Fern Valley Field Station Annual Report 2025

The College of Wooster

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THE COLLEGE OF WOOSTER

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LETTER FROM THE DIRECTOR

16 January 2026

Greetings all,

This past year I have had the privilege of visiting Fern Valley on numerous occasions, and it never ceases to amaze me what a beautiful place it is. Whether it's a scarlet tanager flashing through the undergrowth in May, the peace of soft falling leaves in October or finding mouse footprints in newly fallen snow in December, this is just a wonderful resource for our community at the College of Wooster.

Inside this report you will find updates, information and reminders about the Fern Valley property. Whether you use Fern Valley for class visits, for student or faculty research, or just for hiking and nature exploration (or all of these), I hope you will find something useful in the following pages. Feel free to contact me if you have any questions or concerns about Fern Valley!

Best wishes,

Rick Lehtinen

Biology Department, Fern Valley Director

FERN VALLEY NEWS

- This fall, we once again hosted representatives from the Killbuck Watershed Land Trust (KWLT) at Fern Valley for their annual inspection. KWLT holds the conservation easement on the property. This is a legal agreement that prevents any development of the property and ensures it will remain in its natural state in perpetuity.

- The American Chestnut (*Castanea dentata*) seedlings in the south meadow near the cabin that were planted by Carlo Mareno's class in spring 2024 are still doing well. Most are three or four feet high. Over 200 other native trees planted in the north meadow continue to grow and many are over six feet tall. In just a few more years, the north meadow will be more of a young forest than a meadow!
- Due to changes in the College's liability insurance policies, hunting is no longer allowed on the Fern Valley property.

- Every year, Fern Valley Field Station hosts class visits. Class visits this year included Jennifer Ison's "Field Botany" course.

Students from "Field Botany" at Fern Valley. Photo by G. Wiles

- This year we awarded the first research grant from the Fern Valley Endowment! Thanks to the ongoing and wonderful generosity of David and Betty Wilkin, we provided funding to Assistant Professor of Biology Ferdinand Nanfack-Minkeu for his project on *Culex* mosquitos (see below). Contact me if you have ideas for student or faculty research at Fern Valley – we may be able to help to fund your work.
- In addition to the recent property boundary signs, keep an eye out for new trail signs that are planned for the trail down to the Wilkin Run from the cabin!

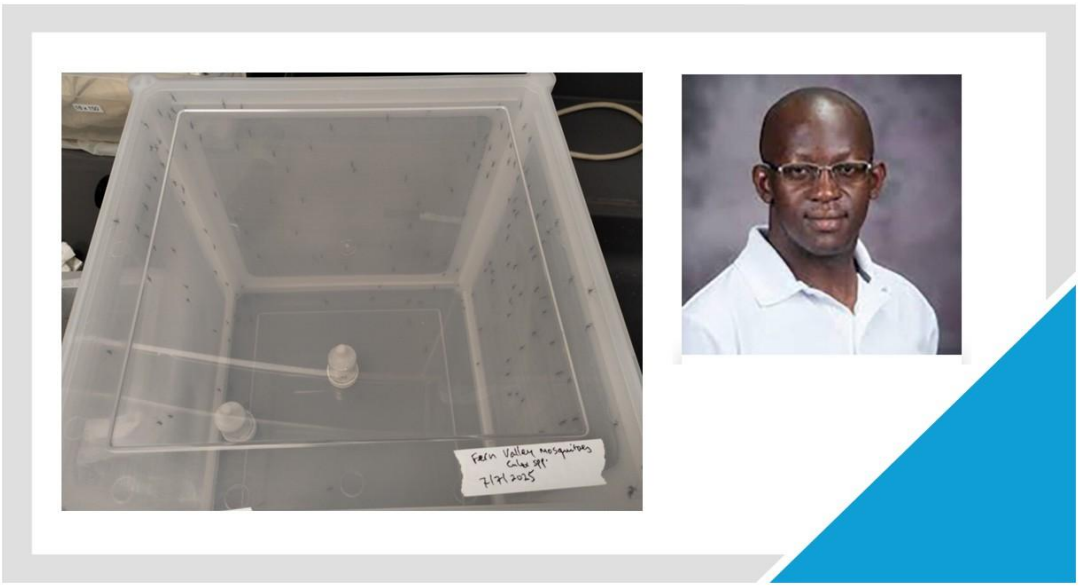




Fern Valley photo collage (from top left to bottom right: unknown fungus, view southwest from cabin area, red oak seedling in reforestation project, wild turkey nest, eastern garter snake; photos by R. Lehtinen)

