACHER.

Taught environmental science for fifth and sixth graders and genetics for seventh and eighth graders in a private high school preparation program for at-risk students.

Houston Council on Alcoholism & Drug Abuse, Houston, TX. (January 1993 - June 1994)

PRACTICUM IN ALCOHOL/SUBSTANCE ABUSE PROGRAMS.

Instructed youth under the jurisdiction of the court in grades five through eight at Harris County Youth Village, a juvenile probation residential facility.

SUMMARY OF TEACHING & OTHER PROFESSIONAL EXPERIENCE IN P-12 SCHOOLS

George Mason University, Fairfax, VA.

INTERIM PROGRAM COORDINATOR OF MASON'S PROFESSIONAL DEVELOPMENT SCHOOL NETWORK – ELEMENTARY EDUCATION. (January 2012 – August 2013)

Administer, oversee, and evaluate the effectiveness of PDS Network (18 schools across four school divisions in Northern Virginia) of pre-service teachers in field experience and internship, in-service teachers serving as Site Facilitators and Clinical Faculty, full- and part-time university faculty serving as University Facilitators at each of 18 school sites, school administrators, and school division administrators, including proposals and administration of financial contracts with participating school divisions.

ADVISOR OF UNIVERSITY SUPERVISORS IN TEACH FOR AMERICA (TFA)

ALTERNATIVE CERTIFICATION PROGRAM. (August 2011 – present)

Develop and evaluate supervision program for in-service teachers while completing on-the-job internships as part of alternative certification requirements; provide professional development and advise university supervisors of Mason's Elementary Education Program – Teach for America) in the District of Columbia and Prince George's County, MD.

ADVISOR OF UNIVERSITY FACILITATORS IN PDS NETWORK. (January 2012 – August 2013)

Provide professional development and advise university facilitators in PDS Network of Mason's Elementary Education Program, including enhanced supervision of selected university facilitators on an as needed basis.

UNIVERSITY SUPERVISOR. (August 2009 – June 2010, January – June 2013)

Supervise pre-service and in-service elementary teachers in professional development school settings Fairfax County Public Schools.

UNIVERSITY SUPERVISOR. (August 2009 – June 2012)

Supervise in-service elementary teachers while completing on-the-job internship as part of alternative certification requirements (Mason's Elementary Education Program – Teach for America) in the District of Columbia and Prince George's County, MD.

Alexandria City Public Schools, Alexandria, VA.

CONSULTANT and GRANT-FUNDED WORK. (March 2007 – April 2010)

Develop, implement, and assess the impact of elementary teacher professional development for at-risk schools, including co-planning K-5 science instruction, leading K-5 science lessons, and co-teaching in K-5 classrooms. Evaluate district's elementary science program.

Old Dominion University, Norfolk, VA.

PROFESSIONAL DEVELOPMENT SCHOOL COMMITTEE. (August 2001 – May 2004)

Science education consultant to professional development schools network of elementary schools, Norfolk Public Schools.

Manhattan Community School District Two, New York, NY.

STAFF DEVELOPER. (January 1999 – June 2001)

Supervised in-service science teachers and long-term substitute teachers of grades 4 through 8 to promote the development and utilization of hands-on, project-based science. Responsibilities included including co-planning instruction, teaching lessons, co-teaching in classrooms, facilitation of teachers' inter-visits, co-planning and co-delivery of professional development with lead staff developer, and co-planning of district-wide support with lead staff developer.

Teachers College, Columbia University, New York, NY.

PROFESSIONAL DEVELOPMENT SCHOOL INSTRUCTOR. (January – June 2000 & 2001)

Planned and co-planned instruction, modeled and co-taught in fifth/sixth grade classrooms, and led professional development seminars. Seminars included multicultural teaching in urban school settings, interdisciplinary curriculum development, lesson planning, classroom management, and assessment.

Teachers College, Columbia University, New York, NY.

ACTION RESEARCH CONSULTANT. (March 1999 – June 1999)

Supervised Professional Development School fifth and sixth grade teachers engaged in action research projects that focused on the promotion of equality and access for all students.

Pasadena Independent School District, Houston, TX. (August 1994 - June 1998)

SCIENCE AND HEALTH TEACHER.

Taught eighth/ninth grade health, ninth grade physical science with an emphasis on chemistry, tenth grade biology, and eleventh/twelfth grade anatomy and physiology.

Higher Achievement Program, Washington, D.C. (June 1996 - August 1996)

SCIENCE TEACHER.

Taught environmental science for fifth and sixth graders and genetics for seventh and eighth graders in a private high school preparation program for at-risk students.

Houston Council on Alcoholism & Drug Abuse, Houston, TX. (January 1993 - June 1994)

PRACTICUM IN ALCOHOL/SUBSTANCE ABUSE PROGRAMS.

Instructed youth under the jurisdiction of the court in grades five through eight at Harris County Youth Village, a juvenile probation residential facility.

PROFESSIONAL HONOR, RECOGNITION, AWARDS

Sloan-C Online Teaching Certificate with Specialization in Online Tools, 2013.

Nominee – Teaching Excellence Award, George Mason University, 2012.

Virginia Initiative for Science Teaching and Achievement; Investing in Innovation (i3); U.S. Department of Education; September 30, 2010 – September 29, 2015. Amount awarded: \$28,445,346; Third party match: \$5,690,370. Total projects costs of \$34,135,716.

<http://vista.gmu.edu>

As Co-Principal Investigator, our research team was the recipient of the largest externally funded grant award publicly received in the history of George Mason University. The grant is funded by U.S. Department of Education in the amount of \$28,445, 346. The lead investigator is Donna R. Sterling with fellow co-principal investigators from The College of William & Mary (Juanita Jo Matkins) and Virginia Commonwealth University (Jacquelyn McDonnough). In November 2011 – May 2012 as service to the college and university, I was honored to serve as Interim Director of the VISTA program tasked with daily (9:00am – 5:00pm) personnel management including the hiring of six new personnel (one still in progress) and review of staff members' duties in light of monetary compensation, state-wide and site-specific program design and implementation, and state-wide collaborative reporting. I now continue to serve in my original capacity as Co-Principal Investigator to provide administrative and research expertise in elementary and secondary science teacher education methods and theory and expertise in professional development for university-based science education professors through my prior experiences as College Committee Chair of the Board of Virginia Association of Science Teachers (VAST).

Selected for interview on prime time news Russian Television & Radio Broadcasting Company (RTR) TV Channel based prior grant work in STEM and elementary science teacher development; interview segment picked up for broadcast to over 120 million in Russia, Baltic countries, Israel, & North America via “VESTI” on four television channels & two radio stations. Topic: Preparing children for the 21st century with regards to creativity & problem-based learning in the context of “Tiger Mom” approaches to child-rearing;” March 3, 3011; see: <http://www.vesti.ru/doc.html?id=433187>

Virginia Mathematics and Science Coalition's "Programs That Work" Award for Teacher Education Programs: CREST New Science Teachers' Support Network, 2010.

Induction into Phi Beta Delta, which recognizes scholarly achievement among students, faculty, and staff who are involved in international activities, 2010.

Science Educator Award (non K-12) – Virginia Association of Science Teachers, 2009 (This annual award recognizes the accomplishments of one non K-12 science educator "who has made a difference").

First place award – Elementary education category of the Engineering Education Service Center's (EESC) Engineering Curriculum Contest, 2009.

District-Wide Partners in Education Award in appreciation for outstanding service and extraordinary commitment to all students of the Alexandria City Public Schools, 2009.

Finalist – Teaching Excellence Award, George Mason University, 2009.

Virginia Mathematics and Science Coalition's "Programs That Work" Award for Teacher Education Programs: CREST Science Camp for Students and Pre-service Teachers, 2008.

George Mason University Summer Research Funding for Tenure-Track Faculty, Summer 2008 (\$5,253).

Old Dominion University's Professional Development Award, 2003 – 2004.

Old Dominion University's Professional Development Award, 2002 – 2003.

Recipient of the Teachers College General Scholarship, 2000 – 2001.

Recipient of the Blackwood Scholarship, 2000 – 2001.

Who's Who Among America's Teachers, 2000.

Recipient of the Heft Memorial Scholarship, 1999 – 2000.

Recipient of the Heft Memorial Scholarship, 1998 – 1999.

Recipient of the Movement Sciences Fellowship, 1998 – 1999.

Texas Future Educators' Teacher of the Month, April 1998.

Masters Student of the Year, Curriculum and Instruction Department, 1996 – 1997.

