VITA

Richard P. Dick
School of Environment and Natural Resources
Ohio State University, Columbus, Ohio

EDUCATION

Degree	Institution	Curriculum	Date
Ph.D	Iowa State University Major Prof: M.A. Tabatabai	Soil Science	1985
M.S.	Louisiana State University Major Prof: E.P. Dunigan	Soil Science	1977
B.S.	University of Minnesota	Plant Science	1974

PROFESSIONAL POSITIONS

Rank and Title	Institution	Dates
Professor & Eminent Scholar of Soil Microbial Ecology	Ohio State University	2004-present
Professor	Oregon State University	1996 to present
Associate Professor	Oregon State University	1991 to 1996
OECD Fellow & Scholar	Wageningen Agricultural Univ. Dept. of Soil Science and Geology The Netherlands	8/1992 to 6/1993
Assistant Professor	Oregon State University	1986 to 1991
Research Assistant	Iowa State University	1981 to 1985
Research Agronomist	Mennonite Central Committee, Bangladesh	1978 to 1981
Research Assistant	Louisiana State University	1975 to 1977

RESUME STATEMENT

Richard Dick is an Ohio Eminent Scholar and Professor of Soil Microbial Ecology in the School of Environment and Natural Resources at The Ohio State University. With his endowment at Ohio State University he has established a lab with the expertise and facilities to apply molecular and stable isotope probing methods for studying soil and aquatic microbial ecology. His research focuses on the role and manipulation of microbial communities in controlling biogeochemical processes and delivering ecosystem services for agricultural and environmental applications. Dr. Dick has authored or co-authored 158+ refereed journal articles, 17 invited book chapters, and 2 books as the editor in chief. He has been an invited speaker at conferences and workshops worldwide, including lectures at the Hong Kong Croucher Advanced Training in Environmental Microbiology, Root Biology Workshop, and the Latin America Society of Microbiology Conference. His research has been supported by >$11.9 million in grants and contracts including, competitive grants from US Environmental Protection Agency, US National Science Foundation, and USDA. He served as Associate Editor (6 years) for the Soil Science Society of America (SSSA) Journal and Editor-in-Chief of Applied Soil Ecology (12 years). He has a long-standing research program in soil enzymology that has resulted in the development of enzyme activities as sensitive indicators of soil quality and a comprehensive soil enzyme methods book published by the Soil Science Society of America. Professor Dick has extensive international experience, as an agronomist for 3 years in Bangladesh, and leading research and development projects for 20 years in West Africa. As a professor he has supervised graduate students and post docs from the USA, Europe, Africa, Asia, and South America.

For the past 19+ years in Senegal, he has been leading a team of African, French and US scientists on a multi-disciplinary project investigating hydrologic and microbial rhizosphere interactions of interplanted shrub-crop rhizospheres. This research has changed the paradigm of how arid environments can function and has major implications for Sahalian agriculture by utilizing inter-cropped shrubs as nutrient/water reservoirs for crops and to remediate degraded landscapes. He is a Gordon Lecturer, Fulbright Scholar, Fellow of the Agronomy Society of America, and a Fellow and past (2018) President of the Soil Science Society of America.

SCHOLARHIP AND CREATIVE ACTIVITY

Refereed Journals

[gs] Supervised graduate student
[pd] Supervised post doctoral candidate
[vs] Collaborating visiting scientist

1. Dunigan, E. P. and R. P. Dick. 1980. Nutrient and coliform losses in runoff from fertilized and sewage sludge-treated soil. J. Environ. Qual. 9:243-250.
2. Busman, L. M., R. P. Dick and M. A. Tabatabai. 1983. Determination of total sulfur and chlorine in plant materials by ion chromatography. Soil Sci. Soc. Am. J. 46:1167-1170.
3. Dick, R. P. and M. A. Tabatabai. 1986. Hydrolysis of polyphosphates in soils. Soil Sci. 142:132-140.
4. Dick, R. P. and M. A. Tabatabai. 1986. Hydrolysis of polyphosphates by corn roots. Plant Soil 94:247-256.
5. Dick, R. P. and M. A. Tabatabai. 1987. Factors affecting hydrolysis of polyphosphates in soils. Soil Sci. 143:97-104.
6. Dick, R. P. and M. A. Tabatabai. 1987. Polyphosphates as sources of phosphorus for plants. Fert. Res. 12:107-118.
7. 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. 52:512-515.
8. Dick, R. P., P. E. Rasmussen and E. A. Kerle. 1988. Influence of long-term residue management on soil enzyme activities in relation to soil chemical properties in a wheat-fallow system. Biol. Fert. Soils 6:159-164.
9. [gs]Castellano, S. D., and R. P. Dick. 1988. Distribution and forms of sulfur fractions as influenced by management of organic residues. Soil Sci. Soc. Am. J. 52:1403-1407.
10. [gs]Deng, S., and R. P. Dick. 1990. Sulfur oxidation and rhodanese activity in soils. Soil Sci. 190:552-560.
11. Dick, R. P., and [gs]S. Deng. 1991. Multivariate factor analysis of sulfur oxidation and rhodanese activity in soils. Biogeochemistry 12:87-101.
12. [pd]Comfort, S. D., R. P. Dick, and J. Baham. 1991. Drying and storage effects on soil sulfate sorption characteristics. Soil Sci. Soc. Am. J. 55:968-973.
13. Brophy, L., H. Murray, L. Lev, R. P. Dick, and L. M. Butler. 1991. In the face of change: A rapid reconnaissance survey of Northwest horticultural crop producers. Am. J. Altern. Ag. 6:23-28.
14. [gs]Castellano, S. D., and R. P. Dick. 1991. Influence of cropping and sulfur fertilization on transformations of sulfur in soils. Soil Sci. Soc. Am. J. 55:114-121.
15. [gs]Castellano, S. D., and R. P. Dick. 1991. A modified calibration procedure for measurement of microbial sulfur in soil. Soil Sci. Soc. Am. J. 55:283-285.
16. [gs]Castellano, S. D., and R. P. Dick. 1991. Modeling transformations of sulfur in soils. Soil Sci.152:448-454.
17. [pd]Comfort, S. D., R. P. Dick, and J. Baham. 1992. Modeling sulfate adsorption in soils. J. Environ. Qual. 21:426-432.
18. Dick, R. P. 1992. A review: Long-term effects of agricultural systems on soil microbial and biochemical parameters. Ag. Ecosyst. Environ. 40:25-36.
19. Cordray, S. M., L. S. Lev, R. P. Dick, and H. Murray. 1993. Characterization of Pacific Northwest horticultural producers using sustainability scales. J. Prod. Ag. 6:121-125.
20. [gs]Castellano, S. D., and R. P. Dick. 1993. Measurement of tritium activity in soils. Health Physics 65:539-540.
21. [gs]Islam, M. M. and R. P. Dick. 1993. Sulphur adsorption ability of some rice soils of Bangladesh. Bangladesh Rice J. 4:70-72.

