

CASSIE FOSTER DOTY

Appalachian Laboratory, University of Maryland Center for Environmental Science
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EDUCATION AND TRAINING

- 2017 NSTA's Discover the NGSS Train-the-Trainer Workshop
- 2013 Guidelines for Excellence in EE state environmental educator workshop
- 2012 Project Wet, Wild and Learning Tree Department of Natural Resources educator workshop
- 2012 Maryland Association for Environmental and Outdoor Education (MAEOE) Green School Leaders Program
- 2004 Ann Lambrose' Problem-Based Learning Academy
- 1997 M.S. ((Environmental Plant) Biology) West Virginia University. The variable response of two central Appalachian forests to high inputs of atmospheric nitrogen: a study of neighboring watersheds in Fernow Experimental Forest, WV. Chair: Dr. William T. Peterjohn
- 1994 B.S. (Biology) Wheeling Jesuit College. The effects of rock size on macroinvertebrate community colonization in the Wheeling Creek watershed, Wheeling, WV. Advisor: Dr. Benjamin M. Stout, III

AREAS OF PROFESSIONAL EXPERTISE AND INTERESTS

- Environmental science education program design and implementation for K-12 and public audiences
- Professional development of non-formal and K-12 educators
- Forest biogeochemistry
- Freshwater ecology

EMPLOYMENT

- 2005 – present Faculty Research Assistant (Education Coordinator), Appalachian Laboratory, University of Maryland Center for Environmental Science, Frostburg, MD
- 2000 – 2005 Curriculum Writer II, NASA Classroom of the Future, Center for Educational Technologies, Wheeling, WV
- 1999 – 2004 Adjunct Professor (Environmental Geology), Wheeling Jesuit University, Wheeling, WV
- 1999 – 2000 Consultant (Environmental Content Developer), NASA Classroom of the Future, Center for Educational Technologies, Wheeling, WV
- 1995 – 1997 Graduate Research Assistant, Department of Biology (Dr. William T. Peterjohn), West Virginia University, Morgantown, WV
- 1994 – 1997 Graduate Teaching Assistant (Principles of Biology, Ecology & Evolution), Department of Biology, West Virginia University, Morgantown, WV
- 1993 – 1994 Undergraduate Research Assistant, Department of Biology (Dr. Benjamin M. Stout, III), Wheeling Jesuit College, Wheeling, WV

AWARDS AND FELLOWSHIPS

- 2015 Allegany College of Maryland STEM Award for leadership in STEM education in Allegany County, ACM, Cumberland, MD
- 2003 – 2005 MESSENGER Educator Fellow, Challenger Learning Center, Alexandria, VA

PROFESSIONAL ACTIVITIES

Maryland Statewide Education Collaboration

- 2018 collaborating member developing Meaningful Watershed Education Experience Online Course
- 2017 – present collaborating member of the Chesapeake Bay Program's Mid-Atlantic Environmental Literacy Forum
- 2017 – present collaborating member of the Chesapeake Bay Program's Education Workgroup
- 2016 – 2018 collaborating member of Maryland State Department of Education's Environmental Literacy in Higher Education Workgroup
- 2015 – present sustainability committee member of Partners Advancing Climate Change Education (PACCE, formerly MADE CLEAR ICCE) community of practice
- 2012 – 2013 co-leader of Maryland Consortium of the Expanding Capacity in Environmental Education Project
- 2012 – 2013 western Maryland liaison for Maryland State Department of Education Environmental Literacy Initiative

Service

- 2017 – present mentor at Maryland Association for Environmental and Outdoor Education conference
2016, 2017 student research project judge for Frostburg State University Regional Math Science Center
2016 – present advisory board member of Capstone Group, Wheeling WV
2013 – present Green Team member for Heart of the Earth Sanctuary and Rescue, Cumberland MD
2005 – present student research project judge for WV Eastern Panhandle Regional Science Fair
1999 – 2011 educational product reviewer for NASA Earth Science Enterprise
1993 – 1994 Earth Team volunteer for Northern Panhandle WV Soil Conservation Service

