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**Daryl L. Moorhead**

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EDUCATION:

- Ph.D. Ecology (March 1985), University of Tennessee, Knoxville. Dissertation title: Development and application of an upland boreal forest succession model.
- M.S. Biology (December 1981), Texas A&M University, College Station. Thesis title: The effects of atrazine on the algal communities of some laboratory streams.
- B.S. Botany and with distinction in Zoology (Cum Laude, June 1978), Ohio State University, Columbus. Honors thesis title: Follicular development and ovulation frequency in white-tailed deer (*Odocoileus virginianus*).

PROFESSIONAL EMPLOYMENT:

- 2007-present Professor, Department of Environmental Sciences, University of Toledo
- 2006-2008 Director, Stranahan Arboretum, University of Toledo
- 2000-2007 Associate Professor, Department of Environmental Sciences, University of Toledo
- 1999-2000 Associate Professor, Department of Biology, University of Toledo
- 1994-1999 Associate Professor, Department of Biological Sciences, Texas Tech University
- 1990-1994 Assistant Professor, Department of Biological Sciences, Texas Tech University
- 1989-1990 Associate Research Scientist, Systems Ecology Research Group, San Diego State University
- 1986-1989 Assistant Research Scientist, Systems Ecology Research Group, San Diego State University
- 1984-1986 Postdoctoral Fellow, Desert Research Group, New Mexico State University

PROFESSIONAL AND HONORARY SOCIETIES. AWARDS:

Sigma Xi, Soil Ecology Society of America, Ecological Society of America; Dean's Merit Award 2000-2001, University of Toledo, Faculty excellence award 2009-2010, University of Toledo

UNIVERSITY CLASSES TAUGHT:

- Human Ecology: Non-majors environmental science
- Environmental Problems Laboratory: Non-majors science laboratory
- Introductory Botany: Non-majors, laboratory science
- Introductory Ecology: Biology majors core course requirement
- Honors Introductory Ecology: Biology majors core course requirement
- Advanced Ecology: Principles of ecology for graduate students
- Foundations of Ecology: Graduate course exploring conceptual milestones in ecology
- Systems Ecology: Graduate course in systems ecology
- Graduate Seminar: Graduate seminar in ecology
- Graduate Special Topics: Graduate advanced topics in ecology

GRADUATE STUDENTS DIRECTED:

Ms. Özlen Konu Grantham (MS; 1992), Mr. Craig Wolf (MS; 1996), Mr. Max Westerfield (MS; 1996), Mr. Shane Davis (MS; withdrew), Ms. Carla Gutherie (MS; 1999), Ms. Jamie Schmeling (MS; 2001), Ms. Laura Burnett (MS; 2000), Ms. Mandy Comes (MS; 2003), Mr. Tony Kufel (MS; withdrew), Ms. Susan Tran (MS; 2004), Ms. Kerry McKenna (PhD; 2006), Mr. Qinglin Li (PhD; 2006), Mr. Ryan Argo (MS; 2006), Mr. Tom Weicht (PhD; in progress), Ms. Sarah Petree (MS; in progress), Mr. John Herman (PhD; 2010), Ms. Erin Hammer (MS; 2010), Ms. Elizabeth Piczarki (MS; 2009), Mr. Nicholas Bryan (MS; in progress)

GRADUATE STUDENT COMMITTEES:

Joel Grise (MS), Yan Wu (MS), John Carey (MS), Doris Anders (PhD), Gerardo Camilo (PhD), Qishui Zhang (PhD), Javier Alvarez (PhD), Judy York (PhD), Dianne Hall (PhD), Brian Croyle (MS), Richard Stephens (MS), Michelle Secrest (MS), Jennifer Jefferies (MS), Steve Presley (PhD), Stephen Cox (PhD), Lynn Hamilton (PhD), Johanna Sholtis (PhD), Chris Bloch (PhD), Kerry McKenna (MS), Julie Blakley (MS), Kelly Driscoll (MS), Kathleen Britton (MS), Marcy Gallo (MS), Rachael Amonetta (MS), Roberta Veluci (MS), Siyan Ma (PhD), Brian Darby (MS), Jacob LaCroix (PhD), Amy Concilio (MS), Melanie McLaughlin (MS), Matt Neilson (PhD), Josh Brown (PhD), Nan Lu (PhD), Chris Barnswell (PhD), Audra Croskey (MS), Justin Selden (MS), Zachary Rinkes (PhD)

GRADUATE STUDENT ADVISOR (NON-THESIS SECONDARY SCHOOL TEACHERS):

Michelle Reed (MS; in progress), Christina Florence (MS; in progress), John Herd (MS; in progress), Jamie Iffland (MS; in progress), Christa Leopold (MS; in progress), Gwen McLaughlin (MS; in progress), Kelly Meinhart (MS; in progress), Blake Parquette (MS; in progress), Adam Russell (MS; in progress), Jeanette Utter (MS; in progress), Mitra Zargari (MS; in progress)

UNDERGRADUATE STUDENT RESEARCH:

Sunil Ganjoo (1990), Pamela Yeh (Clark Scholar 1992), Anthony Boucher (1993), Lottie Lynd (1993), Ryan Butler (1994), Richard Pannel (1995), Casey Norris (1995), Kara Endlich (1996), Sarah Dunkle (1996), Mary Roberson (1996-1997), James Furgeson (1996-1997), Sara Dukie (2001), Lori Staszak (200-2001), Josh Morris (2002-2003), Kelsey Friemouth (2011-present)

REFEREED PUBLICATIONS:

Harder, J. D. and D. L. Moorhead. 1980. Development of corpora lutea and plasma progesterone levels associated with the onset of the breeding season in white-tailed deer (*Odocoileus virginianus*). *Biology of Reproduction* 22:185-91.

Moorhead, D. L. and R. J. Kosinski. 1986. The effect of atrazine on the productivity of artificial stream algal communities. *Bulletin of Environmental Contamination and Toxicology* 37:330-336.

Moorhead, D. L., J. F. Reynolds and W. G. Whitford. 1986. A conceptual model for primary productivity, decomposition and nitrogen cycling in the Chihuahuan creosotebush desert. *Tree Physiology* 2:215-222.

Moorhead, D. L., D. W. Freckman, J. F. Reynolds and W. G. Whitford. 1987. A simulation model of a bacterial feeding nematode (*Acrobeloides* sp.) population dynamics. *Pedobiologia* 30:361-372.

Moorhead, D. L., F. M. Fisher and W. G. Whitford. 1988. Kangaroo rat mounds form nitrogen rich patches in Chihuahuan desert ecosystems. *American Midland Naturalist* 120:443-447.

Moorhead, D. L., and J. F. Reynolds. 1989. Mechanisms of surface litter decomposition in the northern Chihuahuan desert: A reinterpretation. *Journal of Arid Environments* 16:157-163.

