

## Deborah A. Neher

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## Education

PhD, University of California, Davis, Plant Pathology (1990)  
MS, University of Illinois, Urbana-Champaign, Plant Biology (1986)  
BS, McPherson College, Environmental Science (1984), summa cum laude

## Appointments

Professor, University of Vermont (2008-present)  
Department Chair of Plant and Soil Science, University of Vermont (2004-2018)  
Associate Professor, University of Vermont (2004-2008)  
Associate Professor, University of Toledo (2002-2004)  
Assistant Professor, University of Toledo (1996-2002)  
Graduate Faculty Affiliate, Bowling Green State University (1997-2004)  
Visiting Assistant Professor, North Carolina State University (1993-1996)  
Postdoctoral Research Associate, North Carolina State University (1990-1993)  
Naturalist-Ecologist Fellow, University of Michigan Biological Station (1985)

## Advisory Boards

The Land Institute, Salina, Kansas, Board of Directors, Member and Science Committee Chair (2019-present)  
CalRecycle Community Composting for Green Spaces Grant Program, Training Program Advisory Board (2020-2021)  
Soil Health Institute, Measurements, Standards & Assessment Team, Morrisville, NC (2017-2019)  
Highfields Center for Composting, Advisory Board for Research and Education, Chair (2011-2013)  
H. John Heinz III Center for Science, Economics and the Environment, Washington, D.C. *State of the Nation's Ecosystems* project, Farmlands Work Group (2000 – 2008)  
U.S. EPA Scientific Advisory Board Expert Panel for the review of EPA's 2007 Report on the Environment, 2007

U.S. EPA FIFRA Scientific Advisory Panel, Corn Rootworm Plant-incorporated Protectant Non-target Insect and Insect Resistance Management Issues, 2002

ESA Ecosystem Services Communication Project, Advisory Board (2000-2001)

ESA Representative, Henry A. Wallace Institute for Alternative Agriculture Board of Directors (1996-1998); and advisor for the policy report, Soil Quality from the Ground Up: How environmental health starts with soil health (1998)

## Select awards

Semi-Finalist, FoodShot Global GroundBreaker Prize, Innovating Soil 3.0. (2019, 2020)

Soil Ecology Society, Service Award (2017)

Deborah A. Neher Career Award, Ecological Society of America (2015)

HW Vogelmann Award for Excellence in Research & Scholarship, College of Agriculture and Life Sciences, University of Vermont (2009)

Jastro-Shields Graduate Research Scholarship, UC Davis (1988, 1989)

Naturalist-Ecologist Fellowship, University of Michigan Biological Station (1985)

State of Kansas Scholar (1980-1984)

## Program building and administrative experience

### Academic

**Department Chair of Plant and Soil Science**, University of Vermont (2004-2018)

Interdisciplinary program housed 15-18 faculty in tenure-track, extension, and lecturer positions.

- *Fiscal responsibility* for Agriculture and Environmental Testing Laboratory, Master Gardener, and Horticulture Research and Education Center
- *National searches* that yielded hire of six tenure-track faculty, i.e., international agroecology, landscape design, specialty crop entomologist, ecological soil management, and crop genetics
- Culture change, curriculum realignment, and strategic recruitment that tripled numbers of undergraduate and graduate majors
- Special assignments
  - Six years of intensive planning and orchestrating departmental move to James M. Jeffords Plant Science building in 2010
  - Restructuring the Agriculture and Environmental Testing Laboratory for fiduciary solvency and better customer service
  - Co-founder of the BS, MS, and PhD programs in Food Systems
  - Advisor for environmental science major and summer farm apprenticeships

**Assistant and Associate Professor of Biology and Environmental Science**, University of Toledo (1996-2004)

- Hired into the biology department which split during my pre-tenure years leaving the remaining molecular biology contingent to inherit the departmental name. We ecologists joined geology to create a new department of Environmental Science.
- Co-lead curriculum development within the department and on College and Arts and Science Council navigating interdepartmental tensions regarding instruction and the central role of ecology in biology accreditation.
- Executive Committee member for the Plant and Environmental Science Research Center, serving on six faculty hires (chairing two), and coordinating pest management in the new greenhouse.

### **Professional Societies**

Ecological Society of America: Founder of two sections, one in Soil Ecology (1993) and another in Agroecology (2000) serving as inaugural section chair for both. Served as governing board representative to the American Institute for Biological Sciences workshop, "Research in Support of Sustainable Agriculture"; National Research Council-Board of Agriculture workshop, "Agriculture's Role in K-12 Education: A Forum on the National Science Education Standards"; and Council on Agricultural Science and Technology (1994-1996)

Organization of Nematologists for Tropical Americas: Vice President and Scientific Program Chair, Vice President, and President (2016-2019)

Society of Nematologists: Executive Board member, Ecology Committee officer (2002-2005)

Soil Ecology Society: Secretary (1996-1997)

American Phytopathological Society: Epidemiology Committee Chair (1995-1996)

Sigma Xi, University of Toledo Chapter: President-Elect (2003-2004)

### **Editorial Boards**

Ecological Applications, Subject Editor for soil ecology, biological indicators, (2017-present)

Agroecology and Sustainable Food Systems, Associate Editor (2009-present)

Journal of Nematology, Ecology Editor (2001-2004), Associate Editor (1999-2000)

Plant Disease, Associate Editor (1994-1996)

Ad hoc reviewer for 30+ journals (<https://publons.com/researcher/19617/deborah-neher/>)

### **Research funding** (Total External Funding 1992-present: \$10.4 million)

#### **Current**

Hatching a holistic and equitable roadmap for agroecology to address modern food system challenges. USDA-NIFA Sustainable Agroecosystems Conference, \$50,000, PI (11/1/22-10/31/23)

Food Systems Sustainability Starts with Soil, Food Systems Research Center planning grant, \$49,817, co-PI (11/1/22-8/31/23)

Clivus Multrum Compost Toilet Liquid Fertilizer Study, Resource Institute for Low Entropy Systems, \$102,698, PI (10/1/22-8/31/23)

Bedding strategies that promote udder health and milk quality by fostering a beneficial microbiome on organic dairy farms. Organic Research Education Initiative, \$994,898, co-PI (9/1/18-08/23/23)

Organic amendments to suppress disease in organic vegetable and dairy systems, Vermont Agricultural Experiment Station Competitive Hatch H02601MS, \$89,998, PI (10/1/19-9/30/24)

### **Pending**

Companion cropping *Stropharia* mushrooms with hemp for nutrient recovery and economic return, USDA NIFA Small and Medium-Sized Farms SEED, \$298,228, PI (3/1/23-2/28/25)

### **Previous**

Soil builders – education for action: Using compost to prevent erosion and improve water quality in the Lake Champlain Basin, \$40,000, curriculum development contractor (7/1/20-5/31/22)

Specialty composts to control fungal soilborne pathogens in vegetable crops. USDA Specialty Crops Block Grant, \$33,193, PI (1/1/21-3/31/22)

Worm-composted dairy manure to control fungal pathogens in vegetable crops. Farmers Advocating for Organic, \$21,966, PI (4/15/20-12/31/21)

Anaerobic soil disinfestation to control soilborne pathogen *Rhizoctonia solani* in Vermont field conditions. NE-SARE Partnership, \$30,000, PI (9/1/18-12/31/21)

A microbial inoculant for the degradation and recycling of hemp waste into a nutrient-rich fertilizer. NSF 19-554 SBIR Program Phase 1 2014792, \$224,935, co-PI (7/1/20-8/31/21)

Food Systems Metrics and Data Integration Awards, UVM-ARS Center for Food Systems Research, Resilient soils for resilient farms: soil health for small- and medium-sized farms, \$75,000, Lead PI (7/1/20-6/30/21)

Casella Sustainable Materials Management Research Fund for the Recycling, Organics and Resources research group, \$70,000, co-PI (2019-2021)

Recovery of phosphorus from digested dairy manure, Vermont Phosphorus Innovation Challenge \$40,500, co-PI (2018-2019)

Designing compost for disease suppression on specialty crops, Vermont Agricultural Experiment Station Competitive Hatch, \$103,000, PI (2014-2019)

Persistence of enteric pathogens in manure-amended soils in northeast U.S. produce-growing environments, USDA-ARS Specific Cooperative Agreement, \$500,000, Lead PI (2014-2018)

Integrated bedded pack management and fly control reduce mastitis risk by promoting a beneficial teat skin microbiome, Vermont Agricultural Experiment Station Competitive Hatch, \$149,971, co-PI (2015-2018)