PUBLICATIONS IN INTERNATIONAL/NATIONAL REFEREED JOURNALS

Annetta, L. A., Frazier, W. M., Holmes, S. Y., Lamb, R., Cheng, M. T., & Folta, E. (2013). Science teacher efficacy and extrinsic factors toward professional development using video games in a design-based research model: The next generation of STEM Learning. *Journal of Science Education and Technology*, 22(1), 47-61. [Google Scholar: Cited 1 time]

Annetta, L., Peters Burton, E. E., Frazier, W., Cheng, R., & Chmiel, M. (2012). Augmented reality games: Using technology on a budget. *Science Scope*, 36(3), 26-32. [Google Scholar: Cited 1 time]

Peters Burton, E. E. & Frazier, W. (2012). Voices from the front lines: Alignment of reform documents and master teacher instruction. *School Science and Mathematics Journal*, 112, 179-190. DOI: 10.1111/j.1949-8594.2011.00131.x [Google Scholar: Cited 1 time]

Peters Burton, E., Frazier, W., Annetta, L., Lamb, R., Cheng, R., & Chmiel, M. (2011). Modeling augmented reality games with preservice elementary and secondary teachers. *Journal of Technology and Teacher Education*, 19(3), 303-329. [Google Scholar: Cited 3 times]

Sterling, D. R., & Frazier, W. M. (2011). Rethinking science instruction. *Principal*, 91(2). Available: <http://www.naesp.org/principal-novemberdecember-doing-more-less/rethinking-elementary-science-instruction>

Sterling, D. R., & Frazier, W. M. (2011). Setting up uncertified teachers to succeed. *Phi Delta Kappan*, 92(7), 40-45. [Google Scholar: Cited 1 time]

Geller, H. A. and Frazier, W. M. (2010). Assessing planetarium programs for content and pedagogy. *Planetarian, Journal of the International Planetarium Society*, 39(2), 9-11, 25.

Sterling, D. R., & Frazier, W. M. (2010). Maximizing uncertified teachers' potential. *Principal Leadership*, 10(8), 48-52. [Google Scholar: Cited 1 time]

Evans, K. M., & Frazier, W. M. (2010). Blogging about the weather. *Science and Children*, 47(8), 24-28.

Frazier, W. M., & Murray, K. B. (2009). Science poetry in two voices: Poetry and the nature of science. *Science Education Review*, 8(2), 58-78. Retrieved from http://www.scienceeducationreview.com/open_access/frazier-poetry.pdf [Google Scholar: Cited 1 time]

Heddings, K. S., & Frazier, W. M. (2009). Shrinking our footprints: An environmental chemistry unit to measure and reflect on students' ecological impact. *The Science Teacher*, 76(6), 25-28. [Google Scholar: Cited 1 time]

Frazier, W. M., & Sterling, D. R. (2009). Helping new science teachers: A how-to guide for experienced teachers. *The Science Teacher*, 76(5), 34-39.

Anthony, K. J., & Frazier, W. M. (2009). Teaching students to create undiscovered ideas. *Science Scope*, 33(1), 20-27.

- Moore, L., Taylor, G., & Frazier, W. (2008). Career choices and decision-making of urban African American female participants of an afterschool science, technically related engineering and math (STEM) enrichment program." *The National Journal of Urban Education and Practice*, 1(3), 239-249.
- Frazier, W. M., & Sterling, D. R. (2008a). Problem-based learning for science understanding. *Academic Exchange Quarterly*, 12(2), 111-115. [Google Scholar: Cited 3 times]
- McKinney, S. E., & Frazier, W. M. (2008). Embracing the principles and standards for school mathematics: An inquiry into the pedagogical and instructional practices of mathematics teachers in high-poverty, middle schools. *The Clearing House*, 81(5), 201-210. [Google Scholar: Cited 20 times]
- Frazier, W. M., & Sterling, D. R. (2008b). Motor mania: Revving up for technological design. *The Technology Teacher*, 67(5), 5-12. [Google Scholar: Cited 1 time]
- Frazier, W. M., & Sterling, D. R. (2007). Weather Tamers. *Science Scope*, 30(7), 26-31. [Google Scholar: Cited 2 times]
- Sterling, D. R., Matkins, J. J., Frazier, W. M., & Logerwell, M. G. (2007). Science camp as a transformative experience for students, parents, and teachers in the urban setting. *School Science and Mathematics*, 107(4), 134-148. [Google Scholar: Cited 7 times]
- McKinney, S. E., Fleener, C. E., Frazier, W. M., & Abrams, L. (2006, Summer). Responding to the needs of at-risk students in poverty. *Essays in Education*, 17. Retrieved from <http://www.usca.edu/essays/vol172006/mckinney.pdf> [Google Scholar: Cited 9 times]
- Frazier, W. M. (2006). Magnifying students' interest in science. *Science Scope*, 29(8), 32-35.
- Sterling, D. R., & Frazier, W. M. (2006). Collaboration with community partners. *The Science Teacher*, 73(4), 28-31. [Google Scholar: Cited 1 time]
- Berry, R. Q., Reed, P. A., Ritz, J. M., Lin, C. Y., Hsuing, S., & Frazier, W. M. (2005). STEM initiatives: Stimulating students to improve science and mathematics achievement. *The Technology Teacher*, 64(4), 23-28. [Google Scholar: Cited 10 times]
- Salimi, I., Frazier, W. M., Reilman, R., & Gordon, A. M.. (2003). Selective use of visual information signaling objects' center of mass for anticipatory control of manipulative fingertip forces. *Experimental Brain Research*, 150, 9-18. [Google Scholar: Cited 39 times]
- Salimi, I., Hollender, I., Frazier, W. M., & Gordon, A. M. (2000). Specificity of internal representations underlying grasping. *Journal of Neurophysiology*, 84, 2390-2397. [Google Scholar: Cited 80 times]

INVITED PUBLICATIONS IN INTERNATIONAL/NATIONAL REFEREED JOURNALS

Frazier, W. M. (2009, Spring). Feature editor's editorial on problem-based learning. *Academic Exchange Quarterly*, 13(1), 4.

Frazier, W. M., & Sterling, D.R. (2005). What should my science classroom rules be and how can I get my students to follow them? *The Clearing House*, 79(1), 31-35. [Google Scholar: Cited 7 times]

INVITED PUBLICATION IN INTERNATIONAL/NATIONAL PERIODICAL

Fox, R.K., & Frazier, W.M. (2011, Oct. 26). Russian and U.S. teachers focus on global skills for 21st century education (Special Section, *Russia Now*, p. H5). Washington, D.C.: *Washington Post*. Online version available at:
http://rbth.ru/articles/2011/10/25/teacher_exchange_for_a_21st_century_education_13639.html

BOOK

Frazier, W. M. (2009). *The effect of a science work experience program for teachers: A qualitative program evaluation*. Saarbrücken, Germany: Verlag Dr. Müller Aktiengesellschaft & Co. KG Publishers.

BOOK CHAPTERS

Frazier, W. M., Fox, R. K., & Hjalmarson, M. A. (2012). STEM disciplines and world languages: Influences from an international teacher exchange. In B. Shaklee & S. Baily (Eds.), *Internationalizing U.S. Teacher Education*, pp. 175-204. Lanham, MD: Rowan and Littlefield Publishers.

Frazier, W. M. (2009). Easy riders. In C. Baine (Ed.), *Adventures in engineering education: A compilation of winning engineering education activities (E-book)*, pp. 131-141. Springfield, OR: Engineering Education Service Center. Retrieved from
<http://www.engineeringedu.com/contest/curriccontestfinalists.pdf>

PUBLICATIONS IN STATE/REGIONAL REFEREED JOURNALS

Frazier, W. M., & Sterling, D. R. (2010). Helping new science teachers. *California Journal of Science Education*, 11(1), 21-27. [reprint of Frazier, W. M., & Sterling, D. R. (2009). Helping new science teachers: A how-to guide for experienced teachers. *The Science Teacher*, 76(5), 34-39]

Frazier, W. M. (2008). Intelligent collaborations for problem-based learning. *Journal of Virginia Science Education*, 3(1), 18-30.

Frazier, W. M., & Sterling, D. R. (2008). Maximizing the impact of professional development for Earth science teachers. *The Journal of Mathematics and Science: Collaborative Explorations*, 10, 85-98.

Frazier, W. M., & Sterling, D. R. (2007). Taking it into the classroom: They loved your Earth science class but did they do anything with it? *MathScience Innovation Center*. Retrieved from <http://www.virginiaearthscience.info/geoprodev/Classroom/TakingItIntotheClassroom.doc>. Retrieved from <http://www.docstoc.com/docs/11661183/Taking-It-Into-the-Classroom-They-Loved-Your-Science-Course-But>.

Frazier, W. M. (2004). Can science methods really be taught on-line? *The Journal of Mathematics and Science: Collaborative Explorations*, 7, 5-15.

INVITED COMMENTARY ARTICLE IN STATE REFEREED JOURNAL

Frazier, W. M. (2007). How tough can it really be? Summary and commentary based on “The tough road to better science teaching” by Jeffrey Brainard published in *The Chronicle of Higher Education* on August 3, 2007. *Journal of Virginia Science Education*, 2(1), 78-80. Retrieved from <http://www.vast.org/content/File/v2n1/v2n1.pdf>

PUBLICATIONS IN INTERNATIONAL/NATIONAL CONFERENCE PROCEEDINGS

Barton, E. P., & Frazier, W. M. (2011, April). Voices from the front lines: Science teachers on education reform. *Annual International Conference of the National Association for Research in Science Teaching 2010 Proceedings*, Orlando, FL.

