

SCHEDULE-AT-A-GLANCE

#PATroutintheClassroom

First Biennial PA TIC Summit



THURSDAY | 18 July 2019 | 7:30am - 4:30pm
PaTTAN | 6340 Flank Drive, Harrisburg, PA

7:30am - 9:00am	Registration begins at 7:30am. Exhibits open at 8:00am in: Conference Room 1		
9:00am - 9:15am	Welcome! Special address by PA Fish & Boat Commission and PA Council of Trout Unlimited		Conference Room 1
9:15am - 9:50am	Gill Lice in Pennsylvania: What Are Gill Lice? Concerns and Management Strategies Coja Yamashita, PA Fish & Boat Commission Fisheries Biologist / Fish Health Unit Leader		Conference Room 1
10:00am-10:50am <i>Concurrent Session 1</i>	Option A Lancaster Room Is TIC a Meaningful Watershed Educational Experience (MWEE)?	Option B Lebanon Room Connecting the Dots: Tying TIC to STEM Education	Option C Dauphin Room Diving Deeper into Aquatic Macroinvertebrate Education
11:00am - 11:50am <i>Concurrent Session 2</i>	Option A Lancaster Room Is TIC a Meaningful Watershed Educational Experience (MWEE)?	Option B Lebanon Room Connecting the Dots: Tying TIC to STEM Education	Option C Dauphin Room Diving Deeper into Aquatic Macroinvertebrate Education
12:00pm - 1:15pm	LUNCH The State of PA TIC - Tim Schaeffer, PA Fish & Boat Commission Executive Director Keynote Speaker - Chris Wood, Trout Unlimited President and CEO		Conference Room 2
1:25pm - 2:15pm <i>Concurrent Session 3</i>	Option D Lancaster Room TIC Panel Discussion	Option E Cambria Room Using Free Web Tools to Help Your Students Understand Trout Habitat	Option F Susquehanna Room All About Trout
2:25pm - 3:15pm <i>Concurrent Session 4</i>	Option D Lancaster Room TIC Panel Discussion	Option E Cambria Room Using Free Web Tools to Help Your Students Understand Trout Habitat	Option F Susquehanna Room All About Trout
3:30pm - 4:30pm	Networking Sessions and Exhibits		Conference Room 1

* PLEASE NOTE: Sessions run for 50 minutes and repeat in same location during Concurrent Sessions 1/2 and Concurrent Sessions 3/4. Participants should attend a NEW concurrent session during each block of time.



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Concurrent Session 1

Concurrent Session 2

10:00am - 10:50am
11:00am - 11:50am

Option A | Is Trout in the Classroom a Meaningful Watershed Educational Experience (MWEE)? | Jennifer Fetter, M.S., Water Resources Educator at Penn State Extension and Carissa Longo, Environmental Education Program Coordinator at DNCR-PA State Parks | Lancaster Room

Trout in the Classroom (TIC) is a long-running and successful program that enhances student learning. How does the Meaningful Watershed Education Experience (MWEE) framework fit into your TIC program? Come learn about the basics of MWEEs and why they are important to Pennsylvania students and teachers. Through issue definition, investigations, field work, and service learning – you can take your TIC program to the next level, and open the door to potential new funding sources and collaborations.

Option B | Connecting the Dots: Tying TIC to STEM Education | Tamara Pepper, M.S., Environment and Ecology Content Advisor at the PA Department of Education (PDE) and Judd Pittman, STEM Advisor at the PDE | Lebanon Room
Discover how TIC connects students to literacy in science, technology, engineering and mathematics (STEM) while also sparking an innovative spirit that helps prepare them for postsecondary options. Dive into how TIC is another great way to meet Pennsylvania's Common Core Standards by connecting youth to tangible learning opportunities.

Option C | Diving Deeper into Aquatic Macroinvertebrate Education | Tara Muenz, M.S., Assistant Director of Education at Stroud Water Research Center | Dauphin Room

In this hands-on tour of education resources for aquatic benthic macroinvertebrates, learn new ways that teachers, citizen scientists and non-formal educators alike can connect these creeping, crawling trout snacks to water quality, aquatic food webs, and trout life cycles. Explore cutting-edge digital learning tools to grow confidence in macroinvertebrate ID, discover how the international Leaf Pack Network® can transport stream bugs from field to classroom, and interact with preserved specimen of local critters.