Research landscape tool: multi-decadal annotated soil biology bibliography, Soil Health Institute, Cooperative Agreement, \$55,440, PI (2017-2018)

Incentive Funds for Innovation on the Nexus of Food, Energy and Water, University of Vermont, \$5,000, Lead PI (2016-2017)

Regional assessment of the quality control, food safety, environmental, user perception and marketing outlets of diverting food scraps from landfills, Northeastern Experiment Station Directors Planning Grant, \$10,000, Lead-PI (2015-2016)

Plant toxicity tests, Green Mountain Power Corporation, \$4,240, PI (2013-2014)

Compost biology for improving soil quality for Vermont agriculture, Vermont Agricultural Experiment Station Competitive Hatch, \$43,023, PI (2012-2014)

Ecology of nematode-suppressive soils in Midwest soybean-cropping systems, USDA - CSREES Arthropod and Nematode Biology and Management (A) Organismal and Population Biology, co- \$449,000, co-PI (2009-2013)

Winter pasture and bedded pack management for Vermont dairy farms, USDA-NRCS Conservation Innovation, \$248,027, Lead PI (2008-2012)

Compost biology for improving soil quality for Vermont agriculture, Vermont Agricultural Experiment Station Competitive Hatch, \$24,000, PI (2009-2012)

Spatial extent of transported road materials on the ecological function of forested landscapes, University Transportation Center, DOT, \$233,585, co-PI (2008-2012)

Compost for management of plant pathogens and weed seeds, NE-SARE Partnership, \$15,000, PI (2010-2012)

Impact of compost materials on microbial community function for the management of plant pathogens and weed seeds, UG Research Mini-Grant for Patrick Dunseith, \$500, PI (2010-2011)

Training for agricultural service providers in the diagnosis, visual assessment, and management of plant-parasitic nematodes, NE-SARE Professional Development, \$116,115, co-PI (2007-2010)

Attributes of soil communities associated with suppression of plant-parasitic nematodes in New England and North Central Regions of the USA, Vermont Agricultural Experiment Station Competitive Hatch, \$34,359, PI (2006-2009)

Climate change in arid lands: Effects on soil biota and ecosystem processes, Department of Energy-Program for Ecosystems Research, \$1,371,375, co-PI (2005-2010)

Nematodes of the tropical rain forests of Costa Rica: Linking morphology and MOTUs, National Science Foundation - Biodiversity Surveys and Inventories, \$450,000, Lead PI (2007-2010)

Modeling spatial-temporal impacts of soil aggregation on total and net nitrogen mineralization by bacterivorous nematodes with contrasting life strategies, USDA-NRICGP Soil Processes, \$124,000, Lead PI (2005-2008)

Species inventory of nematodes in tropical forests of Costa Rica, National Science Foundation - Biodiversity Surveys and Inventories, \$199,999, Lead PI (2005-2006)

Impacts of hierarchical soil structure on bacterivorous nematodes, Vermont Agricultural Experiment Station Competitive Hatch, \$10,000, PI (2005-2006)

International US-UK Cooperative Research: Validation of nematode life history-based indices using biomarkers of DNA damage, National Science Foundation - International Opportunities for Science and Engineering - Western Europe, \$11,260, PI (2004-2006)

Effects of altered precipitation and temperatures on soil food webs as mediated by biological soil crusts, DOE-Program for Ecosystems Research \$74,684, co-PI (2005)

Linking nematode species-specific habitat preferences to ecosystem processes, USDA/CSREES Hatch, \$10,000, PI (2004-2005)

Quantitative effects of climate change on soil faunal-mediated decomposition, Vermont EPSCoR Equipment, \$18,537, PI (2004-2005)

Effects of Coleopteran-active Bt corn on multiple trophic levels in soil communities, USDA Biotechnology Risk Assessment Research, \$250,261, PI (2003-2006)

Effects of altered precipitation and temperatures on soil food webs as mediated by biological soil crusts, Department of Energy-Program for Ecosystems Research, \$1,186,000, co-PI (2002-2005)

Impact of coleopteran-active Bt corn on non-target soil micro-faunal communities, USDA-CSREES - Biotechnology Risk Assessment Research, \$345,964, PI (2002-2006)

Phytoremediation plant research, United States Department of Agriculture, \$254,020, co-PI (2002-2004)

Biotoxicity of heavy metals and PAHs in Lake Erie Basin soils, Lake Erie Protection Fund, \$10,000, PI (2002-2003)

Investigation of Wolf Creek Bacteria Impact on Maumee Bay State Park Beach, Ohio Department of Natural Resources - Ohio Coastal Management, \$21,760, co-PI (2001-2002)

Impact of atmospheric CO<sub>2</sub> enrichment on rhizosphere function, USDA Terrestrial Ecosystem Program, \$298,000, co-PI (1998-2001)

Biotechnology for phytoremediation of heavy metal contaminated soils in Ohio, Ohio Plant Biotechnology Consortium, \$40,000, Lead PI (2000-2001)

Plant and Microbe Functional Genomics Facilities (OSU, UT, OU), Ohio Board of Regents Hayes Investment Fund, \$1,229,000, co-PI (1999)

Microbiotic soil crusts of the Oak Openings, Lucas County, Ohio. Ohio Biological Survey, \$500, PI (1999-2000)

Soil Collembola from Hocking County, Ohio. Ohio Biological Survey, \$500, PI (1999-2000)

Soil Collembola in Northwestern Ohio, Ohio Biological Survey, \$500, PI (1998)

Interaction of pore size distribution, soil fauna, and C and N mineralization, USDA-NRI CGP, \$218,800, co-PI (1996-1999)

Soil invertebrates as bioindicators of ecosystem stress, U.S. Environmental Protection Agency, \$288,479, Lead PI (1993-1996)

Assessing the health of agroecosystems in the United States, USDA-ARS Specific Cooperative Agreement, \$1,112,408, Lead PI (1993-1997)

## Peer-Reviewed Publications ( $n = 120$ )

h-index = 46, i10-index = 88, total citations = 7394

\*graduate student, \*\*undergraduate student, †postdoctoral scholar, §invited book chapter

### 2022

Neher DA, Andrews TD\*, Weicht TR, Hurd A\*\*, Barlow JW 2022. Organic farm bedded pack system microbiomes: A case study with comparisons to similar and different bedded packs. Dairy 3:587-607. doi.org/10.3390/dairy3030042

Porterfield KK, Hobson SA, Neher DA, Niles MT, Roy ED (2022) Microplastics in composts and digestates derived from food waste: A review. Journal of Environmental Quality JEQ-2022-07-0173-RA (Preprint available on engrXiv: doi.org/10.31224/2187)

Neher DA, Harris JM, Horner CE\*, Scarborough MJ, Badireddy AR, Faulkner JW, White AC\*, Darby H, Farley JC, Bishop-von Wettberg EJ (2022) Resilient soils for resilient farms: An integrative approach to assess, promote and value soil health for small- and medium-size farms. Phytobiomes doi.org/10.1094/PBIOMES-10-21-0060-P [Editor's Pick]

Neher DA<sup>§</sup> (2022) Moving up within the food web: Protozoa and nematodes. Chapter 13 In: Biological Approaches to Regenerative and Resilient Soil Systems, Second edition. Edited by Uphoff N, Thies J, CRC Press.

Kinnebrew E\*<sup>§</sup>, Palawat K, Neher DA, Galford GL (2022) Detritivores' contributions to carbon cycling: Implications for ecosystem services and agricultural benefits. Chapter 14 In: Biological Approaches to Regenerative and Resilient Soil Systems, Second edition. Edited by Uphoff N, Thies J, CRC Press.

Kinnebrew E\*, Neher DA, Ricketts TH, Wallin KF, Darby H, Ziegler SE, Alger SA, Galford GL (2022) Cultivated milkweed hosts high diversity of surface-active and soil-dwelling arthropods in a New England case study. Agriculture, Ecosystems and Environment 325: 107749. doi.org/10.1016/j.agee.2021.107749

Neher DA, Powers TO (2022) Nematodes. Reference Module in Earth Systems and Environmental Sciences <https://doi.org/10.1016/B978-0-12-822974-3.00038-0>

### 2021

Neher DA<sup>§</sup>, Hoitink HA (2021) Compost use for plant disease suppression. Chapter 17 (Pages 847-878) in: Rynk, R. (editor) The Composting Handbook, Second Edition, Elsevier. doi.org/10.1016/B978-0-323-85602-7.00015-7

Limoges MA\*, Neher, DA, Weicht TR, Millner PD, Sharma M, Donnelly C (2021) Differential survival of generic *E. coli* and *Listeria* spp. in northeastern U.S. soils amended with dairy manure compost, poultry litter compost, and heat-treated poultry pellets and fate in raw edible radish crops. *Journal of Food Protection* doi.org/10.4315/JFP-21-261.