Sterling, D. R., Frazier, W. M., Matkins, J. J., McDonnough, J., & Bell, R. (2011, April). Policy implications for extending programs: Virginia initiative for science teaching and achievement (VISTA): Investing in innovation fund (i3). *Annual International Conference of the National Association for Research in Science Teaching 2011 Proceedings*, Orlando, FL.

Frazier, W. M., Sterling, D. R., & Bordeaux, Amy V. (2010, March). Hiring a science specialist to improve elementary science instruction is just the beginning: Supporting schools to maximize the impact of science specialists. *Annual International Conference of the National Association for Research in Science Teaching 2010 Proceedings*, Philadelphia, PA. Retrieved from http://www.narst.org/annualconference/postconference10/Sterling_Frazier_Bordeaux.pdf

Sterling, D. R., & Frazier, W. M. (2010, March). Support programs for new science teachers can increase student test scores: Policy implications. *Annual International Conference of the National Association for Research in Science Teaching 2010 Proceedings*, Philadelphia, PA. Retrieved from http://www.narst.org/annualconference/postconference10/Sterling_Frazier.pdf

Sterling, D. R., Frazier, W. M., & Logerwell, M. G. (2009, April). Increasing the efficacy, instructional skills, and effectiveness of new science teachers: What the data tell us works. [CD-ROM] *Annual International Conference of the National Association for Research in Science Teaching 2009 Proceedings*. Garden Grove, CA.

Frazier, W. M., Sterling, D. R., & Logerwell, M. G. (2008, April). An examination of the process of supporting uncertified science teachers: What new teachers need to succeed. [CD-ROM] *Annual International Conference of the National Association for Research in Science Teaching 2008 Proceedings*. Baltimore, MD.

Sterling, D. R., Frazier, W. M., Logerwell, M. G., Dunn, K. D. (2007). Helping uncertified science teachers survive teaching and focus on student learning. [CD-ROM] *Annual International Conference of the National Association for Research in Science Teaching 2007 Proceedings*. New Orleans, LA.

Logerwell, M. G., Frazier, W. M., & Sterling, D. R. (2007). Retired master science teachers: A valuable resources in science teacher education. *Proceedings of the 2007 Annual International Conference of the Association for Science Teacher Education*. Clearwater, FL.

Sterling, D. R., Frazier, W. M., Logerwell, M. G., & Kitsantas, A. (2006). New science teachers' support network: How can we help provisionally licensed teachers succeed? [CD-ROM] *Science, Technology, Engineering and Math - Alternative Certification for Teachers (STEM-ACT) Conference Proceedings*. Arlington, VA.

Sterling, D. R., Frazier, W. M., Kitsantas, A., Logerwell, M. G., & Hansen, J. (2006). New science teachers: How can we help them succeed? [CD-ROM] *Annual International Conference of the National Association for Research in Science Teaching 2006 Proceedings*. San Francisco, CA. [Google Scholar: Cited 1 time]

Sterling, D. R., Kitsantas, A., Matkins, J. J., & Frazier, W. M. (2005). The new science teachers' support network: Examining its impact on teachers' self-efficacy and use of technology. [CD-ROM] *Annual International Conference of the National Association for Research in Science Teaching 2005 Proceedings*. Dallas, TX.

Frazier, W. M., McKinney, S. E., & Fleener, C. E. (2003). The art of planning ahead: Pre-service and in-service teachers' curriculum maps. [CD-ROM] *Proceedings of the Hawaii International Conference on Education*. Honolulu, HI.

Fleener, C. E., McKinney, S. E., Frazier, W. M., Doviak, S., & Mathews, T. (2003). Literacy: A construct crossing all curriculum areas. [CD-ROM] *Proceedings of the Hawaii International Conference on Education*. Honolulu, HI.

Frazier, W. M. (2001). Science work experience programs for teachers: Refocusing professional development using a qualitative lens. In P. Rubba, J. Rye, W. Di Biase, & B. Crawford (Eds.), *Proceedings of the 2001 Annual International Conference of the Association for the Education of Teachers in Science* (pp. 613-641). Costa Mesa, CA. ERIC Document Reproduction Service No. 435083. Retrieved from http://www.ed.psu.edu/CI/Journals/2001aets/f5_05_frazier.rtf

REPORTS

Frazier, W. M. (2013, March). *Elementary education program: Calendar year 2012 report*. Accreditation and Program Improvement, College of Education and Human Development, George Mason University, Fairfax, VA.

Frazier, W. M. (2012, July). *Elementary education program: Calendar year 2011 report*. Accreditation and Program Improvement, College of Education and Human Development, George Mason University, Fairfax, VA.

Frazier, W. M. (Frazier, W. M., & Fox, R. K. (2012, January). *Summary of activities and outcomes submitted on 1/31/2012 for award number: S-ECAAS-09-CA-175 (EB) [U.S - Russia teacher professional development project (cooperative agreement)] in accordance with the federal funding accountability and transparency act*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2012, January). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2011, October). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2011, July). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2011, April). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2011, January). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2010, October). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2010, July). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2010, April). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2010, January). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Frazier, W. M., & Fox, R. K. (2009, October). *Quarterly report for U.S. – Russia teacher professional development project (cooperative agreement)*. Washington, DC: U.S. Department of State.

Geller, H. A., & Frazier, W. M. (2009, May). *Report on the assessment of the Arlington Public Schools' David M. Brown planetarium*. Arlington, VA: Arlington Public Schools.

Sterling, D. R., & Frazier, W. M. (2009, May). *2009 NSF annual report for award #0302050*. Washington, DC: National Science Foundation.

Wendy M. Frazier, Amy Bordeaux, & Donna R. Sterling (2008, December). *Final quarterly report for science explorers: Elementary science staff development*. Richmond, VA: Virginia Department of Education.

Donna R. Sterling, Wendy M. Frazier, & Amy Bordeaux (2008, November). *Final report for Mathematics and Science Partnership Program: Science explorers: Elementary science staff development*. Washington, DC: U.S. Department of Education.

Sterling, D. R., Frazier, W. M., Roche, S., & Logerwell, M. G. (2008, September). *Final report for Stars & Splash: Science for preservice elementary teachers*. Richmond, VA: State Council of Higher Education.

Sterling, D. R., & Frazier, W. M. (2008a, September). *Supporting new science teachers: What school leaders can do*. Retrieved from http://cehd.gmu.edu/assets/docs/crest/SupportingNewScienceTeachers9_17_08.pdf [Google Scholar: Cited 1 time]

Sterling, D. R., & Frazier, W. M. (2008b, September). *Science test scores increase when new teachers receive support*. Retrieved from http://cehd.gmu.edu/assets/docs/crest/ScienceTestScores%20Increase9_08.pdf

Sterling, D. R., & Frazier, W. M. (2008, June). *2008 NSF annual report for award #0302050*. Washington, DC: National Science Foundation.

Frazier, W. M., Sterling, D. R., & Bordeaux, A. (2008, June). *Quarterly report for science explorers: Elementary science staff development*. Richmond, VA: Virginia Department of Education.

Frazier, W. M., Sterling, D. R., & Bordeaux, A. (2008, March). *Quarterly report for science explorers: Elementary science staff development*. Richmond, VA: Virginia Department of Education.

Sterling, D. R., Roche, S., & Frazier, W. M. (2008, February). *Interim Report for Stars & Splash: Science for Preservice Elementary Teachers*. Richmond, VA: State Council of Higher Education.

Frazier, W. M., Sterling, D. R., Logerwell, M. G., & Kitsantas, A. (2008, February). *Report from the new science teachers' support network: What school leaders can do to support new teachers*. Retrieved from http://cehd.gmu.edu/assets/docs/crest/NSTSN_report.pdf

Frazier, W. M., Sterling, D. R., & Bordeaux, A. (2007, December). *Quarterly report for science explorers: Elementary science staff development*. Richmond, VA: Virginia Department of Education.

Sterling, D. R., Frazier, W. M., & Logerwell, M. G. (2007, September). *Final progress report for foundational physics for middle level science teachers*. Richmond, VA: State Council of Higher Education.

Frazier, W. M., Sterling, D. R., & Bordeaux, A. (2007, September). *Quarterly report for science explorers: Elementary science staff development*. Richmond, VA: Virginia Department of Education.

Sternheim, M., & Zhao, Y., Austin, B., Frazier, W. M., Greenwood, A., Hayes, J., Hickey, C., & Shea, K. (2008, February). *Tomorrow's science teachers; Science, technology, engineering and math – alternative certification for teachers (STEM-ACT) conference project report: Practice section*. National Science Foundation. Retrieved from <http://stemtec.org/act/WhitePapers/Practice.pdf>

Sterling, D. R., & Frazier, W. M. (2007, April). *2007 NSF annual report for award #0302050*. Washington, DC: National Science Foundation.

