

## Jason Cervenec

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Web site: <https://byrd.osu.edu/research/groups/education-outreach>

### Professional Preparation

The Ohio State University	Biology	B.S.	2000
The Ohio State University	Secondary Science	M.Ed.	2001

### Appointments

2012-present Education & Outreach Director, Byrd Polar and Climate Research Center, The Ohio State University, Columbus, Ohio  
2001-2012 High School Science Teacher, Worthington City Schools, Worthington, Ohio  
2002-2012 Science Olympiad Coach, Worthington City Schools, Worthington, Ohio  
2004-2011 Professional Development Workshop Leader, Ohio Board of Regents ITQ Grant

### Products and Presentations

Davis, G., Cervenec, J., and Wilson, A.B. *Ohio Weather, Climate, and Climate Change: A Certified Volunteer Naturalist Curriculum*. [In development]  
Cervenec, J., Davis, G., Gravina, M., and Hamilton, D. A Tool for Exploring Our Fluid Earth. *The Physics Teacher*. [Accepted for publication]  
Hamilton, D., Cervenec, J., Maletic, E., and Patterson, J. (2022). A Low-Cost, User-Friendly Technology for Making Samples and Artifacts Accessible to Online Audiences. *Connected Science Learning*, Nov-Dec 2022, Volume 4, Issue 6.  
Peggau, K., Cervenec, J., Van Tassell, E., Fletcher, A., Hogan, S., Kridel, E., and Iverson, E. (2022). Connecting Youth Using Arctic Mystery-Themed Kits. *Journal of STEM Outreach* 5 (1): 1–12. DOI: <https://doi.org/10.15695/jstem/v5i1.06>  
Cervenec, J., Fox, J., Peggau, K., Wilson, A. B., Li, B., Hu, D., Chang, R., Wong, J., and Bossley, C. (2022). Interactive data visualizations of Earth's atmosphere: Effects on student engagement and perceived learning, *Journal of Geoscience Education*, DOI: [10.1080/10899995.2022.2038963](https://doi.org/10.1080/10899995.2022.2038963)  
Gravina, M., Zhan, M., Cai, M., Arens, A., and Cervenec, J. (2022, Apr 29). Fluid Earth: Open-source Visualization of Weather and Climate Data. *GIS Lounge*. <https://www.gislounge.com/fluid-earth-open-source-visualization-weather-climate-data/>  
Harris, K., Krok, K., Hollister, R., and Cervenec, J. (2021). Virtual tours through the ice using everyday tools. *Eos*, 102. <https://doi.org/10.1029/2021EO160631>. Published on 09 July 2021.  
Hunt, M. and Cervenec, J. 2021. *Exploring Polar Science*. Ohio State University Extension Publishing.  
Cervenec, J. (2021). Presentation for City and Regional Planning Students on Development of the Columbus Climate Adaptation Plan. Virtual via Zoom on February 21, 2021.  
Cervenec, J. (2021). Presentation for the MetClub at Ohio State on Climate Change Education and Development of Decision-Making Tools. Virtual via Zoom on January 19, 2021.  
Porter, S., and Cervenec, J. (2020). Climate Change, Scientific Research, and the Search for Truth. Invited presentation to Thomas Worthington H.S. PoliRad, Worthington, Ohio, December, 9 2020.  
Cervenec, J. (2020). Interview with *Columbus Monthly* for article on Greenland and Climate Change Outreach.  
Cervenec, J. (2020). Presentation on Climate Change and Impacts to the Worthington Garden Club. Virtual via Zoom on November 11, 2020.

Cervenec, J. (2020). Presentation to Youth Climate Action Team in Southeastern Ohio. Virtual via Zoom November 10, 2020.

Cervenec, J. (2020). Guest Lecture on Development of the Columbus Climate Adaptation Plan for an Undergraduate Environment and Natural Resources Class. Virtual via Zoom November 5, 2020.

Cervenec, J., and Wilson, A. B. (2020). Presentation on Climate Change for Faith Group Retreat for Church of the Brethren, Virtual via Zoom October 15, 2020.

