# William F. Schillinger

## Professional Experience

**2005-Present** **Professor and Research Agronomist**
**1999-2005** **Associate Professor and Research Agronomist**
**1993-1999** **Assistant Professor and Research Agronomist**
*Department of Crop and Soil Sciences*
*Washington State University*

Provide leadership for a cropping systems research and extension program in low-precipitation (less than 300 mm annual) farming areas of eastern Washington. Research is focused on best management practices to reduce wind erosion, improved winter wheat stand establishment, agronomy of oilseed crops, increased cropping intensity, technology for new farm equipment, and long-term cropping systems experiments. Serve as director of the Washington State University Dryland Research Station at Lind.

**1989-1992** **Graduate Research Assistant**
*Department of Crop and Soil Science*
*Oregon State University*
*Corvallis, Oregon*

Conducted a Ph.D. research program to determine effect of tillage method and residue placement on seed zone water retention in a wheat-fallow cropping system. Awarded 1992 Doctoral Research Fellowship by the Oregon Wheat League.

**1986-1989** **Cropping Systems Research Agronomist**
*Winrock International/USAID*
*Kathmandu, Nepal*

Initiated and directed a cropping systems research program to increase sustainable food production in mountainous areas of Nepal. Research was conducted with host country scientists in farmers' fields in remote areas. Research promoted biological nitrogen fixation by integrating leguminous food crops and green manures into cereal-based cropping systems. Senior author of a funded $15 million project proposal for expanding cropping systems research in the mountains of Nepal.

**1983-1986** **Agriculture Project Manager (Foreign Service Officer)**
*U.S. Agency for International Development*
*Cameroon, West Africa*

Managed and administered U.S. financed agricultural development projects in cereal seed production and cropping systems research in a three-country region (Cameroon, Central African Republic, and Equatorial Guinea) in West Africa. Travelled frequently to oversee implementation of projects and meet Ministry of Agriculture counterparts. Supervised long-term

expatriate scientists and several short-term consultants.

**1975-1981** *United States Peace Corps*
*Kathmandu, Nepal*

**Peace Corps Agriculture Program Director** (1979-1981)
Developed, directed, and taught comprehensive three-month-long courses in cereal seed multiplication and cropping systems research for new Peace Corps Volunteers. Collaborated closely with host country agricultural scientists and donor agencies.

**Peace Corps Volunteer (certified seed multiplication)** (1975-1978)
Implemented, with Nepalese counterpart, a large regional certified seed multiplication program for the Nepal Ministry of Agriculture with 50 private farmers. Supervised the annual production, conditioning, and storage of 1000 tons of wheat, rice, and corn seed that was the only source of certified seed for five million people in the eastern region of Nepal.

**Other:** Grew up on family's dryland wheat farm in Adams County, Washington.

**Education:** Ph.D., Agronomy, Oregon State University, 1992
M.S., Agronomy, University of California at Davis, 1983
B.A., Communications, Eastern Washington University, 1974

Other: Completed a 36-week fulltime intensive French language course at the Foreign Service Institute, US State Department, Washington, DC, 1984-1985.

**Languages:** French (FSI tested 3 speaking, 3 reading)
Nepalese (FSI tested 3+ speaking)

**Affiliations:** Soil Science Society of America
American Society of Agronomy
Crop Science Society of America
European Society of Agronomy

# PUBLICATIONS

## Books

Zobeck, T.M, and W.F. Schillinger (eds.). 2010. Soil and Water Conservation Advances in the United States. Soil Science Society of America Special Publication 60, Madison, WI. 301 pp.

## Book Chapters

Schillinger, W.F., R.H. McKenzie, and D.L. Tanaka. 2011. Barley production in North America. p. 241-251. *In* S.E. Ullrich (ed.) Barley: Improvement, Production, and Uses. Blackwell Publishing Ltd., Ames, Iowa.

Schillinger, W.F., R.I. Papendick, and D.K McCool. 2010. Soil and water challenges for Pacific Northwest agriculture. p. 47-80. *In* T.M. Zobeck and W.F. Schillinger (eds.) Soil and Water

Conservation Advances in the United States. Soil Science Society of America Special Publication 60, Madison, WI.