Sterling, D. R., Frazier, W. M., & Logerwell, M. G. (2007, February). *Interim progress report for foundational physics for middle level science teachers*. Richmond, VA: State Council of Higher Education.

Sterling, D. R., Logerwell, M. G., & Frazier, W. (2006, September). *Final report for modeling physics: Building conceptual models in physical science*. Richmond, VA: State Council of Higher Education.

Sterling, D. R., Kitsantas, A., & Frazier, W. M. (2006, April). *2006 NSF annual report for award #0302050*. Washington, DC: National Science Foundation.

Sterling, D. R., Kitsantas, A., & Frazier, W. M. (2005, May). *2005 NSF annual report for award #0302050*. Washington, DC: National Science Foundation.

STUDENT MANUSCRIPT EDITING

Wolfgang, C. N. (2009). Managing inquiry-based classrooms. *Science Scope*, 32(9), 14-17. Edited by W. M. Frazier (acknowledged).

PUBLICATIONS IN PROGRESS

Frazier, W. M. (In progress). Poetry and the nature of science. *Journal of Science Teacher Education*.

Frazier, W. M., Fox, R. K., & Logerwell, M. G. (In progress). Fostering interculturally competent 21st century teachers of world languages and STEM: An innovative program for a changing world. *Journal of International Education*.

Frazier, W. M. (In progress). Application of appreciative inquiry to on-the-job internships for elementary teachers. *Journal of Teacher Education*.

Frazier, W. M., Sterling, D. R. (In progress). Supporting schools to maximize the impact of science specialists. *Journal of Science Teacher Education*.

Frazier, W. M. (In progress). Problem solved? Training preservice elementary science teachers via a summer forensic science camp. *Journal of Elementary Science Education*.

Waite, S., & Frazier, W. M. (In progress). A schoolyard of habitats. *Science and Children*.

FUNDING AWARDED

Frazier, W.; George Mason University Elementary PDS Internship Program – Fairfax County Public; Fairfax County Public Schools; July 1, 2013 – June 30, 2014. **Amount funded: \$71,624.**

Frazier, W.; George Mason University Elementary PDS Internship Program – Prince William County Schools; Prince William County Schools; July 1, 2013 – June 30, 2014. **Amount funded: \$ 13,261.**

Frazier, W.; George Mason University Elementary PDS Internship Program – Fairfax County Public; Fairfax County Public Schools; July 1, 2012 – June 30, 2013. **Amount funded: \$102,273.**

Frazier, W.; George Mason University Elementary PDS Internship Program – Prince William County Schools; Prince William County Schools; July 1, 2012 – June 30, 2013. **Amount funded: \$ 13,821.30.**

Sterling, D. R., Matkins, J. J., McDonough, J., & Frazier, W. M.; Virginia Initiative for Science Teaching and Achievement; Investing in Innovation (i3); U.S. Department of Education; September 30, 2010 – September 29, 2015. **Amount awarded: \$28,445,346; Third party match: \$5,690,370. Total project costs of \$34,135,716.**

Frazier, W. M., & Fox, R. K.; U.S. – Russia Teacher Professional Development Project (Cooperative Agreement); U.S. Department of State; September 18, 2009 – December 31, 2011. **Awarded: \$299,998. Total project costs of \$546,003.**

Frazier, W. M.; This Is NOT Just Another Summer Camp! The Effect of Participation in a Summer Enrichment Program for Children Entering Grades Five Through Seven on Preservice Teacher Development and Children's Content Knowledge and Attitudes Toward Science; George Mason University Summer Research Funding; Summer 2008. **Awarded: \$5,253.**

Sterling, D. R., & Frazier, W. M.; Stars and Splash; *No Child Left Behind Act of 2001*, Title II, Part A, State Council of Higher Education for Virginia; 2007-2008. **Awarded: \$97,129.**

Sterling, D. R., & Frazier, W. M.; Science Explorers; Mathematics and Science Partnership, *No Child Left Behind Act of 2001*, Title II, Part B, Virginia Department of Education; 2007-2008. **Awarded: \$241,993.**

Sterling, D. R., Diecchio, R., & Frazier, W. M.; Virginia Earth Science Collaborative; Mathematics and Science Partnership, *No Child Left Behind Act of 2001*, Title II, Part B, Virginia Department of Education (Subaward via Virginia Math and Science Center); 2006-2007. **Awarded: \$57,242.**

Sterling, D. R., Frazier, W. M., Thayer, M., Skelton, C., Hamilton, M., & Hypes, J.; Foundational Physics for Middle Level Science Teachers; *No Child Left Behind Act of 2001*, Title II, Part A, State Council of Higher Education for Virginia; 2006-07. **Awarded: \$57,657.**

Frazier, W. M.; Career Switchers; Virginia Dept. of Education; 2004-05. **Awarded: \$15,796.**

Frazier, W. M., Berry, III, R. Q., Cristol, D., & Heine, P.; Transition to Teaching; U.S. Department of Education's Office of Elementary and Secondary Education (Sub-award via Newport News Public Schools); 2002-2004 (PI: Frazier), 2004-2005 (PI: Cristol). **Awarded to ODU: \$548,402.**

Doviak, S., Mathews, T., Fleener, C. E., & Frazier, W. M.; Smart Stars; *No Child Left Behind*, Title II, Part A, State Council of Higher Education for Virginia; 2003-04. **Awarded: \$67,084.**

Frazier, W. M., & Watson, S.; Science For All Students; Linking Scholars to Academic Resources (LASER) Faculty Mini-Grant Research Award; 2002-2003. **Awarded: \$5,000.**

Doviak, S., Mathews, T., Fleener, C. E., & Frazier, W. M.; Smart Stars; Dwight D. Eisenhower Professional Development Program; 2002-2003. **Awarded: \$59,778.**

McKinney, S. E., Adam, J., & Frazier, W. M.; Preparing Future Middle School Mathematics and Science Teachers: An Opportunity for Virginia; U.S. Department of Education's Fund for the Improvement of Post-Secondary Education (Subaward via Virginia Commonwealth University); 2001-2002 (PI: McKinney), 2002-2003 (PI: McKinney/Frazier), 2003-2004 (PI: Frazier). **Awarded to ODU: \$29, 861.**

GRANT PROPOSALS UNDER REVIEW

Burns, M. S., Kidd, J., Buehl, M., & Frazier, W. M. (2013, August). Exploring the Antecedents and Outcomes of Young Children's Writing and Representing in Literacy, Mathematics, and Science; Institute of Education Sciences. Amount requested: \$1,598,715. Status: Under review.

SERVICE TO FUNDED PROJECTS (not as principal investigator)

Gouleta, E. (2013). National University of Science and Technology (NUST) Professional Development Program. Contract awarded to provide a 3-week professional development program for 15 engineering faculty from Pakistan's National University of Science and Technology (NUST) in the Summer of 2013. With M. Hjalmarson, R. Fox, D. Sprague, W. Frazier, Faculty. [Submission February 2013; funded; contributed to proposal development and delivered professional development]

Shaklee, B. (2012- 2014). Internationalizing Teacher Education in the United States. Longview Foundation. Faculty participant; participate in professional development for faculty from George Mason University and American University and conduct research on internationalizing advanced teacher development.

Bell, R. L., & Murphy, E.; Scientific Inquiry and the Nature of Science: Improving Middle School Science Instruction and Learning; *No Child Left Behind Act of 2001*, Title II, Part A, State Council of Higher Education for Virginia; 2010-2011. Awarded to University of Virginia: \$63,706. Role: External Program Evaluator.

Geller, H.; Assessment of Arlington Planetarium; Arlington Public Schools; Spring-Summer 2009. **Awarded to GMU: \$5,129.** Role: Evaluator of planetarium with respect to Virginia's *Science Standards of Learning for K-12 Public Schools*.

Murphy, E., & Bell, R. L.; Space Science for Teachers; *No Child Left Behind Act of 2001*, Title II, Part A, State Council of Higher Education for Virginia; 2008-2009. Awarded to University of Virginia: \$61,570. Role: External Program Evaluator.

Sterling, D. R., Thayer, M., & Reinshuttle, L.; New Science Teachers' Support Network; National Science Foundation; 2003-2010. **Awarded to GMU: \$841,694.** Role: Manager.

Sterling, D. R., & Deicchio, R.; Virginia Earth Science Collaborative; Mathematics and Science Partnership, *No Child Left Behind Act of 2001*, Title II, Part B, Virginia Department of Education (Subaward via Virginia Math and Science Center); 2005-2006. **Awarded budget to GMU: \$108,139.** Duties: Conduct needs assessment and provide faculty support.

Sterling, D. R., Thayer, M., Skelton, C., & Booker, M; Modeling Physics: Building Conceptual Models in Physical Science; *No Child Left Behind Act of 2001*, Title II, Part A, State Council of Higher Education for Virginia; 2005-2006. **Awarded to GMU: \$52,011.** Role: Evaluator.

