

## Maple Research & Outreach Professional Profiles

### “Dr. Tim” Perkins

**T**im Perkins was born and raised in the Northeast Kingdom of Vermont. As a youth, he, along with his seven siblings (5 brothers, 2 sisters) and father, helped on their grandfather’s (and later Uncle’s) farm in Westmore, Vermont. His chores included gathering sap from buckets, carrying firewood, and, of course, tasting syrup.

His interests from Elementary through High School revolved around all things science-related. Chemistry sets, microscopes, and anything that would lead to further observation and experimentation were favorite “toys.” He copiously devoured any reading material he could get his hands on.

Due to his interests, in his Senior Year of High School, Tim was selected as only a handful of students to participate in the “Student Science Training Program” sponsored by the National Science Foundation and run by Dr. Charles and Marilyn Racine as part of the Center for Northern Studies in Wolcott, Vermont. This involved visiting different field sites around Vermont on Saturdays to learn about and conduct research on a wide variety of natural systems and processes. He graduated from High School as a National Merit Scholar Semi-finalist (top 4% of scorers on national PSAT) and Class Salutatio-

-rian in 1979 and enrolled at the University of Vermont (UVM).

By the end of his first year of College, Tim chose a Self-Designed Major in Environmental Studies, specializing in Field Ecology. Due to his wide interests, he double-majored in Geology, and graduated in 1984 with two Bachelor of Arts Degrees (Environmental Studies and Geology).

In the summer of 1983, Tim took a summer position as a research assistant for the “Acid Rain” lab run by Dr. Hubert Vogelmann and Dr. Richard Klein. This job entailed researching the high-elevation red spruce forest on Camels Hump, Vermont, to describe and understand the impacts of acid deposition induced forest decline. He was hired as a technician in the “Acid Rain” lab upon graduation. As part of this job, he was able to take graduate credits and received a Master of Science Degree in Botany in 1988. The original plan to leave UVM to pursue a Ph.D. elsewhere, but life events (family illness) persuaded him to stay and pursue a doctorate (Ph.D.) in Forest Physiological Ecology (the study of tree function in the environment), which he received in January 1991. While arranging a post-Doctoral position in another state, his Ph.D. advisor and head of the lab

fell ill and convinced Dr. Perkins to remain for “another year or two” until the situation stabilized. During that time, Dr. Perkins started writing and receiving grants to fund his independent research on the mechanisms of winter injury to red spruce foliage (caused by acid deposition). In the spring of 1996, as his time at UVM was again nearing its end, Dr. Mel Tyree, the Director of the UVM Proctor Maple Research Center (PMRC) at the time accepted a position as Director of the U.S. Forest Service Station in Burlington, Vermont. Tim was asked to serve as Interim Director of UVM PMRC until a search could be completed. The search never quite materialized, and in 1999, Dr. Perkins was appointed the permanent Director of UVM PMRC.

Tim’s early research in the maple world focused on the sources lead in maple syrup and also on the effects of fertilization/liming on tree nutrition and maple syrup production. Over time, his interests moved more into sap flow dynamics in trees and tubing systems and delineating the influences of various collection practices on sap production. Nearly a dozen years were spent examining the impacts of taphole, spout and dropline sanitation on sap yield and production economics. This work led to the development of the Leader/H<sub>2</sub>O Check-valve spout and adapter. Most recently, his work includes the development and testing of the Middle Valley Maple Arc-Barb Spout and fittings among other innovations.

During his time as Director, UVM

PMRC grew from about 1,200 taps to about 6,500 taps, focusing on high yield sap production. As a consequence of this, the previous average syrup production of 0.3 gal/tap doubled to its current 20-year average of 0.59 gal/tap. UVM PMRC also began providing syrup to the dining halls at UVM over that time. Pure maple syrup is now the default option on campus (you have to ask if you want the “other stuff”). In addition, along with Dr. Abby van den Berg and Mark Isselhardt, the construction of the Maple Processing Research Facility at UVM PMRC was completed and several years of testing on the effects of air injection and reverse osmosis concentration was conducted in up to four evaporators processing sap simultaneously.

Dr. Perkins was promoted to full Research Professor of Plant Biology in 2010. Over the course of his career, he has had 45 peer-reviewed publications, written 150+ maple industry publications, done hundreds of print and broadcast interviews, and given several hundred invited presentations. He holds (with co-inventors) six patents. Tim was a contributing editor to the Second (2006) and lead editor and contributor to the Third (2022) Editions of the North American Maple Syrup Producers Manual. He has served on a number of position search, grant review, and project review panels for UVM, State, National, and International organizations and chaired or served on several maple industry committees and task forces. . He has served as a science advisor to the Vermont Maple

Sugar Makers Association, Vermont Maple Industry Council (now Committee), the North American Maple Syrup Council, and the International Maple Syrup Institute. He is a Life Member of the North American Maple Syrup Council.

Tim has received over 68 competitive grants during his career, and was instrumental in working with the Vermont Congressional Delegation to conceptualize and develop what became the U.S.D.A. ACER ACCESS Grant Program, providing funds for research and education of maple producers in the U.S.

During his early years on the faculty at UVM Tim taught several courses, but most of his interaction with students was through research. He employed or served as science advisor for several dozen students and graduate students, very often with their projects being translated into published works. Dr. Perkins was awarded the Maple Person of the Year in 2003 by the Vermont Maple Industry Council, the Award of Exceptional Merit in 2007 by the Association of Natural Resources Extension Professionals, the Golden Maple Leaf Award in 2008 by the International Maple Syrup Institute, the Sumner H. Williams Award (President's Cup) by the Vermont Maple Industry in 2011, the Richard G. Haas Distinguished Service Award by the North American Maple Syrup Council in 2013, the President's Award by the International Maple Syrup Institute in 2018 and the Richard G. Haas Distinguished Service Award by the North American Maple Syrup Council in 2022. He was inducted into the Maple Hall of Fame at the International

Maple Museum Centre in Croghan, NY, in 2021, the UVM Ventures Inventor Hall of Fame in 2011 and given the UVM Innovations IMPACT Award in 2023.

In the middle of this, Tim and his wife, Anita (married nearly 42 years) served as coaches, school coordinators, board members, trainers, tournament coordinators, and directors of the Vermont Odyssey of the Mind Program and International Odyssey of the Mind Program as volunteers for over 17 yrs. For over a dozen of those years they planned and coordinated trainings and activities which served hundreds of coaches and students and involved training and coordinating over 100 volunteer judges and officials. The annual Vermont State Tournament was attended by over a thousand spectators and participants. Considering that Tim does maple research and Anita is an accountant, and that the busy time for Odyssey of the Mind falls mainly from January through May, with a huge State Tournament in mid-March and International Odyssey of the Mind World Finals in May, saying they were busy each spring during that time is a huge understatement.

Dr. Perkins stepped down as UVM PMRC Director and retired in June 2023, but returned to UVM in a part-time, remote position to help finish up some ongoing projects during the search for a replacement. He currently resides in South Lyon, Michigan, close to his daughter, son-in-law, and two young grandchildren.



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