

Curriculum vitae
Richard L. Lindroth

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Position and Appointment

Vilas Distinguished Achievement and Douglas D. Sorenson Professor, Department of Entomology; affiliate professor: Department of Integrative Biology, Department of Forest and Wildlife Ecology, Molecular and Environmental Toxicology Center, and Gaylord Nelson Institute for Environmental Studies. University of Wisconsin, Madison.

Education

- 1984 Ph.D. in Biology; Ecology Program, University of Illinois, Urbana-Champaign. (George O. Batzli, adviser).
- 1977 B.S. (summa cum laude) in Fisheries and Wildlife Biology, Iowa State University, Ames.

Former Positions

- 2010-2016 Associate Dean for Research, College of Agricultural and Life Sciences; Associate Director, Wisconsin Agricultural Experiment Station. University of Wisconsin, Madison.
- 1996-2017 Professor, Department of Entomology; affiliate professor: Department of Zoology, Department of Forest and Wildlife Ecology, Molecular and Environmental Toxicology Center, and Gaylord Nelson Institute for Environmental Studies. University of Wisconsin, Madison.
- 1992-96 Associate Professor, Department of Entomology, Environmental Toxicology Center, and Institute for Environmental Studies, University of Wisconsin, Madison.
- 1988-92 Assistant Professor, Department of Entomology and Environmental Toxicology Center, University of Wisconsin, Madison.
- 1987-88 Assistant Scientist, Department of Entomology, University of Wisconsin, Madison.
- 1985-87 National Science Foundation Postdoctoral Fellow, Department of Entomology, University of Wisconsin, Madison.
- 1984-85 Temporary Assistant Professor, Department of Biological Sciences, Illinois State University, Normal.
- 1983-84 Research Assistant, University of Illinois, Urbana-Champaign.
- 1978-83 Teaching Assistant, University of Illinois.
- 1980-81/
1978-79 University Fellow, University of Illinois.

Honors/Awards/Distinctions

- 2019 Dalton Lecturer, George Fox University, Newberg, OR.

- 2018 Scientist in Residence, Canadian Mennonite University, Winnipeg, Canada.
- 2017 Elected Fellow, Entomological Society of America.
- 2016 Elected Fellow, Ecological Society of America.
- 2016 Vilas Distinguished Achievement and Douglas D. Sorenson Professor, University of Wisconsin.
- 2014 E.H. Strickland Memorial Lecture, Department of Biological Sciences, University of Alberta.
- 2011-12 Fellow, Academic Leadership Program, Committee on Institutional Cooperation (CIC).
- 2011 Vilas Associate Award, University of Wisconsin.
- 2010 Kellett Mid-Career Faculty Research Award, University of Wisconsin.
- 2009 Silverstein-Simeone Award in Chemical Ecology. International Society of Chemical Ecology.
- 2009 Commencement address, School of Integrative Biology, University of Illinois-Urbana. May 16.
- 2008 Aspen FACE (Free Air CO₂ Enrichment) "Pioneer" Award.
- 2007 Chairperson, Gordon Research Conference on Plant-Herbivore Interactions, Ventura, California.
- 2006 Elected Fellow, American Association for the Advancement of Science.
- 2005 "Distinguished Ecologist" Lecture Series, Michigan Technological University and USDA Forest Service, Houghton, Michigan.
- 1997 Fulbright Senior Scholar Award, Council for International Exchange of Scholars.
- 1997 AgResearch Research Fellowship, Grasslands Research Centre (Crown Research Institute), Palmerston North, New Zealand.
- 1996 H.I. Romnes Award, University of Wisconsin.
- 1994 Glenn Pound Award for Excellence in Research, College of Agricultural and Life Sciences, University of Wisconsin.
- 1985 National Science Foundation Postdoctoral Research Fellowship in Environmental Biology.
- 1983 Sigma Xi Student Paper Competition Award, University of Illinois.
- 1983 List of Excellent Teachers, University of Illinois.
- 1980-81 University Fellowship, University of Illinois.
- 1978-79 University Fellowship, University of Illinois.
- 1977 Graduated "With Distinction" (summa cum laude), Iowa State University.
- 1977 Honor Student (highest g.p.a., graduating class of 1977), Department of Fisheries and Wildlife Biology, Iowa State