RESEARCH CONFERENCE LEADERSHIP – INTERNATIONAL

Fox, R. K., & Frazier, W. M. (2011, May). *Teachers-as-Researchers Conference for Teachers of Primorsky Krai, Russia, and the United States*. Research conference designed and led in coordination with the U.S. Consulate, Vladivostok, Russia.

Frazier, W. M., & Fox, R. K. (2010, October 18 – November 18). *U. S. - Russia Teacher Professional Development: Research-Driven Methodologies and Practices to Support The Development of Teacher Leaders*. Research-based conference program designed and led in

coordination with the U.S. Department of State, U.S. Consulate – Vladivostok, Asia-Pacific School of Vladivostok, faculty of Thomas Jefferson High School for Science and Technology (TJHSST), and faculty of George Mason University, Fairfax, VA.

Sterling, D. R., Frazier, W. M., Thayer, M., & Calhoun, J. (2009, April). *How Can We Plug the Hole in the Bucket? Addressing Beginning Science Teacher Retention Issues Before It's Too Late*. Research workshop designed and led at the Annual International Conference of the National Association for Research in Science Teaching, Garden Grove, CA.

PRESENTATIONS – INTERNATIONAL/NATIONAL

Frazier, W. M., Fox, R. K., & Logerwell, M. G. (2014-accepted). *Sustained professional development in science and world language: Implications for internationalizing preservice and inservice science teacher education*. Association for Science Teacher Education (ASTE) 2014 International Conference, San Antonio, TX.

Fox, R. K., Frazier, W. M., & Sandstrom, E. (2013-accepted). *Developing international mindedness and applying authentic language through STEM content*. Conference Workshop Presentation at the 45th Annual Meeting of the American Council on the Teaching of Foreign Languages (ACTFL), Orlando, FL.

Frazier, W. (2013, May). *An examination of distance education in the pedagogical training of future teachers of science at the primary and secondary levels*. Annual Multidisciplinary Conference, *International Journal of Arts & Sciences*, Anglo-American University, Prague, Czech Republic.

Frazier, W.M., Fox, R.K., & Logerwell, M.G. (2013, April). *Fostering internationally-minded teacher leaders in the United States and Far East Russia*. Institute for Global Education Diplomacy, Association for Childhood Education International (ACEI), Washington, DC.

Frazier, W., & Fox, R. (2013, February). *Professional development in STEM and world languages via problem-based learning to support an environmentally responsible, global citizenry: Far East Russia and the United States*. International Conference of the Outdoor Learning Environment sponsored by the Weizmann Institute of Science. Ein Bokek & Rehovot, Israel.

Fox, R. K., & Frazier, W. M. (2012, October). *Fostering 21st Century Teacher Leaders in World Languages and STEM: An Innovative Program for a Changing World*. International Conference of the Alliance for International Education, Doha, Qatar.

Frazier, W. M., Fox, R. K., & Logerwell, M. G. (2012, March). *Science, technology, engineering, mathematics, and world language teachers: Fostering teacher leaders for the 21st century*. Annual International Conference of the National Association for Research in Science Teaching, Indianapolis, IN.

- Matkins, J. J., Sterling, D. R., McDonnough, J. T., & Frazier, W. M. (2012, March). *Constructing the science methods course as a shared instructional product*. A paper for the Annual meeting of the National Association of Research in Science Teaching, Indianapolis, IN. [Google Scholar: Cited 1 time]
- McDonnough, J. T., Sterling, D. R., Matkins, J. J., & Frazier, W. M. (2012, March). *Virginia science education at the crossroads: Connecting science education faculty to a professional community*. A paper for the Annual meeting of the National Association of Research in Science Teaching, Indianapolis, IN.
- Annetta, L.A., Peters-Burton, E., Frazier, W., Cheng, R., R., Lamb, R., & Chmiel, M. (2012, March). *Modeling augmented reality games with preservice science teachers*. *JTATE Special Issue*. Paper presented at the annual meeting of the Society for Information Technology and Teacher Education International Conference (SITE), Austin, TX.
- Fox, R. K., & Frazier, W. M. (2011, May). *Teacher research and invitation for collaborative research for STEM and world languages teachers in Russia and the U.S.: Rich possibilities for research and practice*. Joint keynote address and opening remarks at the Teachers-as-Researchers Conference for Teachers of Primorsky Krai, Russia, and the United States, Vladivostok, Russia.
- Frazier, W. M. (2011, May). *Reflection and future goals from a STEM perspective: Continuing collaborative research among world language teachers and teachers of science, technology, engineering, and mathematics*. Teachers-as-Researchers Conference for Teachers of Primorsky Krai, Russia, and the United States, Vladivostok, Russia.
- Barton, E. P., & Frazier, W. M. (2011, April). *Voices from the front lines: Science teachers on education reform*. Annual International Conference of the National Association for Research in Science Teaching, Orlando, FL.
- Sterling, D. R., Frazier, W. M., Matkins, J. J., McDonnough, J., & Bell, R. (2011, April). *Policy implications for extending programs: Virginia initiative for science teaching and achievement (VISTA): Investing in innovation fund (i3)*. Annual International Conference of the National Association for Research in Science Teaching, Orlando, FL.
- Frazier, W. M., & Murray, K. B. (2011, March). *Science poetry in two voices: Action research findings*. National Science Teachers Association National Convention, San Francisco, CA.
- Frazier, W. M., & Fox, R. K. (2011, March). *Fostering teacher leadership via U.S. – Russia teacher professional development (USRTPD): Program experiences and cultural influences*. Global Conversations in Science Education Conference, San Francisco, CA.
- Frazier, W. M., & Fox, R. K. (2011, March). *U.S. – Russia teacher professional development (USRTPD): Fostering teacher leaders*. National Science Teachers' Association National Convention, San Francisco, CA.
- Frazier, W. M., & Sterling, D. R. (2011, March). *NARST: Professional development ideas to support science specialists and elementary generalists*. Session sponsored by National Association for Research in Science Teaching (NARST), National Science Teachers

Association National Convention, San Francisco, CA.

Sterling, D. R., & Frazier, W. M. (2011, March). *NARST: Policy that makes a difference in how to effectively support new secondary science teachers*. Session sponsored by National Association for Research in Science Teaching (NARST), National Science Teachers Association National Convention, San Francisco, CA.

Frazier, W. M. (2010, November). *U.S.-Russia teacher professional development: Research-based curriculum trends in STM teaching*. Presentation developed in collaboration with U.S. Department of State, U.S. Consulate - Vladivostok, and Asia-Pacific School, Vladivostok, Russia. Delivered at George Mason University and Thomas Jefferson High School for Science and Technology, Fairfax, VA.

Frazier, W. M. (2010, November). *U.S.-Russia teacher professional development: Design mode, modeling, and engineering education*. Presentation developed in collaboration with U.S. Department of State, U.S. Consulate - Vladivostok, and Asia-Pacific School, Vladivostok, Russia. Delivered at George Mason University and Thomas Jefferson High School for Science and Technology, Fairfax, VA.

Frazier, W. M. (2010, October). *U.S.-Russia teacher professional development: Problem-based learning to support STEM understanding*. Presentation developed in collaboration with U.S. Department of State, U.S. Consulate - Vladivostok, and Asia-Pacific School, Vladivostok, Russia. Delivered at George Mason University and Thomas Jefferson High School for Science and Technology, Fairfax, VA.

Frazier, W. M. (2010, October). *U.S.-Russia teacher professional development: Reflecting the nature of the STM disciplines through instruction*. Presentation developed in collaboration with U.S. Department of State, U.S. Consulate - Vladivostok, and Asia-Pacific School, Vladivostok, Russia. Delivered at George Mason University and Thomas Jefferson High School for Science and Technology, Fairfax, VA.

Frazier, W. M., Sterling, D. R., & Bordeaux, Amy V. (2010, March). *Hiring a science specialist to improve elementary science instruction is just the beginning: Supporting schools to maximize the impact of science specialists*. Annual International Conference of the National Association for Research in Science Teaching, Philadelphia, PA.

Sterling, D. R., & Frazier, W. M. (2010, March). *Support programs for new science teachers can increase student test scores: Policy implications*. Annual International Conference of the National Association for Research in Science Teaching, Philadelphia, PA.

Sterling, D. R., & Frazier, W. M. (2010, January). *Support programs for new science teachers can increase student achievement*. Association for Science Teacher Education 2010 International Conference, Sacramento, CA.

Frazier, W. M. (2009, April). *Appreciating the Intelligence Community as a resource in preservice teacher education to support responsive, responsible, and effective science teaching*. Symposium on the War on Terror. Annual International Conference of the National Association for Research in Science Teaching, Garden Grove, CA.

Sterling, D. R., Frazier, W. M., & Logerwell, M. G. (2009, April). *Increasing the efficacy, instructional skills, and effectiveness of new science teachers: What the data tell us works*. Annual International Conference of the National Association for Research in Science Teaching, Garden Grove, CA.