Neher DA (2021) Biological indicators and compost for managing plant disease. *Acta Horticulturae* 1317: 33-46. doi.org/10.17660/ActaHortic.2021.1317.5

Readyhough T\*, Neher DA, Andrews T (2021) Organic amendments alter soil hydrology and belowground microbiome of tomato (*Solanum lycopersicum*). *Microorganisms* 9: 1561. doi.org/10.3390/microorganisms9081561

Unc A, Altdorff D, Abakumov E, Adl S, Baldursson S, Bechtold M, Cattani D, Firbank L, Grand S, Guðjónsdóttir S, Kallenbach C, Kedir A, Li P, McKenzie D, Misra D, Nagano H, Neher DA, Niemi J, Oelbermann M, Overgård Lehmann J, Parsons D, Quideau S, Sharkhuu A, Smreczak B, Sorvali J, Vallotton J, Whalen J, Young EH, Zhang M, Borchart N (alphabetical order). Expansion of agriculture in northern cold-climate regions: A cross-sectoral perspective on opportunities and challenges. *Frontiers in Sustainable Food Systems* 5: 663448. doi.org/10.3389/fsufs.2021.663448

Neher DA<sup>§</sup>, Powers TO (2021) Nematodes. In: Blagodatskaya, J., and Unc, A. (section editors) *Encyclopedia of Soils in the Environment*, Second Edition, Elsevier.

Andrews T, Jeffrey C\*, Gilker R, Neher DA, Barlow JW (2021) Survey design and implementation quantifying winter housing and bedding types used on Vermont organic dairy farms. *Journal of Dairy Science* 104: 8326-8337. doi.org/10.3168/jds.2020-19832.

## 2020

Neher DA, Limoges MA\*, Weicht TR, Sharma M, Miller PD, Donnelly C (2020) Bacterial community dynamics distinguish poultry compost from dairy compost and unamended soils planted with spinach. *Microorganisms* 8(10): 1601. doi.org/10.3390/microorganisms8101601

Porterfield KK\*, Joblin, Neher DA, Curtis M, Dvorak S, Rizzo DM, Faulkner JW, Roy ED (2020) Upcycling phosphorus recovered from anaerobically digested dairy manure to support production for vegetables and flowers. *Sustainability* 12: 1139. doi.org/10.3390/su12031139

## 2019

O'Brien BJ\*, Neher DA, Roy ED (2019) Nutrient and pathogen suppression properties of anaerobic digestates from dairy manure and food waste feedstocks. *Waste and Biomass Valorization* 11(12), 6565-6573. doi.org/10.1007/s12649-019-00906-4

Neher DA, Barbercheck ME (2019) Soil microarthropods and soil health: Intersection of decomposition and pest suppression. *Insects* 10(12): 414. doi.org/10.3390/insects10120414



Andrews T\*, Neher DA, Weicht TR, Barlow JW (2019) Mammary microbiome of lactating organic dairy cows varies by time, tissue site, and infection status. *PLoS ONE* 14(11): e0225001. doi.org/10.1371/journal.pone.0225001

Hu W, Kidane E, Neher DA, Chen S (2019) Field and greenhouse evaluations of soil suppressiveness to *Heterodera glycines* in the Midwest corn-soybean production systems. *Journal of Nematology* 51: e2019-32. doi.org/10.21307/jofnem-2019-032

Neher DA, Nishanthan T\*, Grabau ZJ, Chen SY (2019) Crop rotation and tillage affect nematode communities more than biocides in monoculture soybean. *Applied Soil Ecology* 140: 89-97. doi.org/10.1016/j.apsoil.2019.03.016

Neher DA, Cutler AJ\*, Weicht TR, Sharma M, Millner PD (2019) Composts of poultry litter or dairy manure differentially affect survival of enteric bacteria in fields with spinach. *Journal of Applied Microbiology* 126: 1910-1922. doi.org/10.1111/jam.14268

Shah MK, Bradshaw R, Nyarko E, Millner PD, Neher DA, Weicht TR, Bergholz TM, Sharma M (2019) Survival and growth of wild-type and rpoS-deficient *Salmonella* Newport strains in soil extracts amended with heat-treated poultry pellets. *Journal of Food Protection* 82: 501-506. doi.org/10.4315/0362-028X.JFP-18-465

## 2018

Neher DA, Weicht TR (2018) A plate competition assay as a quick preliminary assessment of disease suppression. *Journal of Visualized Experiments* e58767. doi.org/10.3791/58767

Conrad Z, Niles M, Neher DA, Roy ED, Tichenor NE, Jahns L (2018) Relationship between diet quality, food waste, and environmental sustainability. *PLoS ONE* 13(4): e0195405. doi.org/10.1371/journal.pone.0195405

Steel H, Moens T, Vandecasteele B, Hendrickx F, De Neve S, Neher DA, Bert W (2018) Factors influencing the nematode community during composting and nematode-based criteria for compost maturity. *Ecological Indicators* 85: 409-421. doi.org/10.1016/j.ecolind.2017.10.039

Zhang P, Neher DA, Li B, Wu J (2018) The impacts of above- and belowground plant input on soil microbiota: invasive *Spartina alterniflora* vs. native *Phragmites australis*. *Ecosystems* 21(3): 469-481. doi.org/10.1007/s10021-017-0162-8

## 2017

Neher DA, Fang L\*, Weicht TR (2017) Ecoenzymes as indicators of compost to suppress *Rhizoctonia solani*. *Compost Science and Utilization* 25(4): 251-261. doi.org/10.1080/1065657X.2017.1300548

Porter D, Broxton D, Bass A, Neher DA, Weicht TR, Longmire P, Spilde M, Domingue R\*\* (2017) Role of case hardening in the preservation of the cavates and petroglyphs of Bandelier. *MRS Advances* 2(37-38): 1969-2005. doi.org/10.1557/adv.2017.277

Neher DA, Williams KM\*, Lovell ST (2017) Environmental indicators reflective of road design in a forested landscape. *Ecosphere* 8(3): e01734. doi.org/10.1002/ecs2.1734

Bakelaar JE\*, Neher DA, Gilker R (2016) Minimal soil impact by cold season pasture management in Vermont. *Canadian Journal of Soil Science* 97(2): 215-225. doi.org/10.1139/cjss-2014-0005

## 2016

Porter D, Broxton D, Bass A, Neher DA (2016) The role of biofilms and lichens in the preservation of archaeological features in the Bandelier tuff, Bandelier National Monument. *Annual Digital Journal on Research in Conservation and Cultural Heritage* 5: 12-31.

Shao Y, Wang X, Zhao J, Wu J, Zhang W, Neher DA, Li Y, Lou Y, Fu S (2016) Subordinate plants sustain the complexity and stability of soil micro-food web in a subtropical natural forest ecosystem. *Journal of Applied Ecology* 53: 130-139. doi.org/10.1111/1365-2664.12538

Darby BJ<sup>§</sup>, Neher DA (2016) Microfauna within biological soil crusts. Pages 139-157 in *Biological Soil Crusts: An Organizing Principle in Drylands*, Ecological Studies 226, Edited by Weber B, Büdel B, Belnap J, Springer.

