

JENNIFER L. SHIRK

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EDUCATION

Cornell University	Natural Resources	Ph.D.	2014
Cornell University	Natural Resources	M.S.	2004
Bard College	Biology/Ecology	B.A.	1994

CURRENT APPOINTMENTS

2017- *Interim Executive Director*, Citizen Science Association
2015- *Consulting Advisor*, The Pew Charitable Trusts, US Oceans Program, SE

PAST APPOINTMENTS

2015-17 *Acting Director*, Citizen Science Association
2006-17 *Manager of Professional Development for Citizen Science*, Cornell Lab of Ornithology
2015 *Faculty*, Bard College Citizen Science (January intersession)
2014-15 *Communications Coordinator*, Citizen Science Association
2009&10 *Teaching Assistant*, Nature & Culture, Cornell Summer College
2005-06 *Evaluation Assistant*, BirdSleuth curriculum, Cornell Lab of Ornithology
2004-05 *Teaching Assistant*, Cornell Department of Natural Resources
2001-03 *NSF GK-12 Fellow*, Cornell Science Inquiry Partnerships
2001-05 *Collaborating Researcher*, Smithsonian's Conservation & Research Center
2000-01 *Education Specialist*, Smithsonian's Conservation & Research Center
1999 *Research Assistant*, USGS Patuxent Wildlife Research Center/Shenandoah National Park
1998 *Marine Science Instructor*, Catalina Island Marine Institute
1995-97 *Assistant Program Director*, Shaver's Creek Environmental Center, Penn State University
1994-95 *Environmental Educator*, Shaver's Creek Environmental Center, Penn State University
1992-94 *Environmental Interpretive Technician*, Pennsylvania Department of Environmental Resources, Lackawanna State Park

PUBLICATIONS

Law, E., A. C. Williams, A. Wiggins, J. Brier, J. Preece, **J. Shirk**, & G. Newman. 2017. The Science of Citizen Science: Theories, Methodologies and Platforms. In *Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* 395-400. ACM.

McKinley, D. C., A. J. Miller-Rushing, H. L. Ballard, R. Bonney, ... **J. Shirk** & S. F. Ryan. (2017). Citizen science can improve conservation science, natural resource management, and environmental protection. *Biological Conservation*, 208, 15-28.

Storksdieck, M., **J. Shirk**, J. Cappadonna, M. Domroese, C. Göbel, M. Haklay, ... & K. Vohland. 2016. Associations for Citizen Science: Regional Knowledge, Global Collaboration. *Citizen Science: Theory and Practice*, 1(2).

Shirk J., R. Bonney. 2015. Citizen Science Framework Review: Informing a Framework for Citizen Science within the US Fish and Wildlife Service. Cornell Lab of Ornithology, Ithaca, NY.

McKinley, D. C., A. J. Miller-Rushing, ..., **J. L. Shirk** et al. 2015. Investing in Citizen Science Can Improve Natural Resource Management and Environmental Protection. *Issues in Ecology* 19. <http://www.esa.org/esa/wp-content/uploads/2015/09/Issue19.pdf>