Sterling, D. R., Frazier, W. M., & Logerwell, M. G. (2009, April). *Spiraling support needed by new science teachers to succeed at teaching*. American Education Research Association Annual Meeting, San Diego, CA.

Frazier, W. M., Sterling, D. R., & Logerwell, M. G. (2008, April). *An examination of the process of supporting uncertified science teachers: What new teachers need to succeed*. Annual International Conference of the National Association for Research in Science Teaching, Baltimore, MD.

Frazier, W. M., Sterling, D. R., & Logerwell, M. G. (2008, March). *What makes or breaks new teachers? Examining the process of supporting new, uncertified physics teachers through case study analysis*. American Education Research Association Annual Meeting, New York, NY.

Sterling, D. R., Frazier, W. M., Logerwell, M. G., & Dunn, K. D. (2007, April). *Helping uncertified science teachers survive teaching and focus on student learning*. Annual International Conference of the National Association for Research in Science Teaching, New Orleans, LA.

Logerwell, M. G., Frazier, W. M., & Sterling, D. R. (2007, January). *Retired master science teachers: A valuable resource in science teacher education*. The Association for Science Teacher Education International Conference, Clearwater, FL.

Sterling, D. R., Frazier, W. M., Logerwell, M. G., & Kitsantas, A. (2006, May). *New science teachers' support network: How can we help provisionally licensed teachers succeed?* Science, Technology, Engineering and Math - Alternative Certification for Teachers (STEM-ACT) Conference, Arlington, VA.

Sterling, D. R., Kitsantas, A., Frazier, W. M., Hansen, J., & Logerwell, M. G. (2006, April). *Impact of the NSTSN program on new teachers' self-efficacy beliefs, instructional competence, and students' outcomes*. American Education Research Association Annual Meeting, San Francisco, CA.

Sterling, D. R., Frazier, W. M., & George, M. (2006, April). *Survival tips: How to succeed as a beginning science teacher*. National Science Teachers Association National Convention, Anaheim, CA.

Sterling, D. R., Frazier, W. M., Kitsantas, A., Logerwell, M. G., & Hansen, J. (2006, April). *New science teachers: How can we help them succeed?* Annual International Conference of the National Association for Research in Science Teaching, San Francisco, CA.

Sterling, D. R., & Frazier, W. M. (2006, April). *Problem-based learning: It really works!* National Science Teachers Association National Convention, Anaheim, CA.

Kitsantas, A. K., Sterling, D. R., Frazier, W. M., Hansen, J., Matkins, J. J., & George, M. (2005, August). *Teacher efficacy, perceived organizational support, and commitment of science teachers participating in a teacher support program*. European Association for Research in Learning and Instruction, Cyprus.

Sterling, D. R., Kitsantas, A., Matkins, J. J., & Frazier, W. M. (2005, April). *The new science teachers' support network: Examining its impact on teachers' self-efficacy and use of technology*. Annual International Conference of the National Association for Research in Science Teaching, Dallas, TX.

Sterling, D. R., Matkins, J. J., George, M., & Frazier, W. M. (2005, April). *Beyond surviving: Making next year easier for beginning teachers*. National Science Teachers Association National Convention, Dallas, TX.

McKinney, S. E., Frazier, W. M., & Fleener, C. E. (2005, February). *Cultural responsive pedagogy and practices for urban children confronted by social conditions and hardships*. Association of Teacher Educators Annual Conference, Chicago, IL.

Frazier, W. M., & Watson, S. M. (2005, January). *Training teachers to teach science for all students*. Association for Science Teacher Education International Conference, Colorado Springs, CO.

Fleener, C. E., & Frazier, W. M. (2004, May). *Poetry: A way of seeing, hearing, and feeling science*. Paper presented at the International Reading Association Reading Research 2004 Conference, Reno, NV.

Frazier, W. M., Carpenter, S., Doblin, M., Drake, L., & Murray, L. (2004, April). *Art in life science*. National Science Teachers Association National Convention, Atlanta, GA.

Gimbert, B. G., Cristol, D., Frazier, W. M., and Berry III, R. Q. (2004, February). *Alternative routes to teacher licensure through a school-university partnership: Building a professional community of highly qualified secondary school teachers*. Association of Teacher Educators. Dallas, TX.

McKinney, S. E., Frazier, W. M., & Abdous, M. (2003, November). *Learning without limits*. National Council of Teachers of Mathematics Regional Conference, Edmonton, Alberta.

Berry, III, R. Q. & Frazier, W. M. (2003, October). *Highly qualified: An alternative licensure program in secondary mathematics and Earth science*. School Science and Mathematics Association 2003 Convention, Columbus, OH.

Frazier, W. (2003, March). *What should I plan for tomorrow with my students? Pre-service and new in-service teachers plan ahead*. National Science Teachers Association National Convention, Philadelphia, PA.

Frazier, W., McKinney, S., & Fleener, C. (2003, January). *The art of planning ahead: Pre-service and in-service teachers' curriculum maps*. Hawaii International Conference on Education, Honolulu, HI.

Fleener, C., McKinney, S., Frazier, W., Doviak, S., & Mathews, T. (2003, January). *Literacy: A construct crossing all curriculum areas*. Hawaii International Conference on Education, Honolulu, HI.

Frazier, W. (2002, January). *The effects of participation in a science work experience program for teachers: Shaping professional development based on follow-up data*. Traditional paper format. Association for the Education of Teachers of Science International Conference, Charlotte, NC.

Frazier, W. (2001, March). *Science work experience programs for teachers: Bringing technology to the classroom*. Annual International Conference of the National Association for Research in Science Teaching, St. Louis, MO.

Frazier, W. (2001, January). *Science work experience programs for teachers: Refocusing professional development using a qualitative lens*. Association for the Education of Teachers of Science Annual International Conference, Costa Mesa, CA.

Frazier, W. (2000, March). *A case study of the effect of a science work experience program for teachers on the classroom environment: A qualitative program evaluation*. 21st Annual Ethnographic in Education Research Forum, University of Pennsylvania, College of Education, Philadelphia, PA.

Frazier, W. (2000, March). *The effect of a science work experience program for teachers on the classroom environment: A qualitative program evaluation (in progress)*. 21st Annual Ethnographic in Education Research Forum, University of Pennsylvania, College of Education, Philadelphia, PA.

PRESENTATIONS – STATE/REGIONAL

Frazier, W. M. (2013, November – Accepted). *Poetry and the nature of science for young learners*. Virginia Association of Science Teachers Professional Development Institute, Norfolk, VA.

Frazier, W. M. (2013, October). *Tweeting and curating our way to understanding the nature of science*. Annual Meeting of the Southwest Association for Science Teacher Education, San Antonio, TX.

Frazier, W. M. (2010, November). *Science poetry in two voices*. Virginia Association of Science Teachers Professional Development Institute, Hampton, VA.

Frazier, W. M., & Foss, D. W. (2010, November). *Preservice teachers: Professional opportunities through VAST*. Virginia Association of Science Teachers Professional Development Institute, Hampton, VA.

McDonnough, J., other Virginia science education faculty, & Frazier, W. M. (Presider). (2010, November). *Learning within a community*. Virginia Association of Science Teachers Professional Development Institute, Hampton, VA.

Frazier, W. M., & Foss, D. W. (2009, November). *Professional opportunities through VAST - for preservice teachers in 2009-2010*. Virginia Association of Science Teachers Professional Development Institute, Dulles, VA.

Sterling, D. R., Berube, C., Dickerson, D., Sypolt, S., Bell, R., McKenzie, W., McDonnough, J., Peters, E., Slykhuus, D., Meadows, G., Flannagan, J. S., Schimmoeller, P., Sheldon, P., Easterling, T., & Frazier, W. M. (Presider). (2009, November). *Fostering a community of university-based teacher educators*. Virginia Association of Science Teachers Professional Development Institute, Dulles, VA.

Geller, H. A., & Frazier, W. M. (2009, May). *Assessing planetarium programs for content and pedagogy*. Middle Atlantic Planetarium Society Annual Conference, Lanham-Seabrook, MD.

Frazier, W. F., Sterling, D. R., McDonnough, J., Vacarre, T. E., McKenzie, W., Matkins, J. J., Bell, R., & Dickerson, D. (2008, November). *The best from college/university-based science teacher educators*. Virginia Association of Science Teachers Professional Development Institute, Hampton, VA.

Fisher, A., Long, L.A., Millar, E., Murphy, E., Szymczyk, D., Vadala, M., Frazier, W. M., & Sterling, D. R. (2008, November). *Problem-based learning: Astronomy & oceanography for elementary level*. Virginia Association of Science Teachers Professional Development Institute, Hampton, VA.

Frazier, W. M., Foss, D. W., & Jackson, A. (2008, November). *Professional opportunities through VAST - for preservice teachers in 2008-2009*. Virginia Association of Science Teachers Professional Development Institute, Hampton, VA.