22. [gs]Fauci, M. F., and R. P. Dick. 1994. Plant response to organic amendments and decreasing inorganic nitrogen rates in soil from a long-term experiment. Soil Sci. Soc. Am. J. 58:134-138.
23. [gs]Fauci, M., and R. P. Dick. 1994. Soil Microbial Dynamics: Short- and Long-Term Effects of Inorganic and Organic Nitrogen. Soil Sci. Soc. Am. J. 58:801-806.
24. Dick R. P., J. A. Sandor, and N. S. Eash. 1994. Soil Enzyme Activities after 1500 Years of Terrace Agriculture in the Colca Valley, Peru. Agr. Ecosys. Environ. 50:123-131.
25. [vs]Miller, M., and R. P. Dick. 1995. Dynamics of soil C and microbial biomass on whole soil and aggregates in two cropping systems. Applied Soil Ecology 2:253-261.
26. Dick, R. P., and R. A. [gs]Christ. 1995. Nitrogen availability and profile distribution in soils under long-term nitrogen fertilization and organic residue management. Soil Sci. 159:402-408.
27. [vs]Miller, M., and R. P. Dick. 1995. Thermal stability and activities of soil enzyme activities as influenced by crop rotation. Soil Biology and Biochem. 27:1161-1166.
28. Brandi-Dohrn, F. M., R. P. Dick, M. Hess and J. S. Selker. 1996. Field evaluation of passive capillary samplers. Soil Sci. Soc. Amer. J. 60:1705-1713.
29. [gs]Iyamuremye, F., R. P. Dick and J. Baham. 1996. Organic amendments and phosphorus dynamics: I. Phosphorus chemistry and sorption. Soil Science 161:426-435.
30. [gs]Iyamuremye, F., R. P. Dick and J. Baham. 1996. Organic amendments and phosphorus dynamics: II. Distribution of soil phosphorus fractions. Soil Science 161:436-443.
31. [gs]Iyamuremye, F., R. P. Dick and J. Baham. 1996. Organic amendments and phosphorus dynamics: III. Phosphorus speciation. Soil Science 161:444-451.
32. Brandi-Dohrn, F. M., R. P. Dick, M. Hess and J. S. Selker. 1996. Suction cup sampler bias in leaching characterization of an undisturbed field soil. Water Resources Research 32:1173-1182.
33. Brandi-Dohrn, F. M., R. P. Dick, D. D. Hemphil, Jr., [gs]S. Kaufmann, and J. S. Selker. 1997. Nitrate leaching under cereal rye cover crops. J. Environ. Qual. 26:181-188.
34. [gs]Burket, J. Z., D. D. Hemphill, and R. P. Dick. 1997. Winter cover crops and nitrogen management in sweet corn and broccoli rotations. HortScience 32:664-668.
35. [gs]Islam M. M., F. Iyamuremye, and R. P. Dick. 1998. Effect of organic residue amend-ment on mineralization of sulfur in flooded rice soils under laboratory conditions. Comm. Soil Sci. Plant Anal. 29:955-969.
36. [gs]Islam, M. M., F. Iyamuremye, and R. P. Dick. 1998. Effect of organic residue amendments on mineralization of nitrogen in flooded rice soils under laboratory conditions. Comm. Soil Sci. Plant Anal. 29:971-981.
37. [gs]Islam, M. M., and R. P. Dick. 1998. Effect of wheat straw carbon:sulfur ratio on min-eralization of sulfur in soils under simulated laboratory aerobic-flooding cycles. Comm. Soil Sci. Plant Anal. 29:983-995.
38. [gs]Burket, J. Z., and R. P. Dick. 1998. Microbial and soil parameters in relation to N min-eralization in soils of diverse genesis under differing management systems. Biol. Fert. Soils. 27:430-438.
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43. Ndiaye, M., [pd] C. F. Yamoah, and R. P. Dick. 2000. Processed fish by-product as a soil amendment for millet and peanut cropping systems in Senegal. Biol. Ag. & Hort. 17:329-333.
44. [pd] Diack, M., M. Sene, A. N. Badiane, M. Diatta, and R. P. Dick. 2000. Decomposition of a native shrub (*Piliostigma reticulatum*) litter in soils of Semiarid Senegal. J. of Arid Soil Research and Rehabilitation 14(3):205-218.
45. [pd] Iyamuremye, F., V. Gewin, R.P. Dick, [pd] M.Diack, M.Sene, A.N. Badiane, and M. Diatta. 2000. Carbon, nitrogen, and phosphorus mineralization of agroforestry plant residues in soils of Senegal. J. of Arid Soil Research and Rehabilitation 14:359-371.

46. Dick, R. P., [gs]R. A. Christ, J. D. Istok, and [pd] F. Iyamuremye. 2000. Nitrogen fractions and transformations in vadose zone sediments under intensive agriculture in Oregon. Soil Sci. 165:505-515.
47. Ritchie, N.J., [gs]M.E. Schutter, R.P. Dick, and D.D. Myrold. 2000. Use of length heterogeniety-PCR and FAME to characterize microbial communities in soil. Environmental and Applied Microbiology 66:1668-1675.
48. Hashem, A., R.P. Dick, and S. Radosevich. 2000. Competition effects on yield performance, tissue nitrogen, and germination of winter wheat (*Triticum aestivum*) and Italian ryegrass (*Lolium multiflorum*). Weed Tech. 14:718-725.
49. [gs]Schutter, M.E., and R.P. Dick. 2000. Extraction methods of fatty acids for microbial community structure analysis. Soil Sci. Soc. Am. J. 64:1659-1668.
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55. [gs]Minshew, H., J. Selker, D. Hemphill, and R.P. Dick. 2002. NLEAP computer model and multiple linear regression predicting of nitrate leaching in vegetable systems. HortTech. 12:2590-256.
56. [vs]Balota, E.L., Andrade, D.S., Colozzi Filho, A., Dick, R.P. 2003. Microbial biomass in soils under different tillage and crop rotation systems. Biology & Fertility of Soils 38:15-20.
57. [vs]Balota, E.L., Colozzi Filho, A., Andrade, D.S., and Dick, R.P. 2004. Long-term tillage and crop rotation effects on microbial biomass and C and N mineralization in a Brazilian Oxisol. Soil & Tillage Research 77:137–145
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59. Montero, F.A., M.A. Sagardoy, and R.P. Dick. 2004. Temporal variability of microbial populations and enzyme activities in no-tillage soils of Argentina. Arid Land Research and Management 18:201-215.
60. [gs]Hinojosa M.B, J.A. Carreira, R. García-Ruíz, and R.P. Dick. 2004. Soil moisture pre-treatment effects on enzyme activities as indicators of heavy metal-contaminated and reclaimed soils. Soil Biol. Biochem. 36-1559-1568.
61. [gs]Knight, T., and R.P. Dick. 2004. Differentiating microbial and stabilized ß-glucosidase activity in soils. Soil Biol. Bioch. 36:2089-2096.
62. [v]Balota, E.L. M. Kanashiro1, A. Colozzi Filho1, D. Souza Andrade1; R. P. Dick. 2004. Soil Enzyme Activities Under Long-Term Tillage and Crop Rotation Systems in Subtropical Agro-Ecosystems. Brazilian Journal of Microbiology 35:300-306
63. [gs]Hinojosa M. Belen, José A. Carreira, Roberto García-Ruíz, Richard P. Dick. 2005. Microbial response to heavy metal polluted soils: Community analysis from PLFA and EL-FA extracts. J Env. Qual. 34:1789-1800.
64. Nourbakhsh, F. and R. P. Dick. 2005. Net Nitrogen Mineralization/Immobilization Potential in a Residue-Amended Calcareous Soil. J. of Arid Soil Research and Rehabilitation 19:299-306.
65. [gs]Cespedes Leon, C.M., A. Stone, and R. P. Dick. 2006. Organic soil amendments: impacts on snap bean common root rot and soil quality. Appl. Soil Ecol 31:199-210.
66. Medeiros, P.M., M.F. [gs]Fernandes, R.P. Dick, and B.R.T. Simoneit, B.R.T 2006. Seasonal variations in sugar contents and microbial community in a ryegrass soil. Chemosphere 65:832-839.
67. Darby, H.M., A.G. Stone, and R.P. Dick 2006. Compost and manure mediated impacts on soilborne pathogens and soil quality. Soil Sci. Soc. Am. J. 70:347–358.
68. Arancon, N.Q. ,Edwards, C.A., Dick, R.P.., and Dick, L. 2007. Vermicompost tea production and plant growth impacts. BioCycle 48:51 - 52

69. Kizito, F., M. Senè, M. I. Dragila, A. Lufafa, I. Diedhiou, E. Dossa, R. Cuenca, J. Selker, R. P. Dick. 2007. Soil water balance of annual crop-native shrub systems in Senegal's Peanut Basin. Ag. Water Management 90:137 – 148.
70. Kizito, F.; Dragila, M.; Sene, M.; Lufafa, A.; Diedhiou, I.; Dick, R.P.; Selker, J.S., [gs]E. Dossa, E. 2006. Seasonal soil water variation and root patterns between two semi-arid shrubs co-existing with Pearl millet in Senegal, West Africa. Journal of Arid Environments. 67:436-455.
71. [gs]Ochiai, N., M. L. Powelson, R. P. Dick, and F. J. Crowe 2007. Effects of Green Manure Type and Amendment Rate on Verticillium Wilt Severity and Yield of Russet Burbank Potato. Plant Disease 91:400-406.
72. [pd] Lee Y.B., N. Lorenz, L. Kincaid Dick, and R. P. Dick. 2007. Cold storage and pretreatment incubation: Effects on soil microbial properties. Soil Sci. Soc. J. 71:1299–1305.
73. [gs]Ochiai, N,, M. L. Powelson, F. J. Crowe and R.P. Dick. 2008. Green Manure Effects on Soil Quality in Relation to Suppression of Verticillium Wilt of Potatoes Biology and Fertility of Soils 91:400-406.
74. [gs]Moore-Kucera, J.,and R. P. Dick . 2008. A pulse-chase method to ^{13}Carbon-label Douglas-fir seedlings for decomposition studies. Soil Science. 173:46-53.
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81. [gs]Dossa .E. L., J. Baham, M. Khouma, M. Sene, F. Kizito, R.P. Dick. 2009. Phosphorus Sorption and Desorption in Semiarid Soils of Senegal Amended with Native Shrub Residues Soil Science 173:669-682.
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100. [gs]Lane L., N. Lorenz, J. Saxena, C. Ramsier, and R. P. Dick. 2012. The effect of glyphosate on soil microbial activity, microbial community structure, and soil potassium. Pedobiologia 55:335– 342.