- Shirk, J. L. 2014. *"Push the edge of science forward."* Expanding considerations of expertise through scientists' citizen science work in conservation. Doctoral dissertation, Cornell University, Ithaca, NY.
- Cooper, C. B., **J. Shirk**, B. Zuckerberg. 2014. The Invisible Prevalence of Citizen Science in Global Research: Migratory Birds and Climate Change. PLoS ONE 9(9): e106508.
- Bonney, R., **J. L. Shirk**, T. B. Phillips, A. Wiggins, H. L. Ballard, A. J. Miller-Rushing, and J. K. Parrish. 2014. Next steps for citizen science. Science 343: 1436-1437.
- Shirk, J. L., H. L. Ballard, C. C. Wilderman, T. Phillips, A. Wiggins, R. Jordan, E. McCallie, M. Minarchek, B. V. Lewenstein, M. E. Krasny, and R. Bonney. 2012. Public Participation in Scientific Research: a Framework for Deliberate Design. Ecology and Society 17:29. <http://www.ecologyandsociety.org/vol17/iss2/art29/>
- Dickinson, J. L., **J. Shirk**, D. Bonter, R. Bonney, R. L. Crain, J. Martin, T. Phillips, and K. Purcell. 2012. The current state of citizen science as a tool for ecological research and public engagement. Frontiers in Ecology and the Environment 10:291-297.
- Phillips, T., R. Bonney, and **J. Shirk**. 2012. *Towards a Unified Framework for Evaluating Educational Impacts of Citizen Science: Past, Present, and Future*. Chapter 5 in Citizen Science: Public Participation in Environmental Research. Rick Bonney and Janis Dickinson, editors. Cornell University Press, Ithaca, NY.
- Trautmann, N., J. Fee, and **J. Shirk**. 2012. *Who Poses the Question? Creative Tension between Inquiry and Citizen Science in School Settings*. Chapter 12 in Citizen Science: Public Participation in Environmental Research. Rick Bonney and Janis Dickinson, editors. Cornell University Press, Ithaca, NY.
- Bonney, R., H. Ballard, R. Jordan, E. McCallie, T. Phillips, **J. Shirk**, and C.C. Wilderman. 2009. Public Participation in Scientific Research: Defining the Field and Assessing Its Potential for Informal Science Education. A CAISE Inquiry Group Report. Washington, D.C.: Center for Advancement of Informal Science Education (CAISE). www.incsi.org
- Bonney, R., C. Cooper, J. Dickinson, S. Kelling, T. Phillips, K. Rosenberg, and **J. Shirk**. 2009. Citizen Science: A Developing Tool for Expanding Science Knowledge and Scientific Literacy. *BioScience*. 59(11):977-984.
- McEver, C., M. Domroese, E. Sterling, R. Bonney, J. Braus, F. Arengo, **J. Shirk**, R. Petty, and A. Toomey (editors). 2011. Proceedings of the Workshop, Engaging and Learning for Conservation: Public Participation in Scientific Research. American Museum of Natural History, New York, NY, April 7-8, 2011. www.citizenscience.org
- McEver, C., R. Bonney, J. Dickinson, S. Kelling, K. Rosenberg, and **J. Shirk** (editors). 2007. *Proceedings of the Citizen Science Toolkit Conference*. Cornell Laboratory of Ornithology, Ithaca, NY, June 20-23, 2007. 228 pp. www.citizenscience.org
- Bonney, R., **J. Shirk**, and B. Serrell. 2005. Effectiveness of Object Theater in Explaining Citizen Science and Changing Audience Behavior. *Current Trends in Audience Research and Evaluation* 18:30-33.
- Shirk, J. L. 2004. Student-Scientist Partnerships: Student Inquiry and Data Accuracy in a Salamander Monitoring Project. A Thesis Presented to the Faculty of the Graduate School of Cornell University.
- Jung, R. E., J. A. Royle, J. R. Sauer, C. Addison, R. D. Rau, **J. L. Shirk**, and J. C. Whissel. 2005. Estimation of stream salamander (*Plethodontidae*, *Desmognathinae*, and *Plethodontinae*) populations in Shenandoah National Park. *Alytes* 22(3-4):72-84.

Shirk, J., W. Maple, and J. Hart. 1994. Thermoregulation of a Presumed Ectotherm: An Examination of Migratory Patterns and Temperature Trends in a Population of Salamanders, *A. maculatum* and *A. jeffersonianum-laterale*. Bound thesis, Bard College.

MANUSCRIPTS SUBMITTED OR IN PREPARATION

Shirk, J., and R. Bonney. What is Citizen Science? Chapter 1 in *Citizen Science Handbook*, Lepczyk C. et al, eds. University of California Press. *Submitted*.