Concurrent Session 3

Concurrent Session 4

1:25pm - 2:15pm
2:25pm - 3:15pm

Option D | TIC Panel Discussion | David Andrews, Javius Galan, Jerry Green, Doug Hess, Bert Johnson, Christian Shane, Coja Yamashita (Please see Speaker Bios for complete list of speaker titles and organizations) | Lancaster Room

This round-table panel discussion will provide TIC participants with information regarding fish health, TIC lessons and troubleshooting, TIC sustainability and how to connect your TIC program to your community and local watersheds. Panelists include a PA Fish & Boat Commission fisheries biologist, experienced TIC teachers, and TIC program partners.

Option E | Using Free Web Tools to Help Your Students Understand Trout Habitat | James Hovan, Experienced TIC Teacher and TES-MMW Master Teacher and Kerrie Snavelly, TES-MMW Master Teacher | Cambria Room

Teaching Environmental Sustainability - Model My Watershed (TES-MMW) is a free, robust, educational program and web-based GIS tool that helps students investigate watersheds, runoff, sedimentation, nutrient pollution, and stormwater management. Using powerful, real-world data sets and mathematical models, students can also simulate the water quality impacts of different land uses and conservation practices. Participants will receive an overview of the TES-MMW curricula and be given guided time to explore the app for themselves. Please bring your laptop and get ready to “model your watershed” with TES-MMW Master Teachers from Conestoga Valley High School!

**Limited number of workshop laptops available*

Option F | All About Trout | Monty Murty, Executive Vice President of the Pennsylvania Council of Trout Unlimited | Susquehanna Room

About Trout is a fast-paced FYI to get TIC teachers and program partners “hooked” on learning more and more about America's native and wild trout. It keys off THE book TIC teachers should own, and TIC schools should have in their library: *About Trout* by Dr. Robert Behnke, PhD. Trout Unlimited featured Dr. Behnke in its quarterly magazine, *Trout*, for more than 20 years. Professor of ichthyology at Colorado State University, Behnke was our nation's pre-eminent authority on trout biology, as well as a conservationist and superb fisherman. *About Trout* is the collection of Behnke's best columns and most meaningful insights about trout, the environment, and the future of coldwater fishing.

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Keynote Speaker

Chris Wood, President and CEO, Trout Unlimited

Before coming to Trout Unlimited in September 2001, Chris Wood served as the senior policy and communications advisor to the Chief of the U.S. Forest Service where he helped protect 58 million acres of publicly owned land. Chris began his career as a temporary employee with the Forest Service in Idaho and also worked for the Fish and Wildlife program of the Bureau of Land Management. He is the author and co-author of numerous papers and articles and three books including, *Watershed Restoration: Principles and Practices* (AFS 1997), *From Conquest to Conservation: Our Public Land Legacy* (Island Press, 2003), and *My Healthy Stream: A handbook for streamside owners* (Trout Unlimited and Aldo Leopold Foundation, 2013).

The State of PA TIC

Tim Schaeffer, Executive Director, Pennsylvania Fish and Boat Commission

Tim Schaeffer returned to the Pennsylvania Fish and Boat Commission (PFBC) in November 2018. He previously worked for the PFBC as Policy and Planning Director. Immediately before assuming his current position, Tim served as Deputy Secretary for Water Programs for the Pennsylvania Department of Environmental Protection. He has also held positions with Audubon Pennsylvania, the Pennsylvania Environmental Council, the Pennsylvania Organization for Watersheds and Rivers, and multiple local, statewide, and national boards.

Concurrent Session Speakers

Option A: Is Trout in the Classroom a Meaningful Watershed Educational Experience (MWEE)?

Jennifer Fetter, M.S., Water Resources Educator, Penn State Extension

Jennifer coordinates statewide efforts to educate diverse audiences about safe drinking water, stormwater management, and agricultural water issues. Jennifer places special emphasis on elevating water education for youth, leading the biennial *Dive Deeper Summit* for water educators and developing curriculum such as *Rain to Drain – Slow the Flow* and *Watershed Decisions*. She has been working in the field of environmental education for 19 years and received her MS and BS in Biology from Villanova University.

Carissa Longo, Environmental Education Program Coordinator, Pennsylvania Department of Conservation and Natural Resources - Bureau of State Parks

Carissa has worked in the environmental education (EE) field for 22 years with the bulk of her career at DCNR- Bureau of State Parks as an Environmental Education Specialist (EES), and she is now the Environmental Education Program Coordinator for the Bureau's Education & Interpretation Section. She works with a team to implement PA State Park Outdoor Programming Services (OPS) staff training, and she coordinates the following curricula for the bureau: DCNR Watershed Education, DCNR PA Land Choices, Project WET, Healthy Water/Healthy People, Wonders of Wetlands (WoW), Project WILD (statewide), Growing UP WILD (statewide), and Project Learning Tree (PLT). She graduated from Binghamton University with a BA in Environmental Studies and is an NAI Certified Interpretive Guide (CIG).