## 2015

Li Y, Yang G, Neher DA, Xu C-Y, Wu J (2015) Status of soil nematode communities during natural regeneration of a subtropical forest in southwestern China. *Nematology* 17: 79-90. doi.org/10.1163/15685411-00002853

Neher DA, Weicht TR, Dunseith P\*\* (2015) Compost for management of weed seeds, pathogen, and early blight on brassicas in organic farmer fields. *Agroecology and Sustainable Food Systems* 39: 3-18. doi.org/10.1080/21683565.2014.884516

## 2014

Wang F, Li J, Wang X, Zhang W, Zou B, Neher DA, Li Z (2014) Nitrogen and phosphorus addition impact soil N<sub>2</sub>O emission in a secondary tropical forest of South China. *Scientific Reports* 4: 5615. doi.org/10.1038/srep05615

Neher DA, Muthumbi Awn†, Dively GP (2014) Impact of coleopteran-active Bt corn on non-target nematode communities in soil and decomposing corn roots. *Soil Biology and Biochemistry* 76: 127-135. doi.org/10.1016/j.soilbio.2014.05.019

Wang F, Liu J, Zou B, Neher DA, Zhu W, Li Z (2014) Species-dependent responses of soil microbial properties to fresh leaf inputs in a subtropical forest soil in South China. *Journal of Plant Ecology* 7: 86-96. doi.org/10.1093/jpe/rtt016

Zhao J\*, Neher DA (2014) Soil energy pathways of different ecosystems using nematode trophic group analysis: a meta-analysis. *Nematology* 16: 379-385. doi.org/10.1163/15685411-00002771

## 2013

Neher DA, Weicht TR, Bates ST, Leff JW, Fierer N (2013) Changes in bacterial and fungal communities across compost recipes, preparation methods, and composting times. *PLoS ONE* 8(11): e79512. doi.org/10.1371/journal.pone.0079512

Neher DA, Weicht TR (2013) Nematode genera in forest soil respond differentially to elevated CO<sub>2</sub>. *Journal of Nematology* 45: 214-222. PMID: 24115786

Zhang W, Hendrix PF, Dame LE, Burke RA, Wu J, Neher DA, Li J, Shao Y, Fu S (2013) Earthworms facilitate carbon sequestration through unequal amplification of carbon stabilization compared to mineralization. *Nature Communications* 4: 2576. doi.org/10.1038/ncomms3576

Neher DA, Asmussen D\*, Lovell, ST (2013) Roads in northern hardwood forests affect adjacent plant communities and soil chemistry in proportion to maintained roadside area. *Science of the Total Environment*. 449: 320-327. doi.org/10.1016/j.scitotenv.2013.01.062

Zhao J\*, Neher DA (2013) Soil nematode genera that predict specific types of disturbance. *Applied Soil Ecology* 64: 135-141. doi.org/10.1016/j.apsoil.2012.11.008

Zhao J\*, Neher DA, Fu S, Li Z, Wang K (2013) Non-target effects of herbicides on soil nematode assemblages. *Pest Management Science* 69: 679-684. doi.org/10.1002/ps.3505

Zhao J\*, Shao Y, Wang X, Neher DA, Xu G, Li Z, Fu S (2013) Sentinel soil invertebrate taxa as bioindicators for forest management practices. *Ecological Indicators* 24: 236-239. doi.org/10.1016/j.ecolind.2012.06.012

Wang F, Zhu W, Zou B, Neher DA, Xia H, Fu S, Li Z (2013) Seedling growth and soil nutrient availability in exotic and native tree species: implications for afforestation in southern China. *Plant and Soil* 364: 207-218. doi.org/10.1007/s11104-012-1353-x

## **2012**

Zelikova TJ, Housman DC, Grote EE, Neher DA, Belnap J (2012) Warming and increased precipitation frequency on the Colorado Plateau: Implications for biological soil crusts and soil processes. *Plant and Soil* 355: 265-282. doi.org/10.1007/s11104-011-1097-z

Darby BJ\*, Neher DA (2012) Stable isotope composition of microfauna supports the occurrence of biologically fixed nitrogen from cyanobacteria in desert soil food webs. *Journal of Arid Environments* 85: 76-78. doi.org/10.1016/j.jaridenv.2012.06.006

Shao Y, Zhang W, Liu Z, Sun Y, Chen D, Wu J, Zhou L, Xia H, Neher DA, Fu S (2012) Responses of soil microbial and nematode communities to aluminum toxicity in vegetated oil-shale-waste lands. *Ecotoxicology* 21: 2132-2142. PMID: 22732942, doi.org/10.1007/s10646-012-0966-4

Neher DA, Weicht TR, Barbercheck ME (2012) Linking invertebrate communities to decomposition rate and nitrogen availability in pine forest soils. *Applied Soil Ecology* 54: 14-23. doi.org/10.1016/j.apsoil.2011.12.001

## **2011**

Bao Y\*, Neher DA (2011) Survey of lesion and northern root-knot nematodes associated with vegetables in Vermont. *Nematropica* 41: 98-106.

Darby BJ\*, Housman DC, Neher DA, Belnap J (2011) Few short-term effects of elevated soil temperature and increased frequency of summer precipitation on the abundance and taxonomic diversity of desert soil micro- and meso-fauna. *Soil Biology and Biochemistry* 43: 1474-1481. doi.org/10.1016/j.soilbio.2011.03.020

Bao Y\*, Neher DA, Chen S (2011) Effect of soil disturbance and biocides on nematode communities and extracellular enzyme activity in soybean cyst nematode suppressive soil. *Nematology* 13: 687-699. doi.org/10.1163/138855410X541230

## **2010**

Neher DA (2010) Ecology of plant and free-living nematodes in natural and agricultural soil. *Annual Review of Phytopathology* 48: 371-394. doi.org/10.1146/annurev-phyto-073009-114439

Darby BJ\*, Neher DA, Belnap J (2010) Impact of biological soil crusts and desert plants on soil microfaunal community composition. *Plant and Soil* 328: 421-431. doi.org/10.1007/s11104-009-0122-y

## **2009**

Neher DA, Lewins SA, Weicht TR, Darby BJ\* (2009) Microarthropod communities associated with biological soil crusts in the Colorado Plateau and Chihuahuan deserts. *Journal of Arid Environments* 73: 672-677.

Lawhorn CN\*, Neher DA, Dively GP (2009) Impact of coleopteran targeting toxin (Cry3Bb1) of Bt corn on microbially mediated decomposition. *Applied Soil Ecology* 41: 364-368.

Powers TO, Neher DA, Mullin P\*, Esquivel A, Giblin-Davis RM, Kanzaki N, Stock SP, Mora MM, Uribe-Lorio L (2009) Tropical nematode diversity: Vertical stratification of nematode communities in a Costa Rican humid lowland rainforest. *Molecular Ecology* 18: 985-996.

Barbercheck ME, Neher DA, Anas O, El-Allaf SM, Weicht TR (2009) Response of soil fauna to disturbance across three resource regions in North Carolina. *Environmental Monitoring and Assessment* 152: 283-298.

Neher DA<sup>§</sup>, Darby BJ\* (2009) General community indices that can be used for analysis of nematode assemblages. Pages 107-123 in *Nematodes as Environmental Indicators*. Edited by Wilson M, Kakouli-Duarte T, CABI.

## **2008**

Spongberg AL, Hartley L\*, Neher DA, Witter J\* (2008) Fate of heavy metal contaminants in a former sewage treatment lagoon, Hancock County, Ohio. *Soil and Sediment Contamination: An International Journal* 17: 619-629.

Choi WI<sup>†</sup>, Neher DA, Ryoo MI (2008) Life history trade-offs of *Paronychiurus kimi* (Lee)

(Collembola: Onychiuridae) populations exposed to paraquat. *Ecotoxicology and Environmental Safety* 69: 227-232.

## 2007

Housman DC, Yeager CM, Darby BJ\*, Sanford RL Jr, Kuske CR, Neher DA, Belnap J (2007) Heterogeneity of soil nutrients and subsurface biota in a dryland ecosystem. *Soil Biology and Biochemistry* 39: 2138-2149.

Darby BJ\*, Neher DA, Belnap J (2007) Ecological maturity of biological soil crust affects belowground nematode community composition. *Applied Soil Ecology* 35: 203-212.

## 2006

Li Q, Liang W, Yiang Y, Shi Y, Zhu J, Neher DA (2006) Effect of elevated CO<sub>2</sub> and N fertilisation on soil nematode abundance and diversity in a wheat field. *Applied Soil Ecology* 36: 63-69.

Darby BJ\*, Housman DC, Zaki AM, Shamout Y, Adl SM, Belnap J, Neher DA (2006) Effects of altered temperature and precipitation on desert protozoa associated with biological soil crusts. *Journal of Eukaryotic Microbiology* 53: 507-514.

Choi WI†, Moorhead DL, Neher DA, Ryou MI (2006) A modeling study of soil temperature and moisture effects on population dynamics of *Paronychiurus kimi* (Collembola: Onychiuridae). *Soil Biology & Fertility* 43: 69-75.

Veluci RM\*, Neher DA, Weicht TR (2006) Nitrogen fixation and leaching of biological soil crust communities in mesic temperate soils. *Microbial Ecology* 51: 189-196.

Liang W, Zhang X, Li Q, Jiang Y, Ou W, Neher DA (2005) Vertical distribution of bacterivorous nematodes under different land uses. *Journal of Nematology* 37: 254-258.