COMMUNITY ACTIVITIES

- 2019 – present president of Stepping Stone Animal Society
2015 – 2019 vice-president of Stepping Stone Animal Society
2015 – present founding board member and volunteer at Stepping Stone Animal Society, a non-profit low-cost spay and neuter clinic
2014 – present board member of Allegany County Animal Control Board
2012 – present vice-president, Green Team member and volunteer at Heart of the Earth Sanctuary and Rescue, a non-profit animal sanctuary and rescue
2010 – 2015 volunteer at Allegany County Animal Shelter

PUBLICATIONS

- Parker C.E., Styliniski C.D., Bonney C.R., Delisi J., Wong W. & Doty C. (2019) Measuring quality technology integration in science classrooms. *Journal of Science Education and Technology*.
- Styliniski C.D., Engelhardt K.A.M., Keller S., Hawkins K., & Doty C.F. (2013) Engaging rural volunteers in American chestnut research. North American Association for Environmental Education Conference. Baltimore, MD.
- Styliniski C.D. & C.F. Doty (2013) The Inquiring with GIS (iGIS) Project: Helping teachers create and lead local GIS-based Investigations. In: Pages 161-190. MaKinster J.G., Trautman N.M. & Barnett M. (eds.) *Teaching Science and Investigating Environmental Issues with Geospatial Technology: Designing Effective Professional Development for Teachers*, Springer Dordrecht Publishing Co.
- Styliniski C. and C. Doty (2009) Strategies to help teachers lead locally-based GIS environmental investigations ESRI GIS Education User Conference. San Diego, CA.
- Peterjohn, W.T., C.J. Foster, M.J. Christ, and M.B. Adams (1998) Patterns of nitrogen availability within a forested watershed exhibiting symptoms of nitrogen saturation. *Forest Ecology and Management*.
- Peterjohn, W.T., R.J. McGervey, A.J. Sexstone, M.J. Christ, C.J. Foster, and M.B. Adams (1998) Nitrous oxide production in two forested watersheds exhibiting symptoms of nitrogen saturation. *Canadian Journal of Forest Research*.
- Foster C.J. (1997) The Variable Response of Two Central Appalachian Forests to High Inputs of Atmospheric Nitrogen: a Study of Neighboring Watersheds in Fernow Experimental Forest, West Virginia. Thesis. West Virginia University.

CONFERENCES, WORKSHOPS AND OTHER FORMAL PRESENTATIONS

Conferences and Meetings

- 2020 (Linhart J. & Doty C.F.) The science behind how we know the warming world is human driven: interpreting and applying the data. Maryland Association for Environmental and Outdoor Education annual conference workshop.
- 2019 Developing More and Better Standards-based MWEs with Making the Link. Maryland Association for Environmental and Outdoor Education annual conference workshop.
- 2018 (Jacobs L., McCann D., Shaper S., Kenyon-Sisler R., Doty C.F., Nelson D.M., Bostic J., Elmore A.J., & Styliniski C.D.) Four Years of Student-Teacher-And-Researcher (STAR) Project Data Measuring Sources of Nitrogen Pollution on Schoolyards in Western Maryland. Maryland Water Monitoring Council annual conference poster.
- 2018 (Doty C.F., Bensinger L., Greoski L., Merrick B., & Weilmminster C.) How to provide climate change education by investigating related topics. Maryland Association for Environmental and Outdoor Education annual conference workshop.
- 2017 (Houser M., Moore H., Kenyon-Sisler R., Elmore A.J., Doty C.F., Nelson D.M., Bostic J., & Styliniski C.D.) Fingerprinting sources of nitrogen pollution on schoolyards in western Maryland. Maryland Water Monitoring Council annual conference poster.