- Moorhead, D. L. and J. F. Reynolds. 1989. The contribution of abiotic processes to buried litter decomposition in the northern Chihuahuan desert. *Oecologia* 79:133-135.
- Moorhead, D. L., J. F. Reynolds and P. J. Fonteyn. 1989. Patterns of stratified soil water loss in a Chihuahuan Desert community. *Soil Science* 148:244-249.
- Moorhead, D. L. and J. F. Reynolds. 1991. A general model of litter decomposition in the northern Chihuahuan Desert. *Ecological Modelling* 59:197-219.
- Moorhead, D. L. and J. F. Reynolds. 1992. Modeling the contributions of decomposer fungi in nutrient cycling. Chapter 35. pp. 691-714 *In* G. C. Carroll and D. T. Wicklow (eds) *The fungal community: Its organization and role in the ecosystem*. Marcel Dekker.
- Moorhead, D. L., C. A. Kroehler, A. E. Linkins and J. F. Reynolds. 1993. Dynamics of extracellular phosphatase activities in *Eriophorum vaginatum* tussocks. *Arctic and Alpine Research* 25:50-55.
- Moorhead, D. L. and J. F. Reynolds. 1993. Changing carbon chemistry during decomposition of creosotebush fine litter in the northern Chihuahuan Desert. *American Midland Naturalist* 130:83-89.
- Moorhead, D. L. and J. F. Reynolds. 1993. Effects of climate change on decomposition in arctic tussock tundra: A modeling synthesis. *Arctic and Alpine Research* 25:403-412.
- Grantham, Ö. K., D. L. Moorhead and M. R. Willig. 1993. Feeding preferences of *Marisa cornuarietis*: Phytochemistry as a determinant of diet choice. *Journal of the North American Benthological Society* 12:431-437
- Moorhead, D. L. and T. R. Callaghan. 1994. Potential effects of increasing UV-B radiation on litter decay and site fertility. *Biology and Fertility of Soil* 18:19-26.
- Sinsabaugh, R. L. and D. L. Moorhead. 1994. Resource allocation to extracellular enzyme production: A model for nitrogen and phosphorus control of litter decomposition. *Soil Biology and Biochemistry* 26:1305-1311.
- Zak, J. C., M. R. Willig, D. L. Moorhead and H. G. Wildman. 1994. Functional diversity of microbial communities: A quantitative approach. *Soil Biology and Biochemistry* 26:1101-1108.
- Sinsabaugh, R. L., D. L. Moorhead and A. E. Linkins. 1994. The enzymic basis of plant litter decomposition: Mechanisms underlying an ecological process. *Applied Soil Ecology* 1:97-111.
- Moorhead, D. L. and R. A. Wharton, Jr. 1994. Primary production model of benthic microbial mats in Lake Hoare, Antarctica. *Antarctic Journal* 29:241-243.
- Grantham, Ö. K., D. L. Moorhead and M. R. Willig. 1995. Foraging strategy of the giant rams-horn snail, *Marisa cornuarietis*: An interpretive model. *Oikos* 72:333-342.
- Moorhead, D. L., R. L. Sinsabaugh, A. E. Linkins and J. F. Reynolds. 1996. Decomposition processes: Modelling approaches and applications. *Science of the Total Environment*. 183:137-149
- Moorhead, D. L. and J. F. Reynolds. 1996. Modeling decomposition in arctic ecosystems. Chapter 16. pp. 347-367. *In* J. F. Reynolds and J. D. Tenhunen (eds) *Landscape function: Implications for ecosystem response to disturbance, A case study in arctic tundra*. Springer-Verlag, *Ecological Studies Series* Vol. 120.
- Reynolds J., J. Tenhunen, P. Leadley, H. Li, D. Moorhead, B. Ostendorf and F. S. Chapin, III. 1996. Patch and landscape models of arctic tundra: Potentials and limitations. Chapter 14. pp. 293-324. *In* J. F. Reynolds and J. D. Tenhunen (eds) *Landscape function: Implications for ecosystem response to disturbance, A case study in arctic tundra*. Springer-Verlag, *Ecological Studies Series* Vol. 120.
- Reynolds, J. F., P. R. Kemp, B. Acock, J.-L. Chen and D. L. Moorhead. 1996. Limitations and uncertainties in modeling the effects of elevated CO<sub>2</sub> on plants and ecosystems. Chapter 19. pp. 347-380. *In* G. W. Koch and H. Mooney (eds) *Terrestrial ecosystem response to elevated CO<sub>2</sub>*. Academic Press. *Physiological Ecology Series*.
- Hall, D. L., D. L. Wood, D. L. Moorhead, and R. W. Sites. 1996. The efficiency of combining flotation and staining techniques when sorting benthic invertebrates. *Entomological News* 107:33-35.

- Moorhead, D. L., A. E. Linkins and K. R. Everett. 1996. Road dust alters extracellular enzyme activities in tussock tundra soils, Alaska, USA. *Arctic and Alpine Research* 28:346-351.
- Willig, M. R., D. L. Moorhead, S. B. Cox and J. C. Zak. 1996. Functional diversity of soil bacterial communities in the tabonuco forest: The interaction of anthropogenic and natural disturbance. *Biotropica* 28(4a):471-483.
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- Moorhead, D. L. and A. E. Linkins. 1997. Elevated CO<sub>2</sub> alters belowground exoenzyme activities in tussock tundra. *Plant and Soil* 189:321-329.
- Moorhead, D. L., W. S. Davis and R. A. Wharton. 1997. Carbon dynamics of aquatic microbial mats in the Antarctic dry valleys: A modelling synthesis. pp. 181-196 IN W. B. Lyons, C. Howard-Williams and I. Hawes (editors) *Ecosystem Processes in Antarctic Ice-free Landscapes*. A. A. Balkema, Brookfield, VT. 281 pp.
- Moorhead, D. L., C. F. Wolf and R. A. Wharton. 1997. Impact of light regimes on productivity patterns of benthic microbial mats in an Antarctic lake: A modelling study. *Limnology and Oceanography* 42:83-91
- Moorhead, D. L., D. McKnight and C. Tate. 1998. Modeling nitrogen transformations in Antarctic streams. American Geophysical Union. *Antarctic Research Series*. 72:141-151.
- Lyons, W. B., K. A. Welch, K. Neumann, J. K. Toxey, R. McArthur, C. Williams, D. McKnight and D. Moorhead. 1998. Geochemical linkages among glaciers, streams and lakes within the Taylor Valley, Antarctica. American Geophysical Union. *Antarctic Research Series*. 72:77-92
- Moorhead, D. L. and J. C. Priscu. 1998. Linkages among ecosystem components within the McMurdo Dry Valleys: A synthesis. American Geophysical Union. *Antarctic Research Series*. 72:351-363.
- Moorhead, D. L., W. S. Davis and C. F. Wolf. 1998. Coliform densities in urban playas of West Texas. *Journal of Environmental Health*. 60:14-18.
- Moorhead, D. L., M. Westerfield and J. C. Zak. 1998. Plants retard litter decay in a nutrient-limited soil: A case of exploitative competition? *Oecologia* 4:530-536
- Moorhead, D. L., D. L. Hall and M. R. Willig. 1998. Succession of macroinvertebrates in playas of the Southern High Plains, USA. *Journal of the North American Benthological Society* 17:430-442.
- Wolf, C. F., D. L. Moorhead and M. R. Willig. 1999. Urban playas of the Southern High Plains: The Influence of water quality on macroinvertebrate diversity and community structure. pp. 667-689. in D. P. Batzer, R. B. Rader and S. A. Wissinger (eds) *Invertebrates in freshwater wetlands of North America: Ecology and management*. John Wiley & Sons, NY.
- Hall, D. L., R. W. Sites, E. B. Fish, T. R. Mollhagen, D. L. Moorhead, and M. R. Willig. 1999. Playas of the Southern High Plains: Their macroinvertebrate fauna. pp. 635-665. in D. P. Batzer, R. B. Rader and S. A. Wissinger (eds) *Invertebrates in freshwater wetlands of North America: Ecology and management*. John Wiley & Sons, NY.
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- Roberson, M., and D. L. Moorhead. 1999. Growth patterns and morphological features of juvenile *Helix aspersa* from West Texas. *Southwestern Naturalist* 44:93-96.
- Moorhead, D. L., B. Currie, E. Rastetter, W. Parton and M. Harmon. 1999. Climate and litter quality controls on decomposition: An analysis of modeling approaches. *Global Biogeochemical Cycles* 13:575-589.
- Moorhead, D. L., P. T. Doran, A. G. Fountain, W. B. Lyons, D. M. McKnight, J. C. Priscu, R. A. Virginia and D. H. Wall. 1999. Ecological legacies: Impacts on ecosystems of the McMurdo Dry Valleys. *BioScience* 49:1009-1019.

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- Moorhead, D. L., and R. L. Sinsabaugh. 2000. Simulated patterns of litter decay predict patterns of extracellular enzyme activities. *Applied Soil Ecology* 14:71-79
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- Lyons, W. B., K. A. Welch, J. C. Priscu, J. Laborn-Parry, D. Moorhead and D. M. McKnight. 2001. The McMurdo Dry Valleys long-Term Ecological Research program: New understanding of the biogeochemistry of the dry valley lakes: A review. *Polar Geography* 25:202-217
- Moorhead, D. L. D. W. Wall, R. A. Virginia and A. N. Parsons. 2002. Distribution and life cycle of *Scottinema lindsayae* (Nematoda) in Antarctic soils: A modeling analysis of temperature responses. *Polar Biology* 25: 118-125
- Guthrie, C. G. and D. L. Moorhead. 2002. Density-dependent habitat selection: evaluating isoleg theory. *Oikos* 97:184-194
- Doran, P. T., J. C. Priscu, W. B. Lyons, D. M. McKnight, A. G. Fountain, R. A. Virginia, D. H. Wall, A. N. Parsons, C. P. McKay, G. D. Clow, D. Moorhead and C. H. Fritzen. 2002. Recent climate cooling and ecosystem response in the McMurdo Dry Valleys, Antarctica. *Nature* 415:517-520
- Walsh, J. E., P. T. Doran, J. C. Priscu, W. B. Lyons, A. G. fountain, D. M. McKnight, D. L. Moorhead, R. A. Virginia, D. H. Wall, G. D. Clow, C. H. Fritzen, C. P. Mckay and A. N. Parsons. 2002. Recent Temperature Trends in the Antarctic. *Nature* 418:291-292.
- Moorhead, D. L., J. E. Barrett, R. A. Virginia, D. W. Wall and D. Porazinska. 2003. Organic matter and soil biota of upland wetlands in Taylor Valley, Antarctica. *Polar Biology*. 26:567-576.
- Hall, D. L., M. R. Willig, D. L. Moorhead, R. W. Sites, E. B. Fish and T. R. Mollhagen. 2004. Aquatic macroinvertebrate diversity in playa wetlands: the role of landscape and island biogeographic characteristics. *Wetlands* 24:77-91
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- Weicht, T. R. and D. L. Moorhead. 2004. The impact of anhydrobiosis on the persistence of *Scottinema lindsayae* (Nematoda): a modeling analysis of population stability thresholds. *Polar Biology* 27:507-512.
- McKnight, D.M., R. L. Runkel, C. M. Tate, J. H. Duff, and D. L. Moorhead. 2004. Inorganic N and P dynamics of Antarctic glacial meltwater streams as controlled by hyporheic exchange and benthic autotrophic communities. *JNABS* 23:171-188.
- Moorhead, D., J. Schmeling and I. Hawes. 2005. Contributions of benthic microbial mats to net primary production in Lake Hoare, Antarctica. *Antarctic Science* 17:33-45
- Yee, S. H., M. R. Willig and D. L. Moorhead. 2005. Tadpole shrimp structure macroinvertebrate communities in playa lake microcosms. *Hydrobiologia* 541:139-148.
- Concilio, A., S. Ma, Q. Li, J. LeMoine, J. Chen, M. North, D. Moorhead, and R. Jensen. 2005. Soil respiration response to prescribed burning and thinning in mixed-conifer and hardwood forests. *Canadian Journal of Forest Research* 35(7): 1581-1591
- Doran PT, Priscu JC, Lyons WB, et al. 2005. Comment on "El Nino suppresses Antarctic warming" by N. Bertler et al. *Geophysical Research Letters* 32:7
- McKenna, K., Moorhead, D. L., E. Roberts and J. Laybourn-Parry. 2006. Simulating energy flow through a pelagic food web in Lake Fryxell, Antarctica. *Ecological Modelling* 192:457-472.
- Burnett, L. D. Moorhead, I. Hawes and C. Howard-Williams. 2006. Environmental factors associated with deep chlorophyll maxima in dry valley lakes, South Victoria Land, Antarctica. *Arctic, Antarctic and Alpine Research* 38:179-189

