

## BIOGRAPHICAL SKETCH

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### David D. Myrold

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### Professional preparation

Michigan Technological University, Houghton	Forestry	B.S., high honors, 1977
Washington State University, Pullman	Soil Science	M.S., 1979
Michigan State University, East Lansing	Microbiology	Ph.D., 1984

### Appointments

1995-present: Professor, Department of Crop and Soil Science, Oregon State University (graduate faculties of Forest Science, Molecular and Cellular Biology, and Environmental Science).

Research on: Bacterial and fungal diversity in soils. Use of  $^{15}\text{N}$  and  $^{13}\text{C}$  to measure the dynamics of the nitrogen and carbon cycles. Linking microbial structure to function in soil ecosystems. *Frankia*-actinorhizal plant symbiosis.

Teaching: Senior/beginning graduate level course on the biology of the soil ecosystem. Graduate level courses on soil microbial ecology and on principles of stable isotopes.

2000: Visiting professor, Swedish University of Agricultural Sciences, Umeå, Sweden

1991-92: Visiting associate professor, University of Umeå, Umeå, Sweden

1989-95: Associate professor, Department of Soil Science, Oregon State University

1984-89: Assistant professor, Department of Soil Science, Oregon State University

### Awards and Honors

- Outstanding Alumnus Award, School of Forest Resources and Environmental Science, Michigan Technological University
- Soil Science Research Award, Soil Science Society of America (joint with Peter Bottomley, first time awarded as a team)
- Fellow, Soil Science Society of America
- Fellow, American Society of Agronomy

### Selected Publications (>175 total)

Giguere, A.T., A.E. Taylor, **D.D. Myrold**, B.L. Mellbye, L. Sayavedra-Soto, and P.J. Bottomley. 2018. Nitrite-oxidizing activity responds to nitrite accumulation in soil. *FEMS Microbiol. Ecol.* 93:fiy008

Taylor, A.E., A.T. Giguere, C.M. Zoebelin, **D.D. Myrold**, and P.J. Bottomley. 2017. Modeling of soil nitrification responses to temperature reveals thermodynamic differences between ammonia-oxidizing activity of archaea and bacteria. *ISME J.* 11:896-908.

Lu, X., P.J. Bottomley, and **D.D. Myrold**. 2015. Contributions of ammonia-oxidizing archaea and bacteria to nitrification in Oregon forest soils. *Soil Biol. Biochem.* 85:54-62.

Taylor, A.E., K. Taylor, B. Tennigkeit, M. Palatinszky, M. Stieglmeier, **D.D. Myrold**, C. Schleper, M. Wagner, and P.J. Bottomley. 2015. Comparison of inhibitory properties of C2 –