Cervenec, J., Gravina, M., and Wilson, A. B. (2020). Presentation on Fluid Earth to the AMS Education Section. Virtual via Zoom October 15, 2020.

Cervenec, J. and Gardner, C. (2020). Byrd Center Public Tour with a Focus on the Dry Valleys, Virtual via Zoom.

Cervenec, J. (2020). Teaching Weather and Climate, presentation for virtual teacher professional development sessions offered by OSU, 04, August 2020.

Cervenec, J. (2020). Climate Change, Scientific Research, and the Search for Truth. Invited presentation to Thomas Worthington H.S. PoliRad and Composition classes, online, 04 May 2020.

Cervenec, J. (2020). Creation of a Climate Change Adaptation Plan for Columbus, Ohio, presentation for ENR 3500 course at OSU, 14, April 2020.

Cervenec, J. (2020). Application of the Columbus Climate Adaptation Plan to the Central Ohio Region, presentation to Central Ohio ROAR Summit, 29 February 2020.

Cervenec, J. (2020). An Overview of Climate Change and Its Impacts. Presentation for the Little Garden Club, Columbus, Ohio, 19, February 2020.

Cervenec, J. (2020). Discussion with ENGL 3398 course at OSU, 14, February 2020.

Cervenec, J. (2020). Creation of a Climate Change Adaptation Plan for Columbus, Ohio, presentation for City and Regional Planning course at OSU, 05, February 2020.

Cervenec, J. (2019). Climate Change, Scientific Research, and the Search for Truth. Invited presentation to Thomas Worthington H.S. PoliRad and Composition classes, Worthington, Ohio, 05 December 2019.

Cervenec, J. (2019). Climate and Weather Workshop. Invited workshop at the Appalachian Green Teachers Conference, Burr Oak State Park, Ohio, 30, October 2019.

Cervenec, J. (2019). Climate Change Connections to School Gardening. Invited presentation to Ohio 4-H School Gardening Conference, Columbus, Ohio, 25, October 2019.

Cervenec, J. (2019). Changing Climate and Impacts on Ag in Ohio. Presentation to Licking County Professional Agrarians, Newark, Ohio, 10, September 2019.

Cervenec, J. and Wilson, A. B. (2019). Presentation for Ohio Farm Bureau Policy Team, Columbus, Ohio, 12, July 2019.

Cervenec, J. (2019). Climate Change, Climate Adaptation. Invited presentation for the Wexner Medical Center Green Team, Columbus, Ohio, 23, May 2019.

Cervenec, J. (2019). Building Climate Resilience Demands Voices Beyond Physical Sciences and Engineering. Invited presentation at ROTO as part of COSI STEM Festival, Dublin, Ohio, 02, May 2019.

Cervenec, J. (2019). An Overview of Climate Change and Its Impacts. Invited talk at Chalmers Wylie VA, Columbus, Ohio, 30, April 2019.

Cervenec, J. (2019). An Overview of Climate Change and Its Impacts. Invited presentation to retired OSU faculty/staff luncheon, Upper Arlington, Ohio, 21, February 2019.

Cervenec, J. (2019). Interview with Spectrum News 1 about Columbus Climate Adaptation Plan, 20, February, 2019.

Cervenec, J. and Wilson, A. (2019). FARM App/Columbus Climate Adaptation Plan, presenters and session conveners for OSU Engagement Forum, Columbus, Ohio, 23, January 2019.

Cervenec, J. (2019). Creation of a Risk and Vulnerability Report for Columbus, Ohio. Invited speaker for CCAP at Indiana University, online, 08, January 2019.

Cervenec, J. (2018). Interview with Beth Burger for The (Columbus) Dispatch about the Columbus Climate Adaptation Plan, 18, December 2018.

Cervenec, J. Interview with Paige Pfleger on WOSU about Columbus Climate Adaption Plan. <<https://radio.wosu.org/post/ohio-state-team-submits-plan-columbus-fight-climate-change>>, 18, December, 2018.