- Moorhead, D. L. and R. L. Sinsabaugh. 2006. A theoretical model of litter decay and microbial interaction. *Ecological Monographs* 76:151-174
- Choi, W. I., D. L. Moorhead and D. A. Neher. 2006. A modeling study of soil temperature and moisture effects on population dynamics of *Paronychiurus kimi* (Collembola: Onychiuridae). *Biology and Fertility of Soils* 43:69-75
- Tran, S. L., and D. L. Moorhead. 2006. A note on effective basking trap size. *Herpetological Review* 37:307.
- Doran P. T., J. C. Priscu, W. B. Lyons, J. E. Walsh, A. G. Fountain, D. M. McKnight, D. L. Moorhead, R. A. Virginia, D. H. Wall, G. D. Clow, C. H. Fritsen, C. P. McKay, A. N. Parsons. 2005. Comment on "El Nino suppresses Antarctic warming" by N. Bertler et al. *Geophysical Research Letters* 32:7
- Barrett, J. E., Virginia, R. A., Hopkins, D. W., Aislabie, J., Bargagli, R., Bockheim, J. G., Campbell, I. B., Lyons, W. B., Moorhead, D. L., Nkem, J. N., Sletten, R. S., Steltzer, H., Wall, D. H., Wallenstein, M. D. 2006. Terrestrial ecosystem processes of Victoria Land, Antarctica. *Soil Biology & Biochemistry* 38(10, Sp. Iss. SI). p.3019-3034
- Moorhead, D. L. 2007. Mesoscale dynamics of ephemeral wetlands in the Antarctic Dry Valleys: Implications to production and distribution of organic matter. *Ecosystems*. 10:87-95
- Barrett, J.E., R.A. Virginia, W.B. Lyons, D.M. McKnight, J.C. Priscu, P.T. Doran, A.G. Fountain, D.H. Wall and D.L. Moorhead. 2007. Stoichiometric evolution of the Antarctic Dry Valley Ecosystems. *Journal of Biophysical Research*. 112, G01010, doi:10.1029/2005JG000141.
- Tran, S. L., D. L. Moorhead, and K. C. McKenna. 2007. Habitat Selection by Native Turtles in a Lake Erie Wetland, USA, *American Midland Naturalist* 158:16-28
- Li, Q., J. Chen, D. L. Moorhead, J. DeForest, R. Jensen and R. Henderson. 2007. Effects of timber harvest on carbon pools in Ozark forests. *Canadian Journal of Forest Research* 37:2337-2348.
- Herman, J, D Moorhead and B Berg. 2008. The relationship between rates of lignin and cellulose decay in aboveground forest litter. *Soil Biology and Biochemistry* 40:2620-2626.
- Moorhead, DL, J Herman and E Pisarczyk. 2008. Simulation Studies of Ideal Free Distribution and Competition. *Israel Journal of Ecology and Evolution* 54:329-344.
- Li, Q., DL Moorhead, JL DeForest, R Henderson, J Chen, and R Jensen. 2009. Mixed litter decomposition in a managed Missouri Ozark forest ecosystem, *Forest Ecology and Management* 257:688-694.
- Lyons, W. B., K. A. Welch, C. B. Gardner, C. Jaros, D. L. Moorhead, J. L. Knoepfle, and P. T. Doran. 2011. Geochemistry of Upland Ponds, Taylor Valley, Antarctica. *Antarctic Science* 24: 3-11
- Rinkes ZL, Weintraub MN, DeForest JL, Moorhead DL 2011. Microbial substrate preference and community dynamics during decomposition of *Acer saccharum*. *Fungal Ecology* 4:396-407.
- Li, Q., J. Chen and D. Moorhead. 2012. Respiratory carbon losses in a managed oak forest ecosystem. *Forest Ecology and Management* 279:1-10.
- Moorhead, D., G. Lashermes and R. Sinsabaugh. 2012. A theoretical model of C- and N-acquiring exoenzyme activities, which balances microbial demands during decomposition. *Soil Biology and Biochemistry* 53:33-141.

#### IN REVIEW:

- Bryan, NJ, CV Florence, TD Crail and DL Moorhead. Freshwater mussel community response to warm water discharge in western Lake Erie. *Journal of Great Lakes Research*
- Rinkes, ZL, MN Weintraub, JL DeForest, AS Grandy and DL Moorhead. Interactions between leaf litter quality, particle size, and microbial community during the earliest stage of decay. *Biogeochemistry*

- Arnosti, C, C Bell, D Moorhead, RL Sinsabaugh, M Stromberger, M Wallenstein and M Weintraub. Extracellular enzymes in terrestrial, freshwater, and marine environments: System variability and common needs. Biogeochemistry
- Amin, BAZ, B Chabbert, D Moorhead and I Bertrand. Impact of fine litter chemistry on lignocellulolytic enzyme efficiency during decomposition of maize leaf and root in soil. Biogeochemistry

#### BOOK CHAPTERS & REPORTS:

- West, D. C. and D. L. Moorhead. 1983. Forest succession models and their application to problems of air pollution. pp. 105-119. *In* Air Pollution and the Productivity of the Forest. Izaak Walton League of America. Washington, D. C. 344 pp.
- Reynolds, J. F., D. Bachelet, P. Leadley and D. Moorhead. 1986. Assessing the effects of elevated carbon dioxide on plants: Towards the development of a generic plant growth model. U.S. Dept. Energy. Carbon Dioxide Research Division. Washington D.C. Response of Vegetation to Carbon Dioxide Series. No. 028. 210 pp.
- Moorhead, D. L. 1987. Development and application of an upland boreal forest succession model. Oak Ridge National Laboratory. ORNL/TM-9771. Oak Ridge, Tennessee.
- Reynolds, J. F., J. W. Skiles and D. L. Moorhead. 1987. Response of vegetation to carbon dioxide: SERECO: A model for the simulation of ecosystem response to elevated CO<sub>2</sub>. Parts I-III. U.S. Dept. Energy. Carbon Dioxide Research Division. Washington D.C. Response of Vegetation to Carbon Dioxide Series. No. 041. 127 pp.
- Sinsabaugh, R. L. and D. L. Moorhead. 1997. Synthesis of litter quality and enzymic approaches to decomposition modelling. Chapter 27. pp. 363-375. *In* G. Cadisch and K. Giller (eds) Driven by Nature: Plant litter quality and decomposition. CAB International.
- Moorhead, D., T. Bridgeman and J. Morris. 2008. Changes in Water Quality of Maumee Bay 1928-2003. Pp. 123-158 *In* M. Munawar and R. Heath (eds) Checking The Pulse of Lake Erie. AEHMS-Ecovision World Monograph Series.
- Christoffersen, K. S., E. Jeppesen, D. L. Moorhead, and L. J. Tranvik. 2008. Food web relationships and community structures in lakes. Pp 269-289 *In* W. Vincent and J. Laybourn-Parry (eds). the Ecology of High Latitude Lakes. Polar Limnology Series. The Oxford University Press

#### PRESENTED PAPERS:

- Harder, J. D. and D. L. Moorhead. 1979. Multiple luteal cycles, progesterone levels and onset of breeding in *Odocoileus virginianus*. Society of Mammalogists annual meeting. Oregon State University. June 17-21.
- Moorhead, D. L. and R. J. Kosinski. 1981. The effects of the herbicide atrazine on the community metabolism of laboratory streams. Texas Academy of Science annual meeting. University of Texas. March 19-21.
- Reynolds, J. F., D. L. Moorhead and W. G. Whitford. 1985. A conceptual model for primary productivity, decomposition and nitrogen cycling in the Chihuahuan creosotebush desert. IUFRO Symposium. Knoxville, Tennessee. November.
- Moorhead, D. L., D. W. Freckman, J. F. Reynolds and W. G. Whitford. 1986. A model of soil nematode population dynamics and energetics. ESA annual meeting. State University of New York-Syracuse. August 10-17.
- Moorhead, D. L., D. Bachelet and J. F. Reynolds. 1986. A simulation model of soil moisture and temperature regimes in a Chihuahuan desert ecosystem. ASA-CSA-SSSA annual meeting. New Orleans. November 30-December 7.