Frazier, W. M., & Sterling, D. R. (2007, November). *Science explorers: Investigating with poetry*. Virginia Association of Science Teachers Professional Development Institute, Williamsburg, VA.

Frazier, W. F. (2006, November). *Poetry and science investigation*. Virginia Association of Science Teachers Professional Development Institute, Richmond, VA.

Frazier, W. F., Sterling, D. R., & Logerwell, M. G. (2006, November). *Problem-based learning: How to make it fun and safe!* Virginia Association of Science Teachers Professional Development Institute, Richmond, VA.

Sterling, D. R., Frazier, W. F., & George, M. (2005, November). *Take advantage of what you have to succeed as a beginning science teacher*. Virginia Association of Science Teachers Professional Development Institute, Roanoke, VA.

Sterling, D. R., & Frazier, W. M. (2005, November). *Problem-based learning is fun for students and teachers*. Virginia Association of Science Teachers Professional Development Institute, Roanoke, VA.

Sterling, D. R., Cothron, J., Pyle, E. J., Frazier, W. M., Matkins, J. J., & St.John, K. (2005, November). *Virginia Earth Science Collaborative: Developing highly qualified teachers*. Virginia Association of Science Teachers Professional Development Institute, Roanoke, VA.

Matkins, J. J., Sterling, D. R., George, M., & Frazier, W. M. (2004, December). *A survival guide for provisionally licensed teachers*. National Science Teachers Association Area Convention, Richmond, VA.

Frazier, W. M., & Fleener, C. E. (2004, December). *Growing inquiry through poetry*. National Science Teacher Association Eastern Area Convention, Richmond, VA.

Frazier, W. M. (2004, July). *Integrating photography and science to reach middle schoolers*. FIPSE/Virginia Collaborative for Excellence in the Preparation of Teachers Summer Colloquium, Radford, VA.

Frazier, W. M. (2003, October). *Can science methods really be taught online?* Virginia's Statewide Conference on the Preparation of Middle School Science and Mathematics Teachers, Harrisonburg, VA.

McKinney, S. A., & Frazier, W. M. (2003, July). *Webbing methods, project-based instruction, and middle school teachers*. FIPSE/ Virginia Collaborative for Excellence in the Preparation of Teachers Summer Colloquium, Norfolk, VA.

Frazier, W. M. (2002, November). *Whales, waves, water, and the web: A workshop for parents*. The Johns Hopkins University Center for Talented Youth Family Academic Conference, Norfolk, VA.

PRESENTATIONS/WORKSHOPS/TALKS – LOCAL

Frazier, W. M. (2013, September 25). *Introduction to teacher preparation and assessment in the context of a professional development schools network*. Invited presentation to visiting teacher evaluators of Kazakhstan hosted by American Councils, Washington, DC, and held at George Mason University, Fairfax, VA. (Presentation in English with simultaneous translation provided in Russian by interpreter)

Frazier, W. M. (2013, September 20). *Curation for understanding – twitter as an educational tool*. Lunch talk at the 2013 Innovations in Teaching and Learning Conference, George Mason University, Fairfax, VA.

Frazier, W. M. (2012, October). *Center for restructuring education in science and technology (CREST)*. Invited presentation to the Bahamian Ministry of Education, Science, and Technology hosted by Center for International Education, George Mason University, Fairfax, VA.

Sterling, D. R., & Frazier, W. M. (2012, February). *The challenges of leading a statewide education program: VISTA*. CEHD Research Symposium, George Mason University, Fairfax, VA.

Fox, R.K., & Frazier, W. M. (2011, April). *Fostering teacher leadership via U.S. – Russia teacher professional development (USRTPD): Program experiences, cultural influences, & intercultural educational research*. Invited presentation to the Eurasia Group, George Mason University, Fairfax, VA.

- Martin, M., Frazier, W., Muir, S., & Johnson, D. (2010, October). *Integrating active learning into content-focused class sessions (panel discussion)*. 2010 Innovations in Teaching and Learning Conference, George Mason University, Fairfax, VA.
- Frazier, W. F. (2009, May 21). *Community collaboration through the center for restructuring education in science and technology (CREST)*. University as Community - Collaboration of The New Eurasia Foundation and George Mason University, Fairfax, VA. Presented in English (with simultaneous translation in Russian via interpreter) to rectors and provosts of six regional Universities of the Russian Federation.
- Frazier, W. F., Geller, H., Lindemann, M., & Slaven, S. (2008, July 21 – August 1). *Science explorers: Energy content for teachers*. Jefferson-Houston Elementary School, Alexandria, VA.
- Frazier, W. F., Marcus, L., Lindemann, M. (Monthly throughout academic year 2007-2008). *Science explorers: Earth science content and action research strategies for teachers*. Jefferson-Houston Elementary School, Alexandria, VA.
- Frazier, W. M. (2007, August). *Metacognition in elementary science education*. Westlawn Elementary School, Fairfax County Public Schools, Falls Church, VA.
- Frazier, W. M. (2007, August). *Using poetry to support students' investigations*. Westlawn Elementary School, Fairfax County Public Schools, Falls Church, VA.
- Frazier, W. F., Marcus, L., Lindemann, M., & Diecchio, R. (2007, July 23 – August 3). *Science explorers: Earth science content for teachers*. Jefferson-Houston Elementary School, Alexandria, VA.
- Frazier, W. M. (2001, October). *The planet Oobleck and beyond: A five-E unit of instruction*. Smart Stars Meeting of Norfolk Public Schools Teacher Participants, Norfolk, VA.
- Frazier, W. M. (2000, October). *How to prepare your students for the middle school science exam without throwing away your curriculum and possibly improving it in the process*. In-service staff development, Manhattan Community School District Two, city-wide staff development day, New York, NY.
- Frazier, W. (1999, November). *Tips, tools, and techniques of experienced science teachers*. In-service staff development, Manhattan Community School District Two, city-wide staff development day, New York, NY.

SERVICE TO COLLEGE AND UNIVERSITY

International Work

- Plans and negotiations were actively sought this year by R. Fox and W. Frazier (working with S. Filiatreau and the Eurasia connections) to determine funding sources to build on work begun in Far East Russia (Primorsky Krai) under the US-Russia project whose funding concluded. This work will join the World Languages/English as an International Language with the STEM disciplines.

Program Administration

- Center for Restructuring Education in Science and Technology (CREST), Assistant Director (August 2004 – September 2007), Associate Director (October 2007 – present) to include an immediate, temporary assignment from November 2011 to May 2012 as Interim Director of the VISTA program tasked with daily (9:00am – 5:00pm) personnel management including the hiring of six new personnel (one still in progress) and staff-wide review of duties in light of monetary compensation, state-wide and site-specific program design and implementation, and state-wide collaborative reporting. As of May 2012, I continue to serve as a Co-Principal Investigator to provide administrative and research expertise in elementary and secondary science teacher education methods and theory and expertise in professional development for university-based science education professors through my prior experiences as College Committee Chair of the Board of Virginia Association of Science Teachers (VAST).
- Interim Academic Program Coordinator – Elementary Education, extended beyond normal academic program coordinator duties to include Coordinator of the PDS Network to administer, oversee, and evaluate the effectiveness of PDS Network (18 schools across four school divisions in Northern Virginia) of pre-service teachers in field experience and internship, in-service teachers serving as Site Facilitators and Clinical Faculty, full- and part-time university faculty serving as University Facilitators at each of 18 school sites, school administrators, and school division administrators, including proposals and administration of financial contracts with participating school divisions. (January 2012 – August 2013)
- Professor-In-Charge of Elementary Program's Teach For America Program (alternative certification with optional master's degree) to develop and evaluate supervision program for in-service teachers while completing on-the-job internships as part of their alternative certification requirements; provide professional development and advise university supervisors of Mason's Elementary Education Program – Teach for America) in the District of Columbia and Prince George's County, MD; lead the design and implementation of a hybrid delivery model for TFA in-service elementary teachers, which includes redesign of all course syllabi and oversight of faculty during the process to ensure that ACEI/NCATE/state standards are met. (September 2009 – present)
- New Science Teachers' Support Network, Program Manager (August 2004 – July 2010)
- Career Switchers, Program Director (October 1, 2004 – August 24, 2005)
- CREST Science Camp 2005, Co-Director
- CREST Science Camp 2006, Director
- CREST Science Camp 2007, Director
- CREST Science Camp 2008, Director
- CREST Science Camp 2009, Advisor
- CREST Science Camp 2010, Advisor

Accreditation Reporting

- Provide guidelines and professional development to program faculty regarding program-level assessment procedures (January 2012 – present)
- Compiled and wrote Elementary Education accreditation reports (January 2012 – August 2013)