Shirk, J., and R. Bonney. Scientific impacts and innovations of citizen science. Chapter 3 in *Citizen Science – Innovation in Open Science, Society and Policy*. Bonn, A., M. Haklay, S. Hecker, A. Bowser, Z Makuch, & J. Vogel, eds. UCL Press. *Submitted*.

Shirk, J., S. Peters, and M. Krasny. “Something else needed to happen.” Experts, judgment, and the conservation possibilities of citizen science. *In preparation for Frontiers in Ecology and the Environment*.

Shirk, J., S. Peters, and M. Krasny. “I try to work with these people.” Scientists, citizen science, public engagement, and conservation. *In preparation for Conservation Biology*.

Shirk, J. “Make science relevant.” Citizen science and the multiple dimensions of scientific practice. *In preparation for BioScience*.

INVITED LECTURES AND KEYNOTES

2017 “Something else needed to happen.” *Scientists, citizen science, and rethinking research for conservation*. Science Communications Honors College Course. University of Massachusetts, Boston (remote). January 30.

2016 Keynote: *Citizen Science: Building Community and Capacity Around Diverse Practices*. Conference, Citizen Science in the Wasatch Range. Natural History Museum of Utah, Salt Lake City, UT. August 26.

2016 Keynote: *Citizen Science: Engaging the Challenge of Climate Change*. Conference, Citizen Science: The Power of Involvement. Goodwin College, Hartford, CT. April 1.

2015 *Citizen Science and Climate Change*. Spring 2015 Green Living Seminar Series. Massachusetts College of Liberal Arts, North Adams, Massachusetts. April 9.

2015 *Deliberate Design of Citizen Science Projects*. Workshop, Inaugural Conference of the Australian Citizen Science Association, Canberra, Australia. July 23.

2014 *Pursuing the conservation potential of citizen science*. Seminar, Department of Horticulture, Cornell University, Ithaca, New York. September 29.

2014 Keynote: *Citizen Science: An Overview of the Growing Field*. Conference: Exploring the PPSR Landscape Under a Western Sky, Miistakis Institute, Calgary, Alberta, Canada. September 9.

2013 *Advancing an Interdisciplinary Field*. Cornell Lab of Ornithology Board of Trustees meeting, Ithaca, New York, May 31.

2012 Keynote: *Exploring (Together) the Landscape of Citizen Science and Public Participation in Scientific Research*. USGS Citizen Science Workshop, Denver, Colorado. September 11.

2012 *Methods of Working with Volunteers in Citizen Science Projects*. California Biodiversity Citizen Science Meetings, California Academy of Sciences, San Francisco, CA. May 16.

2012 *Cross-Disciplinary Dialogues for Sharing and Collaborating*. Bring Your Own Data: Opportunities and Challenges in Using Citizen-Generated Data, Washington, D. C., November 14.

2011 Keynote: *An Overview of Youth Involvement in Citizen Science*. 4-H Citizen Science Symposium. Ithaca, NY. May 3.

- 2010 *Contributions of Citizen Science to Understanding Ecological Responses to Climate Change*. Keynote address of Symposium: Contributions of Citizen Science to Our Understanding of Ecological Responses to Climate Change. Ecological Society of America Annual Meeting, Austin, TX. August 3.
- 2009 Keynote: *Targeted learning objectives for public participation in scientific research*. All Taxa Biodiversity Inventory Conference. Gatlinburg, TN. December.