- Bachelet, D., J. F. Reynolds and D. L. Moorhead. 1986. Water and nutrient-dependent phenological model for arid system vegetation types. Soil Science Society Conference. New Orleans. November 30-December 7.
- Moorhead, D. L., J. F. Reynolds and W. G. Whitford. 1987. A general model of soil microarthropod population dynamics in the northern Chihuahuan desert: Effects of moisture and temperature. Pacific Division of the AAAS annual meeting. San Diego. June 14-18.
- Moorhead, D. L., J. F. Reynolds and W. G. Whitford. 1987. A process model of decomposition and nitrogen mineralization in a northern Chihuahuan desert ecosystem. ESA annual meeting. Minneapolis. August 10-15.
- Moorhead, D. L. and J. F. Reynolds. 1988. A generic model of soil nematode and microarthropod population dynamics. ESA annual meeting. Ohio State University, Columbus. August 14-18.
- Moorhead, D. L. and J. F. Reynolds. 1988. Modeling freeze-thaw dynamics of an arctic tundra soil system. ASA-CSSA-SSSA annual meeting. Anaheim. November 27-December 2.
- Moorhead, D. L., J. F. Reynolds and A. W. Linkins. 1989. A model of decomposition processes in a cold-dominated, acid tundra ecosystem. ESA annual meeting. University of California-Davis. August 6-10.
- Moorhead, D. L., J. F. Reynolds, J. D. Tenhunen and N. S. Urquhart. 1989. The general arctic simulator: A tool for examining disturbance effects on arctic landscapes. AAAS Arctic Science Conference. University of Alaska-Fairbanks. September 14-16.
- Moorhead, D. L. 1991. Strategies for modeling playa systems. Southwestern and Rocky Mountain Region of AAAS. Texas Tech University. May 15-17.
- Zak, J., D. Anders, D. Moorhead and R. Sinsabaugh. 1991. Interrelationships between fungal community dynamics and activity during wood decomposition in deserts. Mycological Society of America meeting. San Antonio. August 4-9.
- Moorhead, D., C. Kroehler, A. E. Linkins and J. F. Reynolds. 1991. Temporal dynamics of acid phosphatase in *Eriophorum vaginatum* tussocks. ESA annual meeting. San Antonio. Aug 4-9.
- Moorhead, D. L. 1992. Changes in the carbon chemistry of creosotebush litter during decomposition. SW American Naturalists meeting. Junction, Texas. April 9-11.
- Konu, Ö, and D. L. Moorhead. 1992. An energy allocation model for *Marisa cornuarietis*. SW American Naturalists meeting. Junction, Texas. April 9-11.
- Wolf, C., and D. L. Moorhead. 1992. Modelling phosphorus dynamics for trophic state indices. SW American Naturalists meeting. Junction, Texas. April 9-11.
- York, J. D., D. L. Moorhead, M. R. Willig and R. W. Sites. 1992. A general model of disturbance effects on naucorid populations in the South Llano River. SW American Naturalists meeting. Junction, Texas. April 9-11.
- Moorhead, D. L. 1992. Effects of increased UV radiation on aquatic and terrestrial ecosystems: Decomposition and Nutrient Cycling. Scientific Committee on Problems of the Environment (SCOPE) workshop. Corisa-Tramariglio, Sardinia. 28 September-3 October.
- Moorhead, D. L. 1993. Potential effects of increased UV radiation on litter decay and site fertility. SW-ASA meeting. Tulsa, OK. February 2-3.
- Moorhead, D. L. 1993. Litter decay in the desert: Same processes, different emphases. Jornada Desert Research Symposium. Las Cruces, NM. May 19-20.
- Moorhead, D. L. and J. Zak. 1993. Time after time: Linking spatial and temporal patterns. Jornada Desert Research Symposium. Las Cruces, NM. May 19-20.
- Moorhead, D. L. and J. F. Reynolds. 1993. Effects of climate change on decomposition in arctic tussock tundra: A modeling synthesis. ESA annual meeting. Madison, Wisconsin. July 31-August 4.
- Moorhead, D. L. and R. A. Wharton. 1993. Algal mat production in an antarctic lake: Results of a preliminary model. LTER all scientists meeting and international summit. Estes Park, Colorado. September 18-24.



- Moorhead, D. L., R. L. Sinsabaugh, A. E. Linkins and J. F. Reynolds. 1994. Decomposition processes: Modelling approaches and applications. NATO Advanced Research Workshop. Ecosystem modeling: Delineating the possible from the impossible. Bischofsgrün, Germany. February 20-25.
- Moorhead, D. L., R. L. Sinsabaugh, A. E. Linkins and J. F. Reynolds. 1994. Effects of global changes on belowground nutrient cycling: A conceptual and modelling synthesis. SW American Naturalists meeting. Emporia, Kansas. April 21-24
- Grantham, Ö. K., D. L. Moorhead and M. R. Willig. Foraging Strategy of the Giant Rams-Horn Snail, *Marisa cornuarietis*: An Interpretive Model. SW American Naturalists meeting. Emporia, Kansas. April 21-24.
- Willig, M. R., J. C. Zak and D. L. Moorhead. Functional diversity of soil microbiota in the Chihuahuan Desert. SW American Naturalists meeting. Emporia, Kansas. April 21-24.
- Sinsabaugh, R. L., M. C. Carreiro and D. L. Moorhead. 1994. An enzymic resource allocation model for nitrogen and phosphorus control of litter decomposition. ESA meeting. Knoxville, Tennessee. August.
- Reynolds, R. F., P. R. Kemp and D. L. Moorhead. 1994. Response of semiarid-arid transition zones to elevated CO<sub>2</sub> and climate change. VI International Congress of Ecology. Manchester, England. August 20-26.
- Kemp, P. R., J. F. Reynolds and D. L. Moorhead. 1994. Predicting grassland responses to historic and future climate change and elevated CO<sub>2</sub>. VI International Congress of Ecology. Manchester, England. August 20-26.
- Moorhead, D. L., A. E. Linkins and J. F. Reynolds. 1994. Elevated CO<sub>2</sub> Alters Belowground Nutrient Dynamics in Tussock Tundra. VI International Congress of Ecology. Manchester, England. August 20-26.
- Moorhead, D. L., and M. Westerfield. 1995. Prairie grasses retard litter decay in nutrient-poor soils. Driven by Nature: Plant litter quality and decomposition. Wye, England. September 17-20.
- Cox, S. B., M. R. Willig, D. L. Moorhead and S. Harrell. 1995. Functional diversity of aquatic bacterial in playa lakes: Physical, chemical, biological and biocidal correlates. ESA annual meeting. Snowbird, Utah. July 30-August 3.
- Hall, D. L., M. R. Willig, R. W. Sites, D. L. Moorhead, T. R. Mollhagen and E. B. Fish. 1995. Patterns in the structure of benthic macroinvertebrate assemblages of playa lakes: Landscape and island biogeographic perspectives. ESA annual meeting. Snowbird, Utah. July 30-August 3.
- Willig, M. R., D. L. Hall, D. L. Moorhead, T. R. Mollhagen and E. B. Fish. 1995. Variation in water quality among playa lakes: A multivariate approach and landscape perspective. ESA annual meeting. Snowbird, Utah. July 30-August 3.
- Harrell, S. M., M. R. Willig, D. L. Moorhead and S. B. Cox. 1995. Functional diversity of aquatic bacteria in playa lakes: Landscape patterns. ESA annual meeting. Snowbird, Utah. July 30-August 3.
- Wolf, C. F. and D. L. Moorhead. 1996. Macroinvertebrate species diversity and community composition in urban playas of Lubbock, Texas. SW American Naturalists meeting. MacAllen, Texas. April 18-20.
- Davis, W. S., D. L. Moorhead and C. F. Wolf. 1996. Factors regulating coliforms in urban impoundments. SW American Naturalists meeting. MacAllen, Texas. April 18-20.
- Pannell, R., D. L. Moorhead and M. Roberson. 1996. Diet preferences of the giant rams horn snail. SW American Naturalists meeting. MacAllen, Texas. April 18-20.
- Roberson, M. and D. L. Moorhead. 1996. Consumption of three plant species by the common garden snail. SW American Naturalists meeting. MacAllen, Texas. April 18-20.
- Moorhead, D. L. 1996. Exploitative competition between plants and decomposers in a nutrient-limited soil. SW American Naturalists meeting. MacAllen, Texas. April 18-20.

