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PERSONAL

Date of Birth: 16 October 1955
Place of Birth: Milwaukee, Wisconsin
Family Status: Married, three children

EDUCATION

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

PROFESSIONAL EXPERIENCE

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

Research on: Autecology of *Frankia* in soil, including population dynamics and biological diversity. Influence of microscale heterogeneity on nitrogen cycling in soil. Use of ¹⁵N and ¹³C to measure the dynamics of the nitrogen and carbon cycles. Nitrogen cycling in young red alder stands. Subsurface denitrification.

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

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

Research on: Nitrogen cycling in forest soils; microbial community composition of soils with different levels of plant diversity.

Teaching: Graduate seminar on nitrogen cycling in the plant-soil system.

1997-2007: Associate department head, Department of Crop and Soil Science, Oregon State University

Administrative duties: Oversee activities of the soils unit, including chairing faculty meetings, making committee assignments, handling space and resource allocations; doing annual evaluations of all tenured soils unit faculty; participate as a member of the departmental administrative team, which included planning and implementing departmental policy; represent the department head at college and university functions as requested.

1991-1992: Visiting associate professor, Department of Plant Physiology, University of Umeå, Umeå, Sweden

Research on: Autecology of *Frankia* in soil, including population dynamics and biological diversity.

Teaching: Graduate seminar on nitrogen cycling in the plant-soil system.

1989-1995: Associate professor, Department of Soil Science, Oregon State University

Research on: Nitrogen cycling in forest ecosystems and linkages to above and belowground productivity. Long-term effects of forest management on nutrient cycling. Role of microbial biomass as a sink and source of available nutrients. Use of ¹⁵N to measure rates of nitrogen cycling processes. Denitrification and nitrogen transformations in manured pasture systems. Autecology of *Frankia* in soil. Development of molecular probes for detection of soil microorganisms.

Teaching: Senior level course sequence on the soil ecosystem, specifically biological and modeling aspects. Senior level course in forest soils. Graduate level course on soil biology and biochemistry.

1984-1989: Assistant professor, Department of Soil Science, Oregon State University

Research on: Nitrogen cycling in forest ecosystems, particularly nitrification and denitrification. Effects of soil physical properties on microbial activity in soils. Denitrification in ground water aquifers. Microbial ecology of forest tree nursery soils. Role of microbial biomass as a sink and source of available nutrients. Autecology of *Frankia* in soil. Production of bare-root red alder seedlings using *Frankia* inoculum. Development of molecular probes for detection of soil microorganisms.

Teaching: Senior level course in forest soils. Graduate level course on soil biology and biochemistry.

1979-1984: Graduate research assistant, Department of Microbiology and Public Health, Michigan State University

Research on: Comparative evaluation of denitrification potentials in terrestrial habitats. Simultaneous estimation of rates of several nitrogen cycle processes: particularly mineralization, immobilization, nitrification, and denitrification. Effects of substrate and oxygen diffusion on denitrification rates in soil. Modeling denitrification as a Michaelis-Menten process in an unsaturated porous medium, incorporating the dynamics of water and solute movement.

Teaching: Introductory Soil Science Laboratory, 1 term
Introductory Microbiology Laboratory, 2 terms
Microbial Ecology Recitation, 2 terms

1977-1979: Graduate research assistant, Department of Agronomy, Washington State University

Research on: Water potential-water content characteristics of wheat straw. The effect of residue placement, water potential, and temperature on wheat straw decomposition rates. Estimation of kinetic parameters of straw and soil carbon mineralization.

ADDITIONAL EXPERIENCE

Research: Familiar with field sampling of soils and routine soil chemical and microbiological analyses. Experienced with the acetylene reduction assay for estimating nitrogen fixation and enumeration of ectomycorrhizal root-tips. Skilled in the use of ^{15}N in isotope dilution experiments, including analytical methods and ratio mass spectrometry. Some experience with ^{13}N methodology and basic molecular biology procedures.

Computer Expertise: Working knowledge of FORTRAN and BASIC. Familiar with data acquisition, word processing, graphics, spreadsheet, and statistical software.

Modeling Experience: Proficient at the formulation and numerical solution of deterministic models for simulating biological behavior, involving both ordinary and partial differential equations.

REFEREED JOURNAL ARTICLES

1. Myrold, D.D., L.F. Elliott, R.I. Papendick and G.S. Campbell. 1981. Water potential-water content characteristics of wheat straw. *Soil Sci. Soc. Am. J.* 45:329-333.

2. 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.
3. Myrold, D.D., and J.M. Tiedje. 1985. Diffusional constraints on denitrification in soil. *Soil Sci. Soc. Am. J.* 49:651-657.
4. Myrold, D.D., and J.M. Tiedje. 1985. Establishment of denitrification capacity in soil: effects of carbon, nitrate and moisture. *Soil Biol. Biochem.* 17:819-822.
5. Myrold, D.D., and J.M. Tiedje. 1986. Simultaneous estimation of several nitrogen cycle rates using ¹⁵N: theory and application. *Soil Biol. Biochem.* 18:559-568.
6. Myrold, D.D. 1987. Microbial biomass nitrogen as an index of nitrogen availability. *Soil Sci. Soc. Am. J.* 51:1047-1049. [AES #8027; FRL #2267]
7. Myrold, D.D. 1988. Denitrification losses from ryegrass and winter wheat cropping systems. *Soil Sci. Soc. Am. J.* 52:412-416. [AES #8287]
8. Dick, R.P., D.D. Myrold, and E.A. Kerle. 1988. Microbial biomass and soil enzyme activities in compacted and rehabilitated skid trail soils. *Soil Sci. Soc. Am. J.* 52:512-516. [AES #8223; FRL #2311]
9. Myrold, D.D., P.A. Matson, and D.L. Peterson. 1989. Relationships among soil microbial properties and aboveground stand characteristics of conifer forests in Oregon. *Biogeochem.* 8:265-281. [AES #8649]
10. Hansen, E.M., D.D. Myrold, and P.B. Hamm. 1990. Effects of soil fumigation and cover crops on potential pathogens, microbial activity, and seedling quality in conifer nurseries. *Phytopath.* 80:698-704.
11. Gardiner, D.T., N.W. Christensen, and D.D. Myrold. 1990. A comparison of methods for estimating phosphorus uptake kinetics under steady-state conditions. *J. Plant Nutr.* 13:1079-1093. [AES #8906]
12. Lee, C.Y., and D.D. Myrold. 1990. N mineralization and nitrification in forest soils: Effect of chemical treatment on N adsorption by ion exchange resin. *J. Korean For. Soc.* 79:285-289. (in Korean)
13. Hilger, A.B., and D.D. Myrold. 1991. Method for extraction of *Frankia* DNA from soil. *Agric. Ecosys. Environ.* 34:107-113. {also published under the same title in: pp. 107-113. *In Modern techniques in soil ecology* (D.A. Crossley et al., eds.).}
14. Nason, G.E., and D.D. Myrold. 1991. ¹⁵N in soil research: Appropriate application of rate estimation procedures. *Agric. Ecosys. Environ.* 34:427-441. {also published under the same title in: pp. 427-441. *In Modern techniques in soil ecology* (D.A. Crossley et al., eds.).}

15. Hilger, A.B., Y. Tanaka, and D.D. Myrold. 1991. Inoculation of fumigated nursery soil increases nodulation and yield of bare-root red alder (*Alnus rubra* Bong.). *New Forests* 5:35-42. [AES #8707]
16. Martin, K.J., Y. Tanaka, and D.D. Myrold. 1991. Peat-carrier increases inoculation success with *Frankia* on red alder (*Alnus rubra* Bong.) in fumigated nursery beds. *New Forests* 5:43-50. [AES #9543]
17. Vermes, J.-F., and D.D. Myrold. 1992. Denitrification in forest soils of Oregon. *Can. J. For. Res.* 22:504-512. [AES #9852]
18. Binkley, D., P. Sollins, R. Bell, D. Sachs, and D. Myrold. 1992. Biogeochemistry of adjacent conifer and alder-conifer stands. *Ecology* 73:2022-2033.
19. 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.
20. Huss-Danell, K., and D.D. Myrold. 1994. Intrageneric variation in nodulation of *Alnus*: Consequences for quantifying *Frankia* infective units in soil. *Soil Biol. Biochem.* 26:525-531.
21. Myrold, D.D., and K. Huss-Danell. 1994. Population dynamics of *Alnus*-infective *Frankia* in a forest soil with and without host trees. *Soil Biol. Biochem.* 26:533-540. [AES #10,267]
22. Crannell, W.K., Y. Tanaka, and D.D. Myrold. 1994. Calcium and pH interaction on root nodulation of nursery grown red alder (*Alnus rubra* Bong.) seedlings by *Frankia*. *Soil Biol. Biochem.* 26:607-613. [AES #10,268]
23. Nielsen, T.H., R. Well, and D.D. Myrold. 1997. Combination probe for nitrogen-15 soil labeling and sampling of soil atmosphere to measure subsurface denitrification activity. *Soil Sci. Soc. Am. J.* 61:802-811. [AES #11,021]
24. Jeong, S.-C., A. Liston, and D.D. Myrold. 1997. Molecular phylogeny of the genus *Ceanothus* (Rhamnaceae) using *rbcL* and *ndhF* sequences. *Theor. Appl. Genet.* 94:852-857. [AES #11,154]
25. 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.
26. Swanston, C.W., and D.D. Myrold. 1997. Incorporation of nitrogen from decomposing red alder leaves into a mesic Oregon forest soil. *Can. J. For. Res.* 27:1496-1502. [AES #11,234; FRL #3238]

27. Simard, S.W., M.D. Jones, D.M. Durall, D.A. Perry, D.D. Myrold, and R. Molina. 1997. Reciprocal transfer of carbon isotopes between ectomycorrhizal *Betula papyrifera* and *Pseudostuga menziesii*. *New Phytol.* 137:529-542.
28. Well, R. and D.D. Myrold. 1997. Eine neue Methode zur in situ Messung der Denitrifikation in wassergesättigten und ungesättigten. Böden. *Mitt. Dt. Bodenk. Ges.* 85:1063-1066. (in German)
29. Swanson, C.W., and D.D. Myrold. 1998. Evaluation of the stem injection technique and subsequent ¹⁵N partitioning in red alder crowns. *Plant Soil* 198:63-69. [AES #11,229; FRL #3256]
30. Bashan, Y., M.E. Puente, D.D. Myrold, and G. Toledo. 1998. In vitro transfer of fixed nitrogen from diazotrophic filamentous cyanobacteria to black mangrove seedlings. *FEMS Microbiol. Ecol.* 26:165-170.
31. Johannisson, C., D.D. Myrold, and P. Högborg. 1999. Retention of nitrogen by a nitrogen-loaded Scotch pine forest. *Soil Sci. Soc. Am. J.* 63:383-389.
32. Ritchie, N.J., and D.D. Myrold. 1999. Geographic distribution and genetic diversity of *Ceanothus*-infective *Frankia*. *Appl. Environ. Microbiol.* 65:1378-1383. [AES #11,473]
33. Well, R., and D.D. Myrold. 1999. Laboratory evaluation of a new method for *in situ* measurement of denitrification in water-saturated soils. *Soil Biol. Biochem.* 31:1109-1119.
34. Ritchie, N.J., and D.D. Myrold. 1999. Phylogenetic placement of uncultured *Ceanothus* microsymbionts using 16S rRNA gene sequences. *Can. J. Bot.* 77:1208-1213. [AES #11,484]
35. Jeong, S.-C., and D.D. Myrold. 1999. Genomic fingerprinting of *Frankia* microsymbionts from *Ceanothus* copopulations using repetitive sequences and polymerase chain reactions. *Can. J. Bot.* 77:1220-1230. [AES #11,529]
36. Jeong, S.-C., N.J. Ritchie, and D.D. Myrold. 1999. Molecular phylogenies of plants and *Frankia* support multiple origins of actinorhizal symbioses. *Mol. Phylogenet. Evol.* 13:493-503. [AES #11,530]
37. Principal de D'Aubeterre, J., D.D. Myrold, L.A. Royce, and P.A. Rossignol. 1999. A scientific note of an application of isotope ratio mass spectrometry to feeding by the mite, *Varroa jacobsoni* Oudemans, on the honeybee, *Apis mellifera* L. *Apidologie* 30:351-352.
38. 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. [AES #11,614]

39. Whalen, J.K., P.J. Bottomley, and D.D. Myrold. 2000. Carbon and nitrogen mineralization from light- and heavy-fraction additions to soil. *Soil Biol. Biochem.* 32:1345-1352. [AES #11,799]
40. Jeong, S.-C., and D.D. Myrold. 2001. Population size and diversity of *Frankia* in soils under *Ceanothus velutinus* and Douglas-fir stands. *Soil Biol. Biochem.* 33:931-941. [AES #11,713]
41. Whalen, J.K., P.J. Bottomley, and D.D. Myrold. 2001. Short-term nitrogen transformations in bulk and root-associated soils under ryegrass. *Soil Biol. Biochem.* 33:1937-1945. [AES #11,799]
42. Well, R., J. Augustin, J. Davis, S.M. Griffith, K. Meyer, and D.D. Myrold. 2001. Production and transport of denitrification gases in shallow ground water. *Nutr. Cycl. Agroecosys.* 60:65-75.
43. Well, R., and D.D. Myrold. 2002. A proposed method for measuring subsoil denitrification in situ. *Soil Sci. Soc. Am. J.* 66:507-518. [AES#11,823]
44. Cliff, J.B., P.J. Bottomley, R. Haggerty, and D.D. Myrold. 2002. Modeling the effects of diffusion limitations on ¹⁵N isotope dilution experiments in soil aggregates. *Soil Sci. Soc. Am. J.* 66:1868-1877. [AES# 11,813]
45. Cliff, J.B., P.J. Bottomley, D.J. Gaspar, and D.D. Myrold. 2002. Exploration of inorganic C and N assimilation by soil microbes with time of flight secondary ion mass spectrometry. *Appl. Environ. Microbiol.* 68:4067-4073.
46. Hicks, W.T., M.E. Harmon, and D.D. Myrold. 2003. Substrate controls on nitrogen fixation and respiration in woody debris of the Pacific Northwest, USA. *For. Ecol. Manage.* 176:25-35.
47. Well, R., J. Augustin, K. Meyer, and D.D. Myrold. 2003. Comparison of field and laboratory measurement of denitrification and N₂O production in the saturated zone of hydromorphic soils. *Soil Biol. Biochem.* 35:783-799.
48. Jeong, S.C., and D.D. Myrold. 2003. Recent progress in the evolution and ecology of actinorhizal symbioses. *Plant Pathol. J.* 19:1-8.
49. Mintie, A.T., R.S. Heichen, K. Cromack, Jr., D.D. Myrold, and P.J. Bottomley. 2003. Ammonia-oxidizing bacteria along meadow-to-forest transects in the Oregon Cascade mountains. *Appl. Environ. Microbiol.* 69:3129-3136.
50. Myrold, D.D., and K. Huss-Danell. 2003. Alder and lupine enhance nitrogen cycling in a degraded forest soil in northern Sweden. *Plant Soil* 254:47-56.
51. Martin, K.J., N.J. Ritchie, and D.D. Myrold. 2003. Nodulation potential of soils from red alder stands covering a wide age range. *Plant Soil* 254:187-192.

52. Martin, K.J., Y. Tanaka, and D.D. Myrold. 2003. Dual inoculation increases plant growth with *Frankia* on red alder (*Alnus rubra* Bong.) in fumigated nursery beds. *Symbiosis* 34:253-260.
53. Rich, J.J., R.S. Heichen, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. 2003. Community structure and functioning of denitrifying bacteria from adjacent meadow and forest soils. *Appl. Environ. Microbiol.* 69:5974-5982.
54. 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.
55. Swanston, C., P.S. Homann, B.A. Caldwell, D.D. Myrold, L. Ganio, and P. Sollins. 2004. Long-term effects of elevated nitrogen on forest soil organic matter stability. *Biogeochem.* 70: 229-252.
56. Butler, J.L., P.J. Bottomley, S.M. Griffith, and D.D. Myrold. 2004. Distribution and turnover of recently fixed photosynthate in ryegrass rhizospheres. *Soil Biol. Biochem.* 36:371-382.
57. Rich, J.J., and D.D. Myrold. 2004. Community composition and activities of denitrifying bacteria from adjacent agricultural soil, riparian soil, and creek sediment in Oregon, USA. *Soil Biol. Biochem.* 36: 1431-1441.
58. Cliff, J.B., D.J. Gaspar, P.J. Bottomley, and D.D. Myrold. 2004. Peak fitting to resolve CN⁻ isotope ratios in biological and environmental samples using TOF-SIMS. *Appl. Surface Sci.* 231-232:912-916.
59. Bottomley, P.J., A.E. Taylor, S.A. Boyle, S.K. McMahon, J.J. Rich, K. Cromack, Jr., and D.D. Myrold. 2004. Responses of nitrification and ammonia-oxidizing bacteria to reciprocal transfers of soil between adjacent coniferous forest and meadow vegetation in the Cascade Mountains of Oregon. *Microb. Ecol.* 48:500-508.
60. McMahon, S.K., M.A. Williams, P.J. Bottomley, and D.D. Myrold. 2005. Dynamics of microbial communities during decomposition of carbon-13 labeled ryegrass fractions in soil. *Soil Sci. Soc. Am. J.* 69:1238-1247.
61. Högberg, M.N., D.D. Myrold, R. Giesler, and P. Högberg. 2006. Contrasting patterns of soil N cycling in model ecosystems of Fennoscandian boreal forests. *Oecologia* 147:96-107.
62. Williams, M.A., D.D. Myrold, and P.J. Bottomley. 2006. Carbon flow from ¹³C-labeled straw and root residues into the phospholipids fatty acids of a soil microbial community under field conditions. *Soil Biol. Biochem.* 38:759-768.
63. Davis, J.M., S.M. Griffith, W. Horwath, J.J. Steiner, and D.D. Myrold. 2006. Fate of nitrogen-15 in a perennial ryegrass seed field and herbaceous riparian area. *Soil Sci. Soc. Am. J.* 70:909-919.

64. Boyle, S.A., J.J. Rich, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. 2006. Reciprocal transfer effects on denitrifying community composition and activity at forest and meadow sites in the Cascade Mountains of Oregon. *Soil Biol. Biochem.* 38:870-878.
65. Williams, M.A., D.D. Myrold, and P.J. Bottomley. 2006. Distribution and fate of ¹³C-labeled root and straw residues from ryegrass and crimson clover in soil under western Oregon field conditions. *Biol. Fertil. Soils* 42:523–531.
66. Brant, J.B., D.D. Myrold, and E.W. Sulzman. 2006. Root controls on soil microbial community structure in forest soils. *Oecologia* 148:650-659.
67. 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.
68. Bottomley, P.J., R.R. Yarwood, S.A. Kageyama, K.E. Waterstripe, M.A. Williams, K. Cromack, Jr., and D.D. Myrold. 2006. Responses of soil bacterial and fungal communities to reciprocal transfers of soil between adjacent coniferous forest and meadow vegetation in the Cascade Mountains of Oregon. *Plant Soil* 289:35-45.
69. 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.
70. Williams, M.A., D.D. Myrold, and P.J. Bottomley. 2007. Carbon flow from ¹³C-labeled clover and ryegrass residues into a residue-associated microbial community under field conditions. *Soil Biol. Biochem.* 39:819-822.
71. Cliff, J.B., P.J. Bottomley, D.J., Gaspar, and D.D. Myrold. 2007. Nitrogen mineralization and assimilation at millimeter scales. *Soil Biol. Biochem.* 39:823-826.
72. 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.
73. Myrold, D.D., and N.J. Ritchie Posavatz. 2007. Potential importance of bacteria and fungi in nitrate assimilation in soil. *Soil Biol. Biochem.* 39:1737-1743.
74. Myrold, D.D. 2007. Recent advances in soil nitrogen cycling and microbial community analysis. *Korean J. Soil Sci. and Fertilizers* 40:5-9.
75. Khan, A., D.D. Myrold, and A.K. Misra. 2007. Distribution of *Frankia* genotypes of *Alnus nepalensis* with respect to altitude and soil characteristics in the Sikkim Himalayas. *Physiol. Plant.* 130:364–371.

76. Davis, J.H., S.M. Griffith, W.R. Horwath, J.J. Steiner, and D.D. Myrold. 2007. Mitigation of shallow groundwater nitrate in a poorly drained riparian area and adjacent cropland. *J. Environ. Qual.* 36:628-637.
77. 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.
78. Moore-Kucera, J., A.N. Azarenko, L. Brutcher, A. Chozinski, D.D. Myrold, and R. Ingham. 2008. In search of key soil functions to assess soil community management for sustainable sweet cherry orchards. *Hortsci.* 43:38-44.
79. Kageyama, S.A., N. Ritchie Posavatz, K.E. Waterstripe, S.J. Jones, P.J. Bottomley, K. Cromack, Jr. and D.D. Myrold. 2008. Fungal and bacterial communities across meadow/forest transects in the Western Cascades of Oregon. *Can. J. For. Res.* 38:1053-1060.
80. Davis, J.H., S.M. Griffith, W.R. Horwath, J.J. Steiner, and D.D. Myrold. 2008. Denitrification and nitrate consumption in an herbaceous riparian area and perennial ryegrass seed cropping system. *Soil Sci. Soc. Am. J.* 72:1299-1310.
81. Boyle-Yarwood, S.A., P.J. Bottomley, and D.D. Myrold. 2008. Community composition of ammonia-oxidizing bacteria and archaea in soils under stands of red alder and Douglas-fir in Oregon. *Environ. Microbiol.* 10:2956-2965.
82. Chaer, G.M., D.D. Myrold, and P.J. Bottomley. 2009. A soil quality index based on the equilibrium between soil organic matter and biochemical properties of undisturbed coniferous forest soils of the Pacific Northwest. *Soil Biol. Biochem.* 41:822-830.
83. Chaer, G.M., M.F. Fernandes, D.D. Myrold, and P.J. Bottomley. 2009. Shifts in microbial community composition and physiological profiles across a gradient of induced soil degradation. *Soil Sci. Soc. Am. J.* 73:1327-1334.
84. Anderson, M.D., R.W. Ruess, D.D. Myrold, and D.L. Taylor. 2009. Host species and habitat affect nodulation by specific *Frankia* genotypes in two species of *Alnus* in interior Alaska. *Oecologia* 160:619-630.
85. Chaer, G.M., M.F. Fernandes, D.D. Myrold, and P.J. Bottomley. 2009. Comparative resistance and resilience of soil microbial communities and enzyme activities in adjacent native forest and agricultural soils. *Microb. Ecol.* 58:414-424.
86. Khan, A., D.D. Myrold, and A.K. Misra. 2009. Molecular diversity of *Frankia* from root nodules of *Hippophae salicifolia* (D. Don) found in Sikkim. *Indian J. Microbiol.* 49:196-200.