Cervenec, J. (2018). An Overview of Climate Change and Its Impacts. Presentation for the Bexley Garden Club, Bexley, Ohio, 06, November 2018.

Cervenec, J. (2018). An Overview of Climate Change and Its Impacts. Presentation for Our Lady of Perpetual Help parish, Grove City, Ohio, 01, October 2018.

Cervenec, J. and A. Wilson. (2018). From Fields to Forecasts: Participatory Practices for Engaging Farmers in Climate Conversations and Solutions, Great Lakes Adaptation Forum, Ann Arbor, Michigan, 26, September 2018.

Cervenec, J. and A. Wilson. (2018). Creation of a Climate Change Adaptation Plan for Columbus, Ohio, Great Lakes Adaptation Forum, Ann Arbor, Michigan, 25, September 2018.

Cervenec, J. and A. Wilson. (2018). Small Farm Impacts from and Adaptations to Climate Change, invited talk as part of 2018 Farm Science Review, London, Ohio, 19, September, 2018.

Petcovic, H., J. Cervenec, K. Cheek, R. Dahl, N. Price, and E. Pyle. (2018). Research on Elementary, Middle, and Secondary Earth and Space Sciences Teacher Education. In St. John, K. (Ed.) (2018). *A Community Framework for Geoscience Education Research*. National Association of Geoscience Teachers: <[https://nagt.org/nagt/geodresearch/GER\\_framework/theme3/index.html](https://nagt.org/nagt/geodresearch/GER_framework/theme3/index.html)>

Cervenec, J. and A. Wilson. The Science of Climate Change, invited talk to College of Food, Agricultural and Environmental Sciences emeriti and retirees, Upper Arlington, Ohio, 19, March, 2018.

Cervenec, J. (2018). Interview with Rachael Penton for Channel 6 about Columbus Climate Adaptation Plan, 07, March 2018.

Wilson, A., J. Cervenec, and G. Dipre. Building Climate Change Resilience in Columbus through University and Community Engagement, OSU community engagement conference, Columbus, Ohio, 24, January, 2018.

Cervenec, J. and J. Nicolas. Fluid Earth Viewer, a Freely Available Digital Tool for Investigating Weather and Climate, presentation at Science Education Council of Ohio conference, Lewis Center, Ohio, 30, January, 2018.

Cervenec, J. Climate Change: Causes, Impacts, and Options, invited talk as part of Diocese of Toledo Care for Our Common Home workshop, Findlay, Ohio, 4, October, 2017.

Cervenec, J. Climate Change: Causes, Impacts, and Options, invited talk for SAVE Organization at Lourdes University, Sylvania, Ohio, 11, September, 2017.

Cervenec, J., B.G. Mark, and A. Wilson. Long-form interview with Joe Cornely on Town Hall Ohio, available at <<https://ofbf.org/2017/09/07/climate-change-town-hall-ohio/>>, 7, September, 2017.

Cervenec, J. and A. Wilson. Changing Climate in Ohio: Impacts on Small Farms and Rural Communities, invited talk as part of 2017 Farm Science Review, London, Ohio, 21, September, 2017.

Cervenec, J. Climate and Energy Education for Physical Science and Physics Classrooms, invited talk at 2017 Summer Meeting of American Association of Physics Teachers, Cincinnati, Ohio, 24 July 2017.

Cervenec, J. Research of the Byrd Center, Climate Change Impacts on Ohio, and Local Efforts to Adapt, invited talk as part of workshop for environmental remediation staff, Columbus, Ohio, 31 May 2017.

Cervenec, J. Climate Change: A Global Problem Requiring Widespread Solutions, invite talk at St. John XXIII Church, Perrysburg, Ohio, 24 March 2017.

Cervenec, J. Columbus Climate Change Action Plan Overview presented as part of 2017 GreenSpot Celebration at the Columbus Main Library, Columbus, Ohio, 24 March 2017.

Cervenec, J. and B.G. Mark. Delivered professional testimony about science and climate to Ohio State Senate committee, Ohio Statehouse, Columbus, Ohio, 8 December 2016. Hearing was on House Bill 554 to end freeze on renewable energy standards.