- Harrell, S. M., M. R. Willig, S. B. Cox and D. L. Moorhead. 1996. Functional diversity of aquatic bacteria in playa lakes: Spatial organization and landscape characteristics. SW American Naturalists meeting. MacAllen, Texas. April 18-20.
- Hall, D. L., M. R. Willig, R. W. Sites, D. L. Moorhead, T. R. Mollhagen and E. B. Fish. 1996. Macroinvertebrate associations of playa lakes: Landscape and island biogeographic influences. SW American Naturalists meeting. MacAllen, Texas. April 18-20.
- Hall, D. L., M. R. Willig, R. W. Sites, D. L. Moorhead, T. R. Mollhagen and E. B. Fish. 1996. Macroinvertebrate assemblages of playa lakes: Landscape and island biogeographic influences. NABS annual meeting. Kallispell, Montana (scheduled)
- Cox, S. B., M. R. Willig, D. M. Moorhead and J. C. Zak. 1996. Functional diversity of soil bacterial communities in the tabonuco forest: the interaction of anthropogenic and natural disturbance. ESA annual meeting. Rhode Island, August
- Willig, M. R., S. B. Cox, D. L. Moorhead and J. C. Zak. 1996. Functional characteristics of bacterial communities in the tabonuco forest of Puerto Rico: the role of anthropogenic and natural disturbance. ESA annual meeting. Rhode Island, August
- Harrell, S. M., M. R. Willig, S. B. Cox and D. L. Moorhead. 1996. Spatial organization of functional diversity of aquatic bacteria: a landscape perspective. ESA annual meeting. Rhode Island, August
- Moorhead, D. L., D. McKnight and C. Tate. 1997. A model of nitrogen uptake by microbial mats in an antarctic stream. ASLO annual meeting. Santa Fe, NM
- Guthrie, C. G. and D. L. Moorhead. 1998. A modeling analysis of habitat selection between interspecific competitors exhibiting distinct preferences. SWAN annual meeting. Albuquerque, NM, April 9-11
- Moorhead, D. L. and C. G. Guthrie. 1998. Evaluating fitness for competing species based on a model of density-dependent habitat selection. SWAN annual meeting. Albuquerque, NM, April 9-11
- Guthrie, C. G. and D. L. Moorhead. 1998. Centrifugal community organization: A modeling analysis of density-dependent habitat selection between interspecific competitors. Evolution Society annual meeting. Vancouver, BC, June 20-23
- Moorhead, D. L. and C. G. Guthrie. 1998. Centrifugal community organization: Quantifying fitness for two competing species. Evolution Society annual meeting. Vancouver, BC, June 20-23
- Guthrie, C. G. and D. L. Moorhead. 1998. A modeling analysis of habitat selection between interspecific competitors exhibiting shared preferences. Ecology Society annual meeting. Baltimore, MD, August 2-6
- Moorhead, D. L. and C. G. Guthrie. 1998. Relationship between habitat preference and fitness for two competing species exhibiting shared preferences. Ecology Society annual meeting. Baltimore, MD, August 2-6
- Moorhead, D., D. Wall and R. Virginia. (SCAR) 1998. Modeling population dynamics of *Scottnema lindsayae* (Nematoda) in dry valley soils: Impacts of soil temperature. Scientific Committee on Antarctic Research VII. SCAR International Biology Symposium. 28 August - 4 September
- Moorhead, D. (SCAR) 1998. Long-term data: Insights to structure and function of dry valley ecosystems. Scientific Committee on Antarctic Research VII. SCAR International Biology Symposium. 28 August - 4 September
- Hall, D. L., M. R. Willig, D. L. Moorhead, R. W. Sites, E. B. Fish and T. R. Mollhagen. 1999. Landscape and island biogeographic influences on species diversity of playa lakes. North American Benthological Society annual meeting. 25-28 May
- Burnett, L. L. and D. L. Moorhead. 2000. Dynamics of the deep chlorophyll maximum in lakes of the McMurdo Dry Valleys, Antarctica. Ecology Society annual meeting. Snowbird, UT, August 4-11
- Moorhead, D., E. Roberts, J. Layborn-Parry and J. Schmeling. 2000. Carbon fluxes within the pelagic food web of an Antarctic lake: Even slower than expected. Ecology Society annual meeting. Snowbird, UT, August 4-11
- Schmeling, J. D., and D. L. Moorhead. 2000. Carbon flow dynamics in benthic microbial mats of Lake Hoare, Antarctica. Ecology Society annual meeting. Snowbird, UT, August 4-11

- Hall D. L., Willig M. R., Moorhead D. L., Sites R. W., Fish E. B., Mollhagen T. R., 2001. Landscape and island biogeographic influences on macroinvertebrate diversity in playa lakes. Ecology Society annual meeting,
- Moorhead, D, I Hawes, C Howard-Williams. 2001. Organic matter in upland wetlands of Taylor Valley, Antarctica: A pulse-reserve system. Scientific Committee on Antarctic Research (SCAR), IV International Biology working group meeting, Amsterdam, 27 August – 2 September
- Chen, J. and D. L. Moorhead. 2001. Carbon flux and storage in mixed oak forests of the Ozark landscape. Missouri Department of Conservation, Jefferson City, MO, 17-18 October
- Moorhead, D., E. Roberts, J. Layborn-Parry and J. Schmeling. 2002. Carbon fluxes within the pelagic food web of an Antarctic lake: even slower than expected. Network Analysis Workshop, Sevilleta Field Station, NM, 1-3 March
- Moorhead, D., and I. Hawes. 2002. Intermittent production and erosion of organic matter from small ponds of the Antarctic dry valleys. ASLO, Vancouver, British Columbia, Canada, 10-14 June
- Moorhead, D., T. Bridgeman, J. Morris. 2003. Changes in water quality of Maumee Bay, Lake Erie: 1974-2002. International Association of Great Lakes Research (IAGLR). Chicago, Illinois, 22-26 June.
- Comes, M.L. and D. L. Moorhead. 2003. Changing avian biodiversity in the Maumee River watershed. International Association of Great Lakes Research (IAGLR). Chicago, Illinois, 22-26 June.
- McKenna, K. C. and D. L. Moorhead. 2003. Response of native turtles to habitat variation in the Ottawa National Wildlife Refuge. International Association of Great Lakes Research (IAGLR). Chicago, Illinois, 22-26 June.
- Moorhead, D. L. and R. Sinsabaugh. 2003. Modeling impacts of N- and polyphenolic inhibition on litter decay. ESA annual meeting. Savannah, Georgia. 3-8 August
- Weicht, T. and D. L. Moorhead. 2003. Impacts of Temperature and Moisture Regimes on Population Dynamics of *Scottinema lindsayae*, an Antarctic soil nematode. ESA annual meeting. Savannah, Georgia. 3-8 August
- McKenna, K. C., D. L. Moorhead, J. Layborn-Parry, and E. Roberts. 2003. Structural changes in the pelagic food web of Lake Fryxell, Antarctica. ESA annual meeting. Savannah, Georgia. 3-8 August
- Tran, S., D. Moorhead and K. McKenna. 2004. Native Turtles in Lake Erie Wetlands: A Case Study in Habitat Selection. International Association for Great Lakes Research, May 24-28, Waterloo, Ontario, Canada
- Tran, S., D. Moorhead and K. McKenna. 2004. Differential habitat use by two native turtle species in a Lake Erie wetland. Midwest Ecology and Evolution Conference (MEEC), March 5-7, South Bend, Indiana
- Tran, S., D. Moorhead and K. McKenna. 2004. Differential habitat use by two native turtle species in a Lake Erie wetland. Western Great Lakes Research Conference, National Park Service, March 16-17, 2004, St. Paul, Minnesota
- McKenna, K. C. D. L. Moorhead and J. Laybourn-Parry. 2004. Impacts of trophic structure on simulated carbon flow in a pelagic food web in Lake Fryxell, Antarctica. ESA annual meeting. Portland, Oregon. August 1-5
- Weicht, T. and D. L. Moorhead and I. Brown. 2004. Temperature-sensitivity of *Panagrolaimus davidi*: A model of population dynamics for a bacterivorous Antarctic nematode. ESA annual meeting. Portland, Oregon. August 1-5