87. Yarwood, S.A., D.D. Myrold, and M.N. Högberg. 2009. Termination of the tree belowground C allocation alters soil fungal and bacterial communities in a boreal forest. *FEMS Microbiol. Ecol.* 70:151-162.
88. Chaia, E.E., and D.D. Myrold. 2010. Variation of ¹⁵N natural abundance in leaves and nodules of actinorhizal shrubs in Northwest Patagonia. *Symbiosis* 50:97-105.
89. Kluber, L.A., K.M. Tinnesand, B.A. Caldwell, S.M. Dunham, R.R. Yarwood, P.J. Bottomley, and D.D. Myrold. 2010. Ectomycorrhizal mats alter forest soil biogeochemistry. *Soil Biol. Biochem.* 42:1607-1613.
90. Yarwood, S.A., P.J. Bottomley, and D.D. Myrold. 2010. Soil microbial communities associated with Douglas-fir and red alder stands at high- and low-productivity forest sites in Oregon, USA. *Microb. Ecol.* 60:606-617.
91. 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.
92. Högberg, P., C. Johannisson, S.A. Yarwood, I. Callesen, T. Näsholm, D.D. Myrold, and M.N. Högberg. 2011. Recovery of ectomycorrhiza after 'nitrogen saturation' of conifer forest. *New Phytol.* 189: 515–525.
93. Kluber, L.A., J.E. Smith, and D.D. Myrold. 2011. Distinctive fungal and bacterial communities are associated with mats formed by ectomycorrhizal fungi. *Soil Biol. Biochem.* 43:1042-1050.
94. Zeglin, L.H., A.E. Taylor, D.D. Myrold, and P.J. Bottomley. 2011. Bacterial and archaeal amoA gene distribution covaries with soil nitrification properties across a range of land uses. *Environ. Microbiol. Rep.* 3:717-726.
95. González-Pinzón, R., R. Haggerty, and D.D. Myrold. 2012. Measuring aerobic respiration in stream ecosystems using the resazurin-resorufin system. *J. Geophys. Res.* 117:G00N06. (doi: 10.1029/2012JG001965)
96. 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. (doi: 10.1016/j.gca.2012.07.001)
97. 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.* (doi: 10.1038/ismej.2012.51)
98. Zeglin, L.H., L.A. Kluber, and D.D. Myrold. 2012. 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.* (doi: 10.1007/s10533-012-9746-8); Erratum (doi: 10.1007/s10533-012-9777-1)

99. Bottomley, P.J., D.D. Myrold, and Taylor, A.E. 2012. A consideration of the relative contributions of different microbial subpopulations to the soil N cycle. *Front. Microbiol.* 3:373. (doi: 10.3389/fmicb.2012.00373)
100. Yarwood, S.A., E.A. Brewer, R.R. Yarwood, K. Lajtha, and D.D. Myrold. 2013. The persistence of soil microbes: active community composition and capability to respond to litter addition after 12 years of no inputs. *Appl. Environ. Microbiol.* (in press)
101. Zeglin, L.H., and D.D. Myrold. 2013. Fate of decomposed fungal cell wall material in organic horizons of old-growth Douglas-fir forest soils. *Soil Sci. Soc. Am. J.* (in revision)
102. Zeglin, L.H., P.J. Bottomley, A. Jumpponen, C.W. Rice, M. Arango, A. Lindsley, A. McGowan, P. Mfompeb, and D.D. Myrold. 201x. Altered precipitation regime affects soil microbial C cycling—temporal dynamics suggest multiple mechanisms of C retention. *Ecology* (in review)
103. Högberg, M.N., S.A. Yarwood, and D.D. Myrold. 201x. Responses of fungal and bacterial community composition to N in natural and experimental boreal forest. *FEMS Microbiol. Ecol.* (in review)
104. Pett-Ridge, J., M. Keiluweit, L.H. Zeglin, D.D. Myrold, J.J. Bougoure, P.K. Weber, M. Kleber, and P.S. Nico. 201x. Joining NanoSIMS and STXM/NEXAFS to visualize soil biotic and abiotic processes at the nano-scale. *Biogeochem.* (in preparation)
105. Kageyama, S.A., N.J. Posavatz, S.S. Jones, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. 201x. Effects of disturbance scale on microbial communities in the Western Cascades of Oregon. ??? (in preparation)
106. Myrold, D.D., and T.M. Vogel. 2012. Linking microbial community structure to function in soil ecosystems. *Microbiol. Mol. Biol. Rev.* (in preparation)
107. Miller, R.E., H.W. Anderson, R. Brown, and D.D. Myrold. 201x. Response of western hemlock and Douglas-fir seedlings to biruet. *Soil Sci. Soc. Am. J.* (in preparation)
108. McMahon, S.K., P.J. Bottomley, and D.D. Myrold. 201x. Tracing substrate-derived C during the decomposition of ¹³C-labeled ryegrass residue. *Soil Biol. Biochem.* (in preparation)

REFEREED BOOK AND PROCEEDINGS CHAPTERS

1. Childs, S.W., F.T. Lindstrom, L. Boersma, and D.D. Myrold. 1988. A model of carbon substrate injection to enhance nitrate removal in aquifers. p. 547-559. *In*

- Proceedings of the Agricultural Impacts on Ground Water—A Conference. 21-23 March 1988. National Water Well Association, Dublin, OH.
2. Pascoe, F.N., and D.D. Myrold. 1988. Soil compaction and microbial activity: a brief review. pp. 320-325. *In* Degradation of Forest Land: "Forest Soils at Risk", Proceedings 10th B. C. Soil Science Workshop, February 1986. B.C. Ministry Forests, Land Management Rep. Ser. No. 56. [AES #8198; FRL #2266]
 3. Myrold, D.D. 1989. Approaches to measuring soil nitrogen transformations under continuous or steady-state conditions. p. 197-216. *In* Applications of Continuous and Steady-State Methods to Root Biology (J.G. Torrey and L.J. Winship, eds.). Kluwer Academic Publishers, The Netherlands.
 4. Turner, D.P., D.D. Myrold, and J.D. Bailey. 1990. Climate change and patterns of denitrification in the Willamette basin of western Oregon, USA. p. 511-517. *In* Soils and the greenhouse effect (A.F. Bouwman, ed.). John Wiley & Sons.
 5. Edmonds, R.L., D. Binkley, M. Feller, P. Sollins, A. Abee, and D.D. Myrold. 1990. Nutrient cycling: Effects on productivity of northwest forest. pp. 17-35. *In* Maintaining Long-Term Productivity of Pacific Northwest Forests (D.A. Perry et al., eds.). Timber Press, Portland, OR.
 6. Davidson, E.A., D.D. Myrold, and P.M. Groffman. 1990. Denitrification in temperate forest ecosystems. p. 196-220. *In* Sustained Productivity of Forest Soils (S.P. Gessel, D.S. Lacate, G.F. Weetman, and R.F. Powers, eds.). Proceedings of the 7th North American Forest Soils Conference, University of British Columbia, Faculty of Forestry Publication, Vancouver, B.C.
 7. Myrold, D.D. 1990. Effects of acidic deposition on soil organisms. pp. 163-187. *In* Mechanisms of forest response to acidic deposition (A.A. Lucier and S.G. Haines, eds.). Springer-Verlag, New York. [AES #8594; FRL #2310]
 8. Myrold, D.D. 1990. Measuring denitrification in soils using ¹⁵N techniques. pp. 181-198. *In* Denitrification in Soil and Sediment (N.P. Revsbeck and J. Sørensen, eds.). Plenum Press, New York, NY.
 9. Myrold, D.D., and G.E. Nason. 1991. Microorganisms as mediators of acid deposition effects in forest soils. *Trends Soil Sci.* 1:1-13.
 10. Myrold, D.D., and G.E. Nason. 1991. Effect of Acid Rain on Soil Microbial Processes. p. 57-80. *In* New Concepts in Environmental Microbiology (R. Mitchell, ed.). Wiley-Liss, Inc., New York, NY. [AES # 9587]
 11. Kelly, S., J.A. Moore, M. Gamroth, D.D. Myrold, and N.B. Baumeister. 1991. Movement of nitrogen from land application of dairy manure on pasture. p. 251-260. *In* Nonpoint Source Pollution: The Unfinished Agenda for the Protection of our Water Quality, Proc. from the Tech. Session of the Regional Conf., Tacoma, WA, 29-12 March 1991. Washington State University, Pullman, WA.

12. Nason, G.E., and D.D. Myrold. 1992. Nitrogen fertilizers: Fates and environmental effects in forests. p. 67-81. *In* Forest Fertilization: Sustaining and Improving Nutrition and Growth of Western Forests (H.N. Chappell, G.F. Weetman, and R.E. Miller, eds.). Institute of Forest Resources Contrib. 73. College of Forest Resources, Univ. of Washington, Seattle, WA. [AES #8660]
13. Molina, R., D.D. Myrold, and C.Y. Li. 1994. Root and soil biology of alder. p. 23-46. *In* The Biology and Management of Red Alder (D.E. Hibbs, D.S. DeBell, and R.F. Tarrant, eds.). Oregon State University Press, Corvallis, OR.
14. Myrold, D.D. 1994. *Frankia* and the actinorhizal symbiosis. p. 291-328. *In* Methods of Soil Analysis, Part 2. Microbiological and Biochemical Properties (R.W. Weaver, J.S. Angle, and P.J. Bottomley, eds.). Soil Science Society of America Book No. 5, Madison, WI. [AES #10,266]
15. Myrold, D.D., A.B. Hilger, K.J. Martin, and K. Huss-Danell. 1994. Enumerating *Frankia* in soil using molecular methods. p. 127-136. *In* Beyond the Biomass: Compositional and Functional Analysis of Soil Microbial Communities (K. Ritz, J. Dighton, and K.E. Giller, eds.). John Wiley, Chichester, UK. [AES #10,265]
16. Myrold, D.D., K.J. Martin, and N.J. Ritchie. 1995. Gel purification of soil DNA extracts. Section 1.3.5, p. 1-9. *In* Molecular Microbial Ecology Manual (A.D.L. Akkermans, J.D. van Elsas, and F.J. de Bruijn, eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
17. Hart, S.C., and D.D. Myrold. 1996. ¹⁵N tracer studies of soil nitrogen transformations. p. 225-245. *In* Mass Spectrometry of Soils (T.W. Boutton and S.I. Yamasaki, eds.). Marcel Dekker, Inc., New York, NY.
18. Myrold, D.D. 1996. Quantification of nitrogen transformations. p. 445-452. *In* Manual of Environmental Microbiology (C.J. Hurst, G.R. Knudsen, M.J. McInerney, L.D. Stetzenbach, and M.V. Walter, eds.). ASM Press, Washington, DC.
19. 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.
20. Myrold, D.D. 1998. Modeling nitrogen transformations in soils. p. 142-161. *In* Mathematical Modeling in Microbial Ecology (A.L. Koch, J.A. Robinson, and G.A. Milliken, eds.). Chapman and Hall, New York, NY.
21. Myrold, D.D., R.W. Ruess, and M.J. Klug. 1999. Dinitrogen fixation. p. 241-257. *In* Standard Soil Methods for Long-Term Ecological Research (G.P. Robertson, D.C. Coleman, C.S. Bledsoe, and P. Sollins, eds.). Oxford University Press, New York, NY.

22. Groffman, P.M., E.A. Holland, D.D. Myrold, G.P. Robertson, and X. Zou. 1999. Denitrification. p. 272-288. *In* Standard Soil Methods for Long-Term Ecological Research (G.P. Robertson, D.C. Coleman, C.S. Bledsoe, and P. Sollins, eds.). Oxford University Press, New York, NY.
23. Myrold, D.D. 1999. Bacteria. p. 40. *In* Encyclopedia of Environmental Science (D.E. Alexander and R.W. Fairbridge, ed.). Kluwer Academic Publishers, Dordrecht, The Netherlands
24. Myrold, D.D. 1999. Carbon cycle. p. 69-70. *In* Encyclopedia of Environmental Science (D.E. Alexander and R.W. Fairbridge, ed.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
25. Myrold, D.D. 1999. Microorganisms. p. 409. *In* Encyclopedia of Environmental Science (D.E. Alexander and R.W. Fairbridge, ed.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
26. Myrold, D.D. 1999. Nitrates. p. 434-435. *In* Encyclopedia of Environmental Science (D.E. Alexander and R.W. Fairbridge, ed.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
27. Myrold, D.D. 1999. Nitrogen cycle. p. 435-436. *In* Encyclopedia of Environmental Science (D.E. Alexander and R.W. Fairbridge, ed.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
28. Myrold, D.D. 1999. Nitrogen transformations and management interactions in forests. p. 106-113. *In* Proceedings: Pacific Northwest Forest and Rangeland Soil Organism Symposium, 1998 March 17-19, Corvallis, OR (R.T., Meurisse, W.G. Ypsilantis, and C. Seybold, eds.). Gen. Tech. Rep. PNW-GTR-461. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
29. Myrold, D.D. 2002. Quantification of nitrogen transformations. p. 583-590. *In* Manual of Environmental Microbiology, 2nd Edition (C.J. Hurst, G.R. Knudsen, M.J. McInerney, L.D. Stetzenbach, and M.V. Walter, eds.). ASM Press, Washington, DC.
30. Myrold, D.D. 2002. Soil nitrogen cycle. p. 2936-2944. *In* Encyclopedia of Environmental Microbiology (G. Bitton, ed.). John Wiley & Sons, Inc., New York, NY.
31. Myrold, D.D. 2002. Soil nitrogen cycle. p. 1121-1130. *In* Encyclopedia of Agrochemicals, Vol. 3 (J.R. Plimmer, D.W. Gammon, and N.N. Ragsdale, eds.). John Wiley & Sons, Inc., New York, NY.
32. Myrold, D.D. 2004. Microbial nitrogen transformations. p. 333-372. *In* Principles and Applications of Soil Microbiology, 2nd Edition (D.M. Sylvia, J.J. Fuhrmann, P.G. Hartel, and D.A. Zuberer, eds.). Prentice Hall, Upper Saddle River, NJ.

33. Bottomley, P.J., and D.D. Myrold. 2007. Biological nitrogen fixation: The return of N to the soil. p. 365-387. *In Soil Microbiology, Ecology, and Biochemistry*, 3rd Edition (E.A. Paul, ed.). Academic Press, Burlington, MA.
34. Drury, C.F., D.D. Myrold, E.G. Beauchamp, and W.D. Reynolds. 2007. Denitrification techniques for soils. p. 471-493. *In Soil Sampling and Methods of Analysis*, 2nd Edition (M.R. Carter and E.G. Gregorich, eds.). CRC Press, Taylor & Francis Group, Boca Raton, FL.
35. Myrold, D.D. 2007. Quantification of nitrogen transformations. p. 687-696. *In Manual of Environmental Microbiology*, 3rd Edition (C.J. Hurst, R.L. Crawford, J.L. Garland, D.A. Lipson, A.L. Mills, and L.D. Stetzenbach, eds.). ASM Press, Washington, DC.
36. Myrold, D.D., P.J. Bottomley, M.N. Högberg, P. Högberg, and E.W. Sulzman. 2007. Linking microbial communities to activity in soil with molecular and stable isotope techniques. p. 85-86. *In Linking Management to Global Climate Challenges: The Proceedings of the International Symposium on Forest Soils and Ecosystem Health* (Z. Xu, C.E. Johnson, C. Chen, and T.J. Blumfield, eds.). Centre for Forestry and Horticulture Research, Griffith University, Brisbane, Australia. (ISBN 978-1-921291-16-6)
37. Myrold, D.D., and P.J. Bottomley. 2008. Nitrogen mineralization and immobilization. p. 157-172. *In Nitrogen in Agricultural Soils* (W. Raun and J.S. Schepers, eds.). American Society of Agronomy, Madison, WI.
38. Cole, J.R., D.D. Myrold, C.H. Nakatsu, P.R. Owens, G. Kowalchuk, C. Tebbe, and J.M. Tiedje. 2010. Development of soil metadata standards for international DNA sequence databases. p.5-8. *In Proceedings of the 19th World Congress of Soil Science, Soil Solutions for a Changing World* (R.J. Gilkes and N. Prakongkep, eds.). ISBN 978-0-646-53783-2, Published on DVD, <http://www.iuss.org>, Symposium 2.3.2: Gene expression and proteomics in soil, 2010 Aug 1-6. Brisbane, Australia: IUSS.
39. Myrold, D.D., J. Pett-Ridge, and P.J. Bottomley. 2011. Nitrogen mineralization and assimilation at millimeter scales. p. 91-114. *In Research on Nitrification and Related Processes, Part B* (M.G. Klotz and L.Y. Stein, eds.) *Methods in Enzymology*, Vol. 496. Elsevier, Inc., Academic Press, Burlington.
40. Myrold, D.D., and P. Nannipieri. 201x. G. Pietramellara, G. Renella, and P. Nannipieri (Ed). *Omics in Soil Science*. Horizon Scientific Press, Hethersett, UK (in preparation)
41. Bottomley, P.J., and D.D. Myrold. 201x. Biological nitrogen fixation: The return of N to the soil. p. xxx-xxx. *In Soil Microbiology, Ecology, and Biochemistry*, 4rd Edition (E.A. Paul, ed.). Elsevier, Waltham, MA. (in preparation)

TECHNICAL REPORTS AND BULLETINS

1. Myrold, D.D. 1987. Effects of acidic deposition on soil organisms. p. 1-29. *In* Acidic deposition and forest soil biology. National Council of the Paper Industry for Air and Stream Improvement Tech. Bull. No. 527. New York, NY.
2. Myrold, D.D., and G.E. Nason. 1988. Use of soil microbial biomass as an indicator of non-responsive sites to nitrogen fertilization. p. 16. *In* Sulfur Nutrition and Fertilization of Western Conifers (H.N. Chappell and R.E. Miller, eds.). Regional Forest Nutrition Research Project Report No. 10. University of Washington, Seattle, WA.
3. Myrold, D.D., and G.E. Nason. 1989. Microorganisms as mediators of acid deposition effects in forest soils. Preprint available at the Air Pollution Control Association 82nd Annual Meeting. 25-30 June 1989. Air Pollution Control Association, Anaheim, CA. 15 p. [AES #8811]
4. Lindstrom, F.T., L. Boersma, D.D. Myrold, and M. Barlaz. 1991. Denitrification in nonhomogeneous laboratory scale aquifers: 4. Hydraulics, nitrogen chemistry, and microbiology in a single layer. USEPA/600/2-91/014. USEPA, Environ. Res. Lab, Ada, OK.
5. Moore, J.A., M.J. Gamroth, S. Skarda, S. Kelly, N. Baumeister, and D. Myrold. 1992. Pathways of nitrogen movement from land spread manure. Final Report to Soil Conservation Service. 17 p.
6. Myrold, D.D., N.C. Baumeister, and J.A. Moore. 1992. Quantifying losses of nitrogen from land-applied dairy manures. Final Technical Completion Report for Project Number G1609-04. Water Resources Research Institute-115. Oregon Water Resources Research Institute, Oregon State University, Corvallis, OR. 42 p.

PUBLISHED ABSTRACTS

1. Myrold, D.D., A.B. Hilger, and S.H. Strauss. 1990. Detecting *Frankia* in soil using PCR. p. 429. *In* Nitrogen fixation: Achievements and Objectives (P.M. Gresshoff, L.E. Roth, G. Stacey, and W.E. Newton, eds.). Chapman and Hall, New York, NY.
2. Hilger, A.B., and D.D. Myrold. 1992. Quantitation of soil *Frankia* by bioassay and gene probe methods: response to host and non-host rhizospheres and liming. *Acta Oecol.* 13:505-506.
3. Martin, K.J., Y. Tanaka, and D.D. Myrold. 1992. Dual inoculation of red alder (*Alnus rubra* Bong.) with effective *Frankia alni* for nursery bare-root seedling production. *Acta Oecol.* 13:508-509.
4. Myrold, D.D., K.J. Martin, and N.J. Ritchie. 1995. Use of PCR-RFLP analysis to distinguish among *Frankia* strains in nodules of red alder. p. 713. *In* Nitrogen Fixation: Fundamentals and Applications, (I.A. Tikhonovich, V.I. Romanov, N.A.

- Provarov, and W.E. Newton, eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
5. Cliff, J.B., D.J. Gaspar, P.J. Bottomley, and D.D. Myrold. 2005. Microbial C and N assimilation in soils and model systems as revealed by ToF-SIMS. *Geochim. Cosmochim. Acta* 69 (10, Suppl. 1):A527-A527.
 6. Brewer, E.A., and D.D. Myrold. 2009. Impacts of long-term organic matter manipulations on nitrogen cycling in an old growth forest. *J. Nematology* 41:312-313.
 7. DeCrappeo, N.M., P.J. Bottomley, D.D. Myrold, E.A. Brewer, E.J. DeLorenze, and D.A. Pyke. 2009. The relative contributions of soil bacteria and fungi to inorganic nitrogen cycling in sagebrush and cheatgrass rhizosphere soils. *J. Nematology* 41:323-324.
 8. Keiluweit, M., Nico, P.S., Zeglin, L.H., Pett-Ridge, J., Weber, P., Myrold, D.D., Kleber, M., 2010. C and N dynamics in soil microstructures: A joined STXM/NEXAFS and NanoSIMS approach. *Geochimica et Cosmochimica Acta* 74, A502-A502.
 9. Pett-Ridge, J., Keiluweit, M., Kleber, M., Myrold, D., Nico, P., Weber, P., 2010. Visualizing organic matter biogeochemistry at the microaggregate scale: Lessons from STXM-SIMS. *Geochimica et Cosmochimica Acta* 74, A813-A813.

PROCEEDINGS EDITED

1. Berry, A.M., and D.D. Myrold. 1997. Proceedings of the 10th International Conference on *Frankia* and Actinorhizal Plants. *Physiol. Plant* 99:564-738.

POPULAR PRESS ARTICLES

1. Wells, G. 2005. The universe beneath our feet. *Oregon's Agricultural Progress* 51:22-25.
2. Microbial Observatory. Andrews Forest Newsletter, Spring 2008, Issue 4 (<http://andrewsforest.oregonstate.edu/lter/pubs/newsletter.cfm?topnav=170>).
3. Monitoring soil microbial communities as an indicator of soil quality. Subsurface Biosphere Initiative Newsletter, May 2009 (<http://sbi.oregonstate.edu/news/200905.htm>)
4. New research coordination network: TerraGenome. Subsurface Biosphere Initiative Newsletter, March 2012 (<http://sbi.oregonstate.edu/newsletter/201203.html>)

EDITORIALS AND OTHER SCIENTIFIC CORRESPONDENCE

1. Myrold, D.D. 2011. 75 Years and Still Going Strong. *Soil Sci. Soc. Am. J.* 75:IV.
2. Myrold, D.D. 2011. SSSAJ: Still Making an Impact. *Soil Sci. Soc. Am. J.* 75:773-774.
3. Davies, N., D. Field, and the Genomic Observatories Network. 2012 A genomic network to monitor Earth. *Nature* 481:145.
4. Myrold, D.D. 2012. Reviewers—The unsung heroes of *SSSAJ*. *Soil Sci. Soc. Am. J.* 76: 749-756.

BOOKS REVIEWED

1. Richards, B.N. 1988. The microbiology of terrestrial ecosystems. Longman Scientific & Technical, Essex, England. *For. Sci.* 34:250-251.
2. Paul, E.A., and F.E. Clark. 1989. Soil microbiology and biochemistry. Academic Press, San Diego, CA. *BioSci.* 39:819.
3. Pinton, R., Z. Varanini, and P. Nannipieri. 2007. The rhizosphere—biochemistry and organic substances at the soil-plant interface, 2nd Edition. CRC Press, Taylor & Francis Group, Boca Raton, FL. *Soil. Sci. Soc. Am. J.* 72:1844.

DNA SEQUENCES SUBMITTED

- 2,218 sequences deposited in GenBank (<http://www.ncbi.nih.gov/>) as of 31 December 2011.

THESES

Myrold, D.D. 1979. Effects of water potential and residue placement on the rate of wheat straw decomposition. M.S. thesis. Washington State University, Pullman.

Myrold, D.D. 1984. Nitrogen cycling in soils: simultaneous estimation of transformation rates, diffusional control of denitrification, and establishment of denitrification capacity. Ph.D. dissertation, Michigan State University, East Lansing. (Diss. Abstr. Int. 45:2446-B)

PRESENTATIONS

1. Myrold, D.D., L.F. Elliott, and R.I. Papendick. 1979. A psychrometric technique to measure the water potential of crop residue. *Abstr. Pacific Div. Am. Assoc. Advan. Sci.* p. 161.

