

## Danielle J. Ford

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### Professional Experience

2018-present Associate Director, Graduate Studies  
2005-present Associate Professor, Science Education  
1999-2005 Assistant Professor, Science Education

### Education

Ph.D., Science Education, University of Michigan, 1999  
Spencer Dissertation Fellowship  
M.A., Science Education, University of Michigan, 1997  
Sc.M., Geological Sciences, Brown University, 1993  
NASA Graduate Researchers Fellowship  
S.B., Earth, Atmospheric and Planetary Sciences,  
Massachusetts Institute of Technology, 1991

### Grants

McGeary, S., Ford, D., & Gallo-Fox, J. (2016-2019). *The World in a River: Redesigning an entry level Earth Science course for Pre-Service Elementary Teachers through authentic investigations in a local watershed*. Funded by the National Science Foundation, Award No. DUE-1612007. \$290,308.

McCreehy, D. (2013-2017). *LEAP into Science: Engaging Diverse Community Partners in Science and Literacy*. Funded by the National Science Foundation, Award No. DRL-1223730. \$815,123. (Ford, D., Senior Personnel).

Allen, D., Donham, R., Fifield, S., Ford, D. and Madsen, J. (2005-2012). *Development of pedagogical content knowledge and the transition from university student to teaching professional*. Funded by the National Science Foundation, Award No. HRD-0455781. \$2,257,722.

Dagher, Z. & Ford, D. (2005-2007). *Preparing K-8 Teachers to teach science*. Agilent Technologies Foundation, \$25,000.

Ford, D.J. and Brickhouse, N.W. (2002-2007). *Bringing young girls into science through text and inquiry*. Funded by the National Science Foundation, Award No. HRD-0217144, \$333,585.

Fifield, S., Allen, D., Ford, D. Madsen, J., Shipman, H. (2000-2005). *Integrating inquiry-based science and education methods courses in a "science semester" for future elementary teachers*. Funded by the National Science Foundation, Award No. DUE-0088527, \$199,137.

Ford, D.J. (2000). *Using Texts to Support Scientific Argumentation in Elementary Science Classrooms*. Funded by the University of Delaware (General University Research Program), \$5765.

Ford, D.J. (2000). Fellow, Institute for Transforming Undergraduate Education, University of Delaware, \$1000.

## **Publications**

Ford, D.J. (2018). Preservice teachers' conceptions of earth and environmental topics appropriate for K-8 learners. *Journal of Geoscience Education*, 66(2), 121-130.

Qian, X., Nandakumar, R., Glutting, J., Ford, D. and Fifield, S. (2017). Gender and minority achievement gaps in science in eighth grade: Item analyses of nationally representative data. *ETS Research Report Series*.

Fifield, S., Grusenmeyer, L., & Ford, D. (2014). Pedagogical change, loss, and mourning in elementary science teacher education. *Journal of Curriculum Theorizing*, 30(1), 75-86.

Ford, D.J., Fifield, S., Madsen, J. & Qian, X. (2013). The Science Semester: Cross-disciplinary inquiry for prospective elementary teachers. *Journal of Elementary Science Teacher Education*. 24(6), 1049-1072.

Ford, D. (2013). Science and the Common Core. *Nonfiction Notes From the Horn Book*, W13, 1.

Ford, D., Allen, D., Dagher, Z., Donham, R. Fifield, S., Madsen, J., & Shipman, H. (2012). Reforming science for prospective K-8 Teachers: The University of Delaware Professional Continuum (Background Research Paper No. 22). Tuscaloosa, AL: National Science Education Undergraduate Study.

Ford, D.J., (2011). What makes a good space book? *Horn Book Magazine*, 87(6), 28-33.

Ford, D.J. (2010). More than just the facts. In Sutton, R. & Parravano, M.V. (Eds.). *A family of readers: The book lover's guide to children's and young adult literature* (211-216). Somerville, MA: Candlewick Press.