Pan, W., W. Schillinger, D. Huggins, R. Koenig, and J. Burns. 2007. Fifty years of predicting wheat nitrogen requirements in the Pacific Northwest USA. Chapter 10:1-6. *In* T. Bruulsema (Ed.) Managing Crop Nitrogen for Weather. International Plant Nutrition Institute, Norcross, GA.

Schillinger, W.F., R.I. Papendick, S.O. Guy, P.E. Rasmussen, and C. van Kessel. 2006. Dryland cropping in the western United States. p. 365-393. *In* G.A. Peterson, P.W. Unger, and W.A. Payne (eds.) Dryland Agriculture, 2nd ed. Agronomy Monograph no 23. ASA, CSSA, and SSSA, Madison, WI.

Kennedy, A.C., T.L. Stubbs, and W.F. Schillinger. 2004. Soil and crop management effects on soil microbiology. p. 295-326. *In* F. Magdoff and R.R. Weil (eds.) Soil Organic Matter in Sustainable Agriculture. CRC Press, Boca Raton, FL.

Stubbs, T.L., A.C. Kennedy, and W.F. Schillinger. 2004. Soil ecosystem changes during the transition to no-till cropping. p. 105-135. *In* D. Clements and A. Shrestha (eds.) New Dimensions in Agroecology. Hawthorn Press, New York, NY.

## Refereed Journal Articles

Mohan, A., N.P. Grant, W.F. Schillinger, and K.S. Gill. 2021. Characterizing reduced height mutants in wheat for traits affecting abiotic stress and photosynthesis during seedling growth. *Physiologia Plantarum* **https://doi.org/10.1111/ppl.13321**

Blackburn, A., G. Sidhu, W.F. Schillinger, D. Skinner, and K.S. Gill. 2021. QTL mapping using GBS and SSR genotyping reveals genomic regions controlling wheat coleoptile length and seedling emergence. *Euphytica* (accepted).

Gill, K.S., N. Kumar, H. S. Randhawa, K. Murphy, A. H. Carter, C. F. Morris, R. W. Higginbotham, D. A. Engle, S. O. Guy, D. J. Lyon, T. D. Murray, X. M. Chen, and W.F. Schillinger. 2020. Registration of 'Resilience CL+' imazamox tolerant soft white winter wheat. *Journal of Plant Registrations* **https://doi.org/10.1002/plr2.20118**

Hansen, J.C., W.F. Schillinger, T.S. Sullivan, and T.C. Paulitz. 2020. Decline in soil microbial abundance when camelina introduced into a monoculture wheat system. *Frontiers in Microbiology* 11:571178.

Schillinger, W.F. and D.W. Archer. 2020. Winter Triticale: A long-term cropping systems experiment in a dry Mediterranean climate. *Agronomy BASEL* 10:1777.

Schillinger, W.F. New winter crops and rotations for the Pacific Northwest drylands. 2020. *Agronomy Journal*. 112:3335-3349.

Cann, D.J., W.F. Schillinger, J.R. Hunt, K. Porker, and F.A. Harris. 2020. Agroecological advantages of early-sown winter wheat in semi-arid environments: a comparative case study from southern Australia and Pacific Northwest USA. *Frontiers in Plant Science* 11:568.

Porter, M.J. W.L. Pan, W.F. Schillinger, I.J. Madsen, K.E. Sowers, H. Tao. 2020. Winter canola response to soil and fertilizer nitrogen in semiarid Mediterranean conditions. *Agronomy Journal* 112:801-814.

Hansen, J.C., W.F. Schillinger, T.S. Sullivan, and T.C Paulitz. 2019. Soil microbial biomass and fungi reduced with canola introduced into long-term monoculture wheat rotations. *Frontiers in Microbiology* 10:1488.

Schillinger, W.F. 2019. Camelina: Long-term cropping systems research in a dry Mediterranean climate. *Field Crops Research* 235:87-94.