- 2017 (Bostic J., Stylinski C., & Doty C.) A graduate student's experience and perspective on a student-teacher-researcher partnership. American Geophysical Union. New Orleans, LA.
- 2017 (Doty C.F., Bensinger L., Blizzard C., & Greoski L.) From the sky to the sea and everything in between - strategies and activities for exploring the causes, impacts and solutions of climate change. Teacher to Teacher Climate Change Conference workshop.
- 2017 Engaging students in authentic research supporting learning and scientific goals. Maryland Association for Environmental and Outdoor Education annual conference session.
- 2016 (Houser C., Ruggiero J., White G., Elmore A.J., Kenyon-Sisler R., Doty C.F., Nelson D.M., Bostic J., & Stylinski C.D.) Fingerprinting sources of nitrogen pollution on schoolyards in western Maryland. Maryland Water Monitoring Council annual conference poster.
- 2016 "Climatizing" existing activities to incorporate climate change into your curriculum. Maryland Association for Environmental and Outdoor Education annual conference workshop.
- 2015 Sharing and exploring "green" practices with Mid-Atlantic Sustainable Schools – FieldScope. Maryland Association for Environmental and Outdoor Education annual conference session.
- 2014 (Stylinski C.D., Doty C.F. & Takaki E.) Engaging students in sea-level-rise data visualization and analysis. Maryland Association for Environmental and Outdoor Education annual conference session.
- 2014 Engaging students in sea-level-rise data visualization and analysis. Pennsylvania Science Teachers Association annual conference session.
- 2014 Engaging students in Delaware sea-level-rise data visualization and analysis. Delaware Association for Environmental Education annual conference session.
- 2012, 2014 UMCES-AL FieldScope projects. FieldScope User Group meeting presentation.
- 2013 (Stylinski C.D., Doty C.F., Merrick B., Holmes J. & Takaki E.) Modeling and mapping sea level-rise in the Delaware and Chesapeake Bays. North American Association for Environmental Education Conference workshop. Baltimore, MD.
- 2013 Supporting environmental literacy at the elementary Level through PIERS. Western Maryland Elementary Environmental Literacy meeting presentation.
- 2013 (Doty C.F., Takaki E. & Stylinski C.D.) Using GIS technology to support citizen science projects and learning objectives. Maryland Association for Environmental and Outdoor Education annual conference session.
- 2013 Using the Mapping-Our-Streams-with-FieldScope unit to expand your stream investigations in the Chesapeake Bay Watershed. Maryland Water Monitoring Council meeting presentation.
- 2013 Engaging students in sea-level-rise data visualization and analysis. Maryland Department of Natural Resources Data & the Estuary Program meeting presentation.
- 2012 Maryland environmental education (EE) capacity: working with diverse audiences locally. Maryland consortium of the Expanding Capacity in Environmental Education Project meeting presentation.
- 2012 Maryland environmental education (EE) capacity: skills for working with diverse audiences. Maryland consortium of the Expanding Capacity in Environmental Education Project meeting presentation.
- 2012 Maryland environmental education (EE) capacity: building a community. Maryland consortium of the Expanding Capacity in Environmental Education Project meeting presentation.
- 2012 Using the Mapping-Our-Streams-with-FieldScope unit to expand your stream investigations in the Chesapeake Bay Watershed. Maryland State Department of Education Environmental Literacy Summit meeting presentation.
- 2012 Using the Mapping-Our-Streams-with-FieldScope unit to expand your stream investigations in the Chesapeake Bay Watershed. Potomac Watershed Partnership conference session.
- 2012 Using the Mapping-Our-Streams-with-FieldScope unit to expand your stream investigations in the Chesapeake Bay Watershed. Western Maryland Environmental Literacy meeting presentation.
- 2012 (Doty C.F. & Stylinski C.D.) Where did the brook trout go? Find out with FieldScope! Maryland Association for Environmental and Outdoor Education annual conference session.
- 2011 (Doty C.F. & Stylinski C.D.) A birds-eye-view: Using FieldScope to expand your stream/Bay investigations. Maryland Association for Environmental and Outdoor Education annual conference session.
- 2011 Using the FieldScope online mapping tool to expand your stream investigations in the Chesapeake Bay Watershed. West Virginia Environmental Education Association conference workshop.
- 2011 Using the FieldScope online mapping tool to expand your stream investigations in the Chesapeake Bay Watershed. Maryland Streams Symposium annual conference workshop.
- 2010 (Doty C.F. & Stylinski C.D.) Electrifying your local watershed explorations with GIS! West Virginia Environmental Education Association annual conference workshop.
- 2010 (Doty C.F. & Stylinski C.D.) Electrifying EE. Maryland Association for Environmental and Outdoor Education