Neher DA, Darby BJ\* (2006) Computation and application of nematode community indices: General guidelines. Pages 211-222 in *Freshwater Nematodes: Ecology and Taxonomy*. Edited by Eyualem A, Traunspurger W, Andr assy I, CABI.

## 2005

Neher DA, Wu J, Barbercheck ME, Anas O† (2005) Ecosystem type affects interpretation of soil nematode community measures. *Applied Soil Ecology* 30: 47-64.

Li F\*, Neher DA, Darby BJ\*, Weicht TR (2005) Contrasting effects of copper and benzo(a)pyrene concentration on life history characteristics of *Aphelenchus* and *Acroboloides*. *Ecotoxicology* 14: 419-429.

Liang W, Li Q, Jiang Y, Neher DA (2005) Nematode faunal analysis in an aquatic brown soil fertilised with slow-release urea, Northeast China. *Applied Soil Ecology* 29: 185-192.

## 2004

Neher DA, Weicht TR, Moorhead DL, Sinsabaugh RL (2004) Elevated CO<sub>2</sub> alters functional

attributes of nematode communities in forest soils. *Functional Ecology* 18: 584-591.

Neher DA, Fiscus DA\*, Li F\* (2004) Selection of sentinel taxa and biomarkers. *Nematology Monographs and Perspectives* 2: 511-514.

Neher DA<sup>§</sup>, Powers TO (2004) Nematodes. Pages 1-5 in *Encyclopedia of Soils in the Environment* Vol. 3. Edited by Hillel D, Rosenzweig C, Powlson D, Scow K, Singer M, Sparks, D, Academic Press, New York.

### **2003**

Neher DA, Walters T\*, Tramer E, Weicht TR, Veluci RM\*, Saiya-Cork K\*, Will-Wolf, Toppin J, Traub J, Johansen JR (2003) Biological soil crust and plant communities in a sand savanna of northwestern Ohio. *Journal of Torrey Botanical Society* 130: 244-252.

Sinsabaugh RL, Saiya-Cork K\*, Long T†, Osgood MP, Neher DA, Zak DR, Norby RJ (2003) Soil microbial activity in a *Liquidambar* plantation unresponsive to CO<sub>2</sub>-driven increases in primary production. *Applied Soil Ecology* 24: 263-271.

Neher DA, Barbercheck ME, El-Allaf SM\*, Anas O† (2003) Effects of disturbance and ecosystem on decomposition. *Applied Soil Ecology* 23: 165-179.

### **2002**

Leisner SM, Neher DA (2002) Third position codon composition suggests two classes of genes within the Cauliflower Mosaic Virus genome. *Journal of Theoretical Biology* 217: 195-201.

Blakely JK\*, Neher DA, Spongberg AL (2002) Microinvertebrate and microbial communities, and decomposition as indicators of polycyclic aromatic hydrocarbon contamination. *Applied Soil Ecology* 21: 71-88.

Fiscus DA\*, Neher DA (2002) Distinguishing nematode genera based on relative sensitivity to physical and chemical disturbances. *Ecological Applications* 12: 565-575.

Landis DA<sup>§</sup>, Neher DA (2002) Ecological Role of Pests in Agroecosystems. Pages 218-220 in *Encyclopedia of Pest Management*. Edited by Pimentel D, Marcel Dekker, New York.

### **2001**

Neher DA (2001) Role of nematodes in soil health and their use as indicators. *Journal of Nematology* 33: 161-168.

Savin MC\*, Görres JH, Neher DA, Amador JA (2001) Uncoupling of carbon and nitrogen mineralization: Role of microbivorous nematodes. *Soil Biology and Biochemistry* 33: 1463-1472.

Savin MC\*, Görres JH, Neher DA, Amador JA (2001) Biogeophysical factors influencing soil respiration and mineral nitrogen content in an old field soil. *Soil Biology and Biochemistry* 33: 429-438.

Neher DA (2001) Nematode communities as ecological indicators of agroecosystem health. Pages 105-120 in: *Agroecosystem Sustainability: Developing Practical Strategies*. Edited by Gliessman SR, CRC Press, Boca Raton, Florida.

### **1999**

Neher DA, Olson RK\* (1999) Nematode communities in soils of four farm cropping management systems. *Pedobiologia* 43: 430-438.

Neher DA<sup>§</sup> (1999) Soil community composition and ecosystem processes: Comparing agricultural ecosystems with natural ecosystems. *Agroforestry Systems* 45:159-185. [also published as Pages 215-241 in: Lefroy EC, Hobbs RJ, O'Connor MH, Pate JS (editors). *Agriculture as a Mimic of Natural Ecosystems*. Kluwer Academic Publishers, Dordrecht, Netherlands].

Görres JH, Savin M\*, Neher DA, Weicht TR, Amador JA (1999) Grazing in a porous environment 1. Interaction between grazing and soil structure on nutrient mineralization. *Plant and Soil* 212: 75-83.

Neher DA, Weicht TR, Savin M\*, Görres JH, Amador JA (1999) Grazing in a porous environment 2. Nematode community structure. *Plant and Soil* 212: 85-99.

Neher DA, 1999. Nematode communities in organically and conventionally managed agricultural soils. *Journal of Nematology* 31: 142-154.

### **1998**

Neher DA, Easterling, KN\*, Fiscus DA\*, Campbell CL (1998) Comparison of nematode communities in agricultural soils of North Carolina and Nebraska. *Ecological Applications* 8: 213-223.

Neher DA<sup>§</sup>, Noffsinger M, Campbell CL (1998) Nematode communities of North Carolina and Nebraska (USA). Pages 321-334 in *Nematode Communities of Northern Temperate Grassland Ecosystems. Diversity Effects in Grassland Ecosystems of Europe*. Edited by DeGoede R, Bongers T. Wageningen, The Netherlands.

Neher DA<sup>§</sup>, Barbercheck ME (1998) Diversity and role of soil mesofauna. Pages 27-47 in *Biodiversity in Agroecosystems*. Edited by Collins W, Qualset CO, Lewis Publishers, Chelsea, Michigan.

### **1997**

Francl L, Neher DA (editors) (1997) *Exercises in Plant Disease Epidemiology*. American Phytopathological Society Press, St. Paul, Minnesota.

- Book review by Šindelár, L. 1997. *Biologia Plantarum* 40(4): 498.
- Co-authored six chapters: Application of life tables to infection-chain components, Statistical comparison of epidemics, Multiple-point models of yield loss, Analysis of

disease progress curves using nonlinear regression, Analysis of disease progress curves using linear models, Determining sample size.

## 1996

Neher DA, Campbell CL (1996) Sampling for regional monitoring of nematode communities in agricultural soils. *Journal of Nematology* 28: 196-208.

Campbell CL<sup>§</sup>, Neher DA (1996) Challenges, opportunities, and obligations in root disease epidemiology and management. Pages 20-49 In *Principles and Practice of Managing Soilborne Plant Pathogens*. Edited by Hall R, American Phytopathological Society Press, St. Paul, Minnesota.

## 1995

Neher DA, Peck SL\*, Rawlings JO, Campbell CL (1995) Measures of nematode community structure and sources of variability among and within fields. *Plant and Soil* 170: 167-181. [also published as Pages 187-201 in *The Significance and Regulation of Soil Biodiversity*, Edited by Collins HP, Robertson, GP, Klug MJ, Kluwer Academic, Dordrecht, Netherlands]

Neher DA<sup>§</sup> (1995) Biological diversity in soils of agricultural and natural ecosystems. Pages 55-72 in *Exploring the Role of Diversity in Sustainable Agriculture*. Edited by Olson RK, Francis CA, Kaffka S, American Society of Agronomy, Madison, Wisconsin.

Campbell CL<sup>§</sup>, Heck WW, Neher DA, Munster MJ, Hoag DL (1995) Biophysical measurement of the sustainability of temperate agriculture. Pages 251-273 in *Defining and Measuring Sustainability: the Biogeophysical Foundations*. Edited by Munasinghe M, Shearer W, The World Bank, Washington DC.

## 1994

Neher DA, Campbell CL (1994) Nematode communities and microbial biomass in soils with annual and perennial crops. *Applied Soil Ecology* 1: 17-28.

Campbell CL<sup>§</sup>, Neher DA (1994) Estimating severity and incidence of root diseases. Pages 117-147 in *Epidemiology and Management of Root Diseases*. Edited by Campbell CL, Benson DM, Springer-Verlag, New York.