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28. Tugel, A.J., S. Seiter, D. Friedman, J. Davis, R.P. Dick, D. McGrath, and R.R. Weil. 2001. Locally Led Conservation Activities: Developing a Soil Quality Assessment Tool. 529-534 pgs. In: D.E. Stott, R.H. Mohtar, and G.C. Steinhardt (eds). Sustaining the Global Farm - Selected papers from the 10th International Soil Conservation Organization Meeting, May 24-29, 1999, West Lafayette, IN. International Soil Conservation Organization in cooperation with the USDA and Purdue University, West Lafayette, IN. CD-ROM available from the USDA-ARS National Soil Erosion Laboratory, West Lafayette, IN. Web site http://topsoil.nserl.purdue.edu/nserlweb/isco99/pdf/isco99pdf.htm (verified 2 May 2002).

29. Burket, J., J. Sandeno, D. Hemphill, and R. P. Dick. 2003. Cover crop nitrogen for summer vegetable crops. OSU Extension Publ. EM 8803-E. December 2003.

30. Feaga, J. R. P. Dick, M. Louie, and J. Selker. 2004. Nitrates and Groundwater: Why Should We be Concerned with Our Current Fertilizer Practices? Special Report 1050, Ag. Exp. St., Oregon State University, Corvallis

31. **West Africa Farmer Video: "**Using Native Shrubs to Increase Soil Health and Crop Yield" Funded ($25k) through my USAID Legume Innovation Lab, worked extensively with many iterations to develop this in collaboration with the Scientific Animations Without Borders (SAWBO). This has versions in English, French and the local language of Senegal Wolof.

Invited Speaker

Dick, R. P. 1988. Relationships of sulfur fractions to chemical and biological properties in Oregon soils. Regional Forest Nutrition Research Project. College of Forest Resources, University of Washington, Seattle, WA. March 30-31. Attendance ? 35.

Dick, R. P. 1989. Western Regional Sustainable Agricultural Projects. STEEP Annual Meeting. Red Lion Inn, Portland, OR. Jan. 4-5. Attendance ? 150.

Murray, H., and R. P. Dick. 1989. LISA: Case studies of small fruit and vegetable farms in the Pacific Northwest. Oregon Soc. Weed Sci. Annual Meetings. Clackamas, OR. Oct. 18-20. Attendance ? 200.

Dick, R. P. 1990. Research programs and opportunities in sustainable agriculture. Sustainable Agriculture Workshop for Extension Specialists. Oregon State University Extension Service, Corvallis, OR. January 24. Attendance ? 60.

Murray, H., and R. P. Dick. 1990. An integrative systems approach to research and extension programs in sustainable agriculture. National Sustainable Agriculture, Natural Resource Conference, Lincoln, NE, August 15-18.

Dick, R. P. 1990. A review: Long-term effects of agricultural systems on soil microbial and biochemical parameters. International Symposium on Agroecology and Conserva-tion. University of Padova, Italy. Sept. 26-29.

Dick, R. P., and C. A. Christ. 1991. Long-term effects of residue and nitrogen manage-ment on nutrient availability and soil biology. Columbia Basin Agriculture Research Center, Pendleton, OR. Dec. 17. Attendance 30.

Dick, R. P. 1992. History and current issues in sustainable agriculture. Toward a Sustainable Ag. Res. Seminar Series, Oregon State Univ. Jan. 15.

Dick, R. P. 1992. Soil enzyme activities and kinetics as affected by long-term residue management. USEPA, Biotechnology Risk Assessment Division, Corvallis, OR. April 10.

Dick, R. P., and M. F. Fauci. 1992. Nitrogen availability during a simulated transition from inorganic to organic sources of nitrogen. Symposium ? Impacts of Sustainable Agri-culture, Am. Soc. Agron., Minneapolis, MN, Nov. 1-6.

Dick, R. P. 1992. Soil enzyme activities as process level biological indexes of soil quality. Symposium-Soil Quality: Biologically Active Soil Organic C and N Pools. Soil Science Society of Am. Annual Meeting. Minneapolis, MN. Nov. 1-6.

Dick, R. P. 1992. Soil enzyme activities as process level indexes of soil quality. Symposium-Nutrient Cycling with Emphasis on Biological Processes in Soil. Wageningen Agricultural University, Wageningen, The Netherlands. October 8.

Dick, R. P. 1992. Sulfur dynamics in flooded soils. Soil Science and Geology Seminar. Wageningen Agricultural University, Wageningen, The Netherlands. Dec. 3.

Murray, H., R. P. Dick, D. McGrath, and L. S. Lev. 1993. Whole farm case studies: An interdisciplinary approach to systems research. Special Symposium, Am. Soc. Agron. Annual Meeting, Cincinnati, OH, Nov. 7-12.

Dick, R. P. 1995. Soil quality: A potential indicator of agroecosystem health. Oregon State Univ. Issues and Research in Sustainable Agriculture Seminar Series, Corvallis, OR, April 12.

Dick, R. P. and J. Z. Burket. 1995. The short- and long-term role of plant residue quality on nitrogen mineralization potential of soils. Driven by Nature: Plant Litter Quality and Decomposition Workshop, Wye College, Univ. London, U.K., Sept. 17-20.

Dick, R. P. 1995. Historical development of sustainable agriculture in the U.S. The Politics of Sustainable Ag Conf., Univ. Oregon, Eugene, OR, Oct. 7-8.

Dick, R. P. 1997. Soil quality: A bridge to sustainability. OSU Sustainable Agricultural System Seminar Series, Corvallis, OR, May 5.

Dick, R. P., D. Hemphill, and J. Selker. 1997. Nitrogen cycling in integrated winter cover crop/vegetable systems in western Oregon. The Fate of Nitrogen in the Environ-ment: Microbial Field, Cropping System and Landscape Scale Perspectives Symposium. Pacific Div., Am. Assoc. Adv. Sci./Western Soil Sci. Soc. Corvallis, OR, June 24, 1997.

Dick, R. P., R. A. Christ, J. A. Sandeno, M. Miller, and A. Bandick. Short- and long-term soil management effects on soil quality. Soil Quality: Issues, Concerns, and Reflec-tions Symposium. Western Soil Crop Sci./Western Soc. Soil Sci./Am. Assoc. Hort. Sci. Symposium. Corvallis, OR, June 24, 1997.

Dick, R. P., J. Sandeno, G. Buller, E. Ndiaye, and M. Schutter. 1998. Cover Cropping and Soil Quality in Western Oregon. Ten Years of SARE National Conference. Austin, TX, March 5-7.

Dick, R. P. 1999. Soil microbial community structure in integrated vegetable cropping systems. OSU Horticulture Seminar. November 30, 1999.

Dick, R.P. 2000. Enzymes Stabilized on Soil Colloids as Ecosensors. 3rd Symposium Soil Mineral-Organic Matter-Microorganism Interactions and Ecosystem Health. International Union of Soil Sciences. Naples-Capri, Italy, 22-26 May, 2000.

Dick, R.P. 2000. Soil Organic Matter and Sustainable Management. "Farming and Ranching for Profit, Stewardship and Community" Conference. Western Region USDA-SARE Program. Portland, OR, March 7-9, 2000.

Dick, R. P. 2001. Microbial ecology and soil management. International Institute for Tropical Agriculture. Ibadan, Nigeria. February 23, 2001.

Dick, R.P., T. Knight, E. Ndiaye, A. Bandick, and J. Sandeno. 2003. Ecosystem stress—Thresholds and interpretation of soil enzyme technologies. International Conference, Enzymes in the Environment: Ecology, Activity, and Applications. Praha, Czech Republic. July 14-17, 2003.