Option B: Connecting the Dots: Tying TIC to STEM Education

Tamara Peffer, M.S., Environmental and Ecology Content Advisor, Pennsylvania Department of Education

Tamara serves as the Environmental and Ecology Content Advisor for the Pennsylvania Department of Education and Executive Director of the Advisory Council for Environmental Education. Tamara began her formal career in Environmental Education with the Bureau of State Parks. Affiliated with Nolde Forest Environmental Education Center through state service since 1999, most recently she served the agency as the first Communications Liaison for the bureau; Concurrently, Tamara taught Environmental Studies, Environmental Science, Biology, and Social Science and Technology at the Reading Area Community College as an adjunct faculty member. Tamara holds a M.S. in The Science of Instruction from Drexel University and PA teaching certifications in Environmental Education (K-12), Biology and General Science (7-12) and Instructional Technology; additionally she has completed 72+ credit hours at Lehigh University, pursuing doctorate level studies in the Learning Sciences and Technology.

Judd Pittman, Special Consultant to the Secretary of Education on STEM, Pennsylvania Department of Education

Judd was a Trout In the Classroom teacher for several years at the Math & Science Academy Harrisburg, PA. With his extensive science background and his passion to connect students to their surrounding environment, he was always looking for new and enlightening programs to do just that. Now he serves as Special Consultant to the Secretary of Education for STEM and is still equally passionate about the connections TIC provides to schools across the state. At the 2019 PA TIC Summit, he will share knowledge of how TIC can assist teachers with STEM connections.



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Concurrent Session Speakers, Cont.

Option C: Diving Deeper into Aquatic Macroinvertebrate Education

Tara Muenz, M.S., Assistant Director of Education, Stroud Water Research Center

Tara Muenz is an aquatic ecologist and currently the Stroud Center's Assistant Director of Education. With her M.S. in conservation ecology and sustainable development from the University of Georgia's Odum School of Ecology, Muenz's interests focus on cultivating the stewardship and conservation of watersheds through citizen science initiatives and community engagement. She has devoted 20 years to traveling worldwide, assisting individuals and communities in connecting, sustaining, and understanding the planet's resources. Muenz has delivered over 400 water quality monitoring workshops around the world, coordinated a volunteer base of more than 10,000 individuals, and contributed in different roles to several NSF, EPA, and state-funded grant projects that relate to conservation initiatives within communities.

Option D: Trout in the Classroom Panel Discussion

David Andrews, Instructional Coach for Student Engagement in Butler Area School District, President of Connoquenessing Watershed Alliance, Project Director for Thorn Creek Habitat Improvement Project

David Andrews has been actively involved with the Fisheries Science program in the Butler Area School District for 10 years, seeing the expansion of the program to three schools and the raising of multiple species of fish. Mr. Andrews was one of two TIC teachers nationwide invited to present at the inaugural International Trout Congress in Bozeman, MT in 2016. In addition, Mr. Andrews is President of the Connoquenessing Watershed Alliance, program partner for the Butler Area School District TIC programs and one of Pennsylvania's most active organizations in stream habitat restoration.

Javis Galan, Autistic Support Teacher, Wilson School District

Javius believes teaching seamlessly takes place inside and outside the four walls of a school. While continuing his education in advancing his knowledge of outdoor education, he completed classes to become a Berks Ambassador through Berks Nature, Penn State Extension Master Watershed Specialist and has plans this Fall to complete the Master Naturalist course. As a teacher, he is an ambassador of conservation and advocate for all people to actively take part in exploratory educational experiences. Javius believes in the principle that puts other first and knows that all can learn if provided the opportunity.

Jerry Green, TIC Coordinator and Chapter President, John Kennedy Chapter of Trout Unlimited

Jerry has been an active member of TU for 20 years. He has served as Chapter Secretary, Treasurer, Vice President and President, as well as on the Board of Directors. He is the Chapter TIC Coordinator and has served in that capacity for 11 years.

Doug Hess, Benner Spring State Fish Hatchery Manager, Pennsylvania Fish and Boat Commission

Doug attended California University of PA. He has been with the PFBC since 2008 and the manager at Benner Spring since 2013. While at Benner Spring, Doug has been involved with the TIC program as the supplier of the programs eggs.