2. Myrold, D.D., L.F. Elliott, and R.I. Papendick. 1979. The influence of placement and water potential on rates of wheat straw decomposition. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 161.
3. Tiedje, J.M., H.F. Kaspar, and D.D. Myrold. 1980. Comparison of denitrifying activities of a variety of habitats. Bull. Ecol. Soc. Am. 61:85.
4. Myrold, D.D., J.A. Robinson, R.L. Olbrich, E.D. Goodman, and J.M. Tiedje. 1981. A non-linear kinetic model of denitrification in porous media. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 166.
5. Myrold, D.D., J.R. Gosz, and J.M. Tiedje. 1982. Moisture gradient effects on denitrification rates within a nonaggrading aspen site. Bull. Ecol. Soc. Am. 63:134.
6. Myrold, D.D., and J.M. Tiedje. 1982. Simultaneous estimation of several rates of N-cycle processes: an application of compartmental analysis. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 194.
7. Myrold, D.D., and J.M. Tiedje. 1983. Simultaneous estimation of several nitrogen transformation rates by ^{15}N isotope dilution. Abstr. 3rd Int. Symp. Microbial Ecology. p. 35.
8. Myrold, D.D., and J.M. Tiedje. 1984. Effects of carbon, NO_3 , and moisture on the establishment of denitrifying activity in soil. Abstr. Ann. Meet. Am. Soc. Microbiol. p. 197.
9. Myrold, D.D., and J.M. Tiedje. 1984. Does diffusion of NO_3^- limit denitrification in soil aggregates? Agron. Abstr. American Society of Agronomy, Madison, WI. p. 191.
10. Myrold, D.D. 1985. A look at the microbiological basis of the anaerobic nitrogen mineralization assay. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 222.
11. Pascoe, F.N., and D.D. Myrold. 1986. Effects of compaction on soil microbial activity. 10th B.C. Soil Science Workshop. Vancouver, B.C.
12. Myrold, D.D., P.A. Matson and D.L. Peterson. 1986. Relationship between N cycle processes and remotely sensed data across a transect of vegetation zones in Oregon. Abstr. Ann. Meet. Ecol. Soc. Am. p. 249.
13. Myrold, D.D., and C-Y. Li. 1986. Assimilation and dissimilation of nitrate by *Frankia*. 6th Int. Meet. on *Frankia* and Actinorhizal Plants. Umeå, Sweden.
14. Myrold, D.D. 1986. Relationship between nitrogen cycling and net primary production in the coniferous forest ecosystems of Oregon. Abstr. 4th Int. Symp. Microbial Ecology. p. 139.

15. Myrold, D.D. 1986. Denitrification losses in ryegrass and winter wheat cropping systems of western Oregon. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 185.
16. Myrold, D.D. 1987. An overview of forest soil microbiology. Agron. Abstr. American Society of Agronomy, Madison, WI. pp. 188-189.
17. Myrold, D.D., A.B. Hilger, and D. Baker. 1987. A quantitative plant bioassay for measuring *Frankia* populations in soil. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 188.
18. Pascoe, F.N., and D.D. Myrold. 1987. Effects of compaction on microbial activity of forest soils. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 190.
19. Childs, S.W., F.T. Lindstrom, L. Boersma, and D.D. Myrold. 1988. A model of carbon substrate injection to enhance nitrate removal in aquifers. National Water Well Association. Des Moines, IA.
20. Davidson, E.A., Groffman, P.M., and D.D. Myrold. 1988. Denitrification in forest soils. 7th North American Forest Soils Conference. Vancouver, B. C.
21. Childs, S.W., F.T. Lindstrom, L. Boersma, and D.D. Myrold. 1988. The potential for enhancing denitrification in groundwater. Western Society of Soil Science. Corvallis, OR.
22. Hilger, A.B., and D.D. Myrold. 1988. Measurements of growth and respiration of *Frankia* in inoculated sterile soils. 7th Int. Meet. on *Frankia* and Actinorhizal Plants. Storrs, CT.
23. Myrold, D.D., and A.B. Hilger. 1988. Methods for studying *Frankia* autecology in soil. 7th Int. Meet. on *Frankia* and Actinorhizal Plants. Storrs, CT.
24. Hilger, A.B., D.D. Myrold, and Y. Tanaka. 1988. *Frankia*-alder interactions in production of bare-root red alder seedlings. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 294.
25. Vermes, J-F., and D.D. Myrold. 1988. Denitrification in Pacific Northwest forest soils. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 300.
26. Myrold, D.D. 1989. Diversity and complexity: Two problems in rhizosphere research. 50th Biology Colloquium, Oregon State University. Corvallis, OR.
27. Myrold, D.D., and G.E. Nason. 1989. Microorganisms as mediators of air pollution effects in forest soils. Air Pollution Control Association 82nd Ann. Meet., Anaheim, CA.

28. Myrold, D.D., A.B. Hilger, and S.H. Strauss. 1989. Differentiating *Frankia* strains using restriction length polymorphisms. 5th Int. Symp. Microbial Ecology, Kyoto, Japan.
29. Turner, D.P., and D.D. Myrold. 1989. Climate change and patterns of N₂O emission from the Willamette Basin in western Oregon, USA. Int. Conf. on Soils and the Greenhouse Effect., Wageningen, The Netherlands.
30. Hilger, A.B., A. Porteous, and D.D. Myrold. 1989. Method for extraction of *Frankia* DNA from soil. International Workshop on Modern Techniques in Soil Ecology, Athens, GA.
31. Nason, G.E., and D.D. Myrold. 1989. Uses and abuses of ¹⁵N in soil research. International Workshop on Modern Techniques in Soil Ecology, Athens, GA.
32. Martin, K.J., and D.D. Myrold. 1989. Inoculation of red alder with *Frankia* in fumigated nursery beds. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 222.
33. Myrold, D.D., and G.E. Nason. 1989. Geostatistical study of microbial biomass in an old-growth Douglas-fir forest. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 224.
34. Nason, G.E., and D.D. Myrold. 1989. Effects of spatial variability and analytical method on estimates of microbial biomass in a forest soil. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 224.
35. Kelly, S., J. Moore, D. Myrold, and M. Gamroth. 1989. Nitrogen movement from land-spread manures. 1st Ann. Meet. Environ. Res. Oregon State Univ.
36. Hilger, A.B., and D.D. Myrold. 1990. Detecting *Frankia* in soil using PCR. 8th Int. Congress on Nitrogen Fixation, Knoxville, TN.
37. Nason, G.E., and D.D. Myrold. 1990. Fate of ¹⁵N-nitrate applied to a forest soil. Canadian Society of Soil Science, Penticton, B.C.
38. Nason, G.E., and D.D. Myrold. 1990. Immobilization of ¹⁵NH₄⁺ in forest soils of differing texture. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 255.
39. Schimel, J.P., and D.D. Myrold. 1990. Production and consumption of gases by microorganisms in soil. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 258.
40. Wilder, K.L., J.M. Hart, A. Poole, and D.D. Myrold. 1990. Fate of applied nitrogen fertilizer on Oregon cranberries. 87th Ann. Meet. Am. Soc. Hort. Sci., Tucson, AZ.

41. Baumeister, N.C., and D.D. Myrold. 1991. Denitrification in manured pastures. Soil Ecology Society Meeting, Corvallis, OR.
42. Hilger, A.B., K.J. Martin, S.H. Strauss, and D.D. Myrold. 1991. PCR for quantification of low copy number *Frankia* DNA. Abstr. Ann. Meet. Am. Soc. Microbiol. p. 300.
43. Hill, R.T., D.D. Myrold, and R.R. Colwell. 1991. *Frankia* sp. has a single copy of the *tuf* gene. Abstr. Ann. Meet. Am. Soc. Microbiol. p. 255.
44. Gamroth, M.J., D.D. Myrold, and K.L. Wilder. 1991. Technique for labeling dairy manure with a stable nitrogen isotope.
45. Hart, J.M., K.L. Wilder, A.P. Poole, and D.D. Myrold. 1991. Fate of nitrogen fertilizer on Oregon cranberries. Cranberry Researchers Meeting,
46. Hilger, A.B., and D.D. Myrold. 1991. Quantification of soil *Frankia* by bioassay and gene probe methods: Responses to liming and non-host rhizospheres. 8th Int. Conf. on *Frankia* and Actinorhizal Plants. Lyon, France.
47. Martin, K.J., Y. Tanaka, and D.D. Myrold. 1991. Dual inoculation of red alder (*Alnus rubra* Bong.) with effective *Frankia alni* strains for nursery bare-root seedling production. 8th Int. Conf. on *Frankia* and Actinorhizal Plants. Lyon, France.
48. Myrold, D.D. 1991. Molecular techniques for studying *Frankia* autecology in soil. 9th Nordic Meeting on Nitrogen Fixation. Hällnäs, Sweden.
49. Baumeister, N.C., and D.D. Myrold. 1991. Denitrification in manured pastures. Agron. Abstr. American Society of Agronomy, Madison, WI. p. 258.
50. Thies, J.E., D.D. Myrold, M.J. Gamroth, and K.L. Wilder. 1991. *In vivo* ¹⁵N-labelling of dairy manure for use in N cycling studies: Kinetics and fractionation of label incorporation. Abstr. American Society of Agronomy, Madison, WI. p. 279.
51. Hart, J.M., A.P. Poole, D.D. Myrold, and N.W. Christensen. 1992. N fertilizer distribution in cranberry tissue. Oregon State University Extension Service Annual Conference. Portland, OR.
52. Myrold, D.D., and K. Huss-Danell. 1992. Temporal dynamics of *Alnus*-infective *Frankia* biomass in Swedish soils. 6th Int. Symp. Microbial Ecology, Barcelona, Spain.
53. Baune, W.K., D.D. Myrold, Y. Tanaka, and K.J. Martin. 1992. Effects of CaO, HCl and CaCl₂ soil amendments on soil pH and root nodulation by *Frankia* on nursery grown red alder. Abstr. American Society of Agronomy, Madison, WI. p. 249.
54. Hart, S.C., G.E. Nason, D.D. Myrold, and D.A. Perry. 1992. Dynamics of gross nitrogen transformations during long-term incubation of an old-growth forest soil: the

- carbon connection. Abstr. American Society of Agronomy, Madison, WI. p. 259. (also in Bull. Ecol. Soc. Amer. p. 201)
55. Thies, J.E., and D.D. Myrold. 1992. Seasonal variation in gaseous N losses from three Oregon pasture soils receiving ¹⁵N-labelled dairy manure. Abstr. American Society of Agronomy, Madison, WI. p. 268.
56. Hart, J.M., A.P. Poole, K. Wilder, N.W. Christensen, and D.D. Myrold. 1992. N fertilizer distribution in cranberry tissue. Abstr. American Society of Agronomy, Madison, WI. p. 279.
57. Myrold, D.D., A.B. Hilger, K.J. Martin, and K. Huss-Danell. 1993. Enumerating *Frankia* in soil using molecular methods. Beyond the Biomass: Compositional and Functional Analysis of Soil Microbial Communities. Wye College, Univ. London. Kent, United Kingdom.
58. Crannell, W.K., Y. Tanaka, and D.D. Myrold. 1993. Root nodulation of red alder (*Alnus rubra* Bong.) seedlings by *Frankia* is enhanced by CaO and CaCl₂. 9th Int. Conf. on *Frankia* and Actinorhizal Plants. Mt. Ruapehu, New Zealand.
59. Huss-Danell, K., and D.D. Myrold. 1993. Intrageneric variation in nodulation of *Alnus*: Consequences for quantifying *Frankia* infective units in soil. 9th Int. Conf. on *Frankia* and Actinorhizal Plants. Mt. Ruapehu, New Zealand.
60. Myrold, D.D., and K. Huss-Danell. 1993. Population dynamics of *Alnus*-infective *Frankia* in a forest soil with and without host trees. 9th Int. Conf. on *Frankia* and Actinorhizal Plants. Mt. Ruapehu, New Zealand.
61. Martin, K.J., and D.D. Myrold. 1993. Application of a PCR-based MPN method in characterizing *Frankia* populations in alder stands of various ages. Abstr. American Society of Agronomy, Madison, WI. p. 254.
62. Martin, K.J., Y. Tanaka, B. Nakayama, and D.D. Myrold. 1994. Use of polymerase chain reaction based restriction fragment polymorphism to identify *Frankia* strains in nodules from inoculated red alder seedlings. Annual Retreat, Center for Gene Research and Biotechnology, Newport, OR.
63. Ritchie, N.J., and D.D. Myrold. 1994. Characterization of *Frankia* strains using PCR-RFLP analysis. Annual Retreat, Center for Gene Research and Biotechnology, Newport, OR.
64. Cimino, L.-A., and D.D. Myrold. 1994. Gross N mineralization and nitrification in soils from red alder and Douglas-fir stands. Abstr. American Society of Agronomy, Madison, WI. p. 294.
65. Martin, K.J., Y. Tanaka, B. Nakayama, and D.D. Myrold. 1994. Use of polymerase chain reaction based restriction fragment polymorphism to identify *Frankia* strains in

- nodules from inoculated red alder seedlings. Abstr. American Society of Agronomy, Madison, WI. p. 294.
66. Ritchie, N.J., and D.D. Myrold. 1994. Characterization of *Frankia* strains using PCR-RFLP analysis. Abstr. American Society of Agronomy, Madison, WI. p. 294.
67. Tang, J.Y., and D.D. Myrold. 1994. Using ^{15}N to measure N_2 fixation and net N mineralization in red alder stands. Abstr. American Society of Agronomy, Madison, WI. p. 294.
68. Thies, J.E., and D.D. Myrold. 1994. Fate and cycling of N derived from ^{15}N -labelled dairy manure applied seasonally to pasture soils. Abstr. American Society of Agronomy, Madison, WI. p. 285.
69. Myrold, D.D., K.J. Martin, and N.J. Ritchie. 1995. Use of PCR-RFLP analysis to distinguish among *Frankia* strains in nodules of red alder. 10th Int. Congress on Nitrogen Fixation, St. Petersburg, Russia.
70. Well, R., T.H. Nielsen, and D.D. Myrold. 1995. *In situ* measurement of vadose zone denitrification by ^{15}N gas emission. Canadian Society of Soil Science, Quebec City, Canada.
71. Well, R., and D.D. Myrold. 1995. Numerical simulation of gas diffusion in soil—an ancillary procedure to direct measurement of N_2 and N_2O emissions. Canadian Society of Soil Science, Quebec City, Canada.
72. Ritchie, N.J., and D.D. Myrold. 1995. Diversity of *Ceanothus*-infective *Frankia* as determined by PCR-RFLP analysis. 10th Int. Conf. on *Frankia* and Actinorhizal Plants. Davis, CA.
73. Swanston, C., and D.D. Myrold. 1995. Incorporation of nitrogen from decomposing red alder litter into an Oregon forest soil. 10th Int. Conf. on *Frankia* and Actinorhizal Plants. Davis, CA.
74. Myrold, D.D., and K. Huss-Danell. 1995. Diversity of *Frankia* strains nodulating *Alnus* seedlings inoculated with soil from northern Sweden. 10th Int. Conf. on *Frankia* and Actinorhizal Plants. Davis, CA.
75. Myrold, D.D., Nielsen, T.H., and R. Well. 1995. A sampling probe to measure denitrification in subsurface soils by ^{15}N gas emission. 7th Int. Symp. Microbial Ecology, Santos, Brazil.
76. Well, R., T.H. Nielsen, and D.D. Myrold. 1995. *In situ* measurement of vadose zone denitrification by ^{15}N gas emission. Abstr. American Society of Agronomy, Madison, WI. p. 233.

77. Ritchie, N.J., and D.D. Myrold. 1995. Diversity of *Ceanothus*-infective *Frankia* as determined by PCR-RFLP analysis. Abstr. American Society of Agronomy, Madison, WI. p. 236.
78. Swanston, C., and D.D. Myrold. 1995. Incorporation of nitrogen from decomposing red alder litter into an Oregon forest soil. Abstr. American Society of Agronomy, Madison, WI. p. 312.
79. Myrold, D.D., T.H. Nielsen, and R. Well. 1995. A sampling probe to measure denitrification in subsurface soils by ¹⁵N gas emission. Abstr. American Society of Agronomy, Madison, WI. p. 237.
80. Ritchie, N.J., and D.D. Myrold. 1996. Characterization of *Ceanothus*-infective *Frankia*. Abstr. Ann. Meet. Am. Soc. Microbiol. p. 353.
81. Myrold, D.D., and K. Huss-Danell. 1996. Characterization of *Frankia* strains nodulating *Alnus* seedlings inoculated with soil from northern Sweden. Abstr. Ann. Meet. Am. Soc. Microbiol. p. 336.
82. Ritchie, N.J., and D.D. Myrold. 1996. Characterization of *Ceanothus*-infective *Frankia*. ASM Northwest Branch meeting, Newport, OR.
83. Jeong, S.-C., and D.D. Myrold. 1996. Molecular phylogeny of the genus *Ceanothus* (Rhamnaceae) using *rbcL* and *ndhF* sequences. Annual Retreat, Center for Gene Research and Biotechnology, Corvallis, OR.
84. Quilchano, C., and D.D. Myrold. 1996. Gross rates of N mineralization and nitrification in different size fractions of aggregates. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
85. Well, R., and D.D. Myrold. 1996. Comparison of several methods for measuring *in situ* denitrification in soil. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
86. Ritchie, N.J., and D.D. Myrold. 1997. Geographic distribution and genetic diversity of *Ceanothus*-infective *Frankia*. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
87. Myrold, D.D. 1997. Microorganisms—the catalysts that turn the N cycle around. Western Society of Crop Science, Corvallis, OR.
88. Jeong, S.-C., N.J. Ritchie, A. Liston, and D.D. Myrold. 1997. Molecular phylogenies of plants and *Frankia* support multiple origins of actinorhizal symbioses. 78th Annu. Meet. Pacific Div. Am. Assoc. Adv. Sci., Corvallis, OR.
89. Ritchie, N.J., and D.D. Myrold. 1997. Geographic distribution and genetic diversity of *Ceanothus*-infective *Frankia*. Abstr. American Society of Agronomy, Madison, WI. p. xxx.

90. Jeong, S.-C., and D.D. Myrold. 1997. Population size and diversity of *Frankia* in soils under *Ceanothus velutinus* and Douglas-fir stands. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
91. Korschun, S.M., and D.D. Myrold. 1997. Nitrogen cycling in rhizospheres of wetland plants. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
92. Whalen, J.K., D.D. Myrold, and P.J. Bottomley. 1998. Carbon and nitrogen mineralization in soil organic matter fractions of forest, grassland and agricultural soils. Canadian Soil Science Society meeting, Vancouver, BC.
93. Jeong, S.-C., and D.D. Myrold. 1998. Population size and diversity of *Frankia* under *Ceanothus* and Douglas-fir stands. 11th Int. Conf. on *Frankia* and Actinorhizal Plants. Urbana, IL.
94. Ritchie, N.J., and D.D. Myrold. 1998. Genetic diversity of *Ceanothus*-infective *Frankia*. 11th Int. Conf. on *Frankia* and Actinorhizal Plants. Urbana, IL.
95. Myrold, D.D., S.-C. Jeong, and N.J. Ritchie. 1998. Diversity of the *Ceanothus*-*Frankia* symbiosis. 8th Int. Symp. Microbial Ecology, Halifax, Nova Scotia.
96. Christianson, J., and D.D. Myrold. 1998. Land use effects on aggregate stability in three Oregon soils. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
97. Ritchie, N.J., M.E. Schutter, R.P. Dick, and D.D. Myrold. 1999. Use of PCR-based methods to assess microbial community structure in three Oregon Soils. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
98. Myrold, D.D., and N.J. Ritchie. 1999. Exploring soil microbial communities with the length-heterogeneity PCR method. Soil Ecology Society Conference, Chicago, IL.
99. Ritchie, N.J., M.E. Schutter, R.P. Dick, and D.D. Myrold. 1999. Use of PCR- and FAME-based methods to characterize microbial communities in three Oregon soils. Abstr. American Society of Agronomy, Madison, WI. p. 229.
100. Cliff, J.B., P.J. Bottomley, R. Haggerty, and D.D. Myrold. 1999. Modeling the effect of mass transfer limitations on ¹⁵N isotope dilution experiments in soil aggregates. Abstr. American Society of Agronomy, Madison, WI. p. 230.
101. Myrold, D.D., P.J. Bottomley, J.K. Whalen, J.B. Cliff, and N.J. Ritchie. 1999. Compartmentalization and coupling of nitrogen cycling in soil. Abstr. American Society of Agronomy, Madison, WI. p. 363.
102. Davis, J.H., S.M. Griffith, W.R. Horwath, and D.D. Myrold. 1999. Factors controlling denitrification in a poorly-drained agricultural field and adjacent grass riparian area. Abstr. American Society of Agronomy, Madison, WI. p. 239.

103. Well, R., J. Augustin, J.H Davis, S.M. Griffith, K. Meyer, and D.D. Myrold. 1999. Production and transport of denitrification gases in shallow groundwater. Biogenic Emissions of Greenhouse Gases Caused by Arable and Animal Agriculture, Stuttgart, Germany.
104. Rich, J.J., and D.D. Myrold. 2000. Nitrous oxide reductase gene (*nosZ*) profiles of denitrifying bacteria in riparian soils. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
105. Ritchie, N.J., and D.D. Myrold. 2000. Discrimination of host-specific *Frankia* groups using length heterogeneity PCR. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
106. Myrold, D.D., N.J. Ritchie, and J.J. Rich. 2000. Determining soil microbial community structure using length-heterogeneity PCR. British Soc. Soil Sci., Reading, England.
107. Cliff, J.B., P.J. Bottomley, and D.D. Myrold. 2000. Quantifying and imaging N in soils at microbially meaningful scales using TOF-SIMS: preliminary results. 13th Annual Workshop on Secondary Ion Mass Spectrometry, Lake Tahoe, NV.
108. Cliff, J.B., P.J. Bottomley, D.J. Gaspar, and D.D. Myrold. 2000. Exploring N cycling at microbially meaningful scales using time of flight secondary ion mass spectrometry. User's Meeting at the William R. Wiley Environmental and Molecular Sciences Laboratory at Pacific Northwest National Laboratory, Richland, WA.
109. Cliff, J.B., P.J. Bottomley, and D.D. Myrold. 2000. Visualizing soil N at microbially meaningful scales using TOF-SIMS. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
110. Bottomley, P.J., and D.D. Myrold. 2001. The microbial ecology of terrestrial N cycling examined at different spatial scales. US-Egypt Planning Workshop on Microbial Ecology, Cairo, Egypt.
111. Cliff, J.B., P.J. Bottomley, D.J. Gaspar, and D.D. Myrold. 2001. Microbial carbon and nitrogen assimilation in soil using TOF-SIMS. 4th International Symposium on Applied Isotope Geochemistry (AIG-4), Pacific Grove, CA.
112. Myrold, D.D., and K. Huss-Danell. 2001. Long-term Impact of Nitrogen-Fixing Plants on Soil Nitrogen. 12th Int. Meet. on *Frankia* and Actinorhizal Plants, Carry-le-Rouet, France.
113. Martin, K.J., N.J. Ritchie, and D.D. Myrold. Nodulation Potential of Soils from Red Alder Stands Covering a Wide Age Range. 12th Int. Meet. on *Frankia* and Actinorhizal Plants, Carry-le-Rouet, France.
114. Ritchie, N.J., and D.D. Myrold. 2001. Microorganisms Involved in Nitrate Immobilization.. Abstr. American Society of Agronomy, Madison, WI. p. xxx.