Neher D<sup>§</sup>, Meyer JR, Campbell CL, Heck W (1994) Monitoring environmental sustainability in agricultural systems. Pages 53-55 in *Towards Sustainable Agricultural Production: Cleaner Technologies*. Organization for Economic Co-operation and Development, Paris, France.

## 1993

Neher DA, McKeen CD, Duniway JM (1993) Relationships among *Phytophthora* root rot development, *P. parasitica* populations in soil, and yield of tomatoes under commercial field conditions. *Plant Disease* 77: 1106-1111.



Heck WW<sup>§</sup>, Campbell CL, Neher DA, Munster MJ (1993) An agroecosystem monitoring and assessment program for sustainable agriculture. Pages 1-25 in: Integrated Farming Systems Research Methods. University of Guelph, Crop Science Department, Guelph, Ontario, Canada

## **1992**

Neher D (1992) Ecological sustainability in agricultural systems: Definition and measurement. *Journal of Sustainable Agriculture* 2: 51-61. doi: 10.1300/J064v02n03\_05 [also published as Pages 51-61 in *Integrating Sustainable Agriculture, Ecology, and Environmental Policy*, Edited by Olson RK, Food Products Press, New York]

Neher DA, Campbell CL (1992) Underestimation of disease progress rates with the logistic, monomolecular, and Gompertz models when maximum disease intensity is less than 100 percent. *Phytopathology* 82: 811-814.

Neher DA, Wilkinson HT, Augspurger CK (1992) Epidemic progress of damping-off epidemics in *Glycine* populations of even-age and mixed-age structures. *Canadian Journal of Botany* 70: 1032-1038.

Neher D, Duniway JM (1992) Dispersal of *Phytophthora parasitica* in tomato fields by furrow irrigation. *Plant Disease* 76: 582-586.

## **1991**

Neher DA, Duniway JM (1991) Relationship between amount of *Phytophthora parasitica* added to field soil and the development of root rot in processing tomatoes. *Phytopathology* 81: 1124-1129.

Van Bruggen AHC, Neher DA, Weicht TR (1991) Teaching computer-based diagnosis of plant diseases. *Plant Disease* 75: 320-322.

## **1990**

Goodwin PH, English JT, Neher DA, Duniway JM, Kirkpatrick BC (1990) Detection of *Phytophthora parasitica* from host tissue with a species-specific DNA probe. *Phytopathology* 80: 277-281.

## **1987**

Neher DA, Augspurger CK, Wilkinson HT (1987) Influence of age structure of plant populations on damping-off epidemics. *Oecologia* 74: 419-424.

## **In review**

Kinnebrew E<sup>†</sup>, Neher DA, Ricketts TH, Wallin KF, Darby H, Ziegler SE, Alger SA, Galford GL Cultivated milkweed hosts high diversity of surface-active and soil-dwelling arthropods in a New England case study. *Agriculture, Ecosystems and Environment*

## Research featured in popular press

### 2022

- [Soil Steaming: Research by UVM Extension in Support of Vermont's Commercial Vegetable Growers](#), Across the Fence (aired November 1, WCAX-TV, Channel 3)
- Sustainable Winegrowing Podcasts, Interviewed by Craig Macmillan
  - [151: The Role of the Soil Microbiome in Soil Health](#) (live on 6 October 2022)
  - [152: The Role of Nematodes in Soil Health](#) (live 20 October 2022)

### 2021

- McCallum, K. Market to farm: A new food waste disposal method raises fears that microplastics will taint fields. Seven Days (11/24/21)  
<https://www.sevendaysvt.com/vermont/market-to-farm-a-new-food-waste-disposal-method-raises-fears-that-microplastics-will-taint-fields/Content?oid=34317978>
- Connecting our underground livestock to aboveground success. Keynote conversation with Nicole Masters, 25th Annual Vermont Grazing and Livestock Conference (1/15/21)  
<https://youtu.be/iymzpgZ8o2s>

### 2020

- The soil symphony. Interview by Leah Kelleher,  
<https://open.spotify.com/episode/1FMVZTGYhIjRii7Ydy5GFM> (8/20)

### 2018

Americans waste food, especially healthy eaters from doi.org/10.1371/journal.pone.0195405

- **CBS News**, Americans waste nearly a pound of food each day (4/18/18)
- **Newsweek**, Americans waste 150,000 tons of food every day—that's a pound per person (5/13/18)
- **Washington Post**, The staggering environmental footprint of all the food that we just throw in the trash. Story appeared in at least 20 other sites via the Washington Post newswire (4/18/18)
- **USA Today**, Americans waste an astounding amount of food — and healthy eaters are the worst. Story also appeared in at least 40 other outlets via the USA Today Network (4/19/18)
- **Fox News**, Healthy people waste the most food, Story appeared on websites of at least 30 Fox affiliates (4/20/18)
- **Mother Jones**, A new study shows the stunning amount of food people toss in the garbage every day (4/2018)
- **Food & Win**, Here's how much food you're wasting everyday (4/19/18)
- **Voice of America**, Americans waste a lot of food (4/24/18)
- **IFL Science**, This is how much food the average American wastes every single day (4/2018)
- **Daily Mail**, Americans waste 150,000 tons of food per day (4/4/18)

### 2016

Coker C (2016) University of Vermont faculty members convened a group to identify research needs related to mandatory food scraps diversion policies in New England. *BioCycle* 57: 66-67.

#### **2015**

Career story in *Cultures* magazine, Vol. 2 Issue 2, American Society for Microbiology

Delaney C (2015) Hot stuff: Compost for management of plant pathogens and weeds, Northeast Sustainable Agriculture and Research and Education newsletter.

#### **2014**

Baird JB (2014) UVM tracks food-safety – via manure. Burlington Free Press, November.

Wakefield JR (2014) UVM research to play important role in setting federal food safety guidelines. UVM Communications, November.

Bodin M (2014) Compost—A hot mess, Northern Woodlands, October.

Bodin M (2014) Compost – A hot mess to manage at times. Burlington Free Press, October.

#### **2009**

Dorschner C (2009) Space is not the final frontier, November 2009, Neher wins the UVM College of Agriculture and Life Sciences Vogelmann Research Award

Wakefield JR (2009) Life in ‘the poor man’s rainforest’, Vermont Quarterly, Summer 2009

### **Non-peer reviewed publications**

#### **2021**

Neher D, Horner K\*, von Wettberg EB, Scarborough M, Harris J, Darby HM, Badireddy AR, Roy ED, Farley JC, Faulkner J, White A\* (2021) Resilient soils for resilient farms: An integrative approach to assess, promote and value soil health for small- and medium-size farms. USDA Agricultural Research Service (ARS) Center. 7. <https://scholarworks.uvm.edu/arsfoodsystems/7>

#### **2019**

Neher DA (2019) Compost and plant disease suppression. *BioCycle* 60: 22-25.

#### **2012**

Gilker RE, Bakelaar JE, Canella MP, Neher DA (2012). Bedded pack in Vermont: Five stories. University of Vermont Extension Bulletin.

#### **2000**

Kirschenmann F et al. (2000) ‘Naturalize’ your farming system: A whole-farm approach to managing pests. United States Department of Agriculture, Sustainable Agriculture Network ([www.sare.org/san/htdocs/pubs/](http://www.sare.org/san/htdocs/pubs/)). (co-author)

#### **1999**

Neher, D.A. 1999. First springtail species identified in northwestern Ohio. *Natural Notes* 2(4):2.

#### **1998**

Weiser CJ et al. (1998). Agriculture's role in K-12 education: A forum on the national science standards. National Academy Press, Washington, DC. (co-author)

#### **1996**

Neher D (1996) Plant and soil sciences forum. Bulletin of the Ecological Society of America 77: 221.

Neher D (1996) Agriculture's role in K-12 education: A forum on the national science education standards. Bulletin of the Ecological Society of America 77: 108-109.

Campbell CL, Neher DA (1996) Agriculture's role in K-12 education: A forum on the national science education standards. Phytopathology News 30: 38-39.

#### **1995**

Neher D, Powelson ML (1995) Research in support of sustainable agriculture. Phytopathology News 29: 11.

Neher D (1995) Research in support of sustainable agriculture. Bulletin of the Ecological Society of America 76: 49-50.