Cervenec, J. Climate Changes, Impacts, and Vulnerabilities Report Overview. Sierra Club and

- National Wildlife Federation program at The Ohio State University, Columbus, Ohio, November 2016.
- Cummings, T.R., J. Cervenec, and A. Wilson. Development of a Mobile Sensor Platform for Micro-scale Climate and Air Quality Monitoring at Innovative Environmental Monitoring Technology Symposium, Athens, Ohio, 17-18 October 2016.
- Cervenec, J. and A. Wilson. Climate Change Information & Educational Resources, invited talk to Ohio Certified Volunteer Naturalist 2016 State Conference, 8 Oct 2016.
- Cervenec, J. Create Classroom Ice Cores, presented at 2016 Earth Educators Rendezvous, Madison, Wisconsin, 18-22 July 2016.
- Gordon, S., J. Cervenec and M. Durand. 2016. Introducing Teachers to Modeling Water in Urban Environments. *Journal of Computational Science Education*, 7(1), 21-26.
- Cervenec, J. Climate Change: Information and Education Resources, presented as part of Research to Practice Webinar Series for Ohio Certified Volunteer Naturalists, online webinar, 9 Mar 2016.
- GLISA. Climate Change in Columbus Ohio: An Assessment of Columbus' Key Climate Changes, Impacts, and Vulnerabilities of Concern, March 2016, available online at <http://bpcrc.osu.edu/greenteam>.
- Cervenec, J. and P. Gabrielli. Climate Change Science and Communication, presented for a Polar Educators International Master Class, online webinar, 25 Feb 2016.
- Cervenec, J. and M. Durand. Teaching the Water Cycle and Watersheds Using Hands on Experiments and Online Tools, presented at 2016 Ohio Science Institute, Columbus, Ohio, 25-26 Jan 2016.
- Cervenec, J. and A. Wilson. Climate Change Information & Educational Resources, presented at 2016 Ohio Science Institute, Columbus, Ohio, 25-26 Jan 2016.
- Cervenec, J. and M. Durand. From classrooms to geosciences careers: developing and testing a curriculum module and web application for modeling water in urban environments, Abstract ED11A-3391 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec 2014.
- Cervenec, J.M., G. Hitzhusen, S. Ward and C. Foster. A science-faith partnership to provide education and facilitate action on climate change and energy, Abstract ED22A-08 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec 2014.
- Cervenec, J. and C.E. Landis. Experiences & tools from modeling instruction applied to earth Sciences, Abstract ED13B-0782 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec 2012.
- Landis, C.E. and J. Cervenec. Arctic forecasts available from polar bear exhibit as an example of formal/informal collaboration, Abstract ED31C-08 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec 2012.
- Clark, T.M., J. Cervenec and J. Mamais. 2011. "The Price is Right" for your classroom. *Journal of Chemical Education*, 88(4), 428-431, doi: 10.1021/ed100224w.
- Cervenec, J. 2009. Stuck in grade nine? Modeling instruction in freshman physical science (Invited talk), presented at American Association of Physics Teachers Summer Meeting, An Arbor, Michigan July 2009, Session FD: Modeling Instruction in Physics.
- Cervenec, J., K. Harper, and A. Heckler. 2005. Professional development for standards-based physical science education using modeling physics, Abstract TP-C2 presented at Physics Education Research Conference: Connecting Physics Education Research (PER) to Teacher Education at All Levels: K-20, 10-11 August 2005, University of Utah, Salt Lake City.