- McKenna, K, D Moorhead, R Christian and J Laybourn-Parry. 2004. Network analysis on the patterns of carbon flow in the pelagic food web of Antarctic Lakes. Ecosystem Complexity Workshop, Bled, Slovenia, September 25-26
- McKenna, K, D Moorhead, R Christian and J Laybourn-Parry. 2005. Network analysis of carbon flow in the pelagic food web of Lake Fryxell, Antarctica: Impacts of alternative trophic structure. American Society of Limnology & Oceanography (ASLO), Salt Lake City, UT. February 20-25
- Moorhead, D. 2005. Modeling transitions between microbial versus litter control of decomposition. Soil Ecology Society biannual meeting. Chicago, Illinois. May 22-25
- Moorhead, D, T. Bridgeman and T Bolin. 2005. Changing Water Quality in Maumee Bay 1974-1999 International Association of Great Lakes Research (IAGLR) Conference on Great Lakes Research, Ann Arbor, Michigan. May 23-27
- Moorhead D. 2005. Alternating role of ephemeral wetlands in Antarctic dry valleys: Organic matter production and export. American Society of Limnology & Oceanography (ASLO), Santiago de Compostela, Spain. June 18-25
- McKenna, K, D Moorhead, R Christian and J Laybourn-Parry. 2005. Trophic structure and patterns of carbon flow in the pelagic food web of Ace Lake, Antarctica. American Society of Limnology & Oceanography (ASLO), Santiago de Compostela, Spain. June 18-25
- Moorhead, D and R. Sinsabaugh. 2005. Linking microbial guilds to decomposition: A new modeling approach. ESA annual meeting. Montreal, Ontario. August 6-11
- McKenna, K. C. D. L. Moorhead and J. Laybourn-Parry. 2005. Impacts of trophic structure on simulated carbon flow in pelagic food webs of two Antarctic lakes. ESA annual meeting. Montreal, Ontario. August 6-11
- Choi, W-I, D Moorhead, D Neher and M Ryoo. 2005. A modeling study of soil temperature and moisture effects on population dynamics of *Paronychiurus kimi* (Collembola: Onychiuridae).. ESA annual meeting. Montreal, Ontario. August 6-11
- Chen, C, Q Li, J DeForest, R Jensen, D Moorhead, and M Johanson. 2005. Effects of Forest Management on Carbon Pools of an Ozark Landscape. ESA annual meeting. Montreal, Ontario. August 6-11
- Argo, DR and DL Moorhead. Habitat use of two native turtle species in the Ottawa National Wildlife Refuge. Ohio Reptile Research and Conservation Conference. Columbus, Ohio. 8 March 2006
- Herman, J and D Moorhead. 2006. Limit Values and Underlying Mechanisms of Litter Decay. Soil Science Society of America annual meeting, Indianapolis, IN. November 12-16
- Weicht, T, J Gorres, D Moorhead, and D Neher. 2006. A Grid-Based Autonomous Agent Model of Hierarchical Soil Structure and Bacterivorous Nematodes. Soil Science Society of America annual meeting, Indianapolis, IN. November 12-16
- Hammer, EL, JE Herman, DL Moorhead and MN Weintraub. 2007. Impacts of garlic mustard (*Alliaria petiolata*) on microbial community function in Ohio forest soils. Moab, Utah. April 29 - May 2
- Moorhead, D and R Sinsabaugh. Modeling C Dynamics with Measurable Biological and SOM Parameters. SSSA meeting. New Orleans. 6-8 November 2007.
- Moorhead, D and E Hammer. Microbial biomass dynamics during litter decay in aquatic and terrestrial systems. USDA Project Directors Meeting. Menlo Park, CA. 24-25 February 2008.
- Moorhead, D, UT Lake Erie Center's NSF GK-12 Program. Graduate Teaching Fellows in STEM High School Education: An Environmental Science Learning Community at the Land-Lake Ecosystem Interface. Regional GK12 meeting, Purdue, Indiana. November 2008.
- Moorhead, D and S Milz. Ecological and Human Health: An Integrated Curriculum and the University of Toledo. IAGLR annual conference. Toledo, Ohio. 19 May 2009
- Stepien, C, D Moorhead, T Bridgeman, T Fisher C Gruden, R Lohner and G Mentzer. NSF GK-12 Program: Establishing a GK-12 Environmental Science Learning Community at the Land-Lake Ecosystem Interface. IAGLR annual conference. Toledo, Ohio. 19 May 2009

- Pisarczyk, EW, EL Hammer, MN Weintraub and DL Moorhead. The effect of garlic mustard (*Alliaria petiolata*) density on soil enzyme activity in northwest Ohio. Soil Ecology Society Meeting, Burlington, Vermont. 12-15 July 2009.
- Moorhead, D, J Herman and E Hammer. Microbial biomass dynamics associated with litter mass dynamics and chemistry. Soil Ecology Society Meeting, Burlington, Vermont. 12-15 July 2009.
- Weicht, TR, J Gorres, DL Moorhead and DA Neher. Bacterivorous nematode population dynamics in a pore network matrix model. Soil Ecology Society Meeting, Burlington, Vermont. 12-15 July 2009.
- Talbot, J.M., Treseder, K.K., Sinsabaugh, R.L., and D. Moorhead. Testing the guild-based decomposition model: *Arabidopsis thaliana* as a model system. 13th International Symposium on Microbial Ecology August 2010, Pittsburgh, Pennsylvania, USA
- Herman, J. D. Moorhead and M. Weintraub. Changes in leaf litter chemistry and extracellular enzyme activity during decomposition of natural leaf mixtures at two northwest Ohio forests. ESA annual meeting August 2010, Pittsburgh, Pennsylvania, USA
- Moorhead, D, R Sinsabaugh and M Weintraub. Energetic & stoichiometric controls on decomposition: A theoretical model. Ecologie 2010-Colloque national d'écologie scientifique. Montpellier, France. 2-4 September 2010.
- Moorhead, D, I Bertrand, G Lashermes and S Recous. Untangling microbial and substrate controls on decomposition: A modeling analysis. Ecology of Soil Microorganisms. Prague, Czech Republic. 27 April – 1 May 2011.
- Lashermes, G., D. Moorhead, I. Bertrand and S. Recous. Understanding the interacting microbial and litter quality controls on litter decay. International Symposium on Soil Organic Matter. Leuven, Belgium. July 10-14, 2011.
- Moorhead, D., I. Bertrand, G. Lashermes, and S. Recous. A modeling analysis of the transition between microbial and litter quality controls on decomposition. ESA annual meeting August 2011, Austin, Texas USA
- Friemoth, K, and DL Moorhead. A theoretical model balancing C- and N-acquiring exoenzyme activities driving decomposition. Oak Openings Research Forum. Toledo, Ohio, 27-28 January 2012.
- Bryan, NJ, CV Florence, DL Moorhead, and TD Crail. Impacts of water discharge from a coal-fired power plant on native unionids in Western Lake Erie. IAGLR annual conference. Cornwall, Ontario, Canada. May 13-17, 2012.
- Moorhead, D, G Lashermes and R Sinsabaugh. A theoretical model balancing C- and N-acquiring exoenzyme activities driving decomposition. 2nd International Enzymes in the Environment RCN workshop. Ft. Collins, Colorado. May 15-18, 2012.
- Lashermes, G., D., Moorhead, I., Bertrand and S., Recous. Modeling litter decomposition: microbial and litter biochemistry controls. Eurosoil Congress, Bari, Italia, 2-6 July 2012.
- Lashermes, G., D. Moorhead, S., Recous, R.L., Sinsabaugh and I., Bertrand. Implications of extracellular enzymes activities on C and N dynamics during litter decomposition: expanding a theoretical model. Eurosoil Congress, Bari, Italia, 2-6 July 2012.
- Moorhead, D, RL Sinsabaugh and G Lashermes. Modeling interacting microbial and litter quality constraints on decomposition: The intersection of metabolic, stoichiometric and ecoenzymatic theories. ESA annual meeting August 5-10 2012, Portland, Oregon.

#### PARTICIPATION IN WORKSHOPS:

1986. Invited participant in Carbon Dioxide Plant Modeling Workshop. Presented "Developing a modular approach to a generic ecosystem model." Raleigh, North Carolina. Sponsored by U.S. Dept. of Energy, Office of Carbon Dioxide Research. March.
1986. Co-hosted Workshop on Uncertainty Analysis in Ecological Modeling. New Mexico State University. Sponsored by U.S. Dept. of Energy, Office of Carbon Dioxide Research. July.