Schlatter, D., J.C. Hansen, W.F. Schillinger, T.S. Sullivan, and T.C. Paulitz. 2019. Common and unique rhizosphere microbial communities of wheat and canola in a semiarid Mediterranean environment. *Applied Soil Ecology* 144:170-181.

Schlatter, D.C., N.C. Paul, D.H. Shah, W.F. Schillinger, A.I. Bary, B. Sharratt, and T.C. Paulitz. 2019. Biosolids and tillage practices influence soil bacterial communities in dryland wheat. *Microbial Ecology. 78:737-752.*

Wuest, S.B., and W.F. Schillinger. 2019. Soil water dynamics with spring camelina in a three-year rotation in Washington's winter wheat-fallow region. *Soil Science Society of America Journal* 83:1525-1532.

Hansen, J.C., W.F. Schillinger, T.S. Sullivan, and T.C. Paulitz. 2018. Rhizosphere microbial communities of canola and wheat at six paired field sites. *Applied Soil Ecology* 130:185-193.

Pi, H., B. Sharratt, W.F. Schillinger, A. Bary, and C. Cogger. 2018. Chemical composition of windblown dust emitted from agricultural soils amended with biosolids. *Aeolian Research* 32:102-115.

Pi, H., B. Sharratt, W.F. Schillinger, A.I. Bary, and C.G. Cogger. 2018. Wind erosion potential of a winter wheat-summer fallow rotation after land application of biosolids. *Aeolian Research* 32:53-59.

Schillinger, W.F., and T.C. Paulitz. 2018. Canola versus wheat rotation effects on subsequent wheat yield. *Field Crops Research* 223:26-32.

Schlatter, D.C., W.F. Schillinger, A.I. Bary, B. Sharratt, and T.C. Paulitz. 2018. Dust-associated microbiomes from dryland wheat fields differ with tillage practice and biosolids application. *Atmospheric Environment* 185:29-40.

Sharratt, B.S., A.C. Kennedy, J.C. Hansen, and W.F. Schillinger. 2018. Soil carbon loss by wind erosion of summer fallow fields in Washington's dryland wheat region. *Soil Sci. Soc. Am. J.* 82:1551-1558.

Sharratt, B., and W.F. Schillinger. 2018. Soil properties influenced by summer fallow management in the Horse Heaven Hills of south central Washington. *Journal of Soil and Water Conservation* 73:452-460.

Maaz, T.M., W.F. Schillinger, S. Machado, E. Brooks, J.L. Johnson-Maynard, L.E. Young, F.L. Young, I. Leslie, A. Glover, I.J. Madsen, A. Esser, H.P. Collins, and W.L. Pan. 2017. Impact of climate change adaptation strategies on winter wheat and cropping system performance across precipitation gradients in the Inland Pacific Northwest, USA. *Frontiers in Environmental Science* 5:23. doi: 10.3389/fenvs.2017.00023.

Pan, W.L., W.F. Schillinger, F.L. Young, E.M. Kirby, G.G. Yorgey, K.A. Borrelli, E.S. Brooks, V.A. McCracken, T.M. Maaz, S. Machado, I.J. Madsen, J.L. Johnson-Maynard, L.E. Port, K. Painter, D.R. Huggins, A.D. Esser, H.P. Collins, C.O. Stockle, and S.D. Eigenbrode. 2017. Integrating historic agronomic and policy lessons with new technologies to drive farmer decisions for farm and climate: The case of Inland Pacific Northwestern U.S. *Front. Environ. Sci.* 5:76. doi: 10.3389/fenvs.2017.00076

Schillinger, W.F. 2017. Winter Pea: Promising new crop for Washington's dryland wheat-fallow region. *Frontiers in Ecology and Evolution* 5:43. doi: https://doi.org/10.3389/fevo.2017.00043.