- annual conference workshop.
- 2010 (Doty C.F. & Styliniski C.D.) Leading watershed investigations of your LOCAL stream site using geospatial technologies. National Science Teachers Association regional conference session.
- 2009 (Styliniski C. & Doty C.F.) Visualizing the Watershed: How Geospatial Technology enhances local streams investigations North American Association for Environmental Education Conference. Portland, OR.
- 2009 (Styliniski C. & Doty C.F.) Using GIS for environmental investigations in your local neighborhood National Education Computing Conference. Washington, D.C.
- 2009 GIS in West Virginia education. West Virginia Environmental Education Association annual conference discussion panel.
- 2009 (Styliniski C.D., E. Takaki & C. Doty) Mapping and Monitoring Maryland Streams Summary. Bay Watershed Education and Training Program National Conference poster session.
- 2008 Mapping and Monitoring Maryland Streams with GIS. Maryland Association for Environmental and Outdoor Education annual conference session.
- 2007 Bird's-eye view of Maryland watersheds: exploring land use and stream health with GIS and real-world data. Maryland Association for Environmental and Outdoor Education annual conference session.
- 2007 Bird's-eye view of Maryland watersheds: exploring land use and stream health with GIS and real-world data. Maryland Mathematics Engineering Science Achievement meeting presentation.
- 2005 – 2007 Inquiring with GIS (iGIS) Project: using technology to connect students to the world around them. Recruitment presentations at Maryland Association for Environmental and Outdoor Education annual conference sessions, West Virginia Science Teachers Association annual conference sessions, Pennsylvania Science Teachers Association annual conference sessions and various MD, PA and WV staff development meeting presentations.
- 2006 Exploring impacts of land use on watersheds using GIS. National Science Teachers Association (NSTA) regional conference session.
- 2006 Connecting classrooms to real-world investigations using GIS technology. NSTA national conference session.
- 2003 EE for K-4: Using problem-based learning and promoting diversity. North American Association for Environmental Education annual conference session.
- 2003 The use of remotely sensed data in the Exploring the Environment[®] online curriculum series. Appalachian Remote Sensing Conference session.
- 2002 Professional development using the environment as context for learning. North American Association for Environmental Education annual conference session.

Educator Professional Development Not Directly Related to Product Dissemination

- 2014 Using FieldScope to report and analyze Maryland Schoolshed stream data. Maryland Department of Natural Resources Explore and Restore Your Schoolshed workshop.
- 2013 Using FieldScope to support environmental literacy: A stream-based example. Multiple statewide regional Maryland Association for Environmental and Outdoor Education Green Leaders workshops.
- 2013 Echo-location: Seeing like a bat. Garrett County early childhood TEDDY BEARS STEM workshop.
- 2012 Using FieldScope to support environmental literacy: A stream-based example. Multiple statewide regional Maryland State Department of Education environmental literacy for professional development providers workshops.
- 2012 Integrating FieldScope into your environmental science course. Allegany County Earth Science teachers workshop.

Classroom and Community Outreach

- 2019 (Doty C.F. & Linhart J.) Future Urban Climate Online Mapping Tool UMCES-AL Watershed Moments focus group.
- 2019 (Linhart J. & Doty C.F.) What's your carbon footprint? Leadership Allegany presentation.
- 2018 (Doty C.F. & Browning S.) Fingerprinting sources of nitrogen pollution on schoolyards in western Maryland. Western Maryland STEM Festival
- 2017 Who Polluted the Potomac? South Penn Elementary after school science club activity.
- 2017 What's your carbon footprint? Appalachian Festival.
- 2017 What's your carbon footprint? Western Maryland STEM Festival.
- 2017 How to "do" science. Leadership Allegany presentation.
- 2016 What's your carbon footprint? UMCES-AL Open House activity.