Bert Johnson, Experienced Trout in the Classroom Teacher

A veteran TIC teacher, Bert, has been a TIC teacher for several years. In a variety of ways, Bert's approach to integrate TIC into his classroom is genius. His work with hydroponics, unique adaptations of TIC equipment and lessons are sure to inspire current and new teachers alike.

Christian Shane, Experienced Trout in the Classroom Teacher

A veteran TIC teacher, Christian, has been a TIC teacher for over 10 years now. He has implemented TIC with first graders and now middle school students. He has an extensive background in implementation of the program, troubleshooting, and curriculum integration. In addition, as a Penn's Woods West Trout Unlimited Chapter member, Christian also serves as a program partner for several other TIC programs. He has won awards for the Penn's Woods West TU newsletter and also writes for the PA Fish and Boat Commission's Angler and Boater Magazine.

Coja Yamashita, Fisheries Biologist and Fish Health Unit Leader, Pennsylvania Fish and Boat Commission

Coja Yamashita earned a bachelor's degree in biology from Lock Haven university and has been working with the PFBC since 2002. He has been the Fish Health Unit leader with the PFBC's division of Fish Production services since 2009 and is involved in all aspects of fish health both within the PFBC's hatchery system and the waters of the Commonwealth. The role of the Fish Health Unit in the TIC program is to provide technical guidance assisting with fish health issues as they occur and providing guidance in the form of presentations as needed.



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Concurrent Session Speakers, Cont.

Option E: Using Free Web Tools to Help Your Students Understand Trout Habitat

James Hovan, Experienced Trout in the Classroom and High School Science Teacher, Conestoga Valley High School

Mr. James Hovan has been sharing his love of biology and ecology with students of all ages for over 25 years. He currently serves as a high school biology, ecology, AP Environmental Science, honors scientific research, and STEM Workshop teacher at Conestoga Valley High School. He has been raising trout in the classroom since 2004, first as a participant in Donegal Trout Unlimited Trout in the Classroom, and later as a participant in PAFBC's TIC. Since 2015, he has been a participant and master teacher in the Teaching Environmental Sustainability: Model My Watershed (TES-MMW) curricula, and he has presented this watershed education program and watershed modeling tool at numerous local, state, and national programs.

Kerrie Snavelly, High School Science Teacher, Conestoga Valley High School

Mrs. Kerrie Snavelly has been teaching field-based science courses like Freshwater Biology at Conestoga Valley High School for nearly 30 years. Her students perform longitudinal stream studies and investigate resource management through field learning opportunities that take them beyond the classroom walls every week. Since 2015, she has been a participant and master teacher in the Teaching Environmental Sustainability: Model My Watershed (TES-MMW) curricula, and she has presented this watershed education program and watershed modeling tool at numerous local, state, and national programs.

Option F: All About Trout

Monty Murty, Executive Vice President, Pennsylvania Council of Trout Unlimited

Monty's favorite childhood memories are of fishing for trout in the stream that ran beside his grandfather's cottage in Pennsylvania's Laurel Highlands. Monty is a distinguished graduate of Indiana University of Pennsylvania where he received his undergraduate degree in Biology and teaching certificate. Trout fishing and teaching went on hold while he served in the Vietnam War as an Infantry officer. After graduate school he enjoyed a career as a business executive. Now he's retired to a cottage beside a trout stream in Pennsylvania's Laurel Highlands. When not fly fishing, he teaches 7th graders to raise brook trout from eggs and then release them into the wild in Trout Unlimited's Trout in the Classroom program.

VENDORS & EXHIBITS

Thank you to the following organizations for exhibiting their resources in Trout in the Classroom, coldwater fisheries, and related water education at the 2019 PA TIC Summit!

Allegheny Land Trust | Butler Area School District | Carbon Career and Technical Institute | Chesapeake Bay Foundation (CBF) | Connoquenessing Watershed Alliance | Frazier Elementary School | Jersey Shore Area Senior High School | Ingomar Middle School | The Leaf Pack Network | NOAA Chesapeake Bay Office | NOAA-Funded Pennsylvania Watershed Education Task Force | Pennsylvania Association of Environmental Educators (PAEE) | Pennsylvania Council of Trout Unlimited (PA TU) | Pennsylvania Department of Conservation and Natural Resources (DCNR) - Bureau of State Parks | Pennsylvania Department of Education (PDE) | Pennsylvania Department of Environmental Protection (PA DEP) | Pennsylvania Fish and Boat Commission (PFBC) | Pennsylvania State Extension | Project WET | Stroud Water Research Center

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