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- C10 1-alkynes on ammonia oxidation in two *Nitrososphaera* species. *Appl. Environ. Microbiol.* 81:1942-1948.
- Myrold, D.D.**, L.H. Zeglin, and J.K. Jansson. 2014. The potential of metagenomic, and other omic, approaches for understanding soil microbial processes. *Soil Sci. Soc. Am. J.* 78:3-10.
- Zeglin, L.H., P.J. Bottomley, A. Jumpponen, C.W. Rice, M. Arango, A. Lindsley, A. McGowan, P. Mfompeb, and **D.D. Myrold**. 2013. Altered precipitation regime affects the function and composition of soil microbial communities on multiple time scales. *Ecology* 94:2334-2345.
- Zeglin, L.H., L.A. Kluber, and **D.D. Myrold**. 2013. The importance of amino sugar turnover to C and N cycling in organic horizons of old-growth Douglas-fir forest soils colonized by ectomycorrhizal mats. *Biogeochem.* 112:679-693
- Keiluweit, M., J.J. Bougoure, L.H. Zeglin, **D.D. Myrold**, P.K. Weber, M. Kleber, J. Pett-Ridge, and P.S. Nico. 2012. Nano-scale investigation of the association of microbial nitrogen residues with iron (hydr)oxides in a forest soil O-horizon. *Geochim. Cosmochim. Acta* 95:213-226.
- Taylor, A.E., L.H. Zeglin, T.A. Wanzek, **D.D. Myrold**, and P.J. Bottomley. 2012. Dynamics of ammonia oxidizing archaea and bacteria populations and contributions to soil nitrification potentials. *ISME J.* 6:2024-2032.
- Taylor, A.E., L.H. Zeglin, S. Dooley, **D.D. Myrold**, and P.J. Bottomley. 2010. Evidence for different contributions of archaea and bacteria to the ammonia-oxidizing potential of diverse Oregon soils. *Appl. Environ. Microbiol.* 76:7691-7698.
- Boyle, S.A., R.R. Yarwood, P.J. Bottomley, and **D.D. Myrold**. 2008. Bacterial and fungal contributions to soil nitrogen cycling under Douglas fir and red alder at two sites in Oregon. *Soil Biol. Biochem.* 40:443-451.
- Högberg, M.N., P. Högberg, and **D.D. Myrold**. 2007. Is microbial community composition in boreal forest soils determined by pH, C-to-N ratio, the trees, or all three? *Oecologia* 150:590-601.
- Brant, J.B., E.W. Sulzman, and **D.D. Myrold**. 2006. Microbial community utilization of added carbon substrates in response to long-term carbon input manipulation. *Soil Biol. Biochem.* 38:2219-2232.
- Wallenstein, M.D., **D.D. Myrold**, M. Firestone, and M. Voytek. 2006. Environmental controls on denitrifying communities and denitrification rates: Insights from molecular methods. *Ecol. Applic.* 16:2143-2152.
- Butler, J.L., M.A. Williams, P.J. Bottomley, and **D.D. Myrold**. 2003. Microbial community dynamics associated with rhizosphere carbon flow. *Appl. Environ. Microbiol.* 69:6793-6800.
- Ritchie, N.J., M.E. Schutter, R.P. Dick, and **D.D. Myrold**. 2000. Use of length-heterogeneity-PCR and FAME to characterize microbial communities in soil. *Appl. Environ. Microbiol.* 66:1668-1675.
- Myrold, D.D.** 1998. Microbial nitrogen transformations. p. 259-294. In *Principles and Applications of Soil Microbiology* (D.M. Sylvia, J.J. Fuhrmann, P.G. Hartel, and D.A. Zuberer, eds.). Prentice Hall, Upper Saddle River, NJ.
- Simard, S.W., D.A. Perry, M.D. Jones, **D.D. Myrold**, D.M. Durall, and R. Molina. 1997. Net transfer of carbon between ectomycorrhizal tree species in the field. *Nature* 388:579-582.
- Hart, S.C., G.E. Nason, **D.D. Myrold**, and D.A. Perry. 1994. Dynamics of gross nitrogen transformations in an old-growth forest: The carbon connection. *Ecology* 75:880-891.
- Binkley, D., P. Sollins, R. Bell, D. Sachs, and **D. Myrold**. 1992. Biogeochemistry of adjacent conifer and alder-conifer stands. *Ecology* 73:2022-2033.

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- Myrold, D.D.** 1987. Microbial biomass nitrogen as an index of nitrogen availability. *Soil Sci. Soc. Am. J.* 51:1047-1049
- Myrold, D.D.**, and J.M. Tiedje. 1986. Simultaneous estimation of several nitrogen cycle rates using  $^{15}\text{N}$ : theory and application. *Soil Biol. Biochem.* 17:819-822.
- Tiedje, J.M., A.J. Sexstone, **D.D. Myrold**, and J.A. Robinson. 1982. Denitrification: ecological niches, competition and survival. *Anton. Leeuwenhoek J. Microbiol.* 48:569-583.

### **Selected Professional Activities**

- Editor-in-Chief, Soil Science Society of America (2016-present)
- Subject Editor, Soil Biology and Biochemistry (2005-present)
- Editorial Board, ISME Journal (2011-present)
- Chair, Advisory Committee, PNNL Earth and Biological Sciences Directorate (2016-present)
- Director, NSF-TerraGenome Research Coordination Network (2011-2018)
- Director, Subsurface Biosphere IGERT (2006-08)