115. Rich, J.J., A.T. Mintie, R.S. Heichen, K.E. Waterstripe, N.J. Ritchie, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. 2001. H.J. Andrews microbial observatory: N-cycling processes along meadow-forest gradients. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
116. Williams, M.A., P.J. Bottomley, and D.D. Myrold. 2002. Assessing community dynamics through the incorporation of ¹³C into soil microbial phospholipid fatty acids. 3rd International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Flagstaff, AZ.
117. Mintie, A., K. Cromack, Jr., D. Myrold, and P.J. Bottomley. 2002. Nitrification activities and community profiles of ammonia oxidizers across high elevation forest-to-meadow transects. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
118. Ritchie, N.J., and D.D. Myrold . 2002. Microbial community shifts in a meadow-forest core transplant experiment. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
119. McMahon, S.K., and D.D. Myrold. 2002. Nitrogen mineralization measurements on reciprocally transplanted soil cores one year after transplant. Canadian Society of Soil Science annual meeting, Banff, Alberta, Canada.
120. Waterstripe, K.E., J.J. Rich, A.T. Mintie, R.S. Heichen, N.J. Ritchie-Posavatz, K.H. Lamothe, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. 2002. Changes in soil nitrogen cycling processes and microbial communities across a meadow-forest gradient. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
121. Rich, J.J., D.D. Myrold, P.J. Bottomely, and K. Cromack, Jr. 2002. Genetic diversity and functioning of denitrifying bacteria in soils. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
122. Bottomley, P.J. A. Mintie, D.D. Myrold, and K. Cromack. 2002. Characterizing communities of ammonia-oxidizing bacteria in forest soils of the Cascade Mountains, Oregon. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
123. Butler, J.L., P.J. Bottomley, and D.D. Myrold. 2002. Microbial dynamics associated with rhizosphere carbon flow. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
124. Cromack, Jr., K., S.K. McMahon, A.T. Mintie, J.J. Rich, P.J. Bottomley, and D.D. Myrold. 2002. Changes in nitrogen cycling in reciprocally transplanted soil from meadows and forests. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
125. Myrold, D.D., S.A. Kageyama, N.J. Ritchie-Posavatz, K.E. Waterstripe, M.A. Williams, P.J. Bottomley, and K. Cromack, Jr. 2002. Changes in microbial communities in reciprocally transplanted soil from meadows and forests. Abstr. American Society of Agronomy, Madison, WI. p. xxx.

126. McMahon, S.K., P.J. Bottomley, and K. Cromack, and D.D. Myrold. 2002. Nitrogen mineralization measurements on reciprocally transplanted soil cores one year after transplant. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
127. Cliff, J.B., P.J. Bottomley, D.J. Gaspar, and D.D. Myrold. 2002. Sub-mm chemical imaging and isotope ratio analysis with secondary ion mass spectrometry. Abstr. American Society of Agronomy, Madison, WI. p. xxx. (**Invited**)
128. Gaspar, D.J., Cliff, J.B., P.J. Bottomley, and D.D. Myrold. 2002. Toward understanding microsite heterogeneities in soil: Imaging C and N assimilation in bacteria and fungal hyphae via TOF-SIMS. Pacific Northwest AVS (American Vacuum Society), the Science and Technology Society meeting, Vancouver, WA.
129. Myrold, D.D. 2003. Measuring microbial assimilation of C and N at sub-mm scales using TOF-SIMS. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx. (**Invited**)
130. Rich, J. J., P. J. Bottomley, K. Cromack, Jr., D. D. Myrold. 2003. Molecular diversity and functioning of denitrifying bacteria in soils across meadow-forest boundaries. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
131. McMahon, S.K., M.A. Williams, P.J. Bottomley, and D.D. Myrold. 2003. Microbial dynamics during decomposition of ¹³C-labeled ryegrass residue: role of soluble carbon. Canadian Soil Science Society annual meeting, Montreal, Quebec, Canada.
132. Rich, J.J. 2003. Community composition and functioning of denitrifying bacteria in soils. ASM Northwest Branch Meeting, 7-10 Aug 03, Vancouver, BC.
133. Boyle, S.A., A.E. Taylor, K. Cromack, Jr., P.J. Bottomley, and D.D. Myrold. 2003. Nitrogen cycling in a reciprocal transfer study of forests and meadows in the Oregon Cascade Mountains. ASM Northwest Branch Meeting, 7-10 Aug 03, Vancouver, BC.
134. Cliff, J.B., D.J. Gaspar, P.J. Bottomley, and D.D. Myrold. 2003. Peak fitting to resolve CN⁻ isotope ratios in biological and environmental samples using TOF-SIMS. 14th International Conference on Secondary Ion Mass Spectrometry (SIMS XIV). 14-19 Sep 03, San Diego, CA.
135. McMahon, S.K., M.A. Williams, P.J. Bottomley, and D.D. Myrold. 2003. Microbial community structure and dynamics during decomposition of ¹³C-labeled ryegrass residue. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
136. Kageyama, K.A., K.E. Waterstripe, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. 2003. Changes in fungal communities at forest and meadow sites after a reciprocal transplant experiment at the H. J. Andrews LTER. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
137. Williams, M.A., D.D. Myrold, and P.J. Bottomley. 2003. Microbial community dynamics associated with litter-type in agricultural soils. Abstr. American Society of Agronomy, Madison, WI. p. xxx.

138. Boyle, S.A., J.J. Rich, P.J. Bottomley, K. Cromack, Jr, D.D. Myrold. 2004. Denitrifer activity and community composition in reciprocal transfers between forests and meadows in the Cascade Mountains of Oregon. Workshop on Advanced Approaches to Quantify Denitrification. Woods Hole, MA.
139. Boyle, S.A., J.J. Rich, P.J. Bottomley, K. Cromack, Jr, D.D. Myrold. 2004. Denitrifer activity and community composition in reciprocal transfers between forests and meadows in the Cascade Mountains of Oregon. Abstr. Ann. Meet. Am. Soc. Microbiol. p. xxx.
140. Myrold, D.D., S.K. McMahon, M.A. Williams, and P.J. Bottomley. 2004. Tracing carbon through the soil microbial community during ryegrass decomposition. 4th International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Wellington, New Zealand.
141. Myrold, D.D., J.B. Cliff, and D.L. Phillips. 2004. Statistical estimates of variance for ¹⁵N isotope dilution measurements of gross rates of nitrogen cycle processes. 4th International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Wellington, New Zealand.
142. Cliff, J.B., P.J. Bottomley, D.J. Gaspar, and D.D. Myrold. 2004. Heterogeneities in microbial N assimilation in soils at small scale lengths. 5th International Symposium on the Interface Between Analytical Chemistry and Microbiology. Pacific Northwest National Laboratory. April 19-21 2004.
143. Rich, J.J., and D.D. Myrold. 2004. Community composition and activities of denitrifying bacteria from adjacent agricultural soil, riparian soil, and creek sediment in Oregon, USA. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
144. Kageyama, S.A., N.R. Posavatz, S.S. Jones, K. Waterstripe, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. 2004. Changes in bacterial and fungal communities following reciprocal transplant in forest and meadow sites in the Oregon Cascades. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
145. Brant, J.B., E.W. Sulzman, and D.D. Myrold. 2004. Root influences on microbial community composition in forest soils. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
146. Khan, A., D.D. Myrold, and A.K. Misra. 2004. Study on the distribution of *Frankia* genotypes at different altitudes of Sikkim Himalayas, based on Amplicon Restriction Pattern (ARP) and nucleotide sequencing. 13th International Symposium on Frankia and Actinorhizal Plants, Durham, NH.
147. Chaer, G., M. Fernandes, T. Sampaio, S. Diedhiou, D. Myrold, and E. Sulzman. 2004. Influence of landscape position on ¹³C and ¹⁵N natural abundance in an oak-savannah ecosystem. Abstr. American Society of Agronomy, Madison, WI. p. xxx.

148. Myrold, D.D. 2004. Isotope dilution during the next 50 years. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
149. Bottomley, P.J., and D.D. Myrold. 2004. Is there a link between microbial community composition and microbial processes in soils? Abstr. American Society of Agronomy, Madison, WI. p. xxx.
150. Kageyama, S.A., J.B. Brant, and D.D. Myrold. 2004. Effects of Above and Belowground carbon inputs on soil microbial communities at the H. J. Andrews Experimental Forest. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
151. Boyle, S.A., J.J. Rich, P.J. Bottomley, K. Cromack, Jr, and D.D. Myrold. 2004. Denitrifer activity and community composition in reciprocal transfers between forests and meadows in the Cascade Mountains of Oregon. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
152. Brant, J.B., D.D. Myrold, and E.W. Sulzman. 2004. Microbial Community Composition in Response to Substrate Addition in Forest Soils. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
153. Williams, M.A., D.D. Myrold, and P.J. Bottomley. 2004. Environmental and plant controls on C flow to the soil microbial community. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
154. Cliff, J.B., D.J. Gaspar, P.J. Bottomley, and D.D. Myrold. 2005. Microbial C and N assimilation in soils and model systems as revealed by ToF-SIMS. 15th Annual Goldschmidt Conference, Moscow, ID. 20-25 May 2005.
155. Brant, J.B., D. D. Myrold, and E.W. Sulzman. Root influences on microbial community composition in forest soils. H.J. Andrews Experimental Forest 7th Annual Symposium, 7 February 2005, Corvallis, OR.
156. Kageyama, S.A., N.R. Posavatz, S.J. Jones, K.E. Waterstripe, P.J. Bottomley, K. Cromack, Jr., and D.D. Myrold. Changes in bacterial and fungal communities following reciprocal transplant in forest and meadow sites in the Oregon Cascades. H.J. Andrews Experimental Forest 7th Annual Symposium, 7 February 2005, Corvallis, OR.
157. Myrold, D.D., S.M. Dunham, L.A. Kluber, L.J. Bratcher, K.M. Tinnesand, P.J. Bottomley, B.A. Caldwell, K. Cromack, Jr., and J.W. Spatafora. Ectomycorrhizal mats: a new focus for the H.J. Andrews microbial observatory. H.J. Andrews Experimental Forest 7th Annual Symposium, 7 February 2005, Corvallis, OR.
158. Davis, J.H., S.M. Griffith, W.R. Horwath, J.J. Steiner, and D.D. Myrold. 2005. Fate of ¹⁵N-labeled ammonium and nitrate in a poorly drained *Lolium perenne* field and herbaceous riparian area in western Oregon. 9th Int. Symp. on the Biogeochemistry of Wetlands, 20-23 March 2005, Baton Rouge, LA.

159. Kageyama, S.A., P.J. Bottomley, K. Cromack, Jr., D.D. Myrold. 2005. Changes in soil fungal communities across meadow-forest transects in the Western Cascades Mountains of Oregon, USA. Mycological Society of America, Hilo, HI.
160. Myrold, D.D., and P.J. Bottomley. 2005. Linking soil microbial communities and ecosystem function using reciprocal transfer experiments between forests and meadows. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
161. Kageyama, S.A., P.J. Bottomley, K. Cormack, Jr., and D.D. Myrold. 2005. Changes in soil fungal communities across meadow-forest transects in the Western Cascades Mountains of Oregon, USA. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
162. Caldwell, B.A., L.A. Kluber, S.M. Dunham, P.J. Bottomley, K. Cormack, Jr., D.D. Myrold, and J.W. Spatafora. 2005. Lysozyme activity in ectomycorrhizal mats of a Pacific Northwest coniferous forest. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
163. Kluber, L.A., S.M. Dunham, K.M. Tinnesand, R.R. Yarwood, P.J. Bottomley, B.A. Caldwell, K. Cromack, D.D. Myrold, and J.W. Spatafora. 2005. The H.J. Andrews Microbial Observatory: microbial communities and activities of ectomycorrhizal mats. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
164. Chaer, G.M., M. Fernandes, D.D. Myrold, and P.J. Bottomley. 2005. Resistance and resilience of microbial structure and enzymatic activities of soils submitted to heat shock treatments. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
165. Arighi, L.M., R. Haggerty, D.D. Myrold, J. Iverson, J.E. Baham, I.P. Madin, and J. Arendt. 2005. Quantification of the nitrate attenuation capacity of low-permeability Missoula Flood Deposits of the Willamette Valley, Oregon. American Geophysical Union Meeting.
166. Boyle, S.A., P.J. Bottomley, and David D. Myrold. The role of bacteria and fungi in N-cycling under Douglas fir and red alder. H.J. Andrews Experimental Forest 8th Annual Symposium, 8 February 2006, Corvallis, OR.
167. Caldwell, B.A., S.M. Dunham, P.J. Bottomley, K. Cromack, Jr., D.D. Myrold, and J.W. Spatafora. Lysozyme activity in ectomycorrhizal mats of a Pacific Northwest coniferous forest. H.J. Andrews Experimental Forest 8th Annual Symposium, 8 February 2006, Corvallis, OR.
168. Kluber, L.A., K.M. Tinnesand, R.R. Yarwood, G. Chaer, P.J. Bottomley, B.A. Caldwell, K. Cromack, Jr., D.D. Myrold, and J.W. Spatafora. Species diversity of mat forming ectomycorrhizal fungi and their associated microbial activities. H.J. Andrews Experimental Forest 8th Annual Symposium, 8 February 2006, Corvallis, OR.
169. Boyle, S.A., P.J. Bottomley, and D.D. Myrold. 2006. The contributions of bacteria and fungi to nitrogen cycling in forest soils under Douglas fir and red alder. Subsurface Biosphere Initiative Workshop/IGERT Retreat, 18-21 June 2006,

- Newport, OR.
170. Brewer, E.A., T.W. Boutton, and D.D. Myrold. 2006. Woody plant invasion of grassland alters the composition of soil microbial communities. Subsurface Biosphere Initiative Workshop/IGERT Retreat, 18-21 June 2006, Newport, OR.
 171. Brutcher, L., A. Azarenko, A. Chosinski, R. Ingham, D. Myrold, and C. Seavert. 2006. Ecological soil community management for enhanced nutrient cycling in organic sweet cherry orchards. Subsurface Biosphere Initiative Workshop/IGERT Retreat, 18-21 June 2006, Newport, OR.
 172. Chaer, G.M., M.F. Fernandes, D. Myrold, and P. Bottomley. 2006. Resistance and resilience of soil microbial structure and enzymatic activities to heat shocks. Subsurface Biosphere Initiative Workshop/IGERT Retreat, 18-21 June 2006, Newport, OR.
 173. Kluber, L., S. Dunham, K. Tinnesand, P. Bottomley, B. Caldwell, K. Cromack, Jr., D. Myrold, and J. Spatafora. 2006. Species diversity of mat forming ectomycorrhizal fungi and their associated microbial activities. Subsurface Biosphere Initiative Workshop/IGERT Retreat, 18-21 June 2006, Newport, OR.
 174. Myrold, D.D., S.A. Boyle, and P.J. Bottomley. 2006. Red alder (*Alnus rubra*) alters microbial communities and nitrogen cycling. 14th Int. Meet. on *Frankia* and Actinorhizal Plants, Umeå, Sweden.
 175. Khan, A., D.D. Myrold, and A.K. Misra. 2006. Investigation on the genetic diversity of *Frankia* from Sikkim Himalayas in relation with soil characteristics and altitude on the basis of Amplicon Restriction Pattern (ARP) and Nucleotide Sequencing: A molecular ecological approach. 14th Int. Meet. on *Frankia* and Actinorhizal Plants, Umeå, Sweden.
 176. Myrold, D., P. Bottomley, B. Caldwell, K. Cromack, and J. Spatafora. 2006. The H.J. Andrews Microbial Observatory. 2006 LTER All Scientists Meeting, 20-23 September 2006, Estes Park, CO.
 177. Boyle, S., D. Myrold, and P. Bottomley. 2006. The contributions of bacteria and fungi to nitrogen cycling in forest soils under Douglas fir and red alder. 2006 LTER All Scientists Meeting, 20-23 September 2006, Estes Park, CO.
 178. Sulzman, E., J. Brant, D. Myrold, K. Lajtha, B. Caldwell, and R. Bowden. 2006. Components of soil CO₂ efflux in an old growth coniferous forest: a tale of roots, microbes, and priming. 2006 LTER All Scientists Meeting, 20-23 September 2006, Estes Park, CO.
 179. Kageyama, S., Trowbridge, J., Mandyam, K., Fox, C., Riffel, A., Dunn, R., Myrold, D., and Jumpponen, A. 2006. Cross-site comparisons of root-associated dark septate endophytes from five Long Term Ecological Research sites. 2006 LTER All Scientists Meeting, 20-23 September 2006, Estes Park, CO.

180. Brewer, E.A., T.J. Gentry, T.W. Boutton, D.D. Myrold. 2006. Woody plant invasion of grassland alters the composition of soil microbial communities. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
181. Dhungal, R., M.N. Högberg, and D.D. Myrold. 2006. Variation in communities of ammonia-oxidizing and denitrifying bacteria in Fennoscandian forest soils. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
182. Boyle, S.A., P.J. Bottomley, and D.D. Myrold. 2006. The contributions of bacteria and fungi to nitrogen cycling in forest soils under Douglas fir and red alder. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
183. Williams, M., D.D. Myrold, and P.J. Bottomley. 2006. Dynamics of carbon flow from ¹³C-labeled clover and ryegrass residues into a residue-associated microbial community under field conditions. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
184. Dunham, S.M., L.A. Kluber, R.R. Yarwood, G. Chaer, C.N. Hesse, J.H. Blanchard, P.J. Bottomley, B.A. Caldwell, K. Cromack, Jr., J.W. Spatafora, and D.D. Myrold. 2007. Ectomycorrhizal mats: A focus of the H.J. Andrews Microbial Observatory. H.J. Andrews Experimental Forest 9th Annual Symposium, 6 February 2007, Corvallis, OR.
185. Dunham, S.M., L.A. Kluber, R.R. Yarwood, G. Chaer, C.N. Hesse, J.H. Blanchard, P.J. Bottomley, B.A. Caldwell, K. Cromack, Jr., J.W. Spatafora, and D.D. Myrold. 2007. Ectomycorrhizal mats: A focus of the H.J. Andrews Microbial Observatory. NSF Microbial Observatories 4th PI Meeting, 1-3 March 2007, Washington, DC.
186. Brewer, E.A., T.W. Boutton, and D.D. Myrold. 2007. Woody plant encroachment into grassland alters the composition of soil microbial communities. 11th Biennial Soil Ecology Society Meeting, 29 April-2 May 2007, Moab, UT.
187. Myrold, D.D. 2007. Recent Advances in Soil Nitrogen Cycling and Microbial Community Analysis. Annual meeting of the Korean Society of Soil Science and Fertilizer, 10 May 2007, Anseong, Republic of Korea. (**Invited**)
188. Brewer, E.A., T.W. Boutton, and D.D. Myrold. 2007. Woody plant encroachment into grassland alters the composition of soil microbial communities. Subsurface Biosphere Initiative Workshop/IGERT Retreat, 17-19 June 2007, Newport, OR.
189. Brutcher, L., J. Moore-Kucera, A. Azarenko, R. Ingham, D. Myrold, and A. Chozinski. 2007. Tracking effects of soil community management in sweet cherry orchards using nematode community measures. Am. Soc. Hort. Sci. annual meetings, Scottsdale, AZ.
190. Myrold, D.D., P.J. Bottomley, M.N. Högberg, P. Högberg, and E.W. Sulzman. 2007. Linking microbial communities to activity in soil with molecular and stable isotope

- techniques. International Symposium on Forest Soils and Ecosystem Health, 19-23 August 2007, Noosa, Australia. **(Invited)**
191. Myrold, D.D., P.J. Bottomley, and M.B. Leigh. 2007 Stable isotope probing: a direct approach to linking microbial communities to soil organic matter processes. Abstr. American Society of Agronomy, Madison, WI. p. xxx. **(Invited)**
192. Kageyama, S.A., J. Trowbridge, K.G. Mandyam, C. Yaeger, A.K. Riffel, D.D. Myrold, and A. Jumpponen. 2007. Temporal dynamics of root-associated dark septate fungal endophytes in grasslands and meadows at five Long Term Ecological Research sites. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
193. Kluber, L., and D.D. Myrold. 2007. Temporal dynamics of microbial communities associated with ectomycorrhizal *Piloderma* mat and non-mat soils. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
194. Moore-Kucera, J., L. Brutcher, A. Azarenko, and D. Myrold. 2007. Soil enzymes as affected by orchard floor management. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
195. Bottomley, P.J., D. Myrold, J. Spatafora, K. Cromack, and B. Caldwell. 2007. Microbiological and biochemical determinants of ectomycorrhizal mats. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
196. Chaer, G.M., D. Myrold, and P. Bottomley. 2007. An attempt to define the equilibrium between soil organic matter and biochemical properties in Oregon forest soils. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
197. Brutcher, L., J. Moore-Kucera, A. Azarenko, R. Ingham, D. Myrold, and A. Chozinski. 2007. Tracking effects of soil community management in sweet cherry orchards using nematode community measures. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
198. Kluber, L.A., and D.D. Myrold. 2008. Temporal dynamics of fungal and bacterial communities associated with ectomycorrhizal *Piloderma* mat and non-mat soils. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
199. Kluber, L.A., and D.D. Myrold. 2008. Temporal dynamics of fungal and bacterial communities associated with ectomycorrhizal *Piloderma* mat and non-mat soils. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
200. Myrold, D.D., and P.J. Bottomley. 2008. Nitrogen mineralization and immobilization: new thoughts on old themes. Abstr. American Society of Agronomy, Madison, WI. p. xxx. **(Invited)**
201. Diaz, D., D.D. Myrold, E.W. Sulzman, L. Wilson, K. Lajtha, E. Brewer, and R. Yarwood. 2008. Carbon cycling and priming of soil organic matter decomposition in a forest soil following glucose additions. Abstr. American Society of Agronomy,

- Madison, WI. p. xxx.
202. Brewer, E.A., and D.D. Myrold. 2008. Estimating the pace of nitrogen transformations in old growth forest plots undergoing long-term soil organic matter manipulations. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
203. Myrold, D.D., A. Jumpponen, K.L. Jones, K. Rhinhart, and S. Machado. 2008. Measuring changes in soil microbial communities during 30 years of winter wheat management using high-throughput sequencing. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
204. Chaia, E.E., and D.D. Myrold. 2008. Variation of ^{15}N natural abundance in leaves and nodules of actinorhizal shrubs in northwest Patagonia. 15th Int. Meet. on *Frankia* and Actinorhizal Plants, Bariloche, Argentina.
205. Phillips, C.L., L. Kluber, D.D. Myrold, and B.J. Bond. 2008. Contributions of ectomycorrhizal fungal mats to forest soil carbon cycles. American Geophysical Union fall meeting, San Francisco, CA.
206. Myrold, D.D., J.H. Blanchard, L.A. Kluber, and P.J. Bottomley. 2008. Dynamics of microbial communities associated with ectomycorrhizal mats. 21st New Phytologist Symposium, The Ecology of Ectomycorrhizal Fungi. Montpellier, France, 10-12 December 2008.
207. Myrold, D.D. 2008. Using pyrosequencing with archived soils. METASTED meeting, Lyon, France, 13-14 December 2008.
208. Myrold, D.D., A.E. Taylor, Zeglin, L.H., and P.J. Bottomley. 2009. Niche differentiation of nitrification in soils. NRI Soil Processes PI meeting, 8 April 2008, Lansing, MI.
209. Haggerty, R., E. Martí, A. Argerich, N.B. Grimm, D.D. Myrold, M. Nabelek, and J. Zarnetske. 2009. Ticket for one trip around the nutrient spiral: The resazurin "smart" tracer tracer of metabolically-active transient storage. H.J. Andrews Experimental Forest 10th Annual Symposium, 15 April 2009, Corvallis, OR.
210. Zeglin, L.H., L.A. Kluber, and D.D. Myrold. 2009. Organic nitrogen cycling in mycorrhizal and non- mycorrhizal organic soils in an old-growth Douglas-fir forest. H.J. Andrews Experimental Forest 10th Annual Symposium, 15 April 2009, Corvallis, OR.
211. Myrold, D.D., L.A. Kluber, J.H. Blanchard, and P.J. Bottomley. 2009. Dynamics of microbial communities associated with ectomycorrhizal mats. H.J. Andrews Experimental Forest 10th Annual Symposium, 15 April 2009, Corvallis, OR.
212. Brewer, E.A., and D.D. Myrold. 2008. Estimating nitrogen transformation rates in long-term soil organic matter manipulation plots. H.J. Andrews Experimental Forest 10th Annual Symposium, 15 April 2009, Corvallis, OR.