Dick, R.P., M.C. Cesedes Leon, N. Ochiai, A. Stone, M. Powelson, and F. Crow. 2004. Disease suppressive soils: Mechanism and indicators based on microbial responses and soil chemical/physical properties. Special Symposium "Active Management of Soil Microorganism for Plan Root Disease Control." APS Annual Meeting, July 31-August 4, 2004, APS Meeting Abstracts, Anaheim CA.

Dick, R.P 2007. Vermicomposts as stimulants for plant growth promoting microorganisms and disease suppression Indo - US Science & Technology Workshop on Vermitechnology in Human Welfare, Kongunadu Arts and Science College, Coimbatore, Tamilnadu.INDIA in India. June 4-7 2007.

Dick, R. P. and Rattan Lal. 2007. Biofuel: Agronomically feasible but is it ecologically sustainable? 2007 World Energy Conference – Pacific Rim. National Taiwan University. Taipei, Taiwan. October 29-November 1, 2007.

Dick, R. P. 2007. Indigenous shrubs of the Sahel: Remediation potential and controls of hydrological and biogeochemical processes for agroecosystems of West Africa. National Taiwan University. Taipei, Taiwan. November 2, 2007.

Dick. R.P. 2008. Stable isotopic probing using ^{13}C-PLFA; and Soil enzymes and indicators of soil quality. Latin American Society of Microbiology Biennial Conference, Quito, Ecuador. Oct 5-9, 2008.

Dick. R.P. 2008. 1) Soil enzymes and indicators of soil quality; and 2) Microbial remediation of polluted soils. Ecological Soil Symposium. Javeriana University, Bogota and Medellín, Columbia. May 27-30, 2008.

Dick, R. P. 2008. Lectures: 1) Soil enzymology and bioremediation. 2) Innovative Technologies for Soil Remediation. Croucher Advanced Study Institute. Hong Kong University, Hong Kong, Nov. 30 – Dec. 5, 2008.

Dick, R.P., , M. Sene, M. Diack, M. Khouma, A. Badiane, S. A.N.A Samba, I. Diedhiou, A. Lufafa, E. Dossa, F. Kizito, S. Diedhiou, J. Noller, and M. Dragila.. 2009. The Native Shrubs *Piliostigma reticulatum* and *Guiera senegalensis:* The Unrecognized Potential to Remediate Degraded Soils and Optimize Productivity of Sahelian Agroecosystems. International Colloquium for the Great Green Wall of Africa. UNDP, World Bank, and Senegal Ministry of the Environment. Dakar, Senegal. Feb. 11-12, 2009.

Dick, R. P. 2010. Lectures: 1) Soil enzymology and bioremediation and 2) Arseneic Biomethylation to remediate contaminated soils . Remediation of Contaminated Land – Bioavailability and Health Risk. Croucher Advanced Study Institute. University of Hong Kong, Hong Kong, Dec. 9-13,2010.

Diedhiou, I., A. Lufafa, and R. P. Dick. 2011. Landscape level distribution and standing stocks of carbon in native shrub communities of Sénégal's Peanut Basin. 2011. Workshop: Crop-Native Woody Shrubs Systems. Ouagadougou- Burkina Faso February 28 - March 03, 2011.

Dick R., S. Diedhiou, and E. Dossa. 2011. Native shrub-crop rhizosphere interactions relative to microbiology, nutrients, and Crop productivity in Senegal. Workshop: Crop-Native Woody Shrubs Systems. Ouagadougou- Burkina Faso February 28 - March 03, 2011.

Dick R.,. 2011. The Role of Two Local Shrubs (*Piliostigma reticulatum and Guiera senegalensis*) in Agro-Ecosystems of the Sahel:The Unrecognized Potential to Remediate Degraded Soils and Optimize Productivity of Sahelian Agroecosystems
First *Africa Drylands* Week *Dakar*, Senegal, from 10-17 June 2011. UN Food and Agriculture Organizatio.

Richard P. Dick, Taniya Roy Chowdhury and William Mitch. 2012. Seasonal and Landscape Gradient Controls on Methane Oxidation and Methanotrophs in a Freshwater Wetland. EcoSummit 2012. Ecological Sustainability, Restoring the Planet's Ecosystem Services. Proceedings p. 93. 30 Sept -5, Oc., 2012, Columbus OH. USA.

Richard Dick. 2012. Hydrology and microbiology of shrub interrop systems of semi-arid West Africa. The International Congress on "Land Degradation and Challenges in Sustainable Soil Management" Çesme - Izmir, TURKEY, 15-17 May 2012

Richard P. Dick and Taniya Roy Chowdhury. 2012. Optimizing Oxidation by Methanotrophs to Mitigate Methane Emissions from Constructed Wetlands and Rice Paddy Soils. Conference on Contaminated Land, Ecological Assessment and Remediation, Hangzhou, China, Nov 4-8, 2012.

Dick, Richard P. 2012. Delivery of Hydrologic and Microbial Services by Indigenous Shrub Rhizospheres to Agroecosystems of the Sahel. Invited Speaker Special Symposium--Soil Processes and Ecosystem Services, Soil Science Society of America Annual Meetings, Oct 21-24, 2012,Cinncinati, OH.

Dawn Busalacchi[1], Nicholas Basta[2], Lakhwinder Hundal[3], Jennifer Tvergyak[2], Roman Lanno[4] and Richard P. Dick. 2012. Evaluation of Biosolids for Ecological Restoration of Degraded Soil: A Field Study. Symposium--S11/S02 Joint Symposium On the Beneficial Re-Use of Wastes and Environmental Implications of Waste Recycling: I

Richard Dick, 2013. Soil Enzymology: Back to the Future. The History and Future of Soil Enzymology, Invited Speaker Special Symposium—Soil Science Society of America Annual Meetings, Nov 3-6, 2013, Tampa, FL.

Linda Dick, Shipping Deng, and Richard Dick. 2013. Evaluation of Microplate and Bench-Scale β-Glucosidase Assays for Reproducibility, Comparability, Kinetics, and Homogenization Methods in Two Soils. Presentation – The History and Future of Soil Enzymology II, Soil Science Society of America Annual Meetings, Nov 3-6, 2013, Tampa, FL.

Nigel Hoilett, Richard Dick, Nicola Lorenz, and Cliff Ramsier. 2013. Microbial Community Stable Isotopic Probing and Fate of 13C-Glyphosate in Crop Rhizosphers. Presentation – Microbial Community Diversity, Soil Science Society of America Annual Meetings, Nov 3-6, 2013, Tampa, FL.

Mark Nye, Nigel Hoilett, Richard Dick, and Cliff Ramsier. 2013. Microbial and Fusarium Diversity Glyphosate in Simulated Long-Term Glyphosate Tolerant Cropping System. Presentation – Microbial Community Diversity, Soil Science Society of America Annual Meetings, Nov 3-6, 2013, Tampa, FL.

Dick, R. P. 2014. Role of shrubs in the Sahelian production systems: the missing link. Workshop: EverGreen Agriculture for Sustainable Intensification and Resilience in the African Drylands *Priorities and Design Principles for Crop Management R&D in EverGreen Agriculture Systems for Improved Productivity in the Sahel Regio.* Convened by the Bill & Melinda Gates Foundation. May 5-6, 2014. Bamako, Mali.

Dick. R. P. 2014. Delivery of Hydrologic and Microbial Services by Indigenous Shrub Rhizospheres to Agroecosystems under a Changing Climate. Special Symposium: [DS7] African Eco-Efficient Solutions to Food Insecurity and Climate Change. World Congress of Soil Science, June 8-13, 2014, Jeju, Korea.