Lottero-Perdue, P.S., Brickhouse, N.W., & Ford, D.J. (2009). Using literacy and science to challenge a science book. *Practically Primary*, 14(2), 16-19.

Ford, D.J. (2009). Promises and challenges for the use of adapted primary literature in science curricula: Commentary. *Research in Science Education*, 39, 385-390.

Ford, D.J. (2008). Choosing and Using Books to Support Elementary Girls' Science Learning. Problem-Based Learning Clearinghouse, <http://www.udel.edu/pblc>. Published online 11/2008.

Ford, D.J. (2007). What makes a good dinosaur book? *Horn Book Magazine*, 83(3), 249-255.

Ford, D.J. (2007). Making inquiry work for your classroom - It's all in the details! In Settlage, J & Southerland, S.A., *Teaching science to every child: Using culture as a starting point*. New York: Routledge.

Ford, D.J., Brickhouse, N.W., Lottero-Perdue, P. and Kittleson, J. (2006). Elementary girls' science reading at home and in school. *Science Education*, 90, 270-288.

Ford, D.J. (2006). Representations of science in children's trade books. *Journal of Research in Science Teaching*, 43(2), 214-235.

Ford, D.J. (2005). 'How will I know if my students learned what they're supposed to?' Curriculum evaluation in the NCLB era. Problem-Based Learning Clearinghouse, <http://www.udel.edu/pblc>. Published online 8.30.2005.

Ford, D.J. (2005). The challenges of observing geologically: Children's descriptions of rocks and minerals. *Science Education*, 89, 276-295.

Dagher, Z.R. & Ford, D.J. (2005). How are scientists portrayed in children's science biographies? *Science & Education*, 14, 377-393.

Ford, D.J. (2004). Highly recommended trade books: Can they be used in inquiry science? In Saul, W. (Ed.). *Border Crossings: Essays on Literacy and Science* (pp. 277-290). Newark, DE: IRA/NSTA Presses.

Ford, D.J. (2004). Scaffolding preservice teachers' evaluation of children's science literature: Attention to science-focused genres and use. *Journal of Science Teacher Education*, 15(2), 133-153.

Ford, D.J. (2003). Sixth-graders conceptions of rocks in their local environments. *Journal of Geoscience Education*, 51(4), 373-377.

Marcum-Dietrich, N. & Ford, D.J. (2003). The tools of science: Using computer probeware to enhance students' laboratory experiences. *The Science Teacher*, 70, 48-51.

Marcum-Dietrich, N. & Ford, D.J. (2002). The place for the computer is in the laboratory: An investigation of the effect of computer probeware on student learning. *Journal of Computers in Mathematics and Science Teaching*, 21, 361-379.

Palincsar, A.S., Magnusson, S.J., Marano, N., Ford, D., & Brown, N. (1998). Designing a community of practice: Principles and practices of the GISML community. *Teaching and Teacher Education*, 14, 5-19.

## Book Reviews

Ford, D.J. (2006). Promises and challenges for science-literacy integration in elementary instruction [Review of *Integrating Instruction: Literacy and Science*, McKee & Ogle]. *PsychCritiques*, 51(19).

Ford, D.J. (2002). Designing and implementing technology-rich learning environments that facilitate authentic inquiry [Review of the book *Innovations in Science and Mathematics Education: Advance Designs for Technologies of Learning*, Jacobsen & Kozma (Eds.)]. *Journal of Educational Computing Research*, 26(4), 463-467.

## Conference Proceedings

Ford, D., Allen, D., Dagher, Z., Donham, R. Fifield, S., Madsen, J., & Shipman, H. (2011). Reforming science for prospective K-8 Teachers: The University of Delaware Professional Continuum. *Proceedings from the National Science Education Undergraduate Study Conference*.