213. Haggerty, R., E. Martí, A. Argerich, N.B. Grimm, and D.D. Myrold. 2009. Ticket for one trip around the nutrient spiral: The resazurin "smart" tracer of metabolically-active transient storage. North American Benthological Society 57th Annual Meeting Grand Rapids, Michigan, 17-22 May 2009.
214. Myrold, D.D. 2009. It's about time: Climate and community change. 10th International Symposium on Bacterial Genetics and Ecology (BAGECO-10), Uppsala, Sweden, 15-19 June 2009. (**Invited**)
215. Taylor, A.E., S. Dooley, D.D. Myrold, and P.J. Bottomley. 2009. Separating the relative contributions of ammonia-oxidizing archaea and bacteria to soil nitrification. First International Conference on Nitrification, Louisville, KY, 5-10 July 2009.
216. Bottomley, P.J., L.H. Zeglin, A.E. Taylor, and D.D. Myrold. 2009. Distribution and diversity of ammonia-oxidizing archaea and bacteria in soils along an upland to lowland transect receiving either high or low N inputs. First International Conference on Nitrification, Louisville, KY, 5-10 July 2009.
217. Brewer, E.A., and D.D. Myrold. 2009. Impacts of long-term organic matter manipulations on nitrogen cycling in an old growth forest. Soil Ecology Society meeting, Burlington, VT, 12-15 July 2009.
218. DeCrappeo, N.M., P.J. Bottomley, D.D. Myrold, E.A. Brewer, E.J. DeLorenze, and D.A. Pyke. 2009. The relative contributions of soil bacteria and fungi to inorganic nitrogen cycling in sagebrush and cheatgrass rhizosphere soils. Soil Ecology Society meeting, Burlington, VT, 12-15 July 2009.
219. Kluber, L.A., and D.D. Myrold. 2009. Fungal and bacterial communities associated with ectomycorrhizal *Piloderma* mat and neighboring non-mat soils. Mycological Society of America, Snowbird, Utah, 25-29 July 2009.
220. Zeglin, L.H., A.E. Taylor, D.D. Myrold, and P.J. Bottomley. 2009. Distribution and activity of ammonia-oxidizing archaea and bacteria in high and low nitrogen soils across an upland to lowland gradient. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
221. Brewer, E.A., and D.D. Myrold. 2009. Nitrogen limitation following organic matter manipulations in an old growth forest. LTER All Scientists Meeting, 14-16 September 2009, Estes Park, CO.
222. Kluber, L.A., J.H. Blanchard, P.J. Bottomley, and D.D. Myrold. 2009. The H.J. Andrews Microbial Observatory: exploring the community dynamics of ectomycorrhizal mats. LTER All Scientists Meeting, 14-16 September 2009, Estes Park, CO.
223. Haggerty, R., E. Martí, A. Argerich, N.B. Grimm, D. Myrold. 2009. Resazurin as a "smart" tracer for metabolically active transient storage. Geological Society of America Annual Meeting, 18-21 October 2009, Portland, OR.

224. Myrold, D.D., A. Jumpponen, and K.L. Jones. 2009. Measuring changes in soil microbial communities after 10 years of organic matter manipulations in an old-growth Douglas-fir soil using high-throughput sequencing. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
225. Jansson, J.K., D.D. Myrold, J.M. Tiedje, E.W. Triplett, and J. Zhou. 2009. TerraGenome: International soil metagenome sequencing consortium. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
226. Zeglin, L.H., L.A. Kluber, and D.D. Myrold. 2009. Organic nitrogen cycling in ectomycorrhizal mat and non-mat soils of an old-growth Douglas-fir forest. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
227. Brewer, E.A., and D.D. Myrold. 2010. Impacts of long-term organic matter manipulations on nitrogen cycling in an old growth forest. H.J. Andrews Experimental Forest 11th Annual Symposium, 20 April 2010, Corvallis, OR.
228. Zeglin, L.H., L.A. Kluber, and D.D. Myrold. 2010. Organic nitrogen cycling in ectomycorrhizal mat and non-mat soils of an old-growth Douglas-fir forest. H.J. Andrews Experimental Forest 11th Annual Symposium, 20 April 2010, Corvallis, OR.
229. Christensen, C., R. González-Pinzón, A. Argerich, R. Haggerty, D. Myrold, and E. Martí. 2010. Resazurin transformation correlated to aerobic respiration in stream sediments. North American Benthological Society 58th Annual Meeting, Santa Fe, NM, 6-11 June 2010.
230. Keiluweit, M., P.S. Nico, L.H. Zeglin, J. Pett-Ridge, P. Weber, D.D. Myrold, and M. Kleber. 2010. C and N dynamics in soil microstructures: A joined STXM/NEXAFS and NanoSIMS approach. Goldschmidt 2010, 13-18 June, Knoxville, TN.
231. Pett-Ridge J., M. Keiluweit, M. Kleber, D. Myrold, P. Nico, and P. Weber. 2010. Visualizing organic matter biogeochemistry at the microaggregate scale: Lessons from STXM-SIMS. Goldschmidt 2010, 13-18 June, Knoxville, TN.
232. Keiluweit, M., P.S. Nico, L.H. Zeglin, J. Pett-Ridge, P. Weber, D.D. Myrold, and M. Kleber. 2010. The chemistry of environmental interfaces: A joined X-ray spectromicroscopy and NanoSIMS approach. Microscopy & Microanalysis 2010, 1-5 August, Portland, OR.
233. Cole, J.R., D.D. Myrold, C.H. Nakatsu, P.R. Owens, G. Kowalchuk, C. Tebbe, and J.M. Tiedje. 2010. Development of Soil Metadata Standards for International DNA Sequence Databases. 19th World Congress of Soil Science, 1-6 August 2010. Brisbane, Australia.
234. DeCrappeo, N.M., P.J. Bottomley, D.D. Myrold, E.A. Brewer, S.A. Yarwood, E.J. DeLorenze, and D.A. Pyke. 2010. The relative contributions of soil bacteria and fungi to inorganic nitrogen cycling in sagebrush and cheat-grass rhizosphere soils. Abstr.

- Ann. Meet. Ecol. Soc. Am., p. xxx.
235. Myrold, D.D., P.J. Bottomley, A.E. Taylor, and L.H. Zeglin. 2010. Linking ammonia oxidizer communities to nitrification rates across a catena. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx. **(Invited)**
236. Bottomley, P.J., A.E. Taylor, L.H. Zeglin, and D.D. Myrold. 2010. Evidence for different contributions of archaea and bacteria to the ammonia-oxidizing potential of diverse Oregon soils. 13th International Society for Microbiology Meeting. 24 August 2010. Seattle, WA.
237. Myrold, D.D. 2010. The next stage for TerraGenome. 13th International Society for Microbial Ecology Meeting. 27 August 2010. Seattle, WA. **(Invited)**
238. Myrold, D.D., and P.J. Bottomley. 2010. Responses of soil fungal and bacterial communities of Pacific Northwest forests to perturbations. 13th International Society for Microbial Ecology Meeting. 27 August 2010. Seattle, WA. **(Invited)**
239. Chaia, E.E., D. Myrold, K. Huss-Danell, and L.G. Wall. 2010. Assessment of ¹⁵N natural abundance in leaves of *Coriaria ruscifolia* and other plant species occurring in humid forests of northwest Patagonia. 16th International Meeting on *Frankia* and Actinorhizal Plants. 5-8 September 2010. Porto, Portugal
240. Myrold, D.D., P.J. Bottomley, A. Jumpponen, C.W. Rice, J.K. Jansson, S.G. Tringe, R.L. Hettich, and N.C. VerBerkmoes. 2010. Meta-“omics” analysis of microbial carbon cycling responses to altered rainfall inputs in native prairie soils. 2nd Annual Argonne Soils Workshop. 6-8 October 2010. Argonne, IL.
241. Brewer, E.A., S.A. Yarwood, R. Yarwood, and D.D. Myrold. 2010. Litter-derived N in an old-growth forest with long-term organic matter exclusions: Does changing the litter type matter? Abstr. American Society of Agronomy, Madison, WI. p. xxx.
242. Zeglin, L.H., A.E. Taylor, D.D. Myrold, and P.J. Bottomley. 2010. Soil ammonia-oxidizing bacterial and archaeal diversity and nitrification inhibition properties vary by land management. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
243. Moore-Kucera, J., V. Acosta-Martinez, A. Azarenko, D. Myrold, and D. Wester. 2010. Soil chemical and biochemical surveys of sweet cherry agroecosystems in the Pacific Northwest. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
244. Myrold, D.D., A. Jumpponen, K.L. Jones, K. Rhinhart, and S. Machado. 2010. Measuring changes in soil microbial communities during 30 years of winter wheat management using high-throughput sequencing. International Symposium on Soil Metagenomics. 8-10 December 2010. Braunschweig, Germany.
245. Myrold, D.D., P.J. Bottomley, M.M. David, R.L. Hettich, J.K. Jansson, A. Jumpponen, C.W. Rice, S.G. Tringe, N.C. VerBerkmoes, S.A. Yarwood, and L.H. Zeglin. 2011. Meta-“omics” analysis of microbial carbon cycling responses to altered

- rainfall inputs in native prairie soils. DOE Genomic Sciences Meeting, 10-13 April 2011. Arlington, VA.
246. David, M.M., L. Zeglin, M. Shah, S. Yarwood, K. Mavromatis, S. Tringe, R Hettich, N. VerBerkmoes, D. Myrold, and J.K. Jansson. 2011. Assessing the microbial basis of carbon cycling in prairie soils with an integrated omics approach. DOE Genomic Sciences Meeting, 10-13 April 2011. Arlington, VA.
247. Hettich, R. Chourey, K. Pan, C. VerBerkmoes, N. Myrold, D. Orphan, V., Onsttot, T.C. Banfield, J. Omics Techniques for Functional Analysis of Microbial Carbon Cycling, DOE Genomic Sciences Meeting, 10-13 April 2011. Arlington, VA. **(Invited)**
248. Cappellazzi, J.E., D.D. Myrold, and P.J. Bottomley. 2011. Effects of disturbance on ectomycorrhizal mat microbial communities: perspectives from a long-term birth/death study. Andrews Experimental Forest 12th Annual Symposium, 18 April 2011, Corvallis, OR.
249. David, M.M., L. Zeglin, R. Koutsouri, M. Shah, S. Yarwood, K. Mavromatis, S. Lindow, S. Tringe, R Hettich, N. VerBerkmoes, D. Myrold, and J.K. Jansson. 2011. Development of an integrated omics approach for studying carbon cycling in prairie soils. 11th Conference on Bacterial Genetics and Ecology (BAGECO11), 29 May-2 June 2011. Corfu, Greece.
250. Haggerty, R., R. Gonzalez-Pinzon, A. Agerich, E. Marti, C. Christensen, M. Ribot, and D. Myrold. 2011. Patterns of aerobic respiration in streams quantified using the smart tracer resazurin. 7th Symposium for European Freshwater Sciences, 27 June-1 July 2011, Girona, Spain.
251. Pett-Ridge, J.M., Keiluweit, J. Bougoure, P.S. Nico, P.K. Weber, L. Zeglin, D.D. Myrold, and M. Kleber. 2011. Association of amino sugars (chitin) with Fe oxyhydroxides in mycorrhizal mat soils – A STXM/NanoSIMS investigation. Goldschmidt 2011, 14-19 August 2011, Prague, Czech Republic.
252. Myrold, D.D., J.K. Jansson, F. Meyer, J.M. Tiedje, and E.W. Triplett. 2011. RCN: TerraGenome—The Soil Metagenome Network. 3rd Annual Argonne Soils Workshop. 6-8 October 2011. Argonne, IL.
253. Bottomley, P.J., A.E. Taylor, L.H. Zeglin, and D.D. Myrold. 2011. Investigation of the relative contributions of bacteria and archaea to soil nitrification. Abstr. American Society of Agronomy, Madison, WI. p. xxx. **(invited)**
254. Cappellazzi, J.E., D.D. Myrold, and P.J. Bottomley. 2011. Effects of disturbance on ectomycorrhizal mat microbial communities: perspectives from a long-term birth/death study. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
255. Myrold, D.D., P.J. Bottomley, M.M. David, R.L. Hettich, J.K. Jansson, A. Jumpponen, C.W. Rice, S.G. Tringe, N.C. VerBerkmoes, S.A. Yarwood, and L.H.

- Zeglin. 2011. Omics for soil: choose one or integrate all? 2011 International Conference on Soil Omics-Nanjing. 19-23 November 2011, Nanjing, China. **(invited)**
256. Zeglin, L.H., M. David, P. Bottomley, R.L. Hettich, J. Jansson, A. Jumpponen, C.W. Rice, S. Tringe, N. C. VerBerkmoes, and D. Myrold. 2011. Microbial response to modified precipitation patterns in tallgrass prairie soil: molecular mechanisms, activity rates and organic matter dynamics. AGU Fall Meeting, 5-9 December 2011, San Francisco, California, USA.
257. Bougoure, J., M. Keiluweit, L.H. Zeglin, D. Myrold, P.K. Weber, M. Kleber, J. Pett-Ridge, and P.S. Nico. 2011. Rapid associations of microbial amide N with iron(oxyhydr)oxides in N deficient forest O-horizons. AGU Fall Meeting, 5-9 December 2011, San Francisco, California, USA.
258. Berhe, A.A., M. Kaiser, T. Ghezzehei, D. Myrold, and M. Kleber. 2011. Role of CaCO₃ and charcoal application on organic matter retention in silt-sized aggregates. AGU Fall Meeting, 5-9 December 2011, San Francisco, California, USA.
259. Gonzalez Pinzon R.A., S. Acker, R.Haggerty, and D. Myrold. 2011. Quantitative measurement of stream respiration using the resazurin-resorufin system. AGU Fall Meeting, 5-9 December 2011, San Francisco, California, USA.
260. Myrold, D.D., P.J. Bottomley, M.M. David, R.L. Hettich, J.K. Jansson, A. Jumpponen, E. Prestat, C.W. Rice, N.L. Tisdell, S.G. Tringe, N.C. VerBerkmoes, and L.H. Zeglin. 2012. Meta-omics analysis of microbial carbon cycling responses to altered rainfall inputs in native prairie soils. DOE Genomic Sciences Meeting, 26-29 February 2012. Bethesda, MD. **(invited)**
261. David, M.M., L. Zeglin, P. Bottomley, R. Hettich, A. Jumpponen, K. Mavromatis, D. Myrold, C. Rice, M. Shah, S. Tringe, N. VerBerkmoes, and J.K. Jansson. 2012. Development of integrated “omics” approach for assessing microbial cycling of carbon in prairie soil using a model soil bacterium: *Arthrobacter chlorophenolicus*. DOE Genomic Sciences Meeting, 26-29 February 2012. Bethesda, MD.
262. Zeglin, L.H., P.J. Bottomley, M.M. David, R.L. Hettich, J.K. Jansson, A. Jumpponen, C.W. Rice, S.G. Tringe, N.C. VerBerkmoes, and D.D. Myrold. 2012. Meta-omics Microbial response to modified precipitation patterns in tallgrass prairie soil: molecular mechanisms, activity rates and organic matter dynamics. DOE Genomic Sciences Meeting, 26-29 February 2012. Bethesda, MD.
263. David, M.M., L. Zeglin, E. Prestat, J. Dvornik, P. Bottomley, R. Hettich, K. Carrier, A. Jumpponen, K. Mavromatis, C. Rice, M. Shah, S. Tringe, N. VerBerkmoes D. Myrold, and J.K. Jansson. 2012. Development of integrated “omics” approach for assessing microbial cycling of carbon in prairie soil using a model soil bacterium: *Arthrobacter chlorophenolicus*. 7th Annual JGI User Meeting, 20-22 March 2012, Walnut Creek, CA.
264. Yarwood, S., E. Brewer, R. Yarwood, K. Lajtha, D. Myrold. 2012. The persistence of

- soil microbes: active community composition and capability to respond to litter addition after ten years of no-inputs. Ecological Society of America MidAtlantic Branch Meeting, 14 April 2012, Blacksburg, VA.
265. David, M.M., L. Zeglin, E. Prestat, R. Koutsouri, P. Bottomley, R. Hettich, K. Corrier, A. Jumpponen, K. Mavromatis, C. Rice, M. Shah, S. Tringe, S. Lindow, N. VerBerkmoes, D. Myrold, and J.K. Jansson. 2012. Utilization of a model soil bacterium, *Arthrobacter chlorophenolicus*, to develop an “Omics” approach for assessing microbial cycling of carbon in a prairie ecosystem. Abstr. Ann. Meet. Am. Soc. Microbiol.
266. Jansson, J.K., F. Meyer, J.M. Tiedje, E.W. Triplett, and D.D. Myrold. 2012. RCN: TerraGenome—The Soil Metagenome Network. Abstr. Ann. Meet. Am. Soc. Microbiol.
267. Yarwood, S., E. Brewer, R. Yarwood, K. Lahtha, and D. Myrold. 2012. The persistence of soil microbes: active community composition and capability to respond to litter addition after 10-years of no-inputs. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
268. Cappellazzi, J.E., J.E. Smith, P.J. Bottomley, and D.D. Myrold. 2012. The birth and death of ectomycorrhizal mats: Response of ectomycorrhizal fungal communities to a reciprocal soil transplant experiment. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
269. Zeglin, L.H., M. David, E. Prestat, A. Lindsley, M. Arango, P.J. Bottomley, R. Hettich, J. Jansson, A. Jumpponen, C. Rice, S. Tringe, N. VerBerkmoes, and D.D. Myrold. 2012. Microbial functional response to altered precipitation timing and duration – implications for the soil carbon cycle. Abstr. Ann. Meet. Ecol. Soc. Am., p. xxx.
270. David, M.M., L. Zeglin, E. Prestat, J. Dvornik, P. Bottomley, R. Hettich, K. Corrier, A. Jumpponen, K. Mavromatis, C. Rice, R. Koutsouri, S. Lindow, M. Shah, S. Tringe, N. VerBerkmoes, D. Myrold, and J.K. Jansson. 2012. Impact of soil, rhizosphere and growth conditions on the *Arthrobacter chlorophenolicus* transcriptome and proteome. 14th International Society for Microbial Ecology Meeting, 19-24 August 2012, Copenhagen, Denmark.
271. David, M.M., E. Prestat, L. Zeglin, P. Bottomley, R. Hettich, A. Jumpponen, C. Rice, R. Koutsouri, M. Shah, S. Tringe, T. Glavina del Rio, N. VerBerkmoes, D. Myrold, and J.K. Jansson. 2012. Value of sequencing the active soil metagenome for assessing soil microbial functions using an “Omics” approach. 14th International Society for Microbial Ecology Meeting, 19-24 August 2012, Copenhagen, Denmark.
272. Myrold, D.D., L.H. Zeglin, P.J. Bottomley, A. Jumpponen, C.W. Rice, M.M. David, E. Prestat, J.K. Jansson, S.G. Tringe, N. VerBerkmoes, and R.L. Hettich. 2012. Response of microbial transcriptome, proteome, and activity to rainfall pulses in a prairie soil. 14th International Society for Microbial Ecology Meeting, 19-24 August

- 2012, Copenhagen, Denmark.
273. Taylor, A., N. Vajjala, D.J. Arp, D.D. Myrold, and P.J. Bottomley. 2012. Discriminating between the contributions of ammonia oxidizing archaea and bacteria to soil nitrification. 14th International Society for Microbial Ecology Meeting, 19-24 August 2012, Copenhagen, Denmark.
274. Zeglin, L.H., P. Bottomley, A. Jumpponen, C. Rice, M. Arango, A. Lindsley, A. McGowan, and D.D. Myrold. 2012. Microbial functional response to altered precipitation timing and duration: implications for the soil carbon cycle. 2012 LTER All Scientists Meeting, 10-13 September 2006, Estes Park, CO.
275. Zeglin, L.H., M. David, E. Prestat, A. Lindsley, M. Arango, P.J. Bottomley, R. Hettich, J. Jansson, A. Jumpponen, C. Rice, S. Tringe, N. VerBerkmoes, and D.D. Myrold. 2012. Microbial functional response to altered precipitation timing and duration – implications for the soil carbon cycle. 4th Annual Argonne Soils Workshop. 3-5 October 2012. Argonne, IL.
276. Myrold, D.D., J.K. Jansson, F. Meyer, J.M. Tiedje, and E.W. Triplett. 2011. TerraGenome—Coordinating Soil Metagenomic Research. 4th Annual Argonne Soils Workshop. 3-5 October 2011. Argonne, IL.
277. Kaiser, M., T. Ghezzehei, D. Myrold, M. Kleber, and A.A. Berhe. 2012. Combined application of black carbon and CaCO₃ to increase organic matter retention in silt-sized aggregates. 5th International Workshop on Soil & Sediment Organic Matter Stabilization & Destabilization, 7-11 October 2012, Lago Maggiore, Switzerland.
278. Myrold, D.D., M.J. Bailey, J.K. Jansson, F. Meyer, J.M. Tiedje, E.W. Triplett, and T.M. Vogel. 2012. Terragenome—the Soil Metagenome Network. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
279. Rice, C., L. Zeglin, P. Bottomley, N.I. Tisdell, A. Jumpponen, M.M. David, E. Prestat, J.K. Jansson, S.G. Tringe, N. VerBerkmoes, R.L. Hettich, A.W. McGowan, P. Mfombep, M. Arrango, and D. Myrold. 2012. Response of microbial transcriptome, proteome, and activity to rainfall pulses in a prairie soil. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
280. McGinnis, M. and D.D. Myrold. 2012. Soil enzyme activity varies among second-growth Douglas-fir stands of the Pacific Northwest. Abstr. American Society of Agronomy, Madison, WI. p. xxx.
281. Intanon, S., A. Hulting, D. Myrold, and C. Mallory-Smith. 2013. Impacts of meadowfoam seed meal amendment on weeds and soil microbial activity. Tropical Weed Science Conference, Thailand.
282. Andrews, S.B., J. Hang, and D.D. Myrold. 2013. Fertilizer value of algae meal. 27th Annual BioCycle West Coast Conference, 8-11 April, San Diego, CA.

INVITED SEMINARS: ON CAMPUS

1. "A trip around the nitrogen cycle." April 1984. Soil Science Seminar, Oregon State University, Corvallis, OR.
2. "A look at the microbiological basis of the anaerobic nitrogen mineralization test." 18 November 1985. Soil Science Seminar, Oregon State University, Corvallis, OR.
3. "Relationship among soil microbial properties and aboveground stand characteristics." 14 November 1986. Forest Ecology Seminar, Department of Forest Science, Oregon State University, Corvallis, OR.
4. "Use of enriched ^{15}N for measuring rates of soil nitrogen processes." 9 June 1988. Forest Science Seminar, Department of Forest Science, Oregon State University, Corvallis, OR.
5. "*Frankia*: The other symbiotic nitrogen fixing bacterium." 5 December 1988. Department of Microbiology, Oregon State University, Corvallis, OR.
6. "Nitrogen cycling in Oregon forest soils: Past, present, and future." 10 November 1989. H. J. Andrews LTER Seminar Series.
7. "The *Alnus-Frankia* symbiosis: Population dynamics and diversity of *Frankia* strains." 3 October 1994. Soil Science Seminar, Oregon State University, Corvallis, OR.
8. "Molecular ecology of *Frankia*, the bacterial partner of the actinorhizal symbiosis." 30 September 1995. Annual Retreat, Molecular and Cellular Biology Program, Oregon State University, Corvallis, OR.
9. "Soil biology: Is there anything new under the sun?" 24 February 1997. Soil Science Seminar, Oregon State University, Corvallis, OR.
10. "Nitrogen cycling in forest soils: What we know and what we need to learn" 8 January 1998. Forest Science Seminar, Oregon State University, Corvallis, OR.
11. "Functional diversity of soil microbes" 20 September 2000. Department of Microbiology, Oregon State University, Corvallis, OR.
12. "Using stable isotopes to track carbon and nitrogen through the microbial community in soils" 16 January 2003. Forest Science Seminar, Oregon State University, Corvallis, OR.
13. "The H.J. Andrews Microbial Observatory" 7 February 2003. H.J. Andrews Science Hour, Oregon State University, Corvallis, OR.
14. "Lessons learned at OSU's Microbial Observatory at the H.J. Andrews" 10 May 2004. Soil Science Seminar, Oregon State University, Corvallis, OR.
15. Boyle, S.A., P.J. Bottomley, and D.D. Myrold. 2007. "The contributions of bacteria and

- fungi to nitrogen cycling in forest soils under Douglas fir and red alder” 8 February 2007. (Poster presented by S.A. Boyle as part of National Science Board visit to Oregon State University, Corvallis, OR.)
16. “Soil microbial ecology: the world beneath our feet” 28 January 2008, Plant Sciences Seminar, Oregon State University, Corvallis, OR.
 17. “C and N cycling in soils: learning a lot with a little label” 8 June 2009, Isotope Hydrology and Biogeochemistry Workshop, Oregon State University, Corvallis, OR. (<http://oregonstate.edu/groups/hydro/IsotopeWorkshop/OSU%20Isotope%20Workshop%202009%20Myrold.htm>)
 18. “Charismatic Microorganisms of the H.J. Andrews” 7 May 2010, H.J. Andrews Science Hour, Oregon State University, Corvallis, OR.