PROFESSIONAL ASSOCIATIONS

Societies

American Society of Microbiology
American Society of Agronomy
Soil Science Society of America
Soil Ecology Society

Grants and Contracts (Funded)

Year	Amount	Funding Agency/ Principal Investigator	Research Topic/Title
1985-87	$24,500	Oregon Wheat Commission/ N.W. Christensen, S. Broich, and R. P. Dick (1986-87) (Co-P.I.s)	Screening of Hard Red Winter Wheats for Environmental Effects on N Assimilation, N Allocation, and Grain Protein
1986-87	$7,000	Agricultural Research Foundation/F. Crowe and R.P. Dick (Co-P.I.s)	Irrigated Application of Diallyl Disulfide for Eradication of the Onion White Rot Fungus
1987-88	$14,750	Oregon Wheat Commission/ N.W. Christensen, S. Broich, R.P. Dick, F. J. Crowe, and J.M. Hart (Co-P.I.s)	Nitrogen and Sulfur Manage-ment to Increase Yield and Protein Quality of Hard Red Winter Wheat

1987	$1,200	Advanced Science and Technology Institute, Univ. Oregon and Oregon State Univ./R.P. Dick (P.I.)	Sulfur Bentonite as a Source of Sulfur for Agronomic of Crops
1987-89	$17,317	Oregon Dept. Environ. Qual./ J. Hart and R.P. Dick (Co-P.I.s)	Tissue and Soil Nutrient Survey for Grass Straw Removal by Baling and Burning of Turf Type Perennial Rye and Tall Fescue
1987-88	$7,000	Agricultural Research Foundation/ R.P. Dick (P.I.)	Effects of Soil Compaction on Nitrogen Availability and Biological Activity in Soils
1987-90	$26,100	Tennessee Valley Authority and Degra-Sul, Inc., Calgary Canada/R.P. Dick (P.I.)	Oxidation of S-Bentonite in Soils
1988-89	$33,000	Oregon Dept. Environ. Qual./ J. Hart, R.P. Dick and G. Mueller-Warrant (Co-P.I.s)	Effects of Surface Soil pH on Availability and Herbicide Efficacy in Grass Seed Produc- tion
1988-91	$4,500	Sulfur Institute, Washington, D.C./R.P. Dick (P.I.)	Forms, Transformations and Availability of S in Soils
1988-91	$400,000	U.S. Environmental Protection Agency/J. Baham and R.P. Dick (Co-P.I.s)	Adsorption and Desorption of Sulfate by Soils (Agree. CR-815370-01-1)
1988-94	$444,000	USDA Low Input Sustainable Agriculture Western Region Competitive Grant/ R.P. Dick (P.I.)	Evaluation and Design of Low-Input Vegetable and Small Fruit Systems of Western Oregon and Washington (Agree. No. 88-LI-2)
1989-90	$6,000	Phillips 66 Company/ F. Crowe and R.P. Dick (Co-P.I.s)	Irrigated Application of Diallyl Disulfide for Eradication of the Onion White Rot Fungus
1989-91	$7,000	Tennessee Valley Authority Muscle Shoals, AL/ R.P. Dick (P.I.)	Cycling and Efficiency of Nitro-gen in Intensive Vegetable Systems of the Willamette Valley
1989-92	$340,511	Northwest Area Foundation/ R.P. Dick, S. Cordray, S. Radosevich, D. McGrath, and R. William (Co-P.I.s)	Oregon Tilth and Oregon State University Cooperative Study of Sustainable Ag. in the Oregon Maritime Region (Grant No. 89-71)
1990-91	$7,000	Agricultural Research	Effect of Alternative Crop Rota-

		Foundation/ R.P. Dick (P.I.)	tions/Cover Crops on Productiv- ity and Input Efficiency in Veg-etable and Seed Crop Systems
1990-95	$149,665	U.S. AID, PSTC/ R.A. Morris (P.I.), J. Handawela and R.P. Dick (Co-P.I.s)	Cycles of P and Other Nutrients in Alley Crops on Alfisols (Proposal ID No. 10229) (Sri Lanka)
1992	$6,000	Netherlands Integrated Soil Research Programme, Wageningen, The Netherlands/ R.P. Dick (P.I.)	Soil Biological Properties and Distribution of N and C Fractions in Soils Amended C Enriched Plant Residue
1992	$10,000	Northwest Area Foundation/ R.P. Dick and H. Murray	Resource Guide for Sustainable Agriculture
1992-93	$20,000	SWMG Groundwater Protection Program, Oregon DEQ/ R.P. Dick (P.I.) and J. Istok (Co-P.I.)	Fate and Transformation of Nitrate in the Vadose Zone, Northern Malheur County
1992-94	$30,000	Soil Erosion and Water Quality in Pacific Northwest (STEEP II) Program/R.P. Dick (P.I.), and D. Hemphill, R. Karow (co P.I.s)	Effect of Alternative Crop Rotations and Cover Crops on on Productivity and Input Efficiency
Year	**Amount**	**Funding Agency/ Principal Investigator**	**Research Topic/Title**
1992-93	$20,000	Oregon Water Resource Institute (USGS)/R.P. Dick, J. Selker (Co P.I.s)	Measurement of N Leaching Losses with Subsoil Lysimeters under Conventional and Alter-native Crop Systems
1991-94	$70,636	Center for Applied Ag. Res./ R.P. Dick (P.I.), D. Hemphill, J. Steiner, and J. Hart (co-PIs)	Effect of Alternative Crop Rota- tions/Cover Crops on Productiv- ity and Input Efficiency in Vegetable Crop Systems
1993-94	$36,640	Northwest Area Foundation R. P. Dick, D. McGrath, R. William (Co-P.I.s)	Oregon Tilth and OSU Cooper- ative Study of Sustainable Agri- culture in the Oregon Maritime Region
1993-94	$14,221	Oregon Dept. of Agriculture R.P. Dick (P.I.), J.A. Field, P.J. Bottomley (Co-PIs)	Reducing Nitrate Loading of Groundwater by Cover Crop- ping Practices in Vegetable Production Systems

1993-96	$41,474	Soil Erosion and Water Quality in Pacific Northwest (STEEP II) Program/R.P. Dick (P.I.), and D. Hemphill, R. Karow (co P.I.s)	Effect of Alternative Crop Rotations and Cover Crops on Productivity and Input Efficiency
1994-97	$106,028	USDA-ARS Grass Seed Grant Program/R.P. Dick (P.I.)	Soil Biological, Chemical, and Physical Dynamics During Transition to Nonthermal Residue Management Grass Seed Systems
1995-98	$150,000	USEPA/Oregon 319 Program/ R.P. Dick and J. Selker (co-PIs)	Development and Dissemination of BMPs for Intensive Crop Production in the Willamette Valley
1995-98	$75,000	Oregon Dept. of Ag, Groundwater Res. and Devel. Fund/ R.P. Dick and D. Hemphill (co-P.I.s)	Reducing Nitrate Loading of Groundwater by Cover Cropping Practices in Vegetable Production Systems
1996-99	$180,000	Western Region USDA SARE/ R.P. Dick (P.I.), D. McGrath and A. Moldenke (co-P.I.s)	Influences of Alternative Vegetable Systems on Arthropods/ Soil Biological Dynamics and Soil Quality Trajectory
1996-99	$38,000	National Resource Cons. Service R.P. Dick and C. Seybold (co-P.I.s)	Effects of Cover Crops on Soil Physical Properties
1997-98	$249,556	USAID/Senegalese Inst. Ag Res. R.P. Dick, A. Badiane, M. Diata, M. Sene (co-P.I.s)	Strengthening Senegalese Research Capabilities Towards Restoration of Degraded Soils
1998-99	$25,000	USEPA/Oregon 319 Program/ R.P. Dick, J. Selker (co-P.I.s)	Demonstration/Development of Cover-Crop BMPs
1998-2000	$196,806	USEPA/Nat. Ctr. Env. Res. & Qual. Assurance/R.P. Dick (P.I.)	Soil Enzyme Stability as an Ecological Indicator
1999	$23,091	European Union/KARI, Nairobi, Kenya	Soil Science Analytical Training Program
2001-04	$91,988	USDA-ARS Grass Seed Grant Program/R.P. Dick (P.I.)	High Straw-Conservation Grass Seed Production To Mitigate Agricultural Impacts in the Pacific Northwest

2001-04	$243,192	National Institute for Global Environmental Change Dick (P.I.)	Microbial Diversity and Carbon and Sequestration in Soils of Old USDOE/ R.P. Growth and Young Forests Ecosystems
2001-04	$154,649	Western Region USDA SARE/ R.P. Dick (P.I.), D. McGrath and A. Moldenke (co-P.I.s)	Farmer/Scientist Partnership for Integrated Cropping Systems
2003-09	$1,320,000	Biocomplexity (Geosciences) Science Foundation R.P. Dick (P.I.)	Regulation of hydrologic and National C cycles by native shrubs in sub-sahelian Africa
2010-15	$120,000	National Science Foundation R.P Dick (Co-P.I.)	RCN:Enzymes in the Environment (Co-PI)
2011 – 2018	$2,600,000	National Science Foundation R.P. Dick (Director & PI)	Hydrologic Redistribution and Rhizosphere Biology of Resource Islands in Degraded Agroecosystems of the Sahel: A PIRE in Tropical Microbial Ecology
2011- 2013	$1,600,000	HED USAID R.P. Dick (P.I.)	Development of agronomy and crop production academic programs,research, and need based extension programs for sustainable food production in Senegal
2009-2011	$250,000	Ohio Soybean Council R.P. Dick (P.I.)	Effect of Glyphosate on Fate and Transformations of K in Relation to Microbial Community Responses
2013-2014	$32,000	Agricultural Incubator Found. R.P. Dick (P.I.)	Investigation of microbiology and processed vegetable health in organically amended soils from long-term field corn and soybean cropping systems
2013-2015	$105, 737	Natural Resources Conservation Service R.P. Dick (P.I.)	Enzyme activities as dynamic properties to detect soil changes within a human time scale
2007-2021	$725,738	Ag. Spectrum R.P. Dick (P.I.)	Effects of glyphosate on soil microbial communities/Soil health management
2018-2024	$240,000	Ohio Soybean Council R.P. Dick (P.I.)	Development of a New Soil *Quality/Health* System