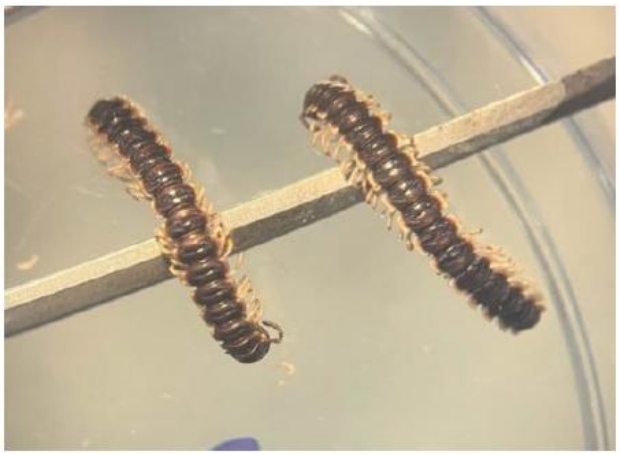
RESEARCH SPOTLIGHT

While perhaps not your favorite organisms, mosquitoes are important ecologically as well as from the perspective of human and wildlife health. Dr. Ferdinand Nanfack-Minkeu has recently begun a project on Fern Valley's mosquitoes that aims to characterize the identity of both the mosquitoes present at Fern Valley and especially the viruses that they transmit. This project ("Ecotype abundance and microbiome diversity of *Culex* mosquitoes") was initiated this year with the help of funding from the Fern Valley Endowment.



Dr. Nanfack-Minkeu and the mosquitoes he collected at Fern Valley (now being reared in the laboratory in Williams Hall).

James Murphy ('25) recently completed his Independent Study thesis at Fern Valley comparing millipede occurrence and diversity between mature and regenerating forests. This was the first thesis at Fern Valley to focus on millipedes and only the fourth on invertebrates. Millipedes are forest floor dwellers that are easy to overlook but play a crucial role in decomposition and forest food webs.



Millipedes found at FV of the species *Oxidus gracilus*. Photo by James Murphy.

James' research was recently featured in the Wooster magazine (summer 2025).

FULFILLING PROMISES

Fern Valley gift and endowment ensure research and experiential learning for generations of Wooster students and faculty

"The funds allow us to undertake key management efforts to keep Fern Valley accessible and in good condition for many years to come."

—RICK LEHTINEN ↗
THERON L. PETERSON AND DOROTHY R. PETERSON PROFESSOR OF BIOLOGY

LIST OF COW I.S. THESES CARRIED OUT AT FERN VALLEY

To date, 23 Independent Study theses at the College of Wooster have been conducted in whole or part at Fern Valley Field Station (see list below):

- Emma Smith (2026, in progress). Title: Comparing bird communities in mature and regenerating deciduous forests. (Biology)
- James Murphy (2025). Title: Tiny creatures of great importance: A survey of millpede abundance and occurrence in second-growth forests in Ohio. (Biology)
- Nat Seeley, Jr. (2023). Title: Invasive Autumn Olive's Impacts On Native Red Oak Tree Growth Rate and Germination. (Biology)
- Sarah Longville (2022). Title: Interspecific Competition Between Eastern Redback And Northern Ravine Salamanders And Long-Term Effect Of Climate Change On Salamander Body Size. (Biology)
- Caden Croft (2021). Title: How Do We Fight Climate Change? A Study on the Impact of Carbon Sequestration Using a Small-Scale Reforestation Technique. (Biology)
- Oria Daugherty (2021). Title: If a Tree Falls in a Forest: The Impacts of Coarse Woody Debris on Biodiversity and Species Abundance in Areas of Ongoing Reforestation. (Biology)
- Morgan Pedroso Curry (2021). Title: The Mass Movements of Fern Valley. (Earth Science)
- Sally Lorbach (2020). Title: Exploratory Analysis of Salamander Abundance and Body Condition in Early Successional, Mature, and Old Growth Forests. (Biology)
- Austin Russell (2019). Title: A Comparison of Salamander Community Composition in Early Successional and Mature Forests. (Biology)
- Weston Gray (2019). Title: A Comprehensive Analysis of the Eastern Grey Squirrel (*Sciurus carolinensis*) Population in Ohio over Time with a Focus on the Melanistic Color Morph. (Biology)
- Alexa Rojas (2018). Title: An Examination of Salamander Abundance and Behavior in Response to Invasive Plants. (Biology)
- Haley Hartman (2018). Title: Investigating the Impact of Invasive Plant Species on Native Plethodontid Salamander Populations. (Biology)
- James Austin (2018). Title: The Impact of Invasive Plant Competition, and Deer Grazing, on Native Plant Species in a Secondary-Growth Forest. (Biology)
- Blake Marlowe (2017). Title: An Experimental Analysis of Invasive Plant Effects on Salamander Abundance. (Biology)
- Mallorey Stack (2017). Title: Effects of the Invasive Plant Species, *Rosa multiflora* and *Alliaria petiolata*, and Deer Browsing on Native Plant Species in a Ohioan Second Growth Forest. (Biology)
- Dabney Gottman (2015). Title: Effects on Beetle and Ant Populations at a Temperate Deciduous Forest and Agricultural Edge. (Biology)
- Elizabeth Ross (2015). Title: Neophobic Behavior but not Aggression Differs Between Urban and Rural Chickadee Flocks (*Poecile atricapilus* and *Poecile carolinenesis*). (Biology)