Brickhouse, N., Ford, D., Kittleson, J. & Lottero-Perdue, P. (2003). Challenging the empiricist nature of elementary science instruction with text. In D. Metz (Ed.), *Proceedings from the 7<sup>th</sup> International Conference on the History and Philosophy of Science in Science Teaching* (pp. 180-186).

Magnusson, S., Hapgood, S., Palincsar, A., & Ford, D. (2000). Investigating the development of understanding and scientific reasoning via cycles of Guided Inquiry instruction. In B. Fishman & S. O'Connor-Divelbiss (Eds.), *Fourth International Conference of the Learning Sciences* (pp. 31-32). Mahwah, NJ: Erlbaum.

Ford, D.J. (1995). Science graduate students' beliefs about science and science teaching. *Proceedings from the 3<sup>rd</sup> International Conference on the History and Philosophy of Science in Science Teaching*, pp. 410-421.

## Presentations

Ford, D., McGeary, S., Gallo-Fox, J. & Ackerman, C. (2018, November). Geoscience curriculum reform using a design based approach. Paper to be presented at the annual meeting of the Geological Society of America, Indianapolis, IN.

Ford, D., McGeary, S., Gallo-Fox, J. & Ackerman, C. (2018, July). Researching the impact of a redesigned introductory earth science course on preservice elementary teacher knowledge and perspectives. Paper presented at the annual Earth Educators Rendezvous, Lawrence, KS.

Ackerman, C., Gallo-Fox, J., Ford, D., & McGeary, S. (2018, April). Is it completely dead, or can we save it? An examination of a real-world evaluation dilemma. Paper presented at the annual conference of the Eastern Evaluation Research Society, Atlantic City, NJ.

Ford, D., Gallo-Fox, J., McGeary, S., & Ackerman, C. (2018, March). Introductory earth science for preservice elementary teachers: Incorporating the NGSS, active, and placed-based learning. Paper presented at the annual conference of the National Association for Research in Science Teaching, Atlanta, GA.

Ford, D., McGeary, S., Gallo-Fox, J. & Ackerman, C. (2018, January). The World in a River: Designing an entry-level earth science course for preservice elementary teachers that incorporates the NGSS, active and placed-based learning, and technological tools. Paper presented at the annual conference of the Association for Science Teacher Education, Baltimore, MD.

McGeary, S., Ford, D., Gallo-Fox, J., & Ackerman, C. (2017, October). "The World in a River": Redesigning an earth science course for pre-service elementary teachers within the framework of the NGSS. Paper presented at the annual conference of the Geological Society of America, Seattle, WA.

Ford, D., McGeary, S., Gallo-Fox, J. & Ackerman, C. (2017, July). "The World in a River": Redesigning an earth science course for pre-service elementary teachers and researching its impact on learner knowledge and perspectives. Paper presented at the annual Earth Educators Rendezvous, Albuquerque, NM.

Ford, D., McCreedy, D., Skolnik, J., & Cox, T. (2016, April). Opportunities for meaning-making in library-based science/literacy workshops. Paper presented at the annual conference of the National Association for Research in Science Teaching, Baltimore, MD.

Ford, D., (2015, July). Examining opportunities for meaning-making in LEAP into Science. Presentation at the LEAP into Science Conference, Philadelphia, PA.

Ford, D. (2015, January). Preservice teachers' perspectives on "appropriate" K-8 earth and environmental science topics. Paper presented at the annual meeting of the Association for Science Teacher Education, Portland, OR.

Ford, D. (2013, December). Preservice teachers' perspectives on "appropriate" K-8 climate change and environmental science topics. Paper presented at the annual meeting of the American Geophysical Union, San Francisco, CA.

Ford, D., Allen, D., Dagher, Z., Donham, R. Fifield, S., Madsen, J., & Shipman, H. (2011, June). Reforming science for prospective K-8 Teachers: The University of Delaware Professional Continuum. Paper presented at the National Science Education Undergraduate Study Conference, Tuscaloosa, AL.