### Synergistic Activities

- Build climate change, sustainability, and science education partnerships at The Ohio State University, within Columbus, and throughout Ohio
- Collaborate with local teachers and university professors to improve geosciences education, focus on crosscutting concepts, and support the transition to the Common Core and Next Generation Science Standards

- Organize programs and outreach activities for local schools, community organizations, and Ohio State students related to climate change, geosciences education, and work of the Byrd Polar and Climate Research Center
- Coordinate undergraduate employees and high school interns at the Byrd Polar and Climate Research Center
- Fulbright Exchange Teacher with the U.S. Department of State in Mumbai, India, 2010

### **Collaborators**

**Individuals:** Joel Barker, OSU; Jim DeGrand, OSU; Michael Durand, OSU; Jill Jentes, OSU; Laura Kissel, OSU; Bryan Mark, OSU; Claire Monk, New Albany-Plain Local Schools; Chris Moore, Olentangy Local Schools; Andrea Vescelius, Olentangy Local Schools; Aaron Wilson, OSU; Geoff Dipre, OSU; Jane Wright, OSU; Janice McDonnell, Rutgers

**OSU Departments & External Institutions:** University Libraries/University Archives; School of Earth Sciences; Geography Department; College of Arts and Sciences; College of Food, Agricultural, and Environmental Sciences; OSU Extension; School of Environment and Natural Resources; The STEAM Factory; Center for Applied Plant Sciences; Center for Automotive Research; Office of Energy and Environment; Office of Research; Office of Student Life; Office of Outreach and Engagement; University Communications; Wexner Medical Center; Columbus Zoo & Aquarium; Ohio 4-H; Franklin Park Conservatory & Botanical Gardens; City of Columbus; MORPC; Franklin County Public Health; NOAA; Ohio Emergency Management and Homeland Security; Rural Action; Camp Oty'Okwa; Central Library Consortium; Rutgers University; Clemson University; University of Alaska – Fairbanks; Woods Hole Research Center; Arctic Data Center; ARCUS

### **Current Funded Projects**

*The Ohio Precipitation Estimate Tool*

Funding Source: Franklin Soil and Water (Total Budget: \$63,858; 0.5 months salary)

*The Scientist Next Door: Making STEM Accessible Through Storytelling*

Funding Source: BETHA (Total Budget: \$105,538 of which \$44,321 from grant ; 0.5 months salary matched)

*Byrd Center Goldthwait Polar Library Renovation*

Funding Source: OSU Public Spaces Grant (Total Budget: \$154,159; 0 months salary)

*Permafrost Discovery Gateway*

Funding Source: NSF NNA (Total Budget: \$106,230; 1 month salary)

*WestFest - 2017 to Present*

Funding Source: Ohio State Energy Partners and Ohio State Outreach and Engagement (Total Budget: ~\$6,400 in 2017, ~\$17,000 in 2023)

### **Past Funded Projects**

*REU Supplement for Summer 2021*

Funding Source: NSF NNA (Total Budget: \$8,966; 0 months salary)

*REU Supplement for Summer 2020*

Funding Source: NSF AISL (Total Budget: \$45,629; 0 months salary)

*OSU Urban Heat Island Study and Instrumentation*

Funding Source: OSU Sustainability Grant (Total Budget: \$149,905; 0.5 months salary matched)

*Virtual Ice Explorer*

Funding Source: NSF AISL (Total Budget: \$299,140; 5 months salary)

*Fluid Earth Viewer (FEVer)*

Funding Source: NSF AISL (Total Budget: \$305,000; 6.25 months salary)

*OSU Urban Heat Island Study and Instrumentation*

Funding Source: OSU Sustainability Grant (Total Budget: \$149,905; 0.5 months salary matched)