Hellkamp AS et al. (1995) Environmental Monitoring and Assessment Program - Agricultural Lands Pilot Field Program Report - 1993. EPA/620/R-95/004. U.S. Environmental Protection Agency, Washington, D.C. (co-author)

#### **1994**

Campbell CL et al. (1994) Environmental Monitoring and Assessment Program - Agroecosystem Pilot Field Program Report - 1992. EPA/620/R-94/014. U.S. Environmental Protection Agency, Washington, D.C. (co-author)

Campbell CL et al. (1994) Environmental Monitoring and Assessment Program - Agroecosystem Pilot Field Program Plan - 1993. EPA/620/R-3/014. U.S. Environmental Protection Agency, Washington, D.C. (co-author)

#### **1992**

Heck WW et al. (1993) Environmental Monitoring and Assessment Program (EMAP)-- Agroecosystem 1992 Pilot Project Plan. EPA/620/R-93/010, U. S. Environmental Protection Agency, Washington, D.C. (co-author)

#### **1991**

Heck WW et al. (1991) Environmental Monitoring and Assessment Program Agroecosystem Monitoring and Research Strategy. EPA 600/4-91/013. U.S. Environmental Protection Agency, Washington, D.C. (co-author)

### **Abstracts and contributed papers (1987-present)**

Professional Societies: Ecological Society of America (22); Soil Ecology Society (19); Society of Nematologists (16); Organization of Nematologists of Tropical Americas (4); American

Phytopathological Society (9); Soil Science Society of America (6); Other international (16), national (22), regional and state (21)

US Universities: Auburn University (1), Bowling Green State University (1), University of California–Riverside (1), Cornell University (3), Duke University (1), Elon College (1), University of Florida (4), University of Georgia (4), Green Mountain College (1), John Carroll University (1), University of Kentucky (1), University of Maryland (1), University of Massachusetts (1), Michigan State University (1), University of Nebraska (1), North Carolina State University (4), Northern Arizona University (1), Ohio State University (3); Pennsylvania State University (1), University of Pennsylvania at Indiana (1); University of Rhode Island (1), Rutgers University (1), South Dakota State University (1), Texas A & M University (1); University of Toledo (9), University of Vermont (17), University of Wisconsin Madison (1), University of Wisconsin-Oshkosh (1)

## **Teaching**

### **Designed and Taught as Instructor in Charge**

University of Vermont

Soil Ecology (Undergraduate / Graduate)

Compost Ecology and Management (Undergraduate)

Professional Development and Career Opportunities (Undergraduate),

Professional Skills Colloquium (Graduate)

University of Toledo

Soil Ecology (Undergraduate / Graduate)

Plants and Society (Non-majors undergraduate)

General Ecology Laboratory (Undergraduate)

Fundamentals of Life Science I (Undergraduate)

Applied Biostatistics (Graduate)

North Carolina State University

Quantitative Plant Disease Epidemiology (Graduate)

### **Guest courses**

University of Ghent (Belgium) Nematodes as Biomonitors (2014)

Fudan University (Shanghai, People's Republic of China) Advanced Ecology Lecture Series on Global Change and Biodiversity (2012)

Chinese Academy of Sciences, South China Botanical Gardens (Guangzhou, People's Republic of China (2011)

Fudan University (People's Republic of China) Institute of Biodiversity (2003)

Institute of Applied Ecology (Shenyang, People's Republic of China) (2003)

Michigan State University, Department of Entomology, Cropping Systems and Nematode Management (2000)

Duke University, Belowground Ecosystems (1995, 1996)

National Agricultural Statistics Service Training School for the Agricultural Lands Resource Group of the Environmental Monitoring and Assessment Program (1992, 1993, 1994)

SCI-LINK Summer Institute (North Carolina State University) K-12 Teacher curriculum development (1992)

University of California, Davis. Diagnosis and Control of Plant Diseases. Teaching assistant for undergraduate course (1988)

University of Illinois, Champaign-Urbana. Plants, Environment and People. Laboratory instructor, Received Excellence in Teaching Awards for three semesters (1984-1986)

McPherson College. General Chemistry. Undergraduate Teaching Assistant (1984)

McPherson College. Remedial lectures and group tutoring for General Biology (1983)

McPherson College. Vertebrate Physiology. Undergraduate Teaching Assistant (1982)

### **Previous graduate students**

Daniel A. Fiscus, MS 1996 (NC State)

Julie Blakely, MS 1999 (Toledo)

Fafeng Li, PhD deceased before completion (Toledo)

Roberta Veluci, MS 2002 (Toledo)

Brian Darby, MS 2004 (Toledo)

C. Nicole Lawhorn, MS 2005 (Toledo)

Brian Darby, PhD 2008 (UVM)

Yiwen Zhao 2009 (UVM)

Bao Yong, MS 2009 (UVM)

David Asmussen, MS 2010 (UVM)

Karen Lamoncha, PhD deceased before completion (UVM)

Tharshani Nishanthan, PhD 2012 (UVM)

Joshua Bakelaar, MS 2012 (UVM)

Kristin M. Williams, MS 2013 (UVM)

Lynn Fang, MS 2015 (UVM)

Anya J. Cutler, MS 2016 (UVM)

Tucker Andrews, MS 2018 (UVM)

Michael LeDuc, all but thesis 2021 (UVM)

Taylor Readyhough, MS 2021 (UVM)

Anna R Brown, MS 2023 (UVM)

## **Current graduate students**

Noah Olson, MS (UVM)

## **Service on graduate student committees**

Bailey Kretzler (Plant and Soil Science PhD expected 2023); Caitlin Jeffrey (Animal and Veterinary Sciences PhD expected 2023); Kamruzzaman Khan Sakib (Civil and Environmental Engineering PhD expected 2023); Michelle Lacasse (UVM Animal Science DNF); Eva Kinnebrew (UVM Natural Resources PhD 2022); Kara Gibson (University of Northern Arizona, PhD 2022); Maryam Nouri Aiin (UVM Plant and Soil Science PhD 2022); Allen Wilder (UVM Plant and Soil Science MS 2020); Brendan O'Brien (UVM Natural Resources MS 2018); Samuel Gorton (UVM Natural Resources PhD-ABD); Marie Limoges (UVM Food and Nutrition Science PhD 2018); Dana Christel (UVM Plant and Soil Science MS 2016); Chenin Limback (UVM Natural Resources PhD 2016); Ryan Melnichuk (UVM Plant and Soil Science PhD 2015); Gemille Brion (UVM Food Systems MS 2015); Victor Izzo (UVM Plant and Soil Science PhD 2013); Katherine Goodall (UVM Plant and Soil Science PhD 2013); Jie Zhao (S China Botanical Garden PhD 2011); Samir Doshi (UVM Natural Resources PhD 2010); Rosemary Mosco (UVM Field Naturalist MS 2010); William J. Landesman (Rutgers University, PhD 2009); Homer Elliot (UVM Natural Resources MS 2018); Walter Auch III (UVM Plant and Soil Science PhD 2009); Aminder Kaur (UVM Plant and Soil Science PhD 2009); Manisha Patel (UVM Plant Biology MS 2007); Abigail E. Hood (UVM Ecological Planning MS 2006); Kerry McKenna (Toledo PhD 2006); Karen Hills (UVM Plant and Soil Science MS 2005); Soung-Ryoul Ryu (Toledo Ph.D. 2005); Barry E. Muller (Toledo PhD 2004); Jim LeMoine (Toledo 2004); Susan Tran (Toledo 2004); Mary Bresee (Toledo MS 2004); Siyan Ma (Toledo PhD 2003); Kevin Diego (Toledo MS 2003); Erin Moan (Toledo MS 2003); Mandy Sturgill Comes (Toledo 2003); Todd Tarrant (Toledo PhD 2002); Christian Lauber (Toledo MS 2001); Jamie Schmeling (Toledo MS 2001); Greg D. Taylor (Toledo MS 2001); Laura Burnett (Toledo MS 2000); Michael T. Homsher (Toledo PhD 2000); Kerry McKenny (Toledo MS 2000); Nancy Hatfield (Toledo PhD 1999); Michele Grigore (Toledo PhD 1998); Kathryn Nelson (Toledo MS 1997); Timothy Walters (Toledo PhD 1997)

## **External examiner for PhD students**

Erika H. Young (Soil Science – Biology focus, Memorial University, Newfoundland, 2021)  
Nick Rose (UVM Food Systems 2020)  
Brendan O'Neill (UVM Food Systems 2019)  
Hanne Steel (University of Ghent PhD 2013)  
Sze Peng Flett (La Trobe University PhD 1991)

## **Undergraduate independent research**

Rachel Elliott (UVM Honors College 2022); Asa Hurd (UVM 2020); Emma C. White (UVM Honors College 2020); Charlotte A. Brodie (UVM 2020); Collin McCarthy (UVM 2018); Alexa Dahler (UVM