WORKSHOPS AND SYMPOSIA

- Convener (2017), Symposium, Integrating Citizen Science into Conservation Resource Management : Strategies and Impacts. Citizen Science 2017 Conference, Saint Paul, Minnesota. May.
- Organizer (2016), Workshop on Integrating Citizen Science into Youth Development Programming. National Association of Extension 4-H Agents Conference, New Orleans, Louisiana. October.
- Convener (2016), Symposium, Scientific Impacts and Innovations of Citizen Science. Citizen Science: Innovation in Open Science, Society and Policy. European Citizen Science Association. Berlin, Germany, 20 May.
- Panelist (2015), Workshop on Principles and Guidelines for Citizen Science. University of Zurich, Zurich, Switzerland. November.
- Attendee (2015), White House Citizen Science Forum. Office of Science and Technology Policy, Washington, DC. September.
- Attendee (2015), White House Open Government Workshop. Office of Science and Technology Policy, Washington, DC. March.
- Organizer (2015), Symposium, “Citizen Science: Advancing Innovations for Science, Information, and Engagement.” AAAS 2015 Annual Meeting. San Jose, CA. February.
- Panelist (2014), Public Forum of Tracking a Changing Climate: Citizen Science Contributions to the National Climate Change Assessment. Washington, DC. November.
- Convener (2014), Session, “Citizen Science: Building connections to get started and keep going.” Association of Science-Technology Centers Annual Meeting. Raleigh, NC. October.
- Convener (2013). Session, “Supporting More Inclusive Approaches to Citizen Science.” Annual meeting of the Association of Science-Technology Centers. Albuquerque, NM. October.
- Organizer (2013), Symposium, “The Future of Ecological Possibilities in Citizen Science.” INTECOL, International meeting of the British Ecological Society. London, UK. August.
- Co-Organizer (2013), Workshop, “Hands-on citizen science: ecology, engagement and technology.” INTECOL, International meeting of the British Ecological Society. London, UK. August.
- Organizer (2013), Symposium, “Scientists as stakeholders: perceptions of citizen science research for conservation by peers, reviewers, and policy makers.” International Congress on Conservation Biology. Baltimore, MD. July.
- Co-Organizer (2012). Workshop: “Integrating Citizen Science into Informal Science Programming.” National Association for Interpretation Conference. Hampton, VA. November.
- Leader (2012). Workshop Series: “Integrating Citizen Science into Science Center Programming.” Association of Science-Technology Centers. California Academy of Sciences (May), Denver Museum of Nature and Science (June), New York Hall of Science (July).
- Leader (2012). Workshop: “Citizen Science – Real World Research for Real World Learning.” Pennsylvania Association for Environmental Education. Entriiken, PA. March.

- Co-Organizer (2011). Workshop: “Enhancing Biodiversity Conservation and Environmental Stewardship through Public Participation in Scientific Research.” American Museum of Natural History, New York, NY. April.
- Co-Organizer (2010). Workshop: “Promoting Ecological Literacy and Climate Literacy: Successful Strategies for Public Participation in Scientific Research.” Annual meeting of the Ecological Society of America. Milwaukee, WI. August.
- Co-Organizer (2009). Workshop: “Environmental learning or environmental action? Exploring outcomes of public participation in research.” 5th World Environmental Education Congress, Montreal, Quebec, Canada. May.
- Organizer (2009). Workshop: “Watch birds for science (and learning!)... Educational programs from the Cornell Lab of Ornithology.” All Taxa Biodiversity Inventory Conference. Gatlinburg, TN. December.
- Organizer (2007). Citizen Science Toolkit Conference. Cornell Lab of Ornithology, Ithaca, NY. June.