INVITED SEMINARS: OFF CAMPUS

1. "Use of ^{15}N to simultaneously estimate rates of nitrogen cycle processes in soil." 12 June 1984. NASA-Ames Research, Moffett Field, CA.
2. "Simultaneously estimating rates of nitrogen cycle transformations in soil." July 1984. College of Forest Resources, University of Washington, Seattle, WA.
3. "Physical controls of microbial activity in soils." 7 October 1987. Department of Plant and Soil Science, University of California, Berkeley, CA.
4. "Approaches to measuring soil nitrogen transformations under continuous or steady-state conditions." 20 October 1987. Program in Forest Microbiology Workshop, Harvard Forest, Petersham, MA.
5. "Terrestrial microbial ecology: Interactions and interfaces." 5 October 1988. Department of Microbiology, University of Minnesota, Minneapolis, MN.
6. "Quantitative aspects of nitrogen cycling in soil ecosystems." 6 October 1988. Department of Soil Science, University of Minnesota, St. Paul, MN.
7. "Use of ^{15}N techniques to measure denitrification in soil." 7 June 1989. Symposium on Denitrification in Soil and Sediment, University of Aarhus, Aarhus, Denmark.
8. "Denitrification: The process, its regulation, and its potential environmental impact." 6 February 1991. Oregon Graduate Center, Portland, OR.
9. "Environmental impacts of forest fertilization." 12 February 1991. Forest Fertilization Conference, Seattle, WA.
10. "Measuring *Frankia* populations in soil." 11 November 1991. Department of Microbiology, University of Helsinki, Helsinki, Finland.

11. "¹⁵N as a tool for studying nitrogen cycling in soil." 14 November 1991. Department of Biology, University of Joensuu, Joensuu, Finland.
12. "Enumerating *Frankia* in soil: bioassay and gene probe approaches." 15 November 1991. Department of Biology, University of Joensuu, Joensuu, Finland.
13. "Probing *Frankia* populations with plants and PCR." 29 April 1992. Department of Plant Physiology, Umeå University, Umeå, Sweden.
14. "Nitrogen fixation and denitrification: Microbial processes that link the atmosphere and biosphere." 27 October 1993. College of Forest Resources, University of Washington, Seattle, WA.
15. "The *Alnus-Frankia* symbiosis: Population dynamics and diversity of *Frankia* strains." 5 October 1994. Department of Ecology, Ethology, and Evolution, University of Illinois, Champaign, IL.
16. "Using ¹⁵N gas emission to measure denitrification in subsurface soils." 23 May 1995. Department of Forest Ecology, Swedish University of Agricultural Sciences, Umeå, Sweden.
17. "Molecular ecology of *Frankia*, the bacterial partner of the actinorhizal symbiosis." 10 October 1995. Department of Microbiology, University of New Hampshire, Durham, NH.
18. "Key Concepts of the Nitrogen Cycle." 30 August 2000. Umeå School of the Environment, Umeå, Sweden.
19. "Soil Organisms: Is it who you are or what you do that matters?" 26 January 2001. Northwest Forest Soils Council, Bellingham, WA.
20. "Linking microbial community composition to function in soil ecosystems." 21 November 2002. School of Natural Resources. Ohio State University, Columbus, OH.
21. "Coupling microbial community composition and activity in soil ecosystems." 24 February 2003. Department of Forest Ecology, Swedish University of Agricultural Sciences, Umeå, Sweden.
22. "Exploring the relationship between microbial community structure and function in soil ecosystems." 4 April 2003. Department of Botany, Northeastern Hills University, Shillong, India.
23. "Probing for links between the structure and function of soil microbial communities." 11 December 2003. Department of Microbiology and Molecular Biology, Brigham Young University, Provo, UT.

24. "Tracing plant-derived C into the soil microbial community through rhizodeposition and decomposition." 15 November 2004. Korea Research Institute of Bioscience and Biotechnology, Daejeon, Republic of Korea.
25. "Tracing plant-derived C into the soil microbial community through rhizodeposition and decomposition." 18 November 2004. Korea Forest Research Institute, Seoul, Republic of Korea
26. "Linking the structure and function of N-cycling microbial communities in soil." 19 November 2004. School of Biological Sciences, Seoul National University, Seoul, Republic of Korea.
27. "Fate of ¹³C-Labeled Plant Material into Soil Microbial Communities." 15 June 2006. DOE Global Change Education Program, Portland, OR.
28. "Structure-function relationships in soil carbon and nitrogen cycling: Does microbial community structure matter?" 1 September 2006. Department of Biology, Kansas State University, Manhattan, KS.
29. "Linking microbial communities to microbial activities at the H. J. Andrews Microbial Observatory." 1-3 March 2007. NSF Microbial Observatories 4th PI Meeting, Washington, DC.
30. "Roots: a major determinant of microbial community composition." 4 May 2007. Chungbuk National University, Cheongju, Republic of Korea.
31. "Microbial communities as responders to change." 7 May 2007. Korea Research Institute of Bioscience and Biotechnology, Ochang, Republic of Korea.
32. "Carbon flux and soil microbial communities." 8 May 2007. National Institute of Agricultural Science & Technology. Suwan, Republic of Korea.
33. "Soil microbial ecology." 9 May 2007. Chungbuk National University, Cheongju, Republic of Korea.
34. "It's about time: Climate and community change." 16 June 2009. 10th International Symposium on Bacterial Genetics and Ecology (BAGECO-10), Uppsala, Sweden.
35. "Microbial communities and function in Oregon soils." 23 June 2009. Department of Agricultural Research for Northern Sweden, Swedish University of Agricultural Sciences, Umeå, Sweden.
36. "Microbial ecology of Oregon forest soils." 11 November 2009. Department of Biology, Lewis and Clark College, Portland, OR.
37. "Linking ammonia oxidizer communities to nitrification rates across a catena." 6 August 2010. Annual Meeting of the Ecological Society of America, Pittsburgh, PA.

38. "The next stage for TerraGenome." 23 August 2010. 13th International Society for Microbiology Meeting, Seattle, WA.
39. "Responses of soil fungal and bacterial communities of Pacific Northwest forests to perturbations." 27 August 2010. 13th International Society for Microbiology Meeting, Seattle, WA.
40. "Publishing your research?" 10 November 2010. Webinair to University of Wisconsin, Madison, WI.
41. "Soil microbial communities of the H.J. Andrews LTER site." 17 June 2011. LTER Fungal/Microbial Genomics Working Group Meeting, Sevilleta, NM.
42. "Microbial roles in the terrestrial nitrogen cycle." 18-19 August 2012. BECC Workshop on Microbial Control of Biogeochemical Cycles, Höör, Sweden.
43. "Influence of N₂-fixing plants on soil nitrogen cycling." 18-21 September 2012. Workshop on N-fixing plant invasion in cold climates, Furka Pass, Switzerland.

INVITED SEMINARS: EXTENSION AND CONTINUING EDUCATION

1. "Insights into mineralizable nitrogen" and "Effects of compaction on microbial activity." 9 January 1986. BLM Soil and Water Workshop, Eugene, OR.
2. "Nitrogen cycle and fate of applied nitrogen" and "Nitrogen fertilization." 1 April 1986. OSU Forestry Extension Workshop on Soil Fertility Management, Corvallis, OR.
3. "Forest soil fertility-productivity relationships." 28 October 1987. Silviculture Institute, Oregon State University, Corvallis, OR.
4. "Soil biology." 12 November 1987. Eugene District BLM and Willamette National Forest Symposium on Maintaining Long-term Forest Soil Productivity, Eugene, OR.
5. "The role of microorganisms in forest soils." 18 November 1987. OSU Forestry Extension Workshop on Forest Soils Management in Eastern Oregon, La Grande, OR.
6. "Forest soil fertility." 26 October 1988. Silviculture Institute, Oregon State University, Corvallis, OR.
7. "Denitrification." 14 March 1991. Extension Meeting, Oregon State University, Corvallis, OR.
8. "Stable isotopes in ecological research." 6 April 1991. Workshop at the Soil Ecology Society Meeting, Oregon State University, Corvallis, OR. Co-chaired with S.C. Hart.

9. "Root symbioses of red alder: Technological opportunities for enhanced regeneration and soil improvement." 18 November 1992. Course on The Biology of Red Alder, College of Forestry, Oregon State University, Corvallis, OR.
10. "Manure nitrogen management." 16 March 1993. Extension Meeting, Oregon State University, Corvallis, OR.
11. "How will ecosystem management affect the soil ecosystem?" 19 July 1994. Program at the H.J. Andrews Experimental Forest, Blue River, OR.
12. "Nitrogen transformations and management interactions." 18 March 1998. Pacific Northwest Forest and Rangeland Soil Organism Symposium, Corvallis, OR.
13. "Nitrogen know-how for septic systems." Oregon Onsite Wastewater Association. 11 February 2012. Seaside, OR.

RESEARCH SUPPORT: RECURRING FUNDS

1984: Denitrification in Pacific Northwest forests. OSU, College of Forestry. \$14,640.

The effect of soil compaction on microbial activity in forest soils. OSU, College of Forestry. \$13,232.

1985: Denitrification in Pacific Northwest forests. OSU, College of Forestry. \$9,597.

The effect of soil compaction on microbial activity in forest soils. OSU, College of Forestry. \$10,577.

1986: Denitrification in Pacific Northwest forests. OSU, College of Forestry. \$8,985.

The effect of soil compaction on microbial activity in forest soils. OSU, College of Forestry. \$11,668.

1987: Denitrification in Pacific Northwest forests. OSU, College of Forestry. \$22,650.

1988: Nitrogen cycling in forest soils. OSU, College of Forestry. \$22,019.

1989: Nitrogen cycling in forest soils. OSU, College of Forestry. \$17,000.

1990: Nitrogen cycling in forest soils. OSU, College of Forestry. \$17,000.

1991: Nitrogen cycling in forest soils. OSU, College of Forestry. \$16,150.

1992: Nitrogen cycling in forest soils. OSU, College of Forestry. \$13,750.

1993: Nitrogen cycling in forest soils. OSU, College of Forestry. \$5,000.

- 1994: Nitrogen cycling in forest soils. OSU, College of Forestry. \$5,000.
- 1995: Nitrogen cycling in forest soils. OSU, College of Forestry. \$5,000.
- 1996: Nitrogen cycling in forest soils. OSU, College of Forestry. \$5,000.
- 1997: Nitrogen cycling in forest soils. OSU, College of Forestry. \$5,000.
- 1998: Nitrogen cycling in forest soils. OSU, College of Forestry. \$5,000.
- 1999: Nitrogen cycling in forest soils. OSU, College of Forestry. \$5,000.

RESEARCH SUPPORT: INTERNAL COMPETITIVE GRANTS (\$459,870 total)

- 1984: Is denitrification a significant nitrogen loss from Willamette Valley soils? OSU, Agricultural Research Foundation. \$6,000 for 2 years.
- Restructuring and updating Forest Soils (SIs 454). OSU, College of Agriculture, Savery Foundation. \$1,255.
- 1985: Microbial ecology of forest tree nursery soils. OSU, College of Forestry, Forestry Opportunity Grant. \$20,000. (joint with Everett Hansen)
- 1986: Microbial ecology of forest tree nursery soils. OSU, College of Forestry, Forestry Opportunity Grant. \$20,000. (joint with Everett Hansen)
- Microbiology of nonleguminous nitrogen fixation in Oregon. OSU, Agricultural Research Foundation. \$7,000 for 2 years.
- 1987: Autecology of *Frankia* (support for autoclave purchase). OSU, Research Council. \$4,000.
- Adapting polyclonal fluorescent antibody techniques to the study of *Frankia* in soil. OSU, Laboratory Animal Un-sponsored Faculty Research. \$1,510.
- 1988: Matching funds for acquisition of automated ratio mass spectrometer. OSU, Research Office. \$18,609.
- 1989: Quantifying denitrification losses of nitrogen from land-applied dairy manure. Water Resources Research Institute. \$50,145 for 2 years. (coauthored with Moore)
- 1999: Bacteria in riparian and agricultural soils. OSU, Agricultural Research Foundation. \$7,500 for 2 years.
- 2000: Replace aging isotope ratio mass spectrometer with a modern, more versatile system. OSU, Research Equipment Reserves. \$80,805.

- 2004: Supplemental award from H.J. Andrews LTER to support Stacie Kageyama's research on the DIRT plots. \$3,447.
- 2005: Supplemental award from H.J. Andrews LTER to support Stephanie Boyle's research on the replacement series plots. \$5,000.
- 2008: The biological basis for predicting nitrogen released from cover crops. OSU, Agricultural Research Foundation. \$12,500 for 2 years.
- 2009: Picarro wavelength-scanned cavity ring down spectrometers for field detection of stable isotopes in C in CO₂ and of O and H in liquid water and water vapor. OSU, Research Equipment Reserves. \$134,795. (Barb Bond, PI)
- Vegetation and soil processes in restored wetlands. OSU, Institute for Water and Watersheds. \$9,955 for 2 years. (shared with Mary Santelmann)
- 2010: Upgrade for SIRU mass spectrometer. OSU Strategic Investment Program with funds from CSS, CAS, and SBI. \$77,349 plus facilities upgrade.
- 2011: Upgrade for second SIRU mass spectrometer. OSU MSAC. \$10,000.
- Multiplexed stable isotope incubation system. OSU, Research Equipment Reserves. \$20,000. (Kate Lajtha, PI)

RESEARCH SUPPORT: EXTERNAL COMPETITIVE GRANTS (\$7,140,409 total)

- 1984: Nitrogen cycle dynamics across a transect of vegetation zones in Oregon. NASA-Ames University Consortium. \$14,528.
- 1985: Literature review on "Effects of atmospheric deposition on soil organisms." National Council of the Paper Industry for Air and Stream Improvement, Inc. \$2,982.
- 1986: Nitrogen cycle dynamics across a transect of vegetation zones in Oregon—Addendum. NASA-Ames University Consortium. \$3,198.
- 1987: Testing of groundwater model performance. USEPA. \$593,788 for 3 years. (coauthored with Boersma et al.)
- Presidential Young Investigator Award. National Science Foundation. \$25,000 plus \$2,000 matching funds.
- 1988: Presidential Young Investigator Award. National Science Foundation. \$25,000 plus \$42,120 matching funds.
- Donation of CHN analyzer and associated peripheral equipment. Isotec Co., Inc. \$37,500.

- Acquisition of an automated ratio mass spectrometer for ^{15}N and ^{13}C analysis. NSF-Biological Instrumentation. \$62,323. (coauthored with Wheeler et al.)
- Improving *Frankia* inoculation methods for production of bareroot red alder seedlings. Weyerhaeuser Company. \$4,080 for 1 year.
- 1989: Nitrogen rate and timing for Oregon cranberries. Oregon Cranberry Growers Association. \$3,000 for 1 year. (coauthored with Hart et al.)
- Fate of ^{15}N fertilizer applied to Oregon cranberries. Ocean Spray Cranberries, Inc. \$5,000 for 1 year. (shared with Wilder et al.)
- Presidential Young Investigator Award. National Science Foundation. \$25,000 plus \$23,410 in matching funds.
- Foliar response of ponderosa pine to management treatments. USDA Forest Service. \$14,000 for 2 years.
- Effects of management treatments in soil nutrient availability. USDA Forest Service. \$23,000 for 2 years.
- Activity and survival of *Frankia* in soil. NSF-Ecology. \$98,915 for 2 years. (coauthored with Strauss)
- 1990: Fate and cycling of ^{15}N -labelled dairy manure. USDA/CSRS Water Quality Program. \$84,147 for 3 years. (coauthored with Moore and Gamroth)
- Improving *Frankia* inoculation methods for production of bareroot red alder seedlings. Weyerhaeuser Company. \$2,500 for 1 year.
- Estimating major ecosystem fluxes across the Oregon transect. NASA. \$177,000 for 2 years. (part of a multiyear project, coauthored with Peterson et al.)
- Fate of ^{15}N fertilizer applied to Oregon cranberries. Ocean Spray Cranberries, Inc. \$8,000 for 1 year. (shared with Hart et al.)
- Effect of biuret on soil microbial biomass and activity. Union Oil Co. \$1,200 for 1 year.
- Presidential Young Investigator Award. National Science Foundation. \$25,000 plus \$21,815.
- 1991: Liming to increase *Frankia* inoculum efficiency. Weyerhaeuser Company. \$5,000 for 1 year.
- Ecology and physiology of *Alnus-Frankia* symbiosis. National Science Foundation. \$17,450.

- Presidential Young Investigator Award. National Science Foundation. \$25,000 plus \$14,008.
- 1992: Methods for assessing *Frankia* diversity. National Science Foundation. \$50,000 for 1 year.
- Presidential Young Investigator Award. National Science Foundation. \$13,135.
- Measuring N₂ fixation and N cycling in pure and mixed red alder stands using ¹⁵N. USDA/NRICGP. \$190,000 for 3 years. (shared with Hibbs and Righetti)
- 1993: Denitrifying activity in deep soil profiles. USDA–Water Quality Special Grants Program. \$149,649 for 2 years.
- REU Supplement: Methods for assessing *Frankia* diversity. National Science Foundation. \$5,000 for 1 year.
- EROL Supplement: Methods for assessing *Frankia* diversity. National Science Foundation. \$15,271 for 1 year.
- 1994: Size and diversity of *Frankia* populations that nodulate *Ceanothus* spp. USDA/NRICGP–Soils and Soil Biology. \$174,000 for 3 years.
- 1997: Compartmentalization and coupling of nitrogen cycling in soil. USDA/NRICGP–Soils and Soil Biology. \$268,000 for 2 years. (shared with Bottomley)
- 1999: Diversity of nitrogen-cycling microorganisms at the H.J. Andrews LTER. NSF–Microbial Observatories. \$561,431 for 3 years. (shared with Bottomley and Cromack, Jr.)
- 2000: Carbon Turnover through the Soil Microbial Community. NSF–Ecosystems Science. \$399,027 for 3 years. (shared with Bottomley)
- 2001: Hot Spots of Nitrogen Cycling in Soil. USDA/NRICGP–Soils and Soil Biology. \$275,292 for 2 years. (shared with Bottomley and Cliff)
- Molecular Diversity of Actinorhizal Symbionts Found in the Sikkim Region of the Eastern Himalayas. NSF, US-India Cooperative Research. \$24,834 for 3 years.
- Earth's Subsurface Biosphere: Coupling of Microbial, Geophysical and Geochemical Processes. NSF–IGERT Program. \$2,662,000 for 5 years. (participant, M.Fisk PI)
- 2002: Microbial physiological and community-level responses to water stress in soil. USDA/NRICGP–Soils and Soil Biology. \$89,200 for 1.5 years. (postdoctoral proposal of Mark Williams)
- 2004: Structure and Function of Mycorrhizal Mat Communities at the H. J. Andrews LTER Microbial Observatory. NSF–Microbial Observatories. \$920,285 for 5 years. (shared with Bottomley, Caldwell, Cromack, Jr., and Spatafora)

- Collaborative Research: Functional Significance of "Dark Septate" Endophytes in Grassland and Meadow Ecosystems of Western North America. NSF–Ecosystem Studies. \$299,251 for 3 years.
- 2005: Ecological soil community management for enhanced nutrient cycling in organic sweet cherry orchards. USDA–Integrated Organic Program. \$437,000 for 3 years. (shared with Azarenko, Ingham, and Seavert)
- 2006: Regulating the Tempo of Nitrogen Turnover in Soils: Microbial and Biochemical Determinants. NSF–Ecosystem Science Cluster. \$68,694 for 1 year. (shared with Bottomley)
- 2007: Niche differentiation of nitrification in soils. NRI–Soil Processes. \$360,000 for 3 years. (shared with Bottomley)
- 2009: A metabolically active transient storage model for predicting nutrient retention in streams. NSF–EAR–Hydrological Sciences. \$391,000 for 3 years. (shared with Haggerty)
- Source partitioning of N pathways in soil: integrated isotope, FTIR and molecular biology methods. U.S.–Israel Binational Science Foundation. \$46,000 (OSU portion) for 3 years. (shared with Bottomley)
- Microbes and minerals: imaging soil C stabilization. DOE, \$243,000 (OSU portion) for 3 years. (shared with Kleber, Pett-Ridge (LLNL), Nico (LBNL))
- 2010: Meta-“omics” analysis of microbial carbon cycling responses to altered rainfall inputs in native prairie soils. DOE-BER, \$956,576 (OSU portion) for 3 years. (shared with Bottomley, Jumpponen & Rice (KSU), Jansson & Tringe (LBNL), Hettich & VerBerkmoes (ORNL))
- 2011: Soil C change following harvest: microbial mechanisms and indicators. Weyerhaeuser Company, \$150,000 for 3 years.
- RCN: TerraGenome—The soil metagenome network. NSF—DEB, \$497,164 for 5 years. (shared with Jansson (LBNL), Meyer (ANL), Tiedje (Michigan State University), Triplett (University of Florida))
- Drivers and impacts of the differential contributions of archaea and bacteria to soil nitrification. USDA-NIFA-AFRI, \$491,000 for 3 years. (shared with Bottomley (PI) and Taylor)

AWARDS AND HONORS

- 2007: Soil Science Research Award, Soil Science Society of America (joint with Peter Bottomley, first time awarded as a team)
- 2002: Excellence in Poster Presentation, Soil Science Society of America, Division S-7
- 2001: Fellow, Soil Science Society of America

2000: Fellow, American Society of Agronomy
1989: NSF Travel Award (attend 5th International Symposium on Microbial Ecology meeting)
1987: Phi Kappa Phi Emerging Scholar Award, OSU Chapter
1987: National Science Foundation Presidential Young Investigator Award
1986: South Santiam Faculty Development Grant (attend Northwest Forest Soils Council summer field trip in Alaska)
1986: OSU Foundation Staff Development Fellowship (attend Ecological Society of America meeting, 6th International Meeting on *Frankia* and Actinorhizal Plants, and 4th International Symposium on Microbial Ecology)
1986: NSF Travel Award (attend 4th International Symposium on Microbial Ecology meeting)
1984: OSU Foundation Staff Development Fellowship (attend Soil Science Society of America workshop on soil variability)
1978-1981: National Science Foundation Graduate Fellowship
1975-1977: Copper Country Memorial Scholarship
1973-1977: State of Michigan Competitive Scholarship
1973-1977: Michigan Technological University Board of Control Scholarship
Member of Xi Sigma Pi (Ranger, 1976-1977)
Member of Phi Kappa Phi
Member of Sigma Xi