1986. Co-hosted Chihuahuan Desert Ecosystem Modeling Workshop. San Diego State University. Sponsored by National Science Foundation. October.
1988. Invited participant in Carbon Dioxide Workshop: The Effects of Elevated Carbon Dioxide on Plants and Ecosystems. Presented "A generic model of litter decomposition processes." San Diego State University. Sponsored by U.S. Dept. of Energy, Office of Carbon Dioxide Research. January.
1988. Invited participant in R4D Project Review. Presented "Decomposition processes in a cold-dominated soil system." Annapolis, Maryland. Sponsored by U.S. Dept. of Energy, Arctic Research Division. April.
1991. Invited participant in Antarctic Workshop: Terrestrial and Aquatic Ecosystems of the Antarctic Dry Valleys. Institute of Ecosystem Studies Workshop, Millbrook, NY. Sponsored by National Science Foundation.
1992. Invited participant at International Scientific Committee on Problems of the Environment (SCOPE) Workshop: Effects of increased UV radiation on aquatic and terrestrial ecosystems. Presented "Potential effects of increasing UV-B radiation on litter decay and site fertility." Corisa-Tramariglio, Sardinia, Italy. September 28-October 3.
1994. Invited participant at NATO Advanced Research Workshop. Ecosystem modeling: Delineating the possible from the impossible. Presented "Decomposition processes: Modelling approaches and applications." Bischofsgrün, Germany. February 20-25.
1996. Participant in LIDET: Long-term Intersite Decomposition Experiment Team Workshop. Presented "Climate and litter quality controls on decomposition: An analysis of modeling approaches." University of New Mexico field station. Socorro, New Mexico. March 24-25.
1996. Invited participant at the Mathematics for Undergraduate Life Sciences Students Conference. Presented "Interactive models add intuitive insight to classroom presentations of ecological relationships." Iowa State University. Ames, Iowa. May 17-18.
1996. Invited participant at the International Workshop on Polar Desert Ecosystems. Presented "Carbon dynamics of aquatic microbial mats in the Antarctic Dry Valleys: A modeling synthesis." National Institute of Water and Atmospheric Research, Ltd. Christchurch, New Zealand. July 1-4.
1996. Member of Coordination Committee for SOLA: "Science on-line, Antarctica." University of Nevada—Reno, Reno, Nevada. September 24-26.
1997. Member of Ecological Committee on FIFRA Risk Assessment Methods (ECOFRAM). US-EPA, Office of Pesticides Program. June 1997-June 1998.
2000. Legacies workshop at the Long-Term Ecological Research network All Scientist Meeting (ASM)
2001. Network analysis workshop, funded by the LTER network office, Sevilleta LTER, New Mexico
2003. Legacies workshop, funded by the LTER network office, Sevilleta LTER, New Mexico
2004. Microbial impacts on ecosystem processes. National Center for Ecological Assessment and Synthesis (NCEAS), Santa Barbara, California
2004. Carbon flux and storage in mixed oak forests of the Ozark landscape. Missouri Department of Conservation. MOFEP workshop, Jefferson City, Missouri, 27-30 November 2004
2005. Synthesis of Soil Biodiversity and Ecosystem Functioning in Victoria Land, Antarctica: An NSF Sponsored Workshop, Jekyll Island, Georgia. 21-23 April
2005. Lessons from large-scale manipulations of ecosystems and landscapes. Ecological Society of America annual meeting. Montreal, Canada. 7 August
2006. MICDIF—Linking microbial diversity and ecosystem functions across scales and interfaces. Vienna, Austria. August 20-25
2012. 2nd International Enzymes in the Environment RCN workshop. Ft. Collins, Colorado. May 15-18.

## SEMINARS:

1985. The effects of soil moisture and temperature regimes on upland boreal forest succession patterns. Biology Department, New Mexico State University.
1985. Productivity, decomposition and nutrient cycling in a desert creosotebush ecosystem: A synthesis of available data. Jornada Long Term Ecological Research Site information meeting, New Mexico State University.
1986. A model of nematode population dynamics as affected by temperature and moisture. Biology Department, San Diego State University. January.
1988. A simulation model of soil freeze-thaw dynamics in an arctic tundra ecosystem. Department of Energy, Arctic Research Division meeting, San Diego State University. January.
1988. A general model of litter decomposition and heterotroph population dynamics. Department of Energy, Arctic Research Division meeting, San Diego State University. January.
1988. Carbon and nitrogen flows in a warm desert ecosystem: Decomposition processes. Department of Biology, California State University—Northridge. April.
1989. Modeling decomposition processes in an arctic tundra and a desert ecosystem. United States Department of the Interior, Environmental Protection Agency. Corvallis. March.
1989. Belowground decomposition processes in a desert ecosystem: A modeling synthesis. Institute of Ecology, University of Georgia, Athens. April.
1989. A modeling synthesis of decomposition processes in a semi-arid ecosystem. Department of Biological Sciences, Texas Tech University, Lubbock. May.
1991. Modeling decomposition in extreme environments: Arctic tundra and shrub desert ecosystems. Department of Biology, Clarkson University, Potsdam, NY. January.
1991. A general model of decomposition processes in contrasting environments. Department of Biology, Southwest Texas State University, San Marcos. November.
1992. Effects of global climate change on arctic tussock tundra: A modeling synthesis. College of Sciences, Clarkson University, Potsdam, NY. May.
1993. Pattern and process of litter decay: Hierarchical perspectives. Department of Biological Sciences, Texas Tech University, Lubbock. September.
1995. Life at the edge: An Antarctic Long-Term Ecological Research Project. Department of Biological Sciences, Texas Tech University, Lubbock. September.
1996. Impacts of disturbance and landuse patterns on the biological diversity of microbial communities in soil and water. University of Illinois—Urbana. April
1998. Structure and function of ephemeral aquatic ecosystems: Case studies from urban, rural and polar environments. Department of Biological Sciences, University of Toledo. April.
1998. A simulation model of density-dependent habitat selection. Department of Biological Sciences, University of Toledo. April.
1999. Contemporaneous Disequilibria in Antarctic Ecosystems: The Role of Legacies in Long-Term Dynamics. Department of Biological Sciences, University of Toledo, April
1999. Resource legacies: Inter-millennial links between ecosystems in the antarctic dry valleys. Department of Biological Sciences, Bowling Green University, December
2000. Uncertain controls on bacterial contamination of urban waters in West Texas, Department of Geography and Urban Planning, University of Toledo, January
2000. A model of carbon fluxes within the pelagic food web of an Antarctic lake. National Institute of Water and Atmospheric Research, Christchurch, New Zealand, May.
2000. A model of nitrogen uptake in an Antarctic stream. National Institute of Water and Atmospheric Research, Christchurch, New Zealand, May.
2000. Long-term biotic and abiotic controls on ecosystem dynamics in the Antarctic Dry Valleys. Department of Earth, Ecology and Environmental Sciences. University of Toledo.
2002. The C:N Stoichiometry of the pelagic food web in Lake Fryxell, Taylor Valley, Antarctica. Department of Earth, Ecology and Environmental Sciences. University of Toledo.

2005. The Edge of Life: Survival in Antarctic Lakes. Lake Erie Center Seminar Series, University of Toledo, September.
2005. The Edge of Life: Ecosystems in Antarctic Dry Valleys. Department of Biology, Lakehead University, Ontario, October.
2005. The Changing Water Quality in Maumee Bay. Department of Geology, Bowling Green State University, November
2006. Complexities of decay: An emergent process. Faculty seminar at IIASA, Vienna, Austria. August 22
2006. Complexities of decay: An emergent process. Biology Department seminar at University of Vienna, Austria. August 23
2007. A microbial view of litter: Substrate and resource. Department of Plant and Soil Sciences. University of Vermont. 12 October
2009. Modeling basic mechanisms of litter decomposition. French National Institute of Agricultural Research (INRA), Reims, France. 25 May
2010. Moorhead D. Analysis and interpretation of fine-scale chemical controls on microbial activity and litter decay. UMR-FARE INRA, working group meeting. Reims, France. 17 September 2010.
2011. Moorhead, D. Modeling interacting microbial & litter quality controls on decomposition. UMR-CNRS INRA, invited speaker seminar. Grignon, France. 25 January 2011.
2011. Moorhead, D. Modeling interacting microbial and litter quality controls on early stages of litter decomposition. INRA. 10 January 2011. Reims, France

## GRANT SUPPORT:

- 1990-1991 Moorhead, D., An analysis of litter carbon dynamics during decomposition in the northern Chihuahuan Desert. TTU-ORS (REF). \$4,400
- 1991-1996 M. E. Harmon, J. Melillo, W. J. Parton, D. Moorhead, E. Rastetter and J. D. Aber. Long-term Intersite Experiments of Leaf and Fine Root Decomposition. NSF BSR-9108329. \$450,227
- 1992-1994 Moorhead, D., R. Sinsabaugh and A. E. Linkins. Exoenzyme activities underlying lignocellulose degradation: A modeling synthesis. USDA. \$86,248
- 1992-1995 Reynolds, R. F., P. R. Kemp, J.-L. Chen, D. L. Moorhead and R. Whitney. Modeling the response of plants and ecosystems to CO<sub>2</sub> and climate change. DOE/OHER grant DE-FG60386ER60490. \$1,275,000
- 1992 Moorhead, D. L., Developing a core computer-teaching facility in the department of biological sciences, TTU. Higher Education Assistance Funds, State of Texas. \$20,700
- 1993-1999 Wharton, R., D. Freckman, B. Lyons, D. McKnight, D. Moorhead and C. Tate. An Antarctic Dry Valley Long Term Ecological Research Site. NSF DPP-921173. \$3,514,000
- 1993 Moorhead, D. L., Biodiversity and microbiology of urban playas: City of Lubbock. TTU-ORS. \$4,470
- 1993 Zak, J. C. and D. L. Moorhead. The importance of woodrat middens to the functioning of desert ecosystems: Associated nitrogen dynamics. TTU-ORS. \$3,630
- 1993-1995 Willig, M. R, D. L. Moorhead, T. R. Mollhagen and E. B. Fish. Integrated indicators of stress in playa lakes: Wetland ecosystems in a sea of aridity and agriculture. EPA. \$299,850
- 1993 Moorhead, D. L. and M. R. Willig. Expanding the core computer-teaching facility in the department of biological sciences: Adding a network server. Higher Education Assistance Funds, State of Texas. \$2,849