PRESENTATIONS

- Shirk, J. and A. Von Harten. 2017. Laying the Groundwork for Effective Citizen Science Collaborations in Management Contexts (poster). Citizen Science 2017 Conference, Saint Paul, Minnesota. May 19.
- Bonney, R. and **J. Shirk**. 2016. Public Participation in STEM Research: Citizen Science. NSF PI meeting. Washington, DC. March 1.
- Shirk, J. and A. Miller-Rushing. 2016. *Citizen Science Association: Building Connections Across Communities of Practice*. Meeting, Federal Community of Practice for Crowdsourcing and Citizen Science. Wilson Center, Washington, DC. September 7.
- Shirk, J. 2016. *Citizen science: Can a community of practice advance scientific reflexivity?* Citizen Science: Innovation in Open Science, Society and Policy. European Citizen Science Association. Berlin, Germany, 20 May.
- Shirk, J. 2016. “*I try to work with these people*” – *Learning from Scientists’ Citizen Science Stories*. Poster. Citizen Science: Innovation in Open Science, Society and Policy. European Citizen Science Association. Berlin, Germany, 19 May.
- Shirk, J. 2015. *Does US Citizen Science Influence Policy?* Workshop: Citizen Science and its science-policy impact – a comparison of international science systems. Leipzig, Germany, 27 April.
- Shirk, J. and S. Peters. 2015. “*I Try to Work With these People.*” *Scientists, Citizen Science, and Public Engagement*. (Poster) AAAS 2015 Annual Meeting. San Jose, CA. February.
- Shirk, J. 2015. *Citizen Science, Youth, Conservation: The Big Picture*. Webinar session, Engaging Youth in Conservation Science. National Conservation Training Center, US Fish & Wildlife Service. 12 May.
- Shirk, J. 2014. *Citizen Science and Conservation: The Big Picture*. Webinar session, Bird Education Alliance for Conservation. 3 December.
- Shirk, J. 2014. *Online Infrastructure for a Citizen Science Association*. Association of Science-Technology Centers Annual Meeting. Raleigh, NC. 19 October.
- Shirk, J. 2014. “*Something else needed to happen.*” *Scientists, citizen science, and expanding expertise for conservation*. Doctoral seminar. Cornell University, Ithaca, NY. 13 June.
- Shirk, J. 2013. *Motivations of professional scientists: Civic-minded science?* Annual meeting of the Royal Geographical Society. London, UK. August.
- Shirk, J. 2013. *Reimagining research for conservation: Citizen science as part of professional scientists’ careers*. In Symposium, “Scientists as stakeholders: perceptions of citizen science

- research for conservation by peers, reviewers, and policy makers.” International Congress on Conservation Biology. Baltimore, MD. July.
- Shirk, J. 2013. “*Push the edge of science forward.*” *Conservation scientists, citizen science, and civic engagement.* Graduate Engaged Research Conference. Ithaca, NY. May.
- Shirk, J. 2012. *Citizen science and science centers.* Association of Science-Technology Centers Conference. Columbus, OH. October.
- Shirk, J. and R. Bonney. 2011. *Contributions, controversies, and credibility: Citizen science and understandings of climate change.* American Geophysical Union Conference. San Francisco, CA. December.
- Shirk, J. 2011. *Citizen Science and Community Conversations.* In session: “*Citizen Science and Dialogue: Engaging Diverse Communities around Scientific Issues.*” Annual meeting of the Association of Science-Technology Centers. Baltimore, MD. October.
- Shirk J., H. Ballard, A. Wiggins, T. Phillips, R. Jordan, C. Wilderman, E. McCallie, and R. Bonney. *Public Participation in Scientific Research: A Framework for Intentional Design.* Annual meeting of the Ecological Society of America. Austin, TX. August.
- Domroese, M., **J. Shirk** (presenter), R. Bonney, H. Ballard, E. Sterling, J. Braus, A. Toomey, R. Petty, and F. Arengo. 2011. *Engaging the Public in Scientific Research for Conservation.* Annual meeting of the Ecological Society of America. Austin, TX. August.
- Shirk, J. and R. Bonney. 2010. *Citizen Science and Climate Change Education.* Annual meeting of the Association of Science-Technology Centers. Honolulu, HI. October.
- Shirk, J. and R. Bonney. 2010. *Opportunities and Resources for Citizen Science at Science Centers.* Annual meeting of the Association of Science-Technology Centers. Honolulu, HI. October.
- Shirk, J., K. Levedahl, and R. Bonney. 2010. *Climate change in my neighborhood? Exploring local indicators of climate change through citizen science.* Annual meeting of the Ecological Society of America. Milwaukee, WI. August.
- Shirk, J. 2010. *Educational impacts of public participation in scientific research (PPSR): Laying the groundwork for future investigations.* National Association for Research in Science Teaching, Philadelphia, PA. March.