Schillinger, W.F., S.E. Schofstoll, T.A. Smith, and J.A. Jacobsen. 2017. Laboratory method to evaluate wheat seedling emergence from deep planting depths. *Agronomy Journal* 109:2004-2010. doi:10.2134/agronj2016.12.0715

Schlatter, D.C., W.F. Schillinger, A.I. Bary, B. Sharratt, and T.C. Paulitz. 2017. Biosolids and conservation tillage: Impacts on soil fungal communities in dryland wheat-fallow cropping systems. *Soil Biology & Biochemistry* 115: 556-567.

Long, D.S., F.L. Young, W.F. Schillinger, C.L. Reardon, J.D. Williams, B.L. Allen, W.L. Pan, and D.J. Wysocki. 2016. Ongoing development of dryland oilseed production systems in northwestern region of the United States. *BioEnergy Research* 9:412-429.

Schillinger, W.F. 2016. Seven rainfed wheat rotation systems in a drought-prone Mediterranean climate. *Field Crops Research* 191:123-130.

Schillinger, W.F. and S.J. Werner. 2016. Horned lark damage to pre-emerged canola seedlings. *Industrial Crops & Products* 89:465-467.

Sharratt, B. and W.F. Schillinger. 2016. Soil characteristics and wind erosion potential of wheat-oilseed-fallow cropping systems. *Soil Science Society of America Journal* 80:704-710.

Schillinger, W.F., and D.L. Young. 2014. Best management practices for summer fallow in the world's driest rainfed wheat region. *Soil Science Society of America Journal* 78:1707-1715.

Schillinger, W.F., and S.B. Wuest. 2014. Wide row spacing for deep-furrow planting of winter wheat. *Field Crops Research* 168:57-64.

Schillinger, W.F., and T.C. Paulitz. 2014. Natural suppression of Rhizoctonia bare patch in a long-term no-till cropping systems experiment. *Plant Disease* 98:389-394.

Sharratt, B.S., and W.F. Schillinger. 2014. Windblown dust potential from oilseed cropping systems in the Pacific Northwest United States. *Agronomy Journal* 106:1147-1152.

Guy, S.O., D.J. Wysocki, W.F. Schillinger, T.G. Chastain, R.S. Karow, K. Garland-Campbell, and I.C. Burke. 2014. Camelina: Adaptation and performance of genotypes. *Field Crops Research* 155:224-232.

Mohan, A., W.F. Schillinger, and K.S. Gill. 2013. Wheat seedling emergence from deep planting depths and its relationship with coleoptile length. *PloS ONE* 8(9): e73314.

Yin, C., S. H. Hulbert, K. L. Schroeder, O. Mavrodi, D. Mavrodi, A. Dhingra, W.F. Schillinger, and T. C. Paulitz. 2013. Role of bacterial communities in the natural suppression of Rhizoctonia bare patch of wheat (*Triticum aestivum* L.). *Applied and Environmental Microbiology* 79:7428-7438.

Wysocki, D.J., T.G. Chastain, W.F. Schillinger, S.O. Guy, and R.S. Karow. 2013. Camelina: Seed yield response to applied nitrogen and sulfur. *Field Crops Research* 145:60-66.

Singh, P., H. Abdou, M. Flury, W.F. Schillinger, and T. Knappenberger. 2013. Critical water potentials for germination of wheat cultivars in the dryland Northwest USA. *Seed Science Research* 23:189-198.

Schillinger, W.F., D.J. Wysocki, T.G. Chastain, S.O. Guy, and R.S. Karow. 2012. Camelina: Planting date and method effects on stand establishment and seed yield. *Field Crops Research* 130:138-144.

Young, D.L., and W.F. Schillinger. 2012. Wheat farmers adopt the undercutter fallow method to reduce wind erosion and sustain profitability. *Soil & Tillage Research* 124:240-244.

Singh, P., B. Sharratt, and W.F. Schillinger. 2012. Wind erosion and PM10 emission affected by tillage systems in the world's driest rainfed wheat region. *Soil & Tillage Research* 124:219-225.

Singh, P., Flury, M., and W.F. Schillinger. 2011. Predicting seed-zone water content for summer fallow in the Inland Pacific Northwest, USA. *Soil & Tillage Research* 115-116:94-104.