Ford, D., Fifield, S., Grusenmeyer, L., Madsen, J., Nandakumar, R., Pizzini, E., & Qian, X.,

(2010, March). From university students to teachers of science: Researching preservice K-8 teachers' acquisition of pedagogical context knowledge within a reform-based curriculum. Symposium presented at the annual meeting of the National Association for Research in Science Teaching, Philadelphia, PA.

Madsen, J., Allen, D., Dagher, Z., Donham, R., Fifield, S., Ford, D., & Shipman, H. (2010, February). Use of PBL in University-Level Teacher Education Programs: Exposing Future Teachers to Inquiry-Based Pedagogies. Paper presented at the 2010 International Problem Based Learning Conference, Sao Paulo, Brazil.

Madsen, J & Ford, D (2009, November). From university students to teachers of science: Researching the acquisition of pedagogical context knowledge within a reform-based curriculum. Presentation at the annual principal investigators meeting of the National Science Foundation DRK-12 Program, Washington, DC.

Madsen, J. & Ford, D. (2008, November). Preservice K-8 teachers' developing pedagogical context knowledge within an integrated science and education continuum. Presentation at the annual principal investigators meeting of the National Science Foundation DRK-12 Program, Washington, DC.

Ford, D., Fifield, S., Qian, X., Allen, D., Donham, R., Gwekwerere, Y., & Sharma, A. (2008, March). Preservice K-8 teachers' developing pedagogical context knowledge within an integrated science and education continuum. Symposium presented at the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.

Sharma, A., Fifield, S., & Ford, D. (2008, April). The performativity of learning to teach science through classroom inquiry: A theoretical perspective. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

Madsen, J., Gehrman, B., & Ford, D. (2007, December). How much of the science of climate change does the public really understand? Evaluation of university students' ideas on the carbon cycle. Paper presented at the annual meeting of the American Geophysical Union, San Francisco, CA.

Tillotson, J.W., Young, M.J., Yager, R.E., Luft, J., & Ford, D. (2007, April). Teacher professional continuum research: Cross-project comparisons of practical, theoretical and methodological considerations in conducting large-scale teacher education research studies. Panel presentation at the annual meeting of the National Association for Research in Science Teaching, New Orleans, LA.

Falcone, T. & Ford, D.J. (2007, April). Where is science in preservice elementary teachers' conceptions of teaching? Paper presented at the annual meeting of the National Association for Research in Science Teaching, New Orleans, LA.

Ford, D., Allen, D., Dagher, Z., Donham, R., Fifield, S., Madsen, J., Shipman, H. (2007, January). Integrating innovative science and education experiences for K-8 preservice teachers: The University of Delaware Teacher Professional Continuum Project. Paper presented at the annual meeting of the Association for Science Teacher Educators, Clearwater, FL.

Ford, D.J. & Falcone, T. (2006, April). Preservice K-8 teachers' conceptions of inquiry within an integrated science and education semester. Paper presented the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA.

Donham, R., Allen, D., Dagher, Z., Fifield, S., Ford, D., Madsen, J., and Shipman, H. (2006, April). Science education by total immersion: Integrating content & pedagogy in an interdisciplinary Science Semester for preservice K-8 teachers. Paper presented at the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA.

Ford, D.J. (2005, October). Exploring the potential of design-based methods for (scientifically-based) literacy/science research. Invited presentation at the NSF-sponsored Gold Standards and Research in Science Literacy Conference, Victoria, B.C.

Brickhouse, N.W. & Ford, D.J. (2005, September). Bringing young girls to science through text and inquiry. Invited presentation at the NSF-sponsored Connecting Science and Literacy in the K-8 Classroom Conference, St. Louis, MO.

Brickhouse, N.W., Ford, D.J., & Kittleson, J.M. (2005, April). Young children and argument. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Dallas, TX.