PROFESSIONAL SOCIETIES

National: American Association for the Advancement of Science
American Society for Microbiology
American Society of Agronomy
Ecological Society of America
International Society of Microbial Ecology
International Society of Soil Science
Soil Ecology Society
Soil Science Society of America

Regional: California Forest Soils Council
Northwest Branch of the American Society for Microbiology
Northwest Forest Soils Council (President, 1991-93)
Oregon Society of Soil Scientists
Western Society of Soil Science

REVIEWER FOR:

Associate Editor, Soil Science Society of America Journal (1991-1997)
Editorial Board, Applied and Environmental Microbiology (1999-2007)
Technical Editor, Soil Science Society of America Journal (2001-2007)
Subject Editor, Soil Biology and Biochemistry (2005-present)
Editorial Board, FEMS Microbiology Ecology (2006-present)
Editor, Soil Science Society of America Journal (2008-present)
Editorial Board, ISME Journal (2011-present)

Panel member, USDA National Research Initiative Competitive Grants Program, Water Quality (1993)
Panel manager, USDA National Research Initiative Competitive Grants Program, Soils and Soil Biology (1995)
Co-editor for the Proceedings of the 10th International Conference on *Frankia* and Actinorhizal Plants published in *Physiologia Plantarum* (1995-1996)
Panel member, USEPA Biology & Microbiology Program (1996)
Panel member, NSF Biocomplexity Program (1999)
Panel member, USDA National Research Initiative Competitive Grants Program, Soils and Soil Biology (2000)
Panel member, Academy of Finland, Research Council for Biosciences and Environment (2001, 2003)
Panel member, NSF Integrated Research Challenges in Environmental Biology (2002)
Panel member, NSF Ecological Studies Program (2002, 2003)
Panel member, NSF Microbial Observatories Program (2004)
Member, College of Reviewers, Canada Research Chairs Program (2002-)
Member, Review team for BYU Department of Plant and Animal Sciences (2005)
Panel member, NIH International Cooperative Biodiversity Groups (ICBG) Program (2009)
Panel member, DOE Early Career Program (2010)

Ad hoc journal reviews

Applied and Environmental Microbiology
Applied Soil Ecology
Agronomie
Aquatic Ecology
Arctic, Antarctic, and Alpine Research
BioEnergy Research
Biogeochemistry
Biology and Fertility of Soils
Bioresource Technology
Canadian Journal of Botany
Canadian Journal of Forest Research
Canadian Journal of Microbiology
Canadian Journal of Soil Science
East African Agricultural and Forestry Journal
Ecology
Ecology Letters
Ecosystems
Environmental Management
Environmental Microbiology
Environmental Science & Technology
European Journal of Soil Biology
FEMS Microbiology Ecology
Forest Science
Frontiers in Ecology and the Environment
Global Change Biology
International Society for Microbial Ecology Journal
Isotopes in Environmental and Health Studies

Journal of Applied Ecology
Journal of Bacteriology
Journal of Environmental Quality
Journal of Microbiological Methods
Journal of Plant Research
Journal of Soil and Water Conservation
Journal of the American Horticultural Society
Kansas State University Ecological Genomics Institute
Letters in Applied Microbiology
Microbial Ecology
Molecular Ecology
Molecular Phylogeny and Evolution
Mycologia
Mycorrhiza
Nature Communications
New Phytologist
New Zealand Journal of Crop and Horticultural Science
Pedobiologie
Plant and Soil
Proceedings of the National Academy of Sciences, U.S.A.
Rapid Communications in Mass Spectrometry
Soil Biology & Biochemistry
Soil Science
Soil Science Society of America Journal
Symbiosis
Water Air and Soil Pollution

Ad hoc proposal reviews

Academy of Finland
L'Agence Nationale de la Recherche–ANR, France
Austrian Academy of Sciences
BBSRC (Biotechnology and Biological Sciences Research Council), Great Britain
EMSL User Proposals
ESF Unit for Life, Earth and Environmental Sciences (LESC)—EUROCORES Program
NASA–Biospherics Program
National Agency for the Promotion of Science and Technology, Argentina
NSF–Biocomplexity Program
NSF–CAREER Program
NSF–Ecological and Evolutionary Physiology Program
NSF–Ecology Program
NSF–Ecosystems Program
NSF–Hydrological Sciences Program
NSF–Instrumentation Program
NSF–Cellular Biochemistry Program
NSF–Geology, Environmental Geochemistry, and Biogeochemistry Program
NSF–Microbial Observatories Program
NSF–Polar Biology Program
NSF–Population and Evolutionary Processes Cluster

NSF–Population Biology and Physiology Program
NSF–Systematic Biology and Biodiversity Inventories Cluster
NSF–US-China Cooperative Program
NSF–US-Korea Cooperative Program
NERC–Terrestrial Initiative in Global Environmental Research
NSERC
NWO—Division Earth and Life Sciences
University of California, Kearney Foundation
USDA Competitive Grants Program–Forest Biology Program
USDA Competitive Grants Program–Nitrogen Fixation Program
USDA National Research Initiative Competitive Grants Program–Water Quality Program
USDA National Research Initiative Competitive Grants Program–Soil and Soil Biology Program
USDA National Research Initiative Competitive Grants Program–Soil Processes Program
USDA National Research Initiative Competitive Grants Program–Forest/Range/Crop/Aquatic
Ecosystems Program
USDA National Research Initiative Competitive Grants Program–Biology of Plant Microbe
Associations Program
US Department of Energy Grants Program
US Environmental Protection Agency
US–Israel BARD Fund
Utah State University Faculty Research Grant Program

VISITING SCIENTISTS HOSTED

Timo J. Hokkanen, University of Joensuu, Joensuu, Finland, 1987-1988
Chung Yong Lee, Forestry Research Institute, Seoul, South Korea, 1989-1990
Warwick B. Silvester, Waikato University, Hamilton, New Zealand, 1993
Kerstin Huss-Danell, University of Umeå, Umeå, Sweden, 1993
Klaus Dittert, University of Kiel, Kiel, Germany, 1994
Tommy Harder Nielsen, University of Aarhus, Aarhus, Denmark, 1994
Consuelo Quilchano Gonzalo, University of Salamanca, Salamanca, Spain, 1995-1996
Reinhard Well, University of Göttingen, Göttingen, Germany, 1999
Arvind K. Misra, North-Eastern Hill University, Shillong, India, 2002, 2004
Georg Carlsson, Swedish University of Agricultural Sciences, Umeå, Sweden, 2002
Peter Högberg, Swedish University of Agricultural Sciences, Umeå, Sweden, 2004-2005
Mona Högberg, Swedish University of Agricultural Sciences, Umeå, Sweden, 2004-2005
Tong Min Sa, Chungbuk National University, Chungbuk, Korea, 2006-2007
Ömer Kara, Karadeniz Teknik Üniversitesi, Faculty of Forestry, Trabzon, Turkey, 2011
Luis García-Montero, Technical University of Madrid, Madrid, Spain, 2012
Cafer Türkmen, Çanakkale Onsekiz Mart Üniversitesi, Department of Soil Science and Plant
Nutrition, Çanakkale, Turkey, 2012
Qianzhi Yao, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, P.R.China,
2012-2013

POSTDOCTORAL TRAINEES SUPERVISED

G. E. Nason, 1987-1990
Morton Barlaz, 1988-1989
Janice E. Thies, 1990-1993
Reinhard Well, 1994-1996
Joann K. Whalen, 1998
Mark A. Williams, 2001-2003
John B. Cliff, 2001-2003
Jeremy J. Rich, 2003
Stacie A. Kageyama, 2006-07
Stephanie A. Boyle, 2007
Shawn Starkenburg, 2008
Lydia Zeglin, 2008-

THESES SUPERVISED

Name: Anne M. Macadam
Title: Effects of Microsite Alteration on Soil Climate, Nitrogen Mineralization, and Establishment of *Picea glauca x engelmannii* Seedlings in the Sub-boreal Spruce Zone of West-central British Columbia.
Degree: M.S. Soil Science
Year: 3 April 1991

Name: Frank N. Pascoe
Title: Effects of forest soil compaction on gas diffusion, denitrification, nitrogen mineralization, and soil respiration.
Degree: M.S. Soil Science
Year: 4 September 1992

Name: Nancy C. Baumeister
Title: Nitrogen dynamics in western Oregon perennial grass pastures fertilized with dairy manure.
Degree: M.S. Soil Science
Year: 17 November 1992

Name: Hassane Benjelloun
Title: Soil genesis, classification, and nitrogen cycling in forest ecosystems of the northwestern Rif region of Morocco.
Degree: Ph.D. Soil Science
Year: 15 June 1993

Name: Wanda K. Crannell
Title: Soil pH and calcium effects on nodulation of nursery grown red alder.
Degree: M.S. Soil Science
Year: 10 December 1993

Name: Christopher W. Swanston
Title: Nitrogen dynamics in red alder

Degree: M.S. Forest Science
Year: 26 August 1996

Name: Soon-Chun Jeong
Title: Evolution and ecology of the *Ceanothus-Frankia* symbiosis
Degree: Ph.D. Plant Physiology
Year: 25 September 1997

Name: Yingxin (James) Tang
Title: Nitrogen fixation and cycling in a mixture of young red alder and Douglas-fir
Degree: M.S. Soil Science
Year: 8 October 1997

Name: Nancy J. Ritchie
Title: The genetic diversity of *Ceanothus*-infective *Frankia*
Degree: M.S. Soil Science
Year: 12 December 1997

Name: Kimberly H. Lamothe
Title: Measurement of acetylene reduction activity across a meadow-forest gradient
Degree: M.S. Environmental Soil Science (non-thesis report)
Year: March 2001

Name: Suzanne McKenzie Miller (co-advised with Jennifer Parke)
Title: Detection of the *Burkholderia cepacia* complex in soil environments
Degree: M.S. Soil Science
Year: 1 June 2001

Name: Kendall J. Martin
Title: Inoculation potential of soil-borne *Frankia* on red alder (*Alnus rubra* Bong.)
Degree: Ph.D. Soil Science
Year: 5 June 2001

Name: John B. Cliff
Title: Toward understanding the nature of the soil microsite in relation to nitrogen and carbon cycling
Degree: Ph.D. Soil Science
Year: 8 June 2001

Name: Jessica L. Butler
Title: Microbial community dynamics associated with rhizosphere carbon flow
Degree: M.S. Soil Science
Year: 8 October 2002

Name: Jeremy J. Rich
Title: Community composition and activities of denitrifying bacteria in soils
Degree: Ph.D. Soil Science
Year: 27 June 2003

Awards: Excellent poster, S7, SSSA meeting, 2001

Name: Sarah J. Shaffar
Title: Genetic diversity of *Frankia* in three different Oregon soils with co-occurring actinorhizal hosts
Degree: B.S. Bioresource Research
Year: 22 August 2003

Name: Shawna K. McMahan
Title: Carbon flux through microbial decomposers
Degree: M.S. Soil Science
Year: 13 January 2004
Awards: Savery Outstanding Master's Student Award, 2004

Name: Jessica Christianson
Title: Aggregate stability measurements and the effects of land use practices on three Oregon soils
Degree: M.S. Environmental Soil Science (non-thesis report)
Year: 21 September 2004

Name: Justin B. Brant (co-advised with Elizabeth Sulzman)
Title: Litter controls of microbial community composition and function in forest soils
Degree: M.S. Soil Science
Year: 10 March 2005

Name: Stacie A. Kageyama
Title: Effects of vegetation and disturbance on fungal communities in the western Cascades of Oregon
Degree: Ph.D. Forest Science
Year: 13 October 2005

Name: Stephanie A. Boyle
Title: The link between nitrogen cycling and soil microbial community composition in forest soils of the Pacific Northwest
Degree: Ph.D. Soil Science
Year: 15 March 2007
Awards: 1st place poster, S3, SSSA meeting, 2006
Emil Troug Soil Science award, 2008

Name: Rama Dhungel Ghimire
Title: Variation in communities of ammonia-oxidizing and denitrifying bacteria in Fennoscandian boreal forest soils
Degree: M.S. Soil Science
Year: 14 September 2007

Name: David D. Diaz
Title: Carbon cycling and priming of soil organic matter decomposition in a forest soil following glucose additions

Degree: M.S. Soil Science
Year: 1 May 2008

Name: Guilherme Chaer (co-advised with Peter Bottomley)
Title: Response of soil microbial communities to physical and chemical disturbances:
implications for soil quality and land use sustainability

Degree: Ph.D. Soil Science
Year: 21 March 2008

Name: Laurel A. Kluber
Title: Microbial and biochemical dynamics of ectomycorrhizal mat and non-mat forest soils
Degree: Ph.D. Soil Science
Year: 27 April 2010

Name: Nicole DeCrappeo (co-advised with Peter Bottomley)
Title: Soil community dynamics in sagebrush and cheatgrass-invaded ecosystems of the
Northern Great Basin
Degree: Ph.D. Soil Science
Year: 8 June 2010

Name: Ronjon Datta (co-advised with Dan Sullivan)
Title: Characterizing nitrogen release and soil enzyme activity following application of
organic amendments
Degree: M.S. Soil Science (non-thesis report)
Year: 10 June 2010

Name: Elizabeth A. Brewer
Title: Response of soil microbial communities and N cycling processes to changes in
vegetation input
Degree: Ph.D. Soil Science
Year: 29 November 2010

Name: Elizabeth A. Leondar
Title: Evaluation of Restored Wetlands in the Greater Willamette Valley
Degree: B.S. Bioresource Research
Year: 26 May 2011

Name: Jed Cappellazzi
Title:
Degree: M.S. Soil Science and Forest Science
Year: 201x
Awards: Soil Science Scholarship

Name: Nathaniel Tisdell
Title:
Degree: M.S. Soil Science
Year: 201x

Name: Megan McGinnis
 Title:
 Degree: M.S. Soil Science
 Year: 201x

Name: Marci Burton
 Title:
 Degree: M.S. Soil Science
 Year: 201x

Name: Shannon Andrews
 Title:
 Degree: M.S. Soil Science
 Year: 201x
 Awards: Robert & Carolyn Witters Travel Fund

Name: Andrew Giguere
 Title:
 Degree: M.S. Soil Science
 Year: 201x
 Awards: Provost's Graduate Fellowship

Name: Xinda Lu
 Title:
 Degree: M.S. Soil Science
 Year: 201x

Name: Arlene B. Hilger
 Title: Activity and survival of *Frankia* in soil
 Degree: Ph.D. Soil Science
 Year: 200x
 Awards: Savery Outstanding Graduate Student, 1991

Name: Leigh-Ann Cimino
 Title: Net nitrogen mineralization in young red alder and Douglas-fir stands
 Degree: M.S. Soil Science
 Year: 200x

Name: Stephanie Korschun
 Title: Oxygen transport in wetland plants and its influence on soil N dynamics
 Degree: M.S. Soil Science
 Year: 200x

MINOR PROFESSOR

Dawn England	Forest Science	M.S.	1984
Jeff Borchers	Forest Science	Ph.D.	1984-90

Greg Korper	Forest Science	Ph.D.	1984-87
Dong Kim	Forest Science	Ph.D.	1985-87
Mark Klopsch	Forest Science	M.S.	1985
Chang Duck Koo	Forest Science	Ph.D.	1985-89
Rosalia Cuevas-Rangel	Forest Science	M.S.	1985-89
John Gleason	Forest Science	M.S.	1985-88
Dave Ianson	Botany & Plant Pathology	Ph.D.	1986-91
Jim Kiser	Forest Science	M.S.	1986-92
Joan Landsberg	Forest Science	Ph.D.	1986-93
Joe Graff	Forest Science	Ph.D.	1987-93
Mike McClellan	Forest Science	M.S.	1987
Mike McClellan	Forest Science	Ph.D.	1987-90
Joan Carlson	Forest Engineering	M.S.	1987-89
Kam Leung	Microbiology	Ph.D.	1987-92
Alejandro Valequez-Martinez	Forest Science	Ph.D.	1987-90
Russell Strader	Forest Resources	Ph.D.	1987-90
Albert Rhodes III	Microbiology	M.S.	1987-88
Sharon Hope	Forest Science	Ph.D.	1989-92
Glenn Ahrens	Forest Science	M.S.	1989
Steve Wondzell	Forest Science	Ph.D.	1990-94
Jonathan Bates	Rangeland Resources	Ph.D.	1991-96
Suzanne Simard	Forest Science	Ph.D.	1992-95
Khrystine Duddleston	Microbiology	Ph.D.	1994-98
R. Flint Hughes	Forest Science	Ph.D.	1995-97
Shirley King	Forest Science	M.S.	1995-
Rota Wagai	Forest Science	M.S.	1997-99
Chris Swanston	Forest Science	Ph.D.	1997-2000
Beth Hoinacki	Botany & Plant Pathology	Ph.D.	1998-2003
Ann Mintie	Microbiology	M.S.	2000-02
Kathryn M. Tinnesand	Microbiology	M.S.	2004 (deceased)
Michael Reisner	Forest Resources	Ph.D.	2007-10
Alicia Kiyvyra	Forest Engineering	Ph.D.	2007-2008

COMMITTEE MEMBER

Matt Busse	Soil Science	Ph.D.	1985-89
Craig Costello	Soil Science	M.S.	1986
Carolee Bull	Botany & Plant Pathology	Ph.D.	1989-92
Cindy Shaw	Forest Resources	Ph.D.	1989-
Steve Strain	Microbiology	Ph.D.	1989-93
Sunthorn Poolpipatana	Soil Science	Ph.D.	1990-92
Rajiv Singh	Forest Science	Ph.D.	1990-96
Mary Fauci	Soil Science	M.S.	1990-92
John Burkett	Soil Science	Ph.D.	1991-98
Kimberly Davis	Botany & Plant Pathology	Ph.D.	1995-2000
Ronald Waschmann	Forest Science	M.S.	1995-
Robert Lewis	Forest Science	Ph.D.	1996-

William Hicks	Forest Science	Ph.D.	1996-2000
Jenny Davis	Soil Science	Ph.D.	1997-2003
Evelyne Ndiaye	Soil Science	M.S.	1997-98
Mary Shutter	Soil Science	Ph.D.	1997-2000
Isabella Cantrell	Botany & Plant Pathology	M.S.	1997-2000
Emily Grossman	Forest Science	M.S.	1998-2000
Sandra Uesugi	Soil Science	M.S.	1998-2000
Yuriko Yano	Forest Science	Ph.D.	1998-2002
Scott Holub	Botany & Plant Pathology	Ph.D.	1998-2002
Chris Yeager	Molecular & Cellular Biology	Ph.D.	1999-2001
Ryan Storfa	Microbiology	Ph.D.	1999-2000
Duncan Wilson	Forest Resources	Ph.D.	1999-2003
Machelle Nelson	Soil Science	M.S.	1999-2002
Rachel Heichen	Environmental Science	M.S.	1999-2002
Dorian "Casey" Corliss	Bioresource Research	B.S.	2000
Steven J. Fonte	Forest Science	Ph.D.	2000-03
Heather M. Darby	Horticulture	Ph.D.	2001-02
Kirk E. Waterstripe	Forest Science	Ph.D.	2001-
Louis M. Arighi	Geosciences	M.S.	2002-04
Marcelo F. Fernandes	Soil Science	Ph.D.	2002-06
Jennifer S. Hooke	Forest Science	M.S.	2003-05
Laura White	Forest Science	Ph.D.	2003-
Sire Diedhiou	Soil Science	Ph.D.	2003-07
Alison Cross	Forest Science	M.S.	2003-06
Holly Oakes-Miller	Geology (PSU)	Ph.D.	2004-
Peggy Hill	Water Resource Engineering	M.S.	2006-
Claire Phillips	Forest Science	Ph.D.	2006-09
Robert Slesak	Forest Engineering	Ph.D.	2007-08
Samantha Colby	Botany & Plant Pathology	Ph.D.	2009-
Ricardo Gonzalez-Pinzon	Water Resources Engineering	Ph.D.	2010-
Marco Keiluweit	Soil Science	Ph.D.	2010-
Sarah Strano	Oceanography	Ph.D.	2010-
Nicole W. Chun	Animal Science	Honors	2011
Celene Christensen	Geology	Honors	2011
Denise Nemeth	Environmental Science	Ph.D.	2011-

GRADUATE COUNCIL REPRESENTATIVE

Luiz Viera	Crop Science	Ph.D.	1984
David Marshall	Forest Science	Ph.D.	1984-90
John Marshall	Forest Science	Ph.D.	1984
Thomas DeGomez	Horticulture	M.S.	1984
Jean Detongnon	Horticulture	M.S.	1984
Scott Herbig	Chemical Engineering	M.S.	1985
Bruce Maxwell	Crop Science	Ph.D.	1985
Lori Wiles	Horticulture	M.S.	1986
Mark Dolan	Civil Engineering	M.S.	1987

Alan Rea	Agricultural Engineering	M.S.	1988
William Nichols	Civil Engineering	M.S.	1989
Mary-Lynn Dickson	Oceanography	Ph.D.	1989-94
John Sharp	Oceanography	M.S.	1991
Keizu Furukawa	Civil Engineering	M.S.	1991
Selvam Panneer	Ocean Engineering	Ph.D.	1997
Mark Kittel	Civil Engineering	M.S.	1997
Beth Dodson Coulter	Forest Engineering	M.S.	1998-99
Carl Schoch	Oceanography	Ph.D.	1999
Kasidit Chansawat	Civil Engineering	Ph.D.	2000-03
Paul Meiman	Rangeland Resources	Ph.D.	2000
Ilja Tromp-van Meervel	Forest Engineering	Ph.D.	2001-04
Pranueng Limkatanyoo	Forest Products/Civil Eng.	Ph.D.	2001-04
Michelle Reba	Forest Engineering	M.S.	2001
Tracie Kirkham	Forest Engineering	M.S.	2002
Joel Hartter	Forest Engineering	M.S.	2003-04
Laila Parker	Bioresourcs Engineering	M.S.	2003-04
Ed Rhodes	Rangeland Resources	M.S.	2004-06
Jamie Lescinski	Ocean Engineering	M.S.	2004
Karis McFarlane	Forest Engineering	Ph.D.	2004-07
Omkar A. Joshi	Chemical Engineering	Ph.D.	2005-
Suva Shakya	Water Resources Engineering	M.S.	2007
Gwenn Kubeck	Marine Resource Management	M.S.	2008
Hang Li	Pharmacy	Ph.D.	2008
Matthew Parks	Botany & Plant Pathology	Ph.D.	2008-11
Wade Homan	Botany & Plant Pathology	M.S.	2010-12
Jason Phillips	COAS	M.S.	2011
Meng Li	Civil Engineering	M.S.	2011
Ty Patton	Horticulture	M.S.	2012

EXTERNAL EXAMINER

Name: M. Karthikakutty Amma
 Title: Effect of continuous cultivation of rubber (*Hevea brasiliensis*) on soil properties
 Degree: Ph.D., 1996
 University: University of Karala, Kerala India

Name: Eshetu Zewdu
 Title: Forest soils of Ethiopian Highlands: Their characteristics in relation to site history. Studies based on stable isotopes.
 Degree: Ph.D., 2000
 University: Swedish University of Agricultural Sciences, Umeå, Sweden

UNDERGRADUATE STUDENTS MENTORED

- Alese Colehour, 2008, Macalester College, "Microbial Community Composition in Soils of the Moro Long-term Experiment" (SBI Summer Intern)
- Lucas Nebert, 2008, Willamette University, "Applications of Quantitative PCR to Soil Microbial Ecology"
- Brian Wakefield, 2008, Whitman College, "Amino Acid Sorption Isotherms in Soil" (SBI Summer Intern, Elizabeth Brewer, graduate student mentor)
- Tom Wanzek, 2009-2011, Oregon State University, "Nitrification Potential of Ammonia-oxidizing Archaea and Bacteria" (Anne Taylor, postdoctoral mentor)
- Adam Lindsley, 2011, Oregon State University, "Soil Enzyme Activity in Response to Soil Wetting and Drying" (SBI Summer Intern, Lydia Zeglin, postdoctoral mentor)
- Carl Evans, 2011-2012, Oregon State University, "Quantitative PCR of Soil Microbial Communities in Ectomycorrhizal Mats" (SBI Summer Intern, Jed Cappellazzi, graduate student mentor)
- Jennifer Hang, 2012-2013, Oregon State University, "Nitrogen Mineralization in Soils Amended with Algae Meal" (Shannon Andrews, graduate student mentor)