Wuest, S.B., and W.F. Schillinger. 2011. Evaporation from high residue no-till versus tilled

fallow in a dry summer climate. *Soil Science Society of America Journal* 75:1513-1519.
Schillinger, W.F. 2011. Rainfall impacts winter wheat seedling emergence from deep planting depths. *Agronomy Journal* 103:730-734.
Schillinger, W.F. 2011. Practical lessons for successful long-term cropping systems experiments. *Renewable Agriculture and Food Systems* 26:1-3.
Lutcher, L.K., W.F. Schillinger, N.W. Christensen, S.B. Wuest, and D.J. Wysocki. 2010. Phosphorus fertilization of late-planted winter wheat into no-till fallow. *Agronomy Journal* 102:868-874.
Paulitz, T.C., K.L. Schroeder, and W.F. Schillinger. 2010. Soilborne pathogens of cereals in an irrigated cropping system: Effects of tillage, residue management, and crop rotation. *Plant Disease* 94:61-68.
Schillinger, W.F., D.L. Young, A.C. Kennedy, and T.C. Paulitz. 2010. Diverse no-till irrigated crop rotations instead of burning and plowing continuous wheat. *Field Crops Research* 115:39-49.
Al-Mulla, Y., J.Q. Wu, P. Singh, M. Flury, W.F. Schillinger, D.R. Huggins, and C.O. Stockle. 2009. Soil water and temperature in chemical fallow and reduced-tillage fallow in a Mediterranean climate. *Applied Engineering in Agriculture* 25:45-54.
Flury, M., J.B. Mathison, J.Q. Wu, W.F. Schillinger, and C.O. Stockle. 2009. Water vapor diffusion through wheat straw residue. *Soil Science Society of America Journal* 73:37-45.
Schillinger, W.F., S.E. Schofstoll, and J.R. Alldredge. 2008. Available water and wheat grain yield relations in a Mediterranean climate. *Field Crops Research* 109:45-49.
Wuest, S.B., and W.F. Schillinger. 2008. Small-increment electric soil sampler. *Soil Science Society of America Journal* 72:1554-1556.
Schillinger, W.F., and R.I. Papendick. 2008. Then and now: 125 years of dryland wheat farming in the Inland Pacific Northwest. *Agronomy Journal* 100(Suppl.):S166-S182.
Schillinger, W.F., T.A. Smith, and H.L. Schafer. 2008. Chaff and straw spreader for a plot combine. *Agronomy Journal* 100:398-399.
Schillinger, W.F. 2007. Ecology and control of Russian thistle (*Salsola iberica*) after spring wheat harvest. *Weed Science* 55:381-385.
Nail, E.L., D.L. Young, and W.F. Schillinger. 2007. Government subsidies and crop insurance effects on the economics of conservation farming systems in eastern Washington. *Agronomy Journal* 99:614-620.
Nail, E.L., D.L. Young, and W.F. Schillinger. 2007. Diesel and glyphosate price changes benefit the economics of conservation tillage versus traditional tillage. *Soil & Tillage Research* 94:321-327.
Schillinger, W.F., A.C. Kennedy, and D.L. Young. 2007. Eight years of annual no-till cropping in Washington's winter wheat – summer fallow region. *Agriculture, Ecosystems & Environment* 120:345-358.
Jones, S.S., S.R. Lyon, K.A. Balow, M.A. Gollnick, K.M. Murphy, T.D. Murray, X.M. Chen, K. G. Campbell, J.W. Burns, W.F. Schillinger, P.E. Reisenauer, and B.J. Goates. 2007. Registration of 'MDM' Wheat. *Journal of Plant Registrations* 1:104-106.
Jones, S.S., S.R. Lyon, K.A. Balow, M.A. Gollnick, T.D. Murray, X.M. Chen, C.F. Morris, K. G. Campbell, J.W. Burns, W.F. Schillinger, P.E. Reisenauer, and B.J. Goates. 2007. Registration of 'Bauermeister' Wheat. *Crop Science* 47:430-431.
Schillinger, W.F., and T.C. Paulitz. 2006. Reduction of Rhizoctonia bare patch in wheat with barley rotations. *Plant Disease* 90:302-306.