Committee Membership

- Search Committee Service
 - Associate Dean for Research: Spring 2006 – Spring 2007,
 - Secondary Education Faculty: Spring 2007,
 - Science Education Faculty: Fall 2008 – Spring 2009,
 - Elementary Education Faculty: Fall 2009,
 - Elementary Education Faculty (3 positions): Fall 2010-Spring 2011,
 - VISTA Program Administrators (4 positions): Fall 2010,
 - VISTA Program Staff at Mason (7 positions) in Fall 2011-Spring 2012: (Director of Science Education – chair of search committee; Chief of Operations – chair of search committee; Technology/Database Specialist – processed search committee decision and reviewed EWP for financial and job assignment inconsistencies; Distance Learning Specialist – processed search committee decision and reviewed EWP for financial and job assignment inconsistencies; Communications Specialist – established advertisement and drafted EWP; Fiscal Technician – established advertisement and drafted EWP; Implementation Researcher – established advertisement and drafted EWP)
 - Chair of Elementary Education Faculty Search (1 position): Spring 2012
 - International Education Faculty (1 position): Spring 2012
 - Chair of Elementary Education Senior Faculty Search (1 position): Fall 2012-Spring 2013
 - Chair of Elementary Education Term Faculty Search (1 position): Spring 2013
 - Member of Division Staff Support Search (1 position): Spring 2012-Summer 2013
- CEHD Appeals Committee (2006 – 2008, 2009-2011, 2012-2013)
- Elementary Teacher Preparation Program Committee (Fall 2004 – present)
- Secondary Teacher Preparation Program Committee (Spring 2005 – May 2011)
- Mathematics and Science Education Leadership Committee (Fall 2004 – Spring 2007)
- Science Education Leadership Committee (Fall 2007 – Fall 2010)
- Collaborations between Smithsonian Naturalist Center and Mason (Fall 2006 – Spring 2009)
- CEHD Council (2013-2014)
- CEHD Curriculum Committee (2013-2015)

Advising

- Dissertation committee member (CEHD):
 - Erin Peters (defended Summer 2007),
 - Dawn Rene Wilcox (defended Spring 2008),
 - Mollianne Logerwell (defended Spring 2009),
 - Claudia Lemus,
 - David Vallett (defended Spring 2013)

- Masters committee member (Environmental Science and Policy): Stacy Jones
- BIS thesis committee member (New Century College/CEHD): John Buckreis (defended Spring 2007)
- Directed the research not related to thesis or dissertation for nine GMU students: Mollianne Logerwell, Jen Hansen, John Buckreis, Stacy Jones, Faye Huie, Amos Simms-Smith, Omar Qarqua, Karen Dunn, Mansi Baghdeo
- Co-advised Professional Development School interns via monthly information seminars during Fall 2004
- Advise students in the elementary teacher preparation program (Fall 2005 – present)
- Advise students in the secondary science teacher preparation program (January 2005 – May 2010)

Supervision of student teaching interns

- Elementary Education Teach for America (TFA) Program – Alternative Certification with Optional Master’s Degree (Fall 2009 – Spring 2012)
- Elementary Education Professional Development School Program (Fall 2009 – Spring 2010; Spring 2013)
- Secondary Education Program (Fall 2005, Fall 2009 – Spring 2010)
- Career Switcher Secondary Program – Alternative Certification with Optional Master’s Degree (Fall 2004 – Spring 2005)

NATIONAL/INTERNATIONAL SERVICE TO PROFESSION

Appointed Board Member, *Science and Children* Advisory Board, National Science Teachers Association (NSTA) (2013-2015)

Financial Award Recipient and Participant, Longview Foundation Grant: Internationalizing Curriculum. (2012-2013)

Appointed Advisor, National Science Teachers Association’s (NSTA) Early Years e-Newsletter; selected by NSTA to provide pedagogical and content expertise during newsletter planning. (Summer 2012 – present)

Appointed National Discussion Board Moderator, Science Education Research: Summer Reading for Teachers 2011; a joint project of National Science Teachers Association, Association for Science Teacher Education, National Association for Research on Science Teaching, and National Science Education Leadership Association; see http://learningcenter.nsta.org/discuss/default.aspx?tid=CRB7IRLMKZs_E (Summer 2011)

Appointed Co-Chair, National Association for Research in Science Teaching Outstanding Paper Award Committee most recently involving the lead administration of a three-stage, blind review of 36 papers nominated by the association’s membership for the award and a committee of 17 members (2011-2013)

National Association for Research in Science Teaching Outstanding Doctoral Research Award Committee Member (2010-2013)

Principal Investigator, U. S. – Russia Teacher Professional Development, funded by U. S. Department of State in collaboration with U. S. Consulate – Vladivostok, Asia Pacific School (Vladivostok), and schools across Primorsky Krai of Far East Russia; see <http://gazette.gmu.edu/articles/18840> (September 2009 - December 2011)

Feature Editor of *Academic Exchange Quarterly*, 13(1), 14(1), 15(1), and upcoming 16(1) on problem-based learning (Fall 2008 – present)

Appointed Committee Member, National Science Teachers Association Committee: Research in Science Teaching (2008-2011)

National Association for Research in Science Teaching Outstanding Paper Award Committee Member (2003 – 2007; 2008-2010, 2010-2013, 2013-2014)

Reviewer

- *NSTA Press* (Spring 2013)
- *Science and Children* (Spring 2013-present)
- *School Science and Mathematics* (Fall 2012-Spring 2013)
- *Journal of Science Education and Technology* (Fall 2012)
- Conference Proposals - National Association for Research in Science Teaching (Fall 2009, Fall 2010)
- *Journal of Research on Technology in Education* (Summer 2008)
- *Journal of Research in Science Teaching* (Spring 2008)
- Sage Publications (Spring 2007, Spring 2008, Summer 2008, Fall 2008)
- Thomson Wadsworth Publishing (Spring 2007)
- Merrill - Prentice Hall - Allyn & Bacon (Spring 2007)
- Bass, J. E., Contant, T. L., & Carin, A. A. (2013). *Teaching science as inquiry (with MyEducationLab)*, 12th edition. Columbus, OH: Allyn & Bacon.
- Acknowledged in the front matter of six texts:
 - Bass, J. E., Contant, T. L., & Carin, A. A. (2009). *Activities for teaching science as inquiry (with MyEducationLab)*, 7th edition. Columbus, OH: Allyn & Bacon.
 - Bass, J. E., Contant, T. L., & Carin, A. A. (2009). *Methods for teaching science as inquiry*, 10th edition. Columbus, OH: Allyn & Bacon.
 - Bass, J. E., Contant, T. L., & Carin, A. A. (2009). *Teaching science as inquiry (with MyEducationLab)*, 11th edition. Columbus, OH: Allyn & Bacon.
 - Chiappetta, E. L., & Koballa, T. R. (2010). *Science instruction in the middle and secondary schools: Developing fundamental knowledge and skills*, 7th edition. Columbus, OH: Allyn & Bacon.
 - Lawson, A. E. (2010). *Teaching inquiry science in middle and secondary schools*. Thousand Oaks, CA: Sage.
 - Liu, X. (2010). *Essentials of science classroom assessment*. Los Angeles: Sage.

Faculty Reviewer for American Council on Education's College Credit Recommendation Service to determine credit equivalency for portions of National Board Certification requirements as defined by the National Board for Professional Teaching Standards (NBPTS) (Spring 2007)

Writing Team Committee Member for Science, Technology, Engineering and Math – Alternative Certification for Teachers (STEM-ACT); National Science Foundation (May 2006 – September 2007)

National Science Teachers Association Committee: Pre-service Teacher Preparation (2004 – 2007)

Honorary member of Kappa Delta Pi (2001 – present)

Member of the following international/national professional organizations:

- Phi Beta Delta, GMU's Epsilon Delta Chapter (2010 – present)
- National Science Teacher Association
- National Council of Teachers of Mathematics
- Sloan Consortium
- Association for Science Teacher Education
- National Association for Research in Science Teaching
- American Educational Research Association
- Association for Supervision and Curriculum Development
- National Science Education Leadership Association (2002 – 2004)
- International Reading Association (2003 – 2004)

REGIONAL/STATE/LOCAL SERVICE TO PROFESSION

Staff Member of the Virginia Mathematics and Science Coalition (2008 – present)

Virginia Association of Science Teachers Board Member and College Committee Chair (August 2007 – May 2011)

Member of Science Standards of Learning (SOL) Review Committee charged with providing biology and physics content support by Virginia Department of Education (Summer 2009)

Reviewer

- Virginia Association of Science Teachers Professional Development Institute – Reviewer of presentation proposals for Assessment Strand (Summer 2009)
- *Journal of Virginia Science Education* (Fall 2007, Spring 2008, 2012-present)

Member of Science Specialist Task Force charged with drafting recommendations for licensure requirements for science specialist, Virginia Mathematics & Science Coalition (Spring 2007)

Virginia Space Grant Consortium Advisory Council Member (2001–2004)

Member of the following regional/state/local professional organizations:

- Faculty participant in Region 2 Mathematics & Science Coalition of Virginia (2003 – 2004)
- Virginia Association of Science Teachers
- Virginia Science Education Leadership Association