HIGH SCHOOL STUDENTS MENTORED

- Brian Wakefield, 2007, Philomath High School, "Nitrogen Levels in Compost Leachate"

COURSES TAUGHT

Soil Organic Matter (SIs 524)	1984
Forest Soils (SIs 454, SIs 470)	1985, 1986, 1987, 1988, 1989, 1990
Soil Biology and Biochemistry (SIs 540X, SIs 540, CSS 645)	1986, 1988, 1990, 1992, 1994, 1995, 1997, 1999, 2001, 2003
Reading & Conference (Forest Site Quality)	1984
Reading & Conference (Forest Soil Nutrition)	1986
Reading & Conference (Soil Microbial Biomass)	1987
Reading & Conference (MB 505)	1997
Research (Soil Nitrogen Methods)	1986
Research (<i>Frankia</i> Methods)	1987, 1994, 1995
Research (MB 501)	1997
Research Apprenticeship (SED 501)	1998
Soil Ecosystem Processes (SIs 440/540, CSS 445/545)	1991, 1993
Modelling Soil Ecosystems (SIs 450/550, CSS 455/555)	1991, 1993, 1994
Soil Ecosystem Properties (CSS 435/535)	1992, 1993, 1994
Biology of the Soil Ecosystem (CSS 448X/558X, CSS 455/555)	1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2007, 2008, 2009, 2010, 2011, 2012
Lab Internship (MCB 610)	1995, 1996, 2008
Water Resource Science (CSS 335)	1999
Senior Seminar (CSS 407)	2001, 2002
Principles of Stable Isotopes (CSS 523)	2002, 2004, 2008, 2010, 2012
Soil Microbial Ecology (CSS 645)	2010, 2012
ST/Soil Organic N Dynamics (CSS 599)	2011

GUEST LECTURES

Forest Nutrient Cycles	1985
Ecosystem Analysis and Application	1990
Current Research in Forest Science	1990
Nitrogen in a Soil-Plant System	1991 (1 week, Umeå University)
Plant Autecology	1992, 1993, 1994
Agroecosystems	1992 (2 lectures)
Nordic Course on Modern Methods for Identification of Microbes in the Environment	1993 (2 weeks, University of Helsinki)
Great Experiments (BRR 100)	1995
Selected Topics in Environmental Microbiology (MB 666)	1996, 1998
Introduction to Crop and Soil Science (CSS 199)	1997, 1998
Principles of Soil Science (CSS 305)	1998, 1999
Nitrogen Cycling in the Plant-Soil System	2000 (1 week, Swedish University of Agricultural Sciences)
Soils: Sustainable Ecosystems (CSS 205)	2000
Special Topics in Crop & Soil Science and Environmental Soil Science Orientation (CSS 599)	2000, 2002
Research Perspectives (MCB 511)	2002, 2003, 2004, 2006, 2007
Stable Isotopes in Soil Science, Plant Ecology, and Biosphere-Atmosphere Exchange	2003 (2 weeks, Swedish University of Agricultural Sciences)
Principles of Subsurface Biosphere Processes (OC 669)	2004
Nitrogen Dynamics in Aquatic Systems (GEO 599)	2004
Properties, Processes, and Functions of Soils (CSS 513)	2007, 2008
Global Biogeochemical Cycles (CSS 699)	2012

STUDENT EVALUATIONS

SIs 454/470–Forest Soils (winter term, every year)

	1985	1986	1987
Number responding/enrolled	22/23	8/9	15/16
Mastery of subject matter	2.41	3.00	3.20
Organization of course	2.68	3.00	3.40
Clarity of presentation	2.55	2.71	3.13
Stimulation of interest	2.24	2.29	3.00
Availability for assistance	2.74	3.43	3.53
Impartiality	2.52	3.14	3.13
Concern for student	2.6	2.83	3.47
Overall effectiveness	2.41	2.75	3.13

SIs 470–Forest Soils (winter term, every year)

	1988	1989	1990
Number responding/enrolled	16/18	8/11	13/13
Objectives/requirements clear	3.47	3.25	3.23
Well prepared/organized	3.50	3.63	3.69
Material explained clearly	3.13	3.25	3.38
Sensitive to students	3.13	3.13	3.69
Stimulated enthusiasm	3.13	3.38	3.77
Availability	3.44	3.50	3.69
Fair and impartial	3.50	3.75	3.62
Encouraged thinking	3.25	3.63	3.46
Examinations relevant	3.33	3.63	3.54
Good communication skills	3.44	3.63	3.46
Learned new skills/ideas	3.13	2.86	3.46
Overall, favorably impressed	3.44	3.25	3.38
Average of all responses	3.32	3.41	3.53

SIs 524/540X–Soil Organic Matter/Soil Biology and Biochemistry (spring term, alternate years)

	1984	1986
Number responding/enrolled	7/9	15/16
Mastery of subject matter	2.86	3.00
Organization of course	3.14	2.57
Clarity of presentation	3.00	2.38
Stimulation of interest	2.57	2.80
Availability for assistance	3.20	3.62
Impartiality	3.14	3.14
Concern for student	3.43	3.21
Overall effectiveness	3.00	2.77

SIs 540–Soil Biology and Biochemistry (spring term, alternate years)

	1988	1990
Number responding/enrolled	17/20	15/15
Objectives/requirements clear	3.12	3.50
Well prepared/organized	3.35	3.71
Material explained clearly	2.65	3.36
Sensitive to students	2.82	3.36
Stimulated enthusiasm	2.88	3.43
Availability	3.71	3.33
Fair and impartial	3.47	3.62
Encouraged thinking	3.29	3.57
Examinations relevant	3.18	3.38
Good communication skills	3.29	3.31
Learned new skills/ideas	3.12	3.43
Overall, favorably impressed	3.18	3.64
Average of all responses	3.17	3.47

CSS 645–Soil Biology and Biochemistry (fall term, alternate years)

	1992	1994	1995	1997	1999	2001
Number responding/enrolled	7/7	12/12	4/4	8/12	9/11	9/9
Objectives/requirements clear	3.14	3.58	3.25	3.38	3.50	3.71
Well prepared/organized	3.57	3.58	3.50	3.75	3.67	3.29
Material explained clearly	3.43	3.42	3.00	3.50	3.67	3.29
Sensitive to students	3.14	3.42	3.25	3.50	3.50	3.57
Stimulated enthusiasm	3.86	3.42	3.33	3.75	3.78	3.14
Availability	3.71	3.58	3.25	4.00	3.78	3.14
Fair and impartial	3.86	3.58	3.75	3.88	3.78	3.71
Encouraged thinking	3.86	3.82	4.00	3.88	3.78	4.00
Examinations relevant	3.43	3.50	3.50	3.75	3.78	3.83
Good communication skills	3.57	3.50	3.25	3.50	3.44	3.57
Learned new skills/ideas	3.57	3.50	3.50	3.75	3.56	3.86
Overall, favorably impressed	3.43	3.58	3.50	3.75	3.67	3.43
Average of all responses	3.55	3.55	3.43	3.70	3.66	3.59

	2003	2006
Number responding/enrolled	8/8	6/8
Objectives/requirements clear	5.0	4.8
Clarity of student responsibilities	5.0	4.8
Course organization	5.5	5.5
Available for extra help	5.5	5.5
Use of teaching techniques	6.0	5.0
Interest in learning	6.0	5.5
Stimulate thinking	6.0	5.1
Timely feedback	6.0	5.5
Classroom environment	6.0	5.5
Evaluation of student performance	5.0	5.5
Course	6.0	4.8
Instructor	6.0	5.3

CSS/SOIL 645–Soil Microbial Ecology (fall term, alternate years)

	2010	2012				
Number responding/enrolled	5/5	6/8				
Objectives/requirements clear	5.0	5.9				
Clarity of student responsibilities	5.3	5.3				
Course organization	5.3	5.9				
Available for extra help	5.7	5.9				
Use of teaching techniques	5.3	5.9				
Interest in learning	5.3	5.9				
Stimulate thinking	5.7	5.9				
Timely feedback	5.7	6.0				
Classroom environment	5.7	5.9				
Evaluation of student performance	5.3	5.9				
Course	5.0	5.9				
Instructor	5.3	5.9				

SIs 440/540–Soil Ecosystem Processes (winter term, every year)

	1991
Number responding/enrolled	15/15
Objectives/requirements clear	3.00
Well prepared/organized	3.47
Material explained clearly	3.07
Sensitive to students	2.93
Stimulated enthusiasm	3.00
Availability	3.79
Fair and impartial	3.46
Encouraged thinking	3.14
Examinations relevant	3.47
Good communication skills	3.29
Learned new skills/ideas	2.93
Overall, favorably impressed	3.43
Average of all responses	3.24

SlS 450/550–Modelling Soil Ecosystems (spring term, every year)

	1991
Number responding/enrolled	5/5
Objectives/requirements clear	2.40
Well prepared/organized	3.40
Material explained clearly	2.60
Sensitive to students	3.60
Stimulated enthusiasm	3.00
Availability	3.60
Fair and impartial	3.80
Encouraged thinking	3.40
Examinations relevant	3.00
Good communication skills	3.60
Learned new skills/ideas	3.00
Overall, favorably impressed	3.20
Average of all responses	3.22

CSS 435/535–Soil Ecosystem Properties (fall term, every year)

	1992	1993
Number responding/enrolled	22/39	2/9
Objectives/requirements clear	2.27	3.00
Well prepared/organized	2.73	4.00
Material explained clearly	2.32	3.50
Sensitive to students	2.33	3.50
Stimulated enthusiasm	2.19	3.50
Availability	2.24	4.00
Fair and impartial	2.74	3.50
Encouraged thinking	2.57	3.50
Examinations relevant	2.05	4.00
Good communication skills	2.38	4.00
Learned new skills/ideas	2.10	3.00
Overall, favorably impressed	2.19	3.00
Average of all responses	2.34	3.57

CSS 445/545–Soil Ecosystem Processes (winter term, every year)

	1993	1994
Number responding/enrolled	24/24	9/23
Objectives/requirements clear	2.33	3.22
Well prepared/organized	2.92	3.00
Material explained clearly	2.54	3.00
Sensitive to students	2.63	2.89
Stimulated enthusiasm	2.50	2.78
Availability	2.91	3.00
Fair and impartial	3.14	3.25
Encouraged thinking	3.13	3.13
Examinations relevant	2.96	3.00
Good communication skills	2.83	3.00
Learned new skills/ideas	2.63	3.00
Overall, favorably impressed	2.71	3.00
Average of all responses	2.76	3.02

CSS 455/555–Modelling Soil Ecosystems (spring term, every year)

	1993	1994
Number responding/enrolled	11/12	4/7
Objectives/requirements clear	2.73	3.33
Well prepared/organized	3.00	3.25
Material explained clearly	3.18	3.50
Sensitive to students	2.91	3.50
Stimulated enthusiasm	3.09	3.25
Availability	2.88	3.50
Fair and impartial	2.80	3.50
Encouraged thinking	2.91	3.50
Examinations relevant	3.00	3.50
Good communication skills	3.09	3.50
Learned new skills/ideas	2.55	3.50
Overall, favorably impressed	2.64	3.50
Average of all responses	2.90	3.45

CSS 448X/548X(455/555)–Biology of the Soil Ecosystem (Winter term, every year)

	1995	1996	1997	1998	1999
Number responding/enrolled	21/21	17/19	26/29	19/26	23/33
Objectives/requirements clear	2.76	3.67	3.73	3.65	3.52
Well prepared/organized	3.05	3.87	3.96	3.75	3.87
Material explained clearly	2.67	3.73	3.69	3.50	3.04
Sensitive to students	2.86	3.80	3.50	3.40	3.00
Stimulated enthusiasm	3.20	3.27	3.42	3.45	2.52
Availability	3.56	3.87	3.92	3.65	3.41
Fair and impartial	3.26	3.60	3.84	3.58	3.13
Encouraged thinking	3.48	3.60	3.58	3.50	3.04
Examinations relevant	3.40	3.60	3.73	3.58	3.09
Good communication skills	2.95	3.60	3.76	3.65	3.35
Learned new skills/ideas	3.10	3.40	3.62	3.65	3.17
Overall, favorably impressed	2.86	3.47	3.85	3.65	2.74
Average of all responses	3.09	3.62	3.72	3.58	3.16

CSS455/555–Biology of the Soil Ecosystem (Winter term, every year)

	2000	2001	2002	2003
Number responding/enrolled	19/19	19/19	26/26	22/22
Objectives/requirements clear	3.44	3.33	3.80	3.50
Well prepared/organized	3.68	3.67	3.77	3.91
Material explained clearly	3.21	2.94	3.65	3.48
Sensitive to students	3.37	3.17	3.50	3.19
Stimulated enthusiasm	3.21	3.06	3.50	2.95
Availability	3.63	3.65	3.80	3.52
Fair and impartial	3.42	3.35	3.69	3.41
Encouraged thinking	3.32	3.18	3.62	3.38
Examinations relevant	3.56	3.00	3.73	3.18
Good communication skills	3.53	3.11	3.73	3.36
Learned new skills/ideas	3.53	3.33	3.73	3.41
Overall, favorably impressed	3.26	3.24	3.54	3.23
Average of all responses	3.43	3.25	3.67	3.38

	2004	2005	2007	2008	2009	2010
Number responding/enrolled	19/19	19/22	17/22	9/12	7/18	17/20
Objectives/requirements clear	5.0	5.2	5.2	4.4	3.5	4.9
Clarity of student responsibilities	5.0	5.2	5.1	4.9	4.5	5.0
Course organization	6.0	5.3	5.0	4.9	5.5	5.6
Available for extra help	4.0	5.7	4.9	5.1	5.8	5.9
Use of teaching techniques	4.0	4.4	4.5	3.8	4.0	4.6
Interest in learning	5.0	5.2	4.6	5.0	4.2	5.1
Stimulate thinking	5.0	5.2	4.1	4.8	3.8	5.3
Timely feedback	6.0	5.6	4.8	5.4	5.5	5.6
Classroom environment	5.0	5.0	4.8	5.3	5.5	5.3
Evaluation of student performance	5.0	5.2	4.8	4.9	4.2	4.9
Course	5.0	5.1	4.3	4.9	4.5	5.2
Instructor	5.0	5.1	5.1	5.1	4.8	5.6

	2011	2012				
Number responding/enrolled	20/20	19/26				
Objectives/requirements clear	4.1	5.0				
Clarity of student responsibilities	4.2	5.4				
Course organization	4.8	5.2				
Available for extra help	5.3	5.6				
Use of teaching techniques	4.1	4.9				
Interest in learning	4.8	5.5				
Stimulate thinking	5.3	5.6				
Timely feedback	5.7	5.4				
Classroom environment	5.1	5.7				
Evaluation of student performance	4.5	4.9				
Course	4.4	5.1				
Instructor	5.0	5.7				

CSS 523–Principles of Stable Isotopes (with E. Sulzman; alternate years)

	2002
Number responding/enrolled	3/9
Objectives/requirements clear	3.00
Well prepared/organized	3.67
Material explained clearly	2.67
Sensitive to students	2.67
Stimulated enthusiasm	3.33
Availability	4.00
Fair and impartial	4.00
Encouraged thinking	4.00
Examinations relevant	2.00
Good communication skills	3.33
Learned new skills/ideas	3.67
Overall, favorably impressed	3.00
Average of all responses	3.35

	2004	2008	2010	2012		
Number responding/enrolled	16/16	4/4	5/5	10/12		
Objectives/requirements clear	5.0	5.8	4.3	4.5		
Clarity of student responsibilities	5.0	6.0	4.9	5.5		
Course organization	5.0	5.5	5.3	4.5		
Available for extra help	6.0	5.8	6.0	5.3		
Use of teaching techniques	4.0	5.5	4.3	4.2		
Interest in learning	5.0	6.0	5.3	5.3		
Stimulate thinking	5.0	5.8	5.7	4.5		
Timely feedback	5.0	6.0	6.0	5.9		
Classroom environment	6.0	5.8	5.3	5.8		
Evaluation of student performance	5.0	5.8	5.2	5.0		
Course	5.0	6.0	5.1	4.0		
Instructor	5.0	5.8	5.1	4.4		

DEPARTMENT SERVICE

Computer Use Committee. 1984.
Facilities and Planning Committee. 1984-1987; chairman, 1988-90.
Fire and Safety Committee. 1984.
Hospitality Committee. 1984; chairman, 1985-1987.
CSRS Departmental Review Steering Committee. 1986.
Seminars and Special Programs Committee. 1988-97; chairman, 1988-96, 2007-
Department Head's Consultative Committee. 1989-90.
Faculty Meeting Secretary. 1989-90.
Crops/Soils Merger Committee. 1990.
Curriculum Committee. 1994-98.
Soils Planning Committee. Chairman, 1994.
Molecular and Cellular Biology Program Outreach Committee. 1994-97; chairman, 1997-98.
Computer Committee. 1995-98.
Awards Committee. 2004-05; chairman, 1995-2003, 2006-
Associate Department Head. 1997-2007.
Soils Graduate Committee. 1997-99.
Promotion and Tenure Committee. 1999-2001, 2011.
Search Committee chair, soil chemist/microbiologist. 2006.
Search Committee chair, environmental soil scientist. 2007-08.

COLLEGE SERVICE

Liaison for the College of Forestry with the Department of Soil Science. 1987-
Coastal Oregon Productivity Enhancement Program (COPE) long-term site productivity
subcommittee. 1988.
Participant on grantsmanship panel for Food Science Retreat. 12 September 2007.

UNIVERSITY SERVICE

Scientific Steering Committee for establishing a Plant Science Center in Rhizosphere Biology.
1987.
Committee investigating potential scientific exchange with Zhejiang Agricultural University.
1987.
Selection Committee for Phi Kappa Phi Emerging Scholar Award. 1987.
Faculty Senate Library Committee. 1988-91; 2009-
Organizing Committee for the 50th Annual Biology Colloquium on Rhizosphere Biology. 1988
Faculty Senate representative. 1989-92.
Departmental representative for Sigma Xi. 1989-91.
Faculty Senate Graduate Admissions Committee. 1993-97.
Baccalaureate Core Committee. 1997-98.
Research Council. 1998-2001.
Search Committee member, geochemical oceanography. 2004.
Search Committee member, forest soil organic geochemist. 2005.
Member, Subsurface Biosphere Initiative executive committee. 2005-12.

Director, Subsurface Biosphere IGERT. 2006-08.

Faculty Senate Library Committee. 2009-12.

Search Committee member, environmental microbiologist. 2010-12.

Search Committee member, environmental engineer. 2013.

COMMUNITY SERVICE ACTIVITIES

- Scoutmaster, assistant scoutmaster, merit badge counselor, unit commissioner, Boy Scouts of America, periodically since 1985.
- Coach or assistant coach, American Youth Soccer Association, periodically from 1985 to 1995.
- Coach or assistant coach, Boys and Girls Club Baseball and Little League Baseball, periodically from 1995 to 1999.

PROFESSIONAL SERVICE ACTIVITIES

1. Member of organizing committee and chairman of the communications committee for the 6th International Symposium on N₂ Fixation, Corvallis, OR. 1985.
2. Chairman of charter reorganization committee of the Northwest Forest Soils Council. 1986.
3. Organizer of the Symposium on Forest Soil Microbiology for the Soil Science Society of America annual meeting, Atlanta, GA. 1987.
4. Organizer of the Symposium on Genesis, Ecology, and Management of Volcanic Soils for the Western Society of Soil Science annual meeting, Corvallis, OR. 1988.
5. Chairman of the Workshop on Soils, Roots, and Regeneration for the Society of American Foresters annual meeting, Spokane, WA. 1989.
6. Member of Committee of Visitors, Ecology Program, National Science Foundation, Washington, DC. 1990.
7. Organizer for Stable Isotope Workshop, Soil Ecology Symposium, Corvallis, OR. 1991.
8. Chair, Northwest Forest Soils Council, 1991-1993.
9. Chair-elect, Division S-3 (Soil Microbiology and Biochemistry), Soil Science Society of America, 1991.
10. Chair, Division S-3 (Soil Microbiology and Biochemistry), Soil Science Society of America, 1992.
11. Past-chair, Division S-3 (Soil Microbiology and Biochemistry), Soil Science Society of America, 1993.
12. Member of Nominations Committee for President of the Soil Science Society of America, 1992.
13. Participant in Trace Gas Network Workshop sponsored by MAB and IGAC/IGBP, Pingree Park, CO, September 1992.
14. Member of USDA/NRICGP Water Quality Panel, 1993.
15. Nordic Course on Modern Methods for Identification of Microbes in the Environment, University of Helsinki, 1993.
16. Mentor, Apprenticeships in Science and Engineering, 1993-94.
17. Participant in SEPS (Science Education Partnerships) program, 1993-95.
18. Manager of USDA/NRICGP Soils and Soil Biology Panel, 1995.

19. Organizer of the Symposium on Soil Biodiversity for the Soil Science Society of America annual meeting, St. Louis, MO, 1995.
20. Participant in LTER Soils Method Standardization Workshop, Sevilleta, NM, 1996.
21. Member of USEPA Biology & Microbiology Panel, 1996.
22. Presiding officer of oral session at Soil Science Society of America annual meeting, Baltimore, MD. 1998.
23. Member of Soil Science Research Award Committee of the Soil Science Society of America, 1998-2000.
24. Member of USDA/NRICGP, Soils and Soil Biology Panel, 2000.
25. Chair, Soil Science Research Award Committee of the Soil Science Society of America, 2000-2001.
26. Member of Research Council for Biosciences and Environment Panel, 2001.
27. Presiding officer of oral session at Soil Science Society of America annual meeting, Charlotte, NC, 2001.
28. Member of NSF Integrated Research Challenges in Environmental Biology Panel, 2002.
29. Member of NSF Ecological Studies Program, 2002, 2003.
30. Member of NSF Microbial Observatories Program, 2004.
31. Participant in Workshop on Advanced Approaches to Quantify Denitrification, Woods Hole, MA, 3-5 May 2004.
32. Presiding officer of oral session at 14th Int. Meet. on *Frankia* and Actinorhizal Plants, Umeå, Sweden, 16-19 July 2006.
33. Co-organizer of Workshop on Molecular Methods in Microbial Ecology at LTER All Scientists Meeting, Estes Park, CO, 20-23 September 2006.
34. Invited participant in Workshop on Microbial Ecology and NEON, Baton Rouge, LA, 14-16 February 2008
35. Invited participant at NSF IGERT Workshop in institutional impacts of interdisciplinary research and graduate education, Washington, DC, 19-20 May 2008.
36. Invited participant at METASTED Workshop on sequencing the soil metagenome, Lyon, France, 13-14 December 2008.
37. Invited convener at 13th International Symposium on Microbial Ecology, Seattle, WA, 27 August 2010.
38. Organizer of SSSA S-3 symposium: “Do -Omics Hold Promise for Greater Understanding of Soil Microbial Ecology?” Soil Science Society of America annual meeting, Long Beach, CA, 1 November 2010.
39. Invited convener of the session on “Functional diversity and the influence of agriculture” at International Symposium on Soil Metagenomics, Braunschweig, Germany, 8-10 December 2010.
40. Invited convener at AGU session: “Integrating Advances in Molecular Studies of Denitrification with Biogeochemistry at Larger Scales” American Geophysical Union fall meeting, San Francisco, CA, 16 December 2010.
41. Member of Soil Science Society of America 75th Anniversary Committee, 2010-11.
42. Member of the DOE Early Career Research Program, 2011.
43. Chairman, TerraGenome: The International Soil Metagenomic Network, 2011-present