2016	(Johnson L., Blizzard C., Doty C.F.) MADE CLEAR energy arcade. Allegany County Chamber of Commerce Chamber Expo activity.
2016	UMCE-AL Students-Teachers-And-Researchers Project. Leadership Allegany presentation.
2015	The science of mud pies. UMCES-AL Open House activity.
2014	Echo-location: Seeing like a bat. Friendsville Elementary Community Night youth activity.
2014	Exploring the water cycle. UMCES-AL Open House activity.
2013	UMCE-AL FieldScope projects. Leadership Allegany presentation.
2013	The effects of land cover type on runoff. Frostburg State University Science, Technology, Engineering, and Mathematics Festival activity.
2013	The effects of land cover type on runoff. Mineral County Science and Engineering Festival activity.
2013	Infiltration across the schoolyard. West Side Elementary School 4 th grade activity.
2011 – 2013	A career in geospatial technologies. Hampshire County 7 th grade activity.
2011, 2013	What's in the water? Bel Air Elementary School 5 th grade activity.
2011, 2013	Who polluted the Potomac? Frost Elementary School 2 nd grade activity.
2012	UMCE-AL PIERS Project. Leadership Allegany presentation.
2012	Mapping our environmental explorations. Allegany County After School Program activity.
2012	How healthy is our lake? Broad Ford Elementary School 5 th grade activity.
2012	Exploring the water cycle. UMCES-AL Open House activity.
2010 – 2012	A career in geospatial technologies. Allegany County Focus on the Future student activity.
2010 – 2012	Geocaching. Mineral County 6 th Grade Outdoor School field activity.
2011	What kind of soil is in our schoolyard? Route 40 Elementary School 5 th grade activity.
2011	Who polluted the Potomac? Bishop Walsh School 1 st grade activity.
2010	Using GIS to explore the world around you. UMCES-AL Open House activity.
2009, 2010	Mapping your world with geographic information systems – a career in GIS. Easy as Pi: Bringing Engineering, Science, and Mathematics to the Younger Generation youth activity.
2009	How healthy is our stream? Flintstone Elementary Flintstone Creek Community Clean Up Day activity.
2008	A career in geospatial technologies. Allegany County Upward Bound Program youth activity.
2008	Using GIS to explore the world around you. UMCES-AL Open House activity.
2006	Using GIS to explore the world around you. UMCES-AL Open House activity.

PRODUCTS

Technology Observation Protocol (TOP) – Science (2019) Parker C.E., Stylinski C.D., Bonney C.R., Delisi J., Wong W. & Doty C.F.

- I. innovative technology classroom observation protocol for high school science classrooms in Word and Excel formats
- II. user guides for both Word and Excel formats of the observation protocol
- III. (5) video tutorials for the Excel format of the observation protocol

Student, Teacher And Researcher (STAR) Partners Nitrate Investigation curricular unit (2017) Stylinski C.D., Doty C.F., Nelson D. & Elmore A. (High School Science course, 4 parts, 7-9 class periods)

Mid-Atlantic Sustainable Schools FieldScope Project (2015) Doty C.F., Collard L., Pradhan K., Stylinski C.D. (Maryland Green School Program online data reporting and mapping tool, K-12 school wide)

FieldScope Starter Maps and Graphs (2015) Doty C.F. & Stylinski C.D. (Middle or high school science course, non-formal users, 8 sample maps and 3 sample graphs)