Madsen, J., Allen, D., Donham, R., Fifield, S., Shipman, H., Ford, D., & Dagher, Z. (2004, November). Inquiry and problem-based learning approaches in an integrated science content and methods course for elementary education majors: Science Semester at the University of Delaware. Paper presented at the annual meeting of the Geological Society of America, Denver, CO.

Allen, D., Donham, R., Fifield, S., Ford, D., & Watson, G. (2004, June). Using PBL to integrate content and pedagogy in an interdisciplinary "Science Semester" for future elementary teachers. Paper presented at the 2004 Problem-based Learning International Conference, Cancun, Mexico.

Ford, D.J., Brickhouse, N.W., Lottero-Perdue, P. & Kittleson, J. (2004, April). Elementary girls' science reading in home and at school. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Brickhouse, N., Kittleson, J., & Ford, D. (2004, March). Articulating the roles of oral and written language in science instruction. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Vancouver, B.C.

Kittleson, J., Ford, D., & Brickhouse, N. (2004, April). The conceptual nature of procedural activity: Comparing the intended and enacted goals of science curriculum. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Lottero-Perdue, P., Krise, S., Brickhouse, N. & Ford, D. (2004, April). Critical talk about science texts in a summer science book club. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Dagher, Z.R. & Ford, D.J. (2003, August). How are scientists portrayed in children's science biographies? Paper presented at the seventh international conference on the History and Philosophy of Science in Science Teaching, Winnipeg, Canada.

Ford, D.J. & Dagher, Z.R. (2003, March). Children's science biographies: How do they represent science and scientists? Paper presented at the annual conference of the National Science Teachers Association, Philadelphia, PA.

Brickhouse, N. Ford, D., Weir, E., Kittleson, J., Antes, C., Deshon, J., Cain, B. & Fredricks, K. (2003, March). Do girls read science? Paper presented at the annual conference of the National Science Teachers Association, Philadelphia, PA.

Ford, D.J., Brickhouse, N., Lottero-Perdue, P. & Kittleson, J (2003, March). Identity construction in the elementary school: Gender, inquiry and text. Paper presented at the annual meeting of the National Association for Research in Science Teaching.

Ford, D.J. & Tisa, L. (2002, April). Recurring cultural themes in science books 1970-2000. Paper presented at the annual meeting of the American Educational Research Association.

Dagher, Z.R. & Ford, D.J. (2002, April). Images of science and scientists in children's science biographies. Paper presented at the annual meeting of the National Association for Research in Science Teaching.

Madsen, J., Fifield, S., Allen, D., Shipman, H., Brickhouse, N., Ford, D., Dagher, Z. (2001, December). A Science Semester at the University of Delaware: Integrated inquiry- and problem-based learning approach to improve the science understanding of future elementary education teachers. Paper presented at the fall meeting of the American Geophysical Union, Boston, MA.

Ford, D. (2001, August). "Outstanding" science trade books: An assessment of preferred content, representations of science, and demands on teacher knowledge. Invited paper presented at the Crossing Borders: Science-Literacy Conference, Baltimore, MD.

Madsen, J., Fifield, S., Allen, D., Brickhouse, N., Dagher, Z., Ford, D., & Shipman, H. (2001, June). Integrating inquiry-based science and education methods courses in a "Science Semester" for future elementary teachers. Paper presented at the annual meeting of the American Geophysical Union, Boston, MA.

Ford, D. (2001, March). What constitutes a good science trade book? Reviewing the reviewers' choices. Paper presented at the annual meeting of the National Association for Research in Science Teaching, St. Louis, MO.

Ford, D.J., Palincsar, A.S., & Magnusson, S.J. (2000, April). The role of text in the development of fourth-graders understandings of the nature of scientific activity. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.



Ford, D.J., Magnusson, S.J. & Palincsar, A.S. (2000, April). The role of text in supporting and extending first-hand investigations in guided inquiry science: An example from a fourth-grade study of light. Paper presented at the annual meeting of the National Association for Research in Science Teaching, New Orleans, LA.