Kennedy, A.C., and W.F. Schillinger. 2006. Soil quality and water intake in traditional-till vs. no-till paired farms in Washington's Palouse region. *Soil Science Society of America Journal* 70:940-949.

Williams, J.D., S.B. Wuest, W.F. Schillinger, and H.T. Gollany. 2006. Rotary subsoiling newly planted winter wheat fields to improve infiltration in frozen soil. *Soil & Tillage Research* 86:141-151.

Paulitz, T.C., P.A. Okubara, and W.F. Schillinger. 2006. First report of damping-off of canola caused by *Rhizoctonia solani* AG 2-1 in Washington State. *Plant Disease* 90:829.

Jones, S.S., S.R. Lyon, K.A. Balow, T.D. Murray, X.M. Chen, B.P. Carter, C.R. Morris, K.G. Campbell, J.W. Burns, W.F. Schillinger, P.E. Reisenauer, and B.J. Goates. 2006. Registration of 'Masami' wheat. *Crop Science* 46:476-477.

Schillinger, W.F. 2005. Tillage method and sowing rate relations for dryland spring wheat, barley, and oat. *Crop Science* 45:2636-2643.

Schillinger, W.F., and D.L. Young. 2004. Cropping systems research in the world's driest rainfed wheat region. *Agronomy Journal* 96:1182-1187.

Juergens, L.A., D.L. Young, W.F. Schillinger, and H.R. Hinman. 2004. Economics of alternative no-till spring crop rotations in Washington's wheat-fallow region. *Agronomy Journal* 96:154-158.

Giri, G.S., and W.F. Schillinger. 2003. Seed priming winter wheat for germination, emergence, and yield. *Crop Science* 43:2135-2141.

Cook, R.J., W.F. Schillinger, and N.W. Christensen. 2002. Rhizoctonia root rot and wheat take-all in diverse direct-seed spring cropping systems. *Canadian Journal of Plant Pathology* 24:349-358.

Janosky, J.S., D.L. Young, and W.F. Schillinger. 2002. Economics of conservation tillage in a wheat-fallow rotation. *Agronomy Journal* 94:527-531.

Schillinger, W.F. 2001. Minimum and delayed conservation tillage for wheat-fallow farming. *Soil Science Society of America Journal* 65:1203-1209.

Donaldson, E., W.F. Schillinger, and S.M. Dofing. 2001. Straw production and grain yield relationships in winter wheat. *Crop Science* 41:100-106.

Schillinger, W.F., and F.L. Young. 2000. Soil water use and growth of Russian thistle after wheat harvest. *Agronomy Journal* 92:167-172.

Schillinger, W.F., R.J. Cook, and R.I. Papendick. 1999. Increased cropping intensity for dryland with no-till barley. *Agronomy Journal* 91:744-752.

Schillinger, W. F., R.I. Papendick, R.J. Veseth, and F.L. Young. 1999. Russian thistle skeletons provide residue in wheat-fallow cropping systems. *Journal of Soil and Water Conservation* 54:506-509.

Schillinger, W.F., E. Donaldson, R.E. Allan, and S.S. Jones. 1998. Winter wheat seedling emergence from deep sowing depths. *Agronomy Journal* 90:582-586.

Schillinger, W.F., and R.I. Papendick. 1997. Tillage mulch depth effects during fallow on wheat production and wind erosion control factors. *Soil Science Society of America Journal* 61:871-876.

Schillinger, W.F., and D.E. Wilkins. 1997. Deep ripping fall-planted wheat after fallow to improve infiltration and reduce erosion. *Journal of Soil and Water Conservation* 52:198-202.

Schillinger, W.F. 1996. Packing summer fallow in the Pacific Northwest: Agronomic benefits and environmental concerns. *Agronomy Journal* 88:9-13.