PROFESSIONAL SERVICE

- 2017- *Member, US-UK Advisory Board, Learning through Citizen Science at Natural History Museums, Science Learning+ (NSF-Welcomme Trust)*
- 2017- *Member, BirdSleuth Advisory Council, Cornell Lab of Ornithology*
- 2015- *Advisor, The Crowd and The Cloud*
- 2014- *Member, Professional Development Working Group, Citizen Science Association*
- 2012- *Co-Chair, Communications Working Group, Citizen Science Association*
- 2014-15 *Member, Steering Committee, Citizen Science Association*
- 2014 *Member, National Advisory Team, Advancing Critical Thinking, Natural History Museum of Utah*
- 2013 *Member, Task Force on Equity, Diversity, and Inclusion for Citizen Science*
- 2013 *Advisor, Northern California Public Participation in Scientific Research (PPSR) Regional Workshop, UC Davis School of Education*
- 2012-16 *Advisor, “Pathways: Using Citizen Science to Study the Social Behaviors of a Charismatic Rare Bat Species at Mammoth Cave National Park”*
- 2012 *Member, “Way Forward for GLOBE Management” Panel, National Science Foundation*
- 2011-15 *Member, PPSR Working Group, DataONE*

- 2011 *Contributor*, Conference, “Science Education for New Civic Engagements and Responsibilities – Informal Science Education,” National Center for Science and Civic Engagement
- 2010-12 *Core Committee Member*, Citizen Science Conference 2012 Planning Team
- 2010 *Contributor*, “Workshop to Define Collaborative Student Climate Research,” National Oceanic and Atmospheric Administration (NOAA)
- 2008-09 *Member*, Public Participation in Research Inquiry Group, Center for Advancement of Informal Science Education (CAISE)
- 2006-09 *Coordinating Committee member and Co-Facilitator*, Citizen Science Working Group for Appalachian Trail MEGA-Transect

HONORS AND AWARDS

- 2006 Exceptional Service Award, Cornell Department of Natural Resources
- 2006 Distinguished Leadership Award Nominee, Cornell University
- 2006 Kieckhefer Adirondack Research Grant
- 2005 Appalachian Trail 2000-miler recognition for 2004-2005 Southbound Thru-hike
- 2001-03 NSF GK-12 Fellow, Cornell Science Inquiry Partnerships
- 2002 Best Ideas Presentation, Department of Natural Resources Graduate Student Symposium
- 2001 Virginia Environmental Endowment
- 1994 Hudsonia, Ltd. Award for Excellence in Ecological Field Work
- 1993 Marlin Perkins Ecology Scholarship
- 1989 Earthwatch Research Scholarship

OTHER SERVICE

- 2012-15 *Trustee*, Greensprings Natural Cemetery Preserve
- 2005-06 *President*, Graduate Student Association, Cornell Department of Natural Resources

PROFESSIONAL TRAINING

- Sustaining Biological Infrastructure: Strategies for Success, A Short Course for Project Directors. Ecological Society of America. The Conference Center at the Maritime Institute, Linthicum Heights, MD. June 21-23, 2016.
- Introduction to Metadata Workshop. National Biological Information Infrastructure, USGS. Asheville, NC. March 6-7, 2007.
- Biodiversity Assessment and Monitoring for Adaptive Management. Smithsonian Institution/ Monitoring and Assessment of Biodiversity Program. Conservation and Research Center, Front Royal, VA. May 13 – June 15, 2001.

PROFESSIONAL SOCIETIES

- Citizen Science Association
- American Association for the Advancement of Science

TECHNICAL REVIEWS REQUESTED

- Biological Conservation
- Biometeorology
- Citizen Science: Theory & Practice
- Connected Science Learning

Conservation Biology
Earthwatch
Ecology and Society
Endangered Species Research
Environmental Management
Frontiers in Ecology and the Environment
International Journal of Biometeorology
University of Antwerp Research Council
Washington Sea Grant