- 1994 Moorhead, D. L. and M. R. Willig. Expanding the computer-teaching capabilities within biological sciences. Higher Education Assistance Funds, State of Texas. \$17,749
- 1995-1996 Co-Investigator with Schlesinger, W. and G. Hendrey (project directors) Forest-atmosphere carbon transfer and storage (FACTS-I): Joint Duke/Brookhaven free-atmospheric carbon dioxide exchange (FACE) facility. DOE-OHER. \$1,050,000 (Phase I—Construction)
- 1996-1997 Co-Investigator with Schlesinger, W. and G. Hendrey (project directors) Forest-atmosphere carbon transfer and storage (FACTS-II): Joint Duke/Brookhaven free-atmospheric carbon dioxide exchange (FACE) facility. DOE-OHER. \$950,000 (Phase II—Science Program)
- 1997 Moorhead, D. L. and R. Strauss. Adding PC-compatibility to the core computer-teaching facility in the department of biological sciences. Higher Education Assistance Funds, State of Texas. \$15,447
- 1999-2005 Lyons B., P. Doran, D. Freckman, A. Fountain, D. McKnight, D. Moorhead and J. Priscu. 2000-2006. An Antarctic Dry Valley Long Term Ecological Research Site. NSF DPP-921173. \$4,199,999
- 1999-2001 Sinsabaugh, R., D. Nehrer and D. Moorhead. Impact of atmospheric CO<sub>2</sub> enrichment on rhizosphere function. USDA 9804651. \$298,000
- 1999-2001 Moorhead, D. L. Ecosystem dynamics in the McMurdo Dry Valleys, Antarctica: A modeling synthesis. NSF-International Programs. \$24,000
- 1999 Moorhead, D. L. Linking interspecific competition to habitat selection with a coupled Lotka-Volterra model. University Research Awards and Fellowships. \$9000
- 1999 Czajkowski, K, T. Bailey and D. Moorhead. Integration of social, physical and ecological research to address interdisciplinary environmental problems in pursuit of future funding. Lake Erie Center, University of Toledo. \$10,000
- 2000 Moorhead, D. L. Database and synthesis of environmental characteristics of the Maumee river Watershed and Maumee Bay. University of Toledo Research Awards and Fellowships Program (RAFP). \$8,982
- 2000 Neher, D., A. Sponberg, D. Moorhead, S. Goldman, J. Gray, S. Leisner, R. Sayre and D. Verma. Biotechnology for phytoremediation of heavy metal contaminated soils in Ohio. Ohio Plant Biotechnology Consortium. \$40,000
- 2000-2003 Sinsabaugh, R. , D. Moorhead and D. Zak. Mechanics of soil carbon sequestration by nitrogen deposition. US-DOE \$600,000.
- 2001-2004 Goldman, S., R. Sinsabaugh,, D. Moorhead and J. Bridgeman. Western basin water quality monitoring program. US-EPA \$468,000
- 2002-2005 Chen, J and D Moorhead. 2002-2005. Carbon flux and storage in mixed oak forests of the Ozark Landacape. Missouri Department of Conservation MOFEP \$119,122.
- 2001 2003 Moorhead, D. Response of Native Turtles in the Ottawa National Wildlife Refuge to Habitat Variation and an Exotic Invader, *Trachemys scripta elegans* University of Toledo Research Awards and Fellowships Program (URAF). \$9000
- 2004-2006 Sinsabaugh, R. , D. Moorhead and D. Zak. Mechanics controlling soil carbon sequestration under atmospheric nitrogen deposition. US-DOE \$200,000.
- 2005-2007 Moorhead,D. Interacting microbial x chemical x nitrogen controls on litter-to-humus transformation. United States Department of Agriculture (USDA), Cooperative State Research, Education, and Extension Service (CSREES), National Research Initiative Competitive Grants Program (NRICGP). \$89,599
- 2007-2008 Moorhead, D, C Stepien, J Chen, A Sponberg, P Lindquist, K Czajkowski, B Pryor, C Blatz, K Kilbert, A Kumar, C Gruden, D Apul, S Milz, B Fink & F Akbar. Integrating Environmental and Public Health of Urban Ecosystems. Programs in Academic Excellence, Office of the Provost, UT. \$15,000.

- 2007-2012 Stepien, CA, C Gruden, DL Moorhead, TB Bridgeman, and TG Fisher. Graduate Teaching Fellows in STEM High School Education: An Environmental Science Learning Community at the Land-Lake Ecosystem Interface NSF GK-12. \$2,468,505
- 2008-2012 Moorhead, D and C Czerniak. Inquiry Masters Program for Advancing Content for Teachers (IMPACT). US Dept Education: Teachers for a Competitive Tomorrow Program. \$937,260
- 2009-2013 Martin, G, T Kvale, D Moorhead & B Randoff, & C Gilbert. Building Ohio talent for a sustainable energy future (BOTSEF). Ohio Board of Regents (OBOR) \$1,563,000
- 2009-2013 Weintraub, M, C Blackwood, D Moorhead & R Sinsabaugh. Microbial control of litter decay at the cellulose-lignin interface. NSF. \$631,515.
- 2009-2011 Moorhead, D. EAGER: MSB: Collaborative Research: Chemical and Microbial Mechanisms Linking Litter Quality and Decomposition Rate. NSF. \$67,239 (UT portion of collaborative grant).

## OTHER PROFESSIONAL ACTIVITIES:

- 2012-present Graduate Advisor, Department of Environmental Sciences, University of Toledo
- 2007-2010 Interdisciplinary Studies Committee, University of Toledo
- 2007-2009 Senior Fellow, Humanities Institute, University of Toledo
- 2007 Campus Beautification Committee, University of Toledo
- 2006-2007 Faculty Senate, University of Toledo
- 2005, 07 & 08 Panelist for NSF Program, Ecology of Infectious Diseases.
- 2004 Member, Lake Erie Center Advisory Committee
- 2003-2010 Member, Advisory committee, Urban Affairs Center, University of Toledo
- 2000-2003 Member, Executive committee, Plant and Environmental Sciences Research Centers, University of Toledo
- 2000-present Member, Department of Earth, Ecology and Environmental Sciences Graduate Student Selection Committee, University of Toledo
- 1999-2010 Member, interdepartmental organizing committee for Department of Earth, Ecology and Environmental Sciences, University of Toledo
- 1999-2009 Member, users group, Plant Sciences Research Center, University of Toledo
- 1999-present Member, Department of Biological Sciences Computer Coordination Committee, University of Toledo
- 1999-2000 Member, Department of Biological Sciences Graduate Student Selection Committee, University of Toledo
- 1999 Member, Department of Biological Sciences Vision Graphic Committee
- 1998-1999 Member, Department of Biological Sciences Environmental Sciences Faculty Awards Committee, Texas Tech University (TTU)
- 1995-1999 Chairman, Department of Biological Sciences Environmental Sciences Course Committee, TTU
- 1994-1999 Member, Environmental Technology Management Program Advisory Board, TTU
- 1990-1999 Member, Ecology Research Group, Department of Biological Sciences, TTU
- 1990-1998 Member, Institute of Environmental Studies, TTU
- 1995-1998 Member, Department of Biological Sciences Tenure and Promotion Committee, TTU
- 1994-1998 Chairman, Ecology Research Group, Department of Biological Sciences, TTU
- 1994-1995 Member, Department of Biological Sciences Graduate Student Selection Committee, TTU
- 1990-1998 Chairman, Department of Biological Sciences Computer Coordination Committee, TTU
- 1991-1994 Member, Department of Biological Sciences Seminar Committee, TTU

- 1992 Member, Southwestern Association of Naturalists Organizing Committee
- 1992 Member, National Science Foundation Dissertation Improvement Awards Program review panel
- 1990-1991 Executive Board Member, Institute of Environmental Studies, Texas Tech University
- 1988-1990 Member of Systems Ecology Research Group Advisory Council, San Diego State University