PIERS Schoolyard Investigation curricular units

- I. Survival (2014) Stylinski C.D. & Doty C.F. (1st grade, 3 lessons, 3 class periods)
- II. Soil Habitat (2014) Stylinski C.D. & Doty C.F. (2nd grade, 3 lessons, 3 class periods)
- III. Schoolyard Plant-Animal Interaction (2012) Stylinski C.D. & Doty C. (4th grade, 3 lessons, 4 class periods).
- IV. Raindrop to Runoff to Ocean (2011) Stylinski C.D., Doty C.F. & Burk A. (5th grade, 5 lessons, 5 class periods)
- V. Healthy Schoolyards Healthy Streams (2009) Stylinski C.D., Doty C.F. & Burk A. (7 Lesson, 6 class periods)

MBSS FieldScope Investigations (2014) Stylinski C.D. & Doty C.F. (5 mini-investigations for middle or high school)

Sea Level Rise (2014) Stylinski C.D., Doty C.F., Friebele E., Merrick B., Holmes J., Russell E., Sill T., Takaki E., & Weilminster C.

- I. Delaware Bay (2014) (high school, 3 lessons, 4 class periods)
- II. Chesapeake Bay Sea Level Rise (high school, 3 lessons, 4 class periods)

Mapping Our Streams – FieldScope & My World versions (2014, 2011, 2009) Stylinski C.D. & Doty C.F. (5 lessons, 7 class periods)

Mapping Our Parks (2013) Stylinski C.D. & Doty C.F. (3 lessons, 1 class periods)

Citizens Restoring American Chestnuts (2012) Stylinski C.D., Doty C.F. & Hawkins K. (datasheets, instructions, online data reporting and mapping tool for citizen scientists)

K-4 Earth Science Modules (2003) Doty C.F. & Exploring the Environment Team (elementary science class, 5 parts, duration varies)

Get InSTEP with Lewis and Clark: Exploring the Possibilities (2003) Doty C.F. & Project InSTEP Team (elementary or middle school science, geography, history or art class, four parts, duration varies)

A River Runs Through It – CVEEC Online Curriculum (2001) Doty C.F. & Exploring the Environment Team (summer youth programming, duration varies)

Coral Reefs Module (2001) Doty C.F. & Exploring the Environment Team (middle or high school science course, 6 parts, duration varies)

Florida Everglades Module (2001) Doty C.F. & Exploring the Environment Team (middle school science course, 5 parts, duration varies)

Global Climate Change Module (2001) Doty C.F. & Exploring the Environment Team (middle or high school science course, 5 parts, duration varies)

Yellowstone Fires Module (2001) Doty C.F. & Exploring the Environment Team (middle school science course, 5 parts, duration varies)

Water Quality Module, Version 2 (2000) Doty C.F. & Exploring the Environment Team (middle or high school science course, 6 parts, duration varies)

EDUCATION PROGRAMING AND RESEARCH PROJECTS

2017 – Present International Farming (iFarm) Learning Exchange

- collaboratively developing teacher and student resources to support their identification and investigation of science questions about sustainable agricultural production in China and the US, and their comparison of their findings with their International partner
- providing companion teacher professional development

2017 – Present Making the Link: Aligning MWEEs with NGSS and MD E-Lit through Professional Learning Community and Targeted Resources– with the Maryland State Department of Education and Maryland State Department of Natural Resources

- recruiting and facilitating a Maryland MWEE Professional Learning Community that is focused on developing, revising with peer feedback, and implementing NGSS/E-Lit-based MWEEs
- collaboratively developing a MWEE Peer Advisory System to support development and implementation of NGSS/E-Lit-based MWEEs
- collaboratively developing Narratives for Success that describe existing successful NGSS/E-Lit-based MWEE development processes and implementation examples as well as reflections of community members as they develop and implement their own standards-based MWEEs
- collaboratively organizing a Maryland Standards-based MWEE Toolkit with existing and new resources that supports development and implementation of NGSS/E-Lit-based MWEEs

2015 – 2019 Technology Observation Protocol (TOP) – Science – with the Education Development Center, collaboratively developing and validating an innovative technology classroom observation protocol in high school science classrooms