Biological Science Honors 2018); Amy Davis (UVM Environmental Science Honors 2016); Flore Costumé (UVM 2014); Patrick Dunseith (UVM Honors College 2011); Henrietta Oakley (UVM 2006-2007); Jeff Connell (Toledo 2003); Andrew Hosken (REU Toledo 2001); Stephen Meininger (REU Toledo 2001); Kelly Ketcham (REU Toledo 2001); Catherine Buchanan (REU Toledo 2001); Fahim Malik (Toledo Honors College 2000); Mohammad Moussa (Toledo Honors College 2000); Natalie Gottschall (REU Toledo 2000); Yvette L. Phillips (Toledo 1999); Jennifer Kurek (Toledo 1997); Brian S. Marlow (Toledo 1997)

### **Undergraduate thesis examiner**

Emily Piersiak (Environmental Science 2020); Beck Morrows (Plant and Soil Science 2020); Sean Pease (Plant and Soil Science 2020)

**Undergraduate research assistants** Asa Hurd (2020); Charlotte A. Brodie (2019-2020); Emma Wright (2018-2019); Sydney Stegman (2018-2020); Olivia Shrantz (2016-2018); Russell Frisch (2015); Michael Street (2009- 2010); Nicholas LeBlanc (2009- 2010); Patricia Brousseau (2007-2009); Hannah Cady (2007- 2009); Sarah Kearsley (2006- 2007); Sarah Sterling (2006); Nick LaValley (2006); Jennifer Cooksen (2006); Alison Lauze (2005); Sara Moussa (2000-2001); Anja Sachse (1999-2000); Muhammad Ali Haider (1999-2000); Ann Steck (1999); Lona Haas (1997-1999); Vakindi Unvu (1997-1998); Charlotte I. A. Moss (1996-1997)

### **Undergraduate internships**

Ellie Green (Food Systems 2019); Greg Daniels (Environmental Science 2014); Mackenzie Hart (Environmental Science 2012); Nicholas LeBlanc (Ecological Agriculture 2009); Kate Turcott (Food Systems 2009); Patricia Brousseau (Environmental Science 2007); Kate Riley (Environmental Science 2006); Will Harrigan-Anderson (Environmental Science 2006); Amber Waery (Sustainable Landscape Horticulture 2005-2006)

### **Previous postdoctoral scholars**

Won Il Choi, now Korea Forest Service

Agnes Muthumbi, now University of Nairobi

Osama Anas, now Senior Scientist at BASF, North Carolina

### **Select invited speaker, seminars and workshops**

**2021:** International Congress of Nematology (symposium coordinator and invited speaker, Antibes Juan-Les-Pins, France)

**2021:** University of Northern Arizona (Flagstaff), International Society for Horticultural Science (keynote speaker, Ghent, Belgium)



**2020:** University of Florida (Gainesville)

**2019:** Organization of Nematologists of Tropical America (Costa Rica), Brazilian Congress of Nematology (Caldas Novas, Goiás)

**2018:** Organization of Nematologists of Tropical America (Peru), Ecological Society of America (New Orleans, Louisiana)

**2017:** Organization of Nematologists of Tropical America (Puerto Rico)

**2016:** Our Food, Our Future: Research that Feeds Newfoundland and Labrador (plenary speaker)

**2015:** Organization of Nematologists of Tropical America (Cuba), Tri Societies (Minneapolis, Minnesota)

**2014:** Compost symposium, California Polytechnic State University (Keynote speaker)

**2013:** Society of Nematologists symposium (Knoxville, Tennessee), Michigan State University (Horticulture student speaker choice)

**2012:** Plant Protection Research Institute, Stellenbosch, South Africa (Keynote speaker)  
International Symposium on Nematodes as Environmental Bio-indicators, University of Ghent, Ghent, Belgium (Keynote speaker)

**2011:** Organization of Nematologists of Tropical America, Coimbra, Portugal (Keynote speaker)

**2009:** Ecological Society of America symposium (Albuquerque, New Mexico), Society of Nematologists symposium (Burlington, Vermont)

**2006:** Organization of Nematologists of Tropical America (Costa Rica)

**2005:** H. John Heinz III Center for Science, Economics and the Environment, Biological Community Condition Workshop (Washington DC)

**2004:** Organization of Nematologists of Tropical America (Costa Rica), Pan-American Sensors for Environmental Observatories (Argentina)

**2003:** Future Directions and Research Priorities for the USDA Biotechnology Risk Assessment Research Grants (Arlington, Virginia)

**2002:** International Congress of Nematology (Canary Islands), National Biotechnology Risk Assessment workshop (Ft. Lauderdale, Florida), Heniz Center State of the Nation's Ecosystems project report at Ecological Society of America (Tucson, Arizona)

**2001:** Ecological Society of America (Madison, Wisconsin)

**2000:** Society of Nematologists (Quebec City, Canada), Tri-societies (Minneapolis, Minnesota), Monsanto (St. Louis, Missouri)

**1999:** Ecological Society of America (Spokane, Washington)

**1998:** International Congress of Ecology (Florence, Italy), European Society of Nematology (Dundee, Scotland)

**1997:** Agriculture as a Mimic of Natural Ecosystems (Perth, Western Australia)

**1996:** Ecological Society of America (Providence, Rhode Island), American Phytopathological Society (Indianapolis, Indiana)

**1995:** Tri-Societies (St. Louis, Missouri)

**1994:** American Phytopathological Society (Albuquerque, New Mexico), Tri-Societies (Seattle, Washington)

**1993:** American Phytopathological Society (Nashville, Tennessee), Rodale Institute Research Center (Kutztown, Pennsylvania)

**1991:** U.S. Environmental Protection Agency, Arlington, Virginia

## **Symposia and workshops organized**

Sentinel Taxa symposium, Society of Nematologists (2004)

Computation of Nematode Community Indices workshop, Society of Nematologists (2004)

Nutrient Mineralization in Soil: Integration of Soil Ecology, Biogeophysics and Biogeochemistry workshop, Ecological Society of America, co-organizer (1996)

## **Professional service**

### **State government**

Vermont Joint Committee of Natural Resources, Testimony on microplastics in soil, 2021

Sustainable Sanitation H.382 Workgroup, 2021 - present

### **National Agency Review Panels**

National Science Foundation: 2010, 2011 (x2), 2012)

U.S. Department of Agriculture: 2004, 2008, 2014, 2017

U.S. Environmental Protection Agency: 2006

U.S. Department of Energy: 2004, 2006, 2010

National Institute of Environmental Health Sciences: 2003

## **Departmental service**

University of Vermont, Plant and Soil Science

Graduate Faculty, Full Member (2004-present)

Food Systems Graduate Faculty Member (2015-present)

University of Toledo

Graduate Faculty, Full Member (1996-2004)

Statistical consulting with graduate students

Undergraduate Research Symposium, Organizer (1999)

Physical Facilities and Equipment Management Committee (1996-1999)

Undergraduate Affairs Committee (1998-1999)

## College service

University of Vermont College of Agriculture and Life Sciences

Distinguished Undergraduate Research Committee (2018-2021)

HW Vogelmann Award for Excellence in Research & Scholarship Committee (2010-present)

Nutrition and Food Science Five Year Review, chair (2015)

CALS Dean Five-Year Review, Provost-appointed member (2014)

Animal Science Chair Search Committee, chair (2008-2009)

Dean Search Committee, member (2008-2009)

## University service

University of Vermont

Natural Resources School Dean Five-Year Review, Provost-appointed member (2019)

President's Distinguished Senior Lecturer Award Selection Committee, member (2017)

Advisory Committee for the Associate Provost for Faculty Affairs, member (2015)

Advisory Committee for the Pre and Post Grant Award Integration, member (2010-2011)

Dairy Center for Research Excellence Advisory Board, member (2009-2010)

Campus Kitchen Program, Advisory Board, member (2008-2011)

Global Sustainability Institute, Advisory Board, member (2008-2010)

Continuing Education, Advisory Board, member (2007-2009)

President's Commission on LGBTQ Equity, member (2007-2009)

Commencement Reflections, University of Vermont (2007)

Provost Vision by Design Task Force, member (2007)

Business School Dean Five-Year Review Committee, member (2007)

Faculty Senate, Financial and Physical Planning Committee, member (2006)

Provost Search Committee, member (2005)

UVM EPSCoR Advisory Board, member (2004-2013)

University of Toledo

University Women's Commission, Board Member-At-Large, member (1997-1998)