*Virtual Ice Explorer*

Funding Source: NSF AISL (Total Budget: \$299,140; 5 months salary)  
*Fluid Earth Viewer (FEVer)*  
 Funding Source: NSF AISL (Total Budget: \$305,000; 6.25 months salary)  
*Columbus Climate Action Plan*  
 Funding Source: Natural Resources Defense Council (Total Budget: \$50,000; 2 months salary)  
*Installation of Science on a Sphere System and Development of Program Content*  
 Funding Source: Women & Philanthropy at The Ohio State University, OSU Office of Research, and Byrd Polar and Climate Research Center (Total Budget: \$42,000)  
*Development of FARM App and Submission of Midwest RISA Center Proposal*  
 Funding Source: OSU Connect and Collaborate Grant (Total Budget: \$45,000; 2 weeks salary)  
*Harnessing Education and Technology for Environmental Detection (HEATED)*  
 Funding Source: BETHA Grant 2014 (Total Budget: \$53,308; 1 month salary)  
*Ohio Earth Sciences Boot Camp*  
 Funding Source: Ohio Board of Regents (Total Budget: \$40,368; 0.6 month salary)  
*Climate Explorations & Climate Collaborative: Bringing Cutting Edge Science & Hands-On Investigations to Your Neighborhood & Building Collective Action on Climate Change Education*  
 Funding Source: OSU Cares Grant 2014 (Total Budget: \$40,310; 1 month salary)  
*Argumentation Workshop for Middle and High School Teachers*  
 Funding Source: Ohio Humanities Council Grant 2014 and Donation to BPRC Education & Outreach Fund (Total Budget: \$7,640)  
*Connecting Climate Science and Inquiry in K-6 Classrooms*  
 Funding Source: Ohio Board of Regents – Improving Teacher Quality Grant 2013 (Total Budget: \$102,958; 2.4 months salary)  
*Classrooms to Geoscience Careers: Developing, Testing and Disseminating a High School Module on Modeling Water in Urban Environments*  
 Funding Source: NSF 2013 and 2014 (Total Budget: \$149,638; 1.75 months salary)

### **Contributions to the Geosciences Education, Climate Services, and OSU Communities**

2020-present	Co-convener of OSU STEM Impact Collaborative (Group of STEM Broader Impact Professionals)
2019-present	Co-organizer of Byrd Center Symposium on Climate Change
2017-present	Organizing Committee member for OSU's annual <i>WestFest</i> public outreach and sustainability event
2013-2021	Leader for <i>Ohio Science Olympiad State Tournament</i> events (including Dynamic Planet and Remote Sensing for middle and high school)
2020	Provided technical information to Franklin County Public Health on extreme heat in response to the COVID-19 pandemic, with Aaron Wilson
2019	Participated in CFAES Legislator Date at the Ohio Statehouse as part of State Climate Office of Ohio
2019	Organizing Committee member for <i>50<sup>th</sup> Anniversary Celebration of First All-Women Research Team in Antarctica</i> , held at the Byrd Center, Columbus, OH on October 17 and 18, 2019
2019	Host for OSU's <i>Road Scholar Tour</i> kick-off site
2019	Member of climate change panel for discussion at Old Worthington Library with Celebrezze, D. and Taylor-Miesle, H.
2019	Served on sustainability panel for OSU service learning luncheon
2019	Served on broader impacts panel for workshop at CAPS/ABRC at OSU
2019	Organizing Committee member for the <i>Ohio Climate Services Summit</i> , a collaboration of the State Climate Office of Ohio and National Weather Service, held at the Byrd Center, Columbus, OH on June 4 and 5, 2019

- 2018 Member of panel on climate change and Midwest perceptions for Denison University journalism workshop, Newark, Ohio 10, November 2018.
- 2018 Served on National Science Foundation Review Panel
- 2015-2017 Chaired the Climate Working Group for the (Columbus) Mayor's Green Team that produced *Climate Change in Columbus Ohio: An Assessment of Columbus' Key Climate Changes, Impacts, and Vulnerabilities of Concern* in collaboration with Great Lakes Integrated Sciences + Assessments
- 2017 Participant in Geoscience Education Research Grand Challenges and Strategies Workshop at 2017 *Earth Educators' Rendezvous*, Albuquerque, New Mexico, 16-19 July 2017.
- 2016 Served as reviewer for materials in the SERC collection at the *Earth Educators' Rendezvous*, Madison, Wisconsin
- 2015 Served on NASA Review Panel
- 2014 Served on National Science Foundation Review Panel

#### **Service to the Local Community**

- 2014-Present Volunteer with Franklin County Juvenile Court, East Side Restorative Justice Circle
- 2015-Present Member of the Creation Care Team for the Roman Catholic Diocese of Columbus
- 2014-2018 Board Member of Ohio Interfaith Power and Light
- 2015-2017 Member of the Mayor's Green Team for the City of Columbus and Chair of the Climate Change Subcommittee