2015 – 2018 Students-Teachers-And-Researchers (STAR) Partners

- collaboratively developing 4-part schoolyard-based (8 class periods) curricular unit with supporting documents and video
- providing companion teacher professional development workshops and in-classroom support (including indirect and direct interactions with AL scientist) for most environmental science teachers in Garrett, Allegany and Washington Counties (15 teachers and about 300 students)

2012 – Present Partners Advancing Climate Change Education (PACCE, formerly MADE-CLEAR II: Informal Climate Change Education, ICCE) Community of Practice

- participating in the community of practice with ~40 members from >25 institutions
 - collaborating with community of practice members on the development and dissemination of climate change-related activities
 - collecting and analyzing data on the community members for the sustainability committee to determine long-term goals of the community
- 2011 – 2015 Citizens Restoring American Chestnuts
- collaboratively developed protocol packet and online National Geographic mapping tool (FieldScope)
 - provided 11 introductory presentations for 228 community members
- 2011 – 2015 Chesapeake FieldScope
- collaboratively developed several FieldScope-based investigations, including maps and supporting materials: Mapping Our Streams–FieldScope (middle and high school curricular unit), MBSS Investigations, Delaware and Chesapeake Sea Level Rise FieldScope (high school curricular units), Mid-Atlantic Sustainable Schools FieldScope project, and FieldScope Starter Maps and Graphs
 - assisted in the production of video tutorials for the Mid-Atlantic Sustainable Schools FieldScope project
 - provided companion teacher professional development workshops for Mapping Our Streams – FieldScope, MBSS Investigations, Delaware and Chesapeake Sea Level Rise FieldScope, and Mid-Atlantic Sustainable Schools FieldScope project
- 2003 – 2016 Partners in Ecology and Restoration of Schoolyards
- collaboratively developed four elementary-level schoolyard issue investigation curricular units for 1st grade, 2nd grade, 4th and 5th grade students and teachers
 - provided companion professional development workshops and in-class support for all teachers at each targeted grade level in Allegany and Garrett County (about 3900 students and 130 teachers; note 5th grade Garrett County only)
 - supported teachers in developing schoolyard enhancements and securing Chesapeake Bay Trust mini-grant funding for those projects
 - supported teachers in their completion of Maryland Green School applications
- 2009 – 2013 Mapping Our Parks
- with Alice Ferguson Foundation and the National Park Service, collaboratively developed 3-lesson curricular unit with supporting documents and FieldScope map
 - provided companion teacher professional development workshops (60 teachers)
- 2004 – 2010 Mapping and Monitoring Maryland Streams
- collaboratively developed 5-lesson Maryland-focused curricular unit with supporting documents and MyWorld GIS map and data layers
 - provided companion teacher professional development workshops with online and in-person portions (73 teachers)
- 2004 – 2009 Inquiring with GIS
- with Northwestern University, collaboratively developed 5-lesson Chesapeake-Bay-Watershed-focused curricular unit with supporting documents and MyWorld GIS map and data layers
 - provided companion teacher professional development workshops with online, in-person and student institute portions (106 teachers plus 158 youth in experiences co-led by iGIS staff)
- 2003 – 2005 WV InSTEP
- collaboratively provided online and in-person K-12 teacher professional development on the development and implementation of problem-based learning investigations and the integration of technology into the classroom
 - developed Get InSTEP with Lewis and Clark: Exploring the Possibilities curricular unit and provided companion teacher professional development
- 2003 – 2005 MESSENGER Educator Fellowship
- distributed K-12 educational materials related to NASA’s mission to Mercury at various non-formal educator and teacher professional development workshops
- 1999 – 2005 Exploring the Environment
- collaboratively developed several web-based problem-based learning science investigations: K-4 Earth Science, Water Quality Module (V2), Yellowstone Fires, Global Climate Change, Florida Everglades, and Coral Reefs

- collaboratively developed several web-based problem-based learning investigations to compliment Cuyahoga Valley Environmental Education Center's summer youth program, A River Runs Through It
- provided companion teacher professional development workshops for all curricular units