2019-present	$349,937	USAID Peanut Innovation Lab R.P. Dick (P.I.)	Optimized Shrub System (OSS): Landscape Regeneration & Resilience in Senegal
2019-2024	$99,000	USAID Legume Innovation Lab R.P. Dick (P.I.)	Optimized Shrub System (OSS): An Innovation for Improving Cowpea Yield & Strengthening Smallholder Resilience in Senegal
2019-present	$35,000	US DOE Community of Science Joint Genome Institute R.P. Dick (P.I.)	Shrub-Crop-Microbiome Interactions: A Novel A Novel Rhizosphere Alliance to Mitigate In-Season Drought in the Sahel
2020-2022	$63,000	OSU Center Applied Plant Sci. R.P. Dick (P.I)	Shrub-Crop-Microbiome Interactions: A Rhizosphere Alliance to Mitigate In-Season Drought in the Sahel
2021-present	$101,000	USDA NIFA R.P. Dick (P.I)	Pre-doctoral Fellowship
2022-present	$591,477	USDA NIFA R.P. Dick (co-PI)	N fixation in *Zea* through Domestication, Spread, & Improvement in the Americas
2022-present	$749,213	USDA AFRI R.P. Dick (co-PI)	Impacts of Agricultural Systems on the Functions of Soil & Tomato-associated microbiome & productivity

SUPERVISION OF RESEARCH PERSONNEL

Kerle, E. A. 1986-89. Research Assistant. Nutrient cycling in soils. (1.0 FTE)

Bane, G. 1989-1990. Research Assistant. Project leader in developing Sustainable Agriculture Resource Guide (0.5 FTE)

Murray, H. 1988-1993. Project Associate. Western Oregon and Washington USDA Sustainable Agriculture Project. (1.0 FTE)

Castellano, S. D. 1990. Research Assistant. Sulfur cycling in soils. (0.75 FTE)

Bulling, L. 1993-1994. Research Assistant. Sustainable agriculture and soil science. (0.5 FTE)

Sattell, R. 1995-1998. Research Assistant. Nitrogen cycling and cover crops. (0.5 FTE)

Christ, R. 1991-2005. Research Assistant. Sulfur and nitrogen cycling in soils. (0.75 FTE)

Sandeno, J. 1989-2005. Senior Faculty Research Assistant. Nutrient cycling in soils. (1.0 FTE)

Pascoe, N. 1998-2000. Faculty Research Assistant. Soil Enzymology. (1.0 FTE).

Lorenz, N. 2006-2011. Lab manager and Research Scientist (1.0 FTE)

Wojno, M. 2008-2011. Lab technician (1.0 FTE)

Hoilett, N. 2011-2013. Post doc and lab manager (1.0 FTE)

Renz, P. 2013-present. Research Associate (1.0 FTE)

Lee, N. 2011-present. Research Associate (1.0 FTE)

Davey, A. 2010-present. Project Manager, Senegal Projects (0.25 to 1.0 FTE)

Lorenz, N. 2014-present, Lab Manager and Research Scientist

INTERNATIONAL PROGRAMS

Bangladesh

Position: Research Agronomist

Location: Rural Bangladesh, Noakhali District

Duration: 1978-81

Organization: Mennonite Central Committee, Akron, Pennsylvania

Responsibilities: Supervisor for regional experiment station/developed farming systems research project program design and implementation, identification of agro-ecological zones/training of national staff in soils and land use.

International Cooperative Projects: International Rice Research Inst., Philippines International Crops Research Inst. for the Semi-Arid Tropics, India; and Asian Vegetable Research and Development Center.

Working Language: Bengali

Senegal

A. USAID Natural Resource Based Agriculture Project (~$10 million).
Position: OSU Project Coordinator and Collaborative Soil Scientist (1996-1998)
Collaborative Education and Research Project: Research and scientist exchange project between Senegal Institute of Agricultural Research (ISRA) and Oregon State University. The agroforestry research project investigated a native shrub and tree species for litter biomass production and effects on soil properties. Developed plan to revitalize and reequip soil testing lab at Bambay. Major purchases in lab equipment were done as well as training in lab procedures. This included a thorough review of the Soil Testing Lab at Kaolack. In rural areas. traditional farming practices were investigated. Worked with ISRA scientists in publishing research results in refereed journals. Arranged study tours of ISRA technicians, scientists, and an administrator.

B. . US National Science Foundation : Native Shrubs as Drivers of Hydrology and C Cycles in Soils of Sub-Sahelian Africa ($1.3 million), 2003-2009
Position: PI and Project Leader
International Collaborative Research: This was a NSF Geoseicene/Bioocomplexity project that had 4 Co-PIs in Senegal, 2 collaborating professors at Oregon State University (soil physics and pedology), 1 post-doc (plant ecology and mycorrhizae) and 4 African PhD. students (microbiology, biogechem, physics, landscape ecology) This multidisciplinary study investigated the unrecognized role of shrubs as key determinants in biogeochemical process, sequestration of C, water relations, and soil degradation mitigation in semiarid Senegal that is representative of much of Sub-Sahelian Africa.

C. US National Science Foundation: Hydrologic Redistribution and Rhizosphere Biology of Resource Islands in Degraded Agroecosystems of the Sahel: A PIRE in Tropical Microbial Ecology ($2.6 million), 2011 – 2018.
Position: Project Director and PIh
Multidisciplinary Plant-Microbial Ecology Project: It has 4 Co-PIs in Senegal, 3 collaborating professors at Ohio State University,1 Co-PI UC Merced, 1 post-doc (plant ecology and mycorrhizae) and 4 US PhD. students (3 microbiology and 1 soil hydrology) This multidisciplinary study is investigating shrubs as beneficial hydrologic and plant growth promoting microorganisms resources for crops. Our seminal research on the 2 dominant shrub species of the Sahel has discovered their unique agro-ecological niche and *ability to do hydraulic lifting* (HL) *of water from wet sub- to surface soil* and *improve crop productivity. Our premise is that the presence of local shrubs in cropping systems contributes significantly to Sahelian agroecosystems and offers a new avenue to develop biologically based cropped agroecosystems. We hypothesize that shrub HL assists crops through drought periods and results in a unique habitat for soil microorganisms, with the prediction that these microorganisms contribute substantially to the growth of adjacent crop plants.* We will use micrometeorology and soil moisture instrumentation with innovative ^{2}H-labeling to determine the fate of hydraulic lifted water in soils, crop roots, and mycorrhizal fungal hyphae. ^{13}C plant signatures will be used to measure crop water stress in the presence and absence of local shrubs. The baseline differences in microbial communities present at different water potentials in bulk soil, and in shrub and crop rhizospheres will be determined by lipid and metagenomic fingerprinting. And, molecular community profiling based on T-RFLP will be used to identify and direct the isolation of microbes with plant growth promoting abilities. Field studies, laboratory and greenhouse investigations will be undertaken in parallel to determine how hydraulic lift affects microbial rhizosphere diversity and function.

SERVICE

UNIVERSITY SERVICE

Iowa State University

Chair, Colloquium on International Agriculture Committee, Dept. of Agronomy. Leadership role in initiating and organizing annual seminar series. 1983-85.

Scientific Host. President Feng Yang and Professor Shifen Li, Sichuan Agricultural College, Peoples Republic of China. Hosted tour of ISU's Agronomy Department and local farms and social activities. May 19-26, 1984.

Graduate Student Agronomy Department Review Committee. Worked jointly with USDA-CSRS Review Team. 1984.

Oregon State University

University-wide

Co-Chair, Oregon State University Ad hoc Task Force on Sustainable Agriculture. Appointed by Dean, College of Agricultural Sciences. 1988-1990.

Global Geoscience Planning Committee. Organization and future role of OSU in global geoscience activities. 1988.