## **Professional and University Activities**

### School of Education

2018-2015	Graduate Studies Committee
2014-2015	Student Teaching Coordinator Search Committee
2014-2015	Co-coordinator, Learning Sciences Ph.D. Specialization: Evaluations
2013-2016, 2018-2012	ETE Curriculum Coordinator
2013-2016, 2018-2012	Doctoral Core Committee
2012	Ad Hoc Committee on Ph.D. Program Reorganization
2003-2013	Coordinator of Ph.D. Specialization in Science Education
2010-2011	Faculty Affairs Committee
2010	Promotion and Tenure Committee
2010	Student Teaching Coordinator Search Committee, Co-Chair
2006-2013	Coordinator of M.I. Specialization in Science Education
2006-2008	Interim Coordinator of M.Ed. Specialization in Science Education
2005-2006	Promotion and Tenure Committee
2003-2005	Chair, Committee on Undergraduate Studies
2004, 2005	Science Education Search Committees
2002-2003, 2007	Honors Day Selection Committee
2001-2003	Coordinator of Ph.D. Concentration in Curriculum and Instruction
2001-2003	School of Education Executive Committee
2001	Educational Psychology Search Committee

### College of Education and Human Development

2017	Steele Symposium Awards Reviewer
2006-2008	CHEP College Council
2003-2005	CHEP Committee on Undergraduate Studies (Chair, 2004-2005)
2000-2002	ERC Advisory Committee

### University

2018	ADVANCE Women's Leadership @UD Training
2017-	University Budget Subcommittee for Sponsored Activities
2013-15; 17-18	Undergraduate Studies Committee
2012-2015	Faculty Senate
2010-2012	Environmental Research Cluster Hire Search Committee
2008	First Year Experience Faculty Focus Group

2007- 2008 University General Education Committee  
 2005-2006 UD Mineralogical Museum Advisory Board  
 2002-2005 Distinguished Scholars Selection Committee  
 2000-2002 University General Education Committee  
 2000-2002 Educational Technology Task Force, Ad Hoc UCTE Committee

#### State of Delaware

2011-2012 DNREC Greener Schools Advisement Committee

#### National/International Professional Associations Service

2018 Panel Reviewer, Gulf Research Program, National Academies of Science and Engineering  
 2018 Education Advisory Group, American Geophysical Union  
 2016- Editorial Review Board, *Innovations in Science Teacher Education*  
 2011-2014 National Association of Research in Science Teaching: Publications Advisory Committee  
 2005-2014 Editorial Review Board, *Journal of Science Teacher Education*  
 2011-2014 ASTE Annual Meeting Proposal Reviewer  
 2009-2013 AERA Annual Meeting Invited Panel Reviewer, Division C  
 2006-2009 Editorial Board, *Journal of Research in Science Teaching*  
 2001-2011 *Science Education* Board of Reviewers  
 2001- Reviewer, *Journal of Research in Science Teaching*, *Journal of the Learning Sciences*, *Journal of Geoscience Education*, *Cell Biology Education*, *Cognition and Instruction*, *Elementary School Journal*, *Research in Science Education Series*; *Science Education*; *Science & Education*  
 2005-2008 National Association of Research in Science Teaching: Outstanding Dissertation Award Committee (2006-2007, Co- Chair; 2007-2008, Chair)  
 2000-2003 National Association for Research in Science Teaching: JRST Outstanding Paper Award Committee

#### Consulting

1995- Children's Science Book Reviewer, *Horn Book Magazine* and *Horn Book Guide to Children's and Young Adult Books*  
 2003-2007 Science Trade Book Consultant, H.W. Wilson Junior High List

#### Memberships

American Geophysical Union  
 Association for Science Teacher Education  
 Geological Society of America  
 National Association of Geology Teachers  
 National Association of Research in Science Teaching