Schillinger, W.F., and F.E. Bolton. 1996. Packing summer fallow in the Pacific Northwest: Seed zone water retention. *Journal of Soil and Water Conservation* 51:62-66.

Schillinger, W.F., and F.E. Bolton. 1993. Fallow water storage in tilled vs. untilled soils in the Pacific Northwest. *Journal of Production Agriculture* 6:267-269.

## Other Publications

University extension bulletins: 36
Conference proceedings papers: 33
Abstracts for professional meetings: 70+
Popular publications: 60+

## National/International Service

| | |
|---|---|
| 2020-2021 | Member, Gary "Pete" Peterson Dryland Soil Management Scholarship, Soil Science Society of America. |
| 2019-2020 | Member, Soil Science Research Award Committee, Soil Science Society of America. |
| 2018-2019 | Member, J. Fielding Reed Undergraduate Soil and Plant Sciences Scholarship Committee, American Society of Agronomy. |
| 2016-2017 | Member (2016) and Chair (2017), Soil Science Applied Research Award Committee, Soil Science Society of America. |
| 2015-2016: | Vice Chair (2015) and Chair (2016), Semiarid Dryland Cropping Systems Community, American Society of Agronomy. |
| 2015-2016: | Member, Agronomic Service Award Committee, American Society of Agronomy. |
| 2015-2016: | Member, Carl Sprengel Agronomic Research Award Committee, American Society of Agronomy. |
| 2015: | Panel member, Agriculture and Food Research Initiative Competitive CAP Grants Program, USDA-NIFA, 31 August – 3 September, Washington, DC. |
| 2012: | Panel member, Biofuel Research Priorities Committee for the USDA-ARS, 8-9 July, Fort Collins, CO. |
| 2007: | Panel member, expert technical review of the USDA-ARS Northern Plains Research Laboratory, 22-25 October, Sidney, MT |
| 2006: | National peer reviewer for USDA-Agricultural Research Service projects in soil science, 13-17 March, Beltsville, MD. |
| 2006-2011: | Associate Editor of the Soil Science Society of America Journal. |
| 2005: | Panel chair, expert technical review of the USDA-ARS Wind Erosion Research Unit, 17-21 October, Manhattan, Kansas. |
| 2004-2006: | Member, National Agricultural Air Quality Task Force. Meetings were held four times per year at various locations throughout the United States. |

## International Consulting

2015: Twelve-day assignment in Thailand, India, and Nepal for the International Cryosphere Climate Initiative to develop a coordinated program to help convince farmers to reduce or eliminate burning of stubble after wheat and rice harvest.

2012: Ten days of consulting for the INVISTA Co. based in London, England to provide an assessment of the potential and likelihood for camelina to be produced under rainfed conditions in the U.S. Pacific Northwest and Northern Great Plains.

2010: Forty-five days of consulting for BC Hydro to design and conduct field experiments to mitigate blowing dust emissions on Williston Reservoir beaches
2009: Forty days of consulting for BC Hydro to design and conduct field experiments to mitigate blowing dust emissions on Williston Reservoir beaches.
2008: Twenty-five days of consulting for BC Hydro to design and conduct field experiments to mitigate blowing dust emissions on Williston Reservoir beaches.
2007: Eighteen days of consulting in northern British Columbia to mitigate blowing dust emissions on Williston Reservoir beaches caused by water draw down by B.C. Hydro.
2005: Three days of consulting for the U.S. Agency for International Development on the Iraq Wheat Project.
2004: Five days of consulting for the U.S. Agency for International Development on the Iraq Wheat Project.
2003: Uzbekistan, Central Asia. Four-week assignment with the World Bank to help develop a national cropping systems research strategy.
1994: Senegal, West Africa. Four-week assignment to evaluate a seed multiplication and storage project for the U.S. Agency for International Development.
1993: The Gambia, West Africa. Two-week assignment to evaluate an on-farm seed storage project for the U.S. Agency for International Development.
1989: Nepal, Asia. Four-week assignment to design a cropping systems research program for hilly and mountainous regions of Nepal for the U.S. Agency for International Development.