NW Area Foundation Proposal Committee. Appointed by Ag. Exp. Station to work on joint OSU/Oregon Tilth proposal to NW Area Foundation on Sustainable Agriculture. 1989.

Secretary, Oregon Chapter Gamma Sigma Delta, Honor Society of Agriculture. 1990-91.

Vice President, Oregon Chapter Gamma Sigma Delta, Honor Society of Agriculture. 1991-92.

Vice President, Oregon Chapter Gamma Sigma Delta, Honor Society of Agriculture. 1992-93.

President, Oregon Chapter Gamma Sigma Delta, Honor Society of Agriculture. 1993-94.

Chair, Steering Committee, OSU Sustainable Agricultural Systems Program. 1994-95.

Organizer, One-day Cover Crop Summit, Multidisciplinary meeting on research activities related to cover cropping at OSU, Memorial Union, March 24, 1995.

Seminar organizer - Bioremediation Seminar Series, included fund raising for invited speakers and recruitment of on-campus facility for presentations. Internationally known speakers included Professor Martin Alexander (Cornell University) and Richard Burns

(University of Kent, U.K.). Eight weekly seminars attracted faculty and students from a range of departments and colleges (attendance was from 48 to 82). Spring term, 1998.

Seminar organizer - Stream Quality and Habitat: Linkages to Micro and Macro Scale Landscape Processes Seminar Series, included fund raising for invited speakers and recruitment of on-campus facility for presentations (average attendance >60). Spring term, 2002.

Soil Science Program Oregon State University

Assisted at 1986 Oregon High School Soil Judging Contest.
Seminars and Special Programs Committee. 1985-88, Chair 1988.
Curriculum and Course Committee. 1987-88.
Library Committee. 1985-2004, Chair.
Fire and Safety Committee. 1985-1991.
Coordinator for Soil Science Graduate Student Graduate Program. 1997-2003
Soil Science Graduate Committee. 1997-2004.
Soil Science Planning Committee. 1996-2004
Organizer and leadership role in Environmental Soil Science M.S. degree program.

Ohio State University
President's and Provost's Advisory Committee. 2005- present.
SENR Soil Science Curriculum Committee. 2005-2006.
Chair, Soil Science Graduate Program, 2008-2011
CFAES Promotion and Tenure Committee. 2008-2011
OARDC SEEDS Research Committee, 2010-2013
CFAES Promotion and Tenure Committee. 2017-2020
SENR Promotion and Tenure Committee. 2020-present

SERVICE TO THE PROFESSION

Appointed and Elected Positions at Soil Science Society of America

Honorary Member of SSSA Award Committee (2011)
Associate Editor Div. S-3 , Soil Biology and Biochemistry, Soil Science Society of America Journal, (1999-2005)
SSSA Division Chair, S-3 , Soil Biology and Biochemistry, (2002)
SSSA Board of Directors, (2004-2011)
SSSA Annual Meeting Symposium Organizer, (1988, 1994, 2002, 2009, 2010)
SSSA Budget and Finance Committee, 2004-2007.
Chair, Clark Lectureship Committee, Div. S-3 Soil Science Society of America (2003
Chair, Clark Soil Biology Graduate Student Scholarship Committee, SSSA (2003)
President, Soil Science Society of America, 2018
Executive Council, Soil Science Society of America, 2017-2020

Service to other Societies and Programs

Chair, (1997, 2010) NCERA -59 Soil Organic Matter

Secretary (2002-2006), Soil Biology Division, International Union of Soil Science (2002 – 206) IUSS Congress Symposium Organizer (2006),

Functional molecular soil microbial ecology Session Chair, Pac. Div., Am. Assoc. Adv. Sci./West Soil 14-15 June, 1987

Program organizer, Sustainable Agriculture in the Western US 21-25 June, 1992, U.S. Western Soil Science Society Symposium, Pacific Div.Am. Assoc. for the Adv. of Science, Santa Barbara, CA.

Co-Chair, Tri-State Symposium on Sustainable Agriculture, 1-2 March, 1989 Planning Committee. Farming for Profit and Stewardship,Portland, OR. Appointed by the Directors of Agriculture Experiment Stations and Cooperative Extension Service for Washington, Idaho and Oregon

Member, Tri-State Symposium on Sustainable Agriculture.2-3 March, 1990, Planning Committee. Farming for Profit and Stewardship,Vancouver, WA.

Co-program organizer, Symposium-Impacts of Sustainable on 1-6 Nov., 1992. Agriculture, American Society of Agronomy Annual Meetings, Minneapolis, MN.

Co-program organizer, Special Symposium, Assessment of 13-18 Nov., 1994.Soil Quality, Sponsored by S-3, Am. Soc. Agron. Ann. Meet., Seattle, WA.

Program organizer, Special Symposium, Nutrient Cycling in Ecosystems 13-18 Nov., 1994. Sponsored by S-4, Am. Soc. Agron. Ann. Meeting, Seattle, WA.

Chair, Technical Committee, 29-30 Aug., 1990. USDA Western Region Low-Input Sustainable Agriculture Committee (WRCC67). Coordinated annual meeting and agriculture tour, Portland, OR.

Member, 1987- 1990. USDA Western Region Low-Input Sustainable Agriculture Committee (WRCC67). Develops policy, communications and competitive grant program on sustainable agriculture in western region.

Member, 1998-1990. Sustainable Agriculture Committee, American Society of Agronomy

Member, 1992-present. North Central Regional Committee on Soil Organic Matter (NCER-59) Soil Quality Initiative.

Secretary, 1996. North Central Regional Committee on Soil Organic Matter (NRC-59) Soil Quality Initiative.

AWARDS

State

Research Excellence Award, $250, President of Iowa State University, 1985
Search for Excellence: Outstanding Leadership in Educational Programming. "Farming for Profit and Stewardship: Sustainable Agriculture in the Pacific Northwest, 1990, Portland Oregon" Award given by OSU Extension Association
Savery Outstanding Young Faculty Award, $1,000, College of Agricultural Sciences, 1991
James and Mildred Oldfield/E. R. Jackman Team Award, as member of Collaborative and Participatory Learning Team, 1995
The Ohio State University International Engagement Emerging Award $1,000, Office of International Affairs and Office of Outreach and Engagement, 2013

National

Gamma Sigma Delta, Honor Society of Agriculture, 1983
USDA/OICD/RSED Scientific Exchange Award, $2,300, Scientist exchange visit with Cooperative Research Center for Soil and Land Management and Dept. of Soil Science, University of Adelaide, Australia, March 14-31, 1994.
Fulbright Senior Scholar, Research Award, 2000; $24,900
2001 Fellow, American Society of Agronomy
2002 Fellow, Soil Science Society of America
2006 Editor's Citation for Excellence, Soil Science Society of America Journal
2016 Gordon Research Conference Lecturer, Multiscale Plant Vascular Biology Conference (travel and honorarium, award)

International

Wageningen Agricultural University Visiting Scholar Award, $12,375, living stipend, Wageningen, The Netherlands, 1992-93
Research Fellowship, Organization for Economic Cooperation and Development, $10,400 plus travel expenses, Paris, France, 1992-93
German Academic Exchange Award, German Ministry of Science and Technology, University of Hohenheim, 2000; $4,650

Graduate Students

Castellano, Steven D. M.S. 1989. Effects of cropping and sulfur fertilization on transformations of sulfur in soils.

Deng, Shiping. M.S. 1990. Sulfur oxidation and rhodanese activity in soils.

Nelson, Sheila. M.S. 1991. The influence of phosphatase-producing bacteria on phosphatase activity and available phosphorus in soil.

Christ, Robert. M.S. 1992. Long-term organic residue management effects on transformations and availability of nitrogen, sulfur, and phosphorus.

Islam, Mujibul, International Rice Research Institute Scholar. Ph.D. 1992. Transformations of sulfur in soils under flooded and aerobic/flooding cycles.

Fauci, Mary. M.S. 1992. Organic and inorganic N amendments in relation to biological activity and N availability in soils.

Iyamuremye, Faustin, Fulbright Scholar. Ph.D. 1994. Effect of organic amendments on phosphate sorption in soils.

Kauffman, Susan. M.S. 1994. Soil N dynamics in cover crops systems.

Bandick, Anna. M.S. 1997. Soil enzyme activities as a soil quality index.

Burket, John. Ph.D. 1998. N cycling in vegetable cover crop systems.

Buller, Gilbert. M.S. 1998. Effects of cover crops on soil physical properties.