- Jason Ziegler (2014). Title: Assessing the Effects of Forest Fragmentation on Moths Using Island Biogeography Theory and Tree Species Richness. (Biology)
- Philip Bauerle (2010). Title: The Effects of Competition on Radishes, *Raphanus sativus*, Grown at High and Low Densities as Well as Grown with a Different Cultivar Neighbor. (Biology)
- Hilary Edgington (2010) Title: Characterization of Hybridization in Two Species of Plethodontid Salamanders, with a Discussion of the Impact of Hybridization on Species Concepts. (Biology)
- Emmy Cassagnol (2009) Title: DNA Sequence Variation Indicates Hybridization between *Plethodon electromorphus* and *Plethodon cinereus*. (Biology)
- Kimberly Skully (2009). Title: Decomposition and Macroinvertebrate Colonization of Single and Mixed Species Leaf Litter in Two First-Order Temperate Streams. (Biology)
- Justin Baker (2006) Title: Phylogeography of Two Closely Related Darter Species, *Etheostoma nigrum* and *Etheostoma blennioides*, in Ohio. (Biology)

PEER REVIEWED PUBLICATIONS FROM RESEARCH AT FERN VALLEY (* INDICATES COW UNDERGRADUATE CO-AUTHOR)

- Kuchta, S.R., M.M. Hantak, B.P. Waldron, C.D. Anthony, C.M. Hickerson, and R.M. Lehtinen. 2022. Hybridization between the woodland salamanders *Plethodon cinereus* and *P. electromorphus* is Not Widespread. Ichthyology and Herpetology 110: 430–438.
- Lehtinen, R.M., H. Hartman*, B. Marlowe* and A. Rojas*. 2022. Evidence for negative impacts on terrestrial salamanders following invasive plant removal. Journal of Herpetology 56: 92–98.
- Lehtinen, R.M., B.M. Carlson, A.R. Hamm*, A.G. Riley*, M.M. Mullen*, and W.J. Gray*. 2020. Dispatches from the neighborhood watch: Using citizen science and field survey data to document color morph frequency in space and time. Ecology and Evolution. DOI: 10.1002/ece3.6006
- Lehtinen, R.M., A.F. Steratore*, M.M. Eyre*, E.S. Cassagnol*, M.L. Stern* and H.K. Edgington*. 2016. Identification of widespread hybridization between two terrestrial salamanders using morphology, image analysis and molecular markers. Copeia 104:132-139.
- Goss, Charles W., P. Charles Goebel, S. Mažeika P. Sullivan. 2014. Shifts in attributes along agriculture-forest transitions of two streams in central Ohio, USA. Agriculture, Ecosystems and Environment 197: 106–117.

REMINDERS

- New research projects at Fern Valley need approval before beginning work. This is so we can make sure that new projects don't interfere with established ones. Please contact me to discuss projects you (or your students) are thinking about.
- Please let me know when you are taking a class out to Fern Valley so we can track visitation numbers.
- While some years are worse than others, there are ticks out at Fern Valley during much of the year. And where there are ticks, there are often also tick-borne illnesses such as Lyme disease. To protect yourself and your students, dress appropriately, check yourself carefully afterwards and remove any ticks that you find as soon as possible.
- You can view the Fern Valley website here: https://wooster.edu/area/biology/

Acknowledgements

Many thanks as always to David and Betty Wilkin as well as to the Killbuck Watershed Land Trust, Beau Mastrine, Phil Olsen, Tracy Holtz, Beth Lingenfelter, Jennifer Ison, Carlo Moreno, Greg Wiles, Laura Sirot, Marcy Campbell and Nick Wiesenberg for their help and support.