Minshew, Hudson. 1998. Nitrate dynamics in vegetable cover crop systems.

Good, Judith. 1998. Non-thesis M.S. in Environmental Soil Science.

Ndiaye, Evelyne. M.S. 1998. Effect of cover cropping on soil biological properties.

Schutter, Mary. Ph.D. 2000. Determinants of microbial community structure in cover cropped soils.

Knight, Tim. M.S. 2002. Soil enzyme stability in disturbed ecosystems.

Cesepes, Cecilia. M.S. 2002. Paper sludge amendments in relation to soil ecology and soil borne disease suppression.

Fernandez, Marcello. Ph.D. 2004. Soil microbial community succession and activity during organic matter decomposition.

Ochachai, Naiyuki. M.S. 2004. Green manure amendment effects on Verticiluim wilt disease suppression and soil ecology.

Banners, Candace. M.S. 2005. No-tillage vegetable production and soil ecology.

Moore, Jennifer. Ph.D. 2006. Microbial Diversity and Carbon Sequestration in Soils of Old growth and Young Forest Ecosystems

Washburn, Jennifer. M.S. 2006. Forest stand age in relation to C sequestration. Oregon State University

Diedhiou, Sire. Ph.D. 2007. Influence of native shrubs on microbial and C dynamics in soils in Sub-Sahalean Africa.

Dossa, Ekwe. Ph.D. 2007. Nitrogen and phosphorus cycling in relation to shrubs ecology in Senegal.

Yousef, Lina. PhD. 2010. Class-I Elicitins in Relation to Sterol Acquisition and Lipid Profiling of *Phytophthora sojae*. Ohio State University.

Lane, Mathew. M.S. 2011. The Effect of Glyphosate On Soil Microbial Communities. Ohio State University.

Roy Chowdhury, Taniya. PhD. 2012. Meithane Oxidation and Methantrophs in Pulsing Wetlands.

Jennifer, Tvergyak, Jennifer. M.S. 2012. Heavy Metal Pollution and Subsequent Remediation Effects on Soil Enzyme Function.

Nye, Mark, MS. 20.13. Effect of soybean and corn glyphosate tolerant residues on soil microbial communities.

Bright, Mathew. PhD. 2017. Present. Mycorrhizal Ecology and Diversity in Shrub-Crop Systems of the Sahel.

DeLay, Chelsea, MS. 2017. Functional Diversity and N Fixation by Free-Living Microorganism in Shrub-Crop Systems of the Sahel.

Lattin, Esther, MS. 2017. PLFA microbial community profiling and nitrogen dynamics of intercropping shrub systems in Senegal.

Lee, Nathan, MS. 2018. Glyphosate tolerant cropping effects on soil microbial communites and accumulation of AMPA.

Hendrick, Luanne, MS 2020. Effects of glyphosate metabolite (AMPA) on soil communities.

Mason, Laura, PhD 2024. Biodiversity and abundance of drought resistance conferring microorganisms in crop rhizospheres in shrub intercropping systems.

Renz, Peter, PhD (current). Enzyme activities as sensitive and calibrated indicators of soil quality in soybean fields.

Charles, Christine, MS 2022. Shrub intercropping effects on microbial community and millet during a simulated in-season drought.

Charlotte Solomon, MS (current). Optimization of a multi-substrate enzyme activity soil health indicator

Tuny Amphonechit, MS (current). Microbiomes and nitrogen fixation of aerial roots of Mexican maize landraces

Mariama Dione, PhD (current as co-adviser, University of Thies, Senegal). Agronomic and soils performance of Optimized Shrub-intercropping under farmer management in Senegal.

Post Doctoral Candidates

Dr. Dudley Jayasinghe. 1990. Sorption and desorption of sulfate in soils.
Dr. Steven Comfort. 1988-1990. Sorption and desorption of sulfate in soils.
Dr. Faustin Iyamuremye. 1994-1996. Phosphorus sorption and organic amendments.
Dr. Mateugne Diack. 1996-1998. Soil microbial and carbon pool dynamics beneath native tree and shrub species in Senegal.
Dr. Charles Yamoah. 1998. Strengthening Senegalese research and publication capabilities at ISRA
Dr. Ibrahima Diedhiou. 2002- 2009. Plant ecology of shrubs and soil degradation in Senegal. US NSF project.
Dr. Nicola Lorenz. 2005-2011. Influence of glyphosate on microbial communities
Dr. Ekwe Dossa, 2008-2009. Nitrogen fixation by free living microorganisms in native shrubs of Senegal.
Dr. Sire Diedhiou. 2009-2011. Microbial ecology of disease suppressing plant residues added to soils. Caribbean DEVAG Project
Dr. Jyotisna Saxena. 2011- 2015. Phylogentics of soil organisms.
Dr. Nigel Hoilet. 2011-2013. Microbiology of soil under glyphosate tolerant cropping systems
Dr. Helene Ndiaye, 2012 – 2015. Microbiology of shrub-crop systems of the Sahel
Dr. Roger Bayala, 2011-2017. Soil hydrology and shrub intercropping.
Dr. Sidy Diakhate, 2015-2017. Soils amended with shrub residues to resist heat stress and controlling parasitic nematodes.
Dr. Samaneh Tajik, 2016-2018. Microbial diversity across plant biomes in Iron
Dr. Samaneh Tajik, 2033. Effect of air drying on extractable phospholipid fatty acids as microbial biomarkers.

Mentor for B.S. Honors' Students

Berry, Amanda. 1999. Microbial and carbon pool dynamics in nonthermal grass seed systems. Oregon State Univeristy.

Taylor, Anne. 2000. Soil enzyme activity as indicators of ecosystems stress. Oregon State Univeristy.

Wagner, Ron. 2000. Extraction of ergosterol across diverse ecosystems. Oregon State Univeristy.

Ken Verdell. 2009. Volatilization of arseneic from soils. Ohio State University

Laura Mason. 2015 Undergraduate Honors, Isolation and identification of beneficial microorganisms in millet rhizospheres as influenced by intercropped shrubs.

Rachael Birri. 2020-21. Assessing the Efficacy of Enzyme Assays as a Soil Health Indicator on Diverse Long-Term Agronomic Plots
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Supervised Graduate Student Awards

Steven D. Castellano
OSU Outstanding Publication Award, 1989
$100

Sheila Nelson
Sigma Xi Graduate Student Research Poster Award, 1991
$300

Mary Fauci
Western Soil Science Graduate Student Travel Award, 1992
Santa Barbara, CA
$200

John Burket
Western Soil Science Graduate Student Travel Award, 1994
San Francisco, CA
$200

Thomas Buford
Sigma Xi Graduate Student Research Poster Award, 1995
$300

Anna Bandick

Western Soil Science Graduate Student Travel Award, 1996
Vancouver, B.C., Canada
$150

Anna Bandick
Western Soil Science Graduate Student Travel Award, 1995
San Jose, California
$150

Hudson Minshew
International Trade and Development Graduate Fellowship, 1997 and 1998
Nippon Foundation
Oregon State System of Higher Education
$5,000 (1997); $4,000 (1998)

Virginia Gewin
1998 Soil Science Merit Assistantship
Oregon State University
$13,000 plus tuition

Virginia Gewin
1999 NASA Earth Systems Fellowship
$78,000

Tim Knight
2001 NSF High School Science Educational Assistantship
$16,000 plus tuition

Jennifer Washburn
2004 Laurels Scholarship
$8,000
2004/5 Sports Lottery Graduate Student Scholarship
$4,100

Candace Banners
2004/5 NSF High School Science Educational Assistantship
$16,000 plus tuition

Taniya Roy Chowdhury
2009-2012 Ohio State University PhD University Fellowship. Three year living stipend and tuition waiver.

Mathew Bright
2011-2012. Ohio State University PhD University Fellowship.
2012-2013 Ohio Agriculture Research and Development Center International PhD Fellowship. One-year living stipend and tuition waiver.

Luanne Hendrick,
2019-2020. Ohio State University MS University Fellowship. Full living stipend and tuition waiver.

Christine Charles
2019-2022. Ohio State University MS University Fellowship. Full living stipend and tuition waiver.

Laura Mason

- 2021. Ohio State University Presidential Fellowship $31,900 plus tuition waiver
- 2021 CRDF Global Rodney Nichols Travel Scholarship ($7,500 + travel)
- 2021 OSU Infectious Disease Institute Works in Progress Trainee Travel Award $400
- 2023 OSU Microbial Communities Thematic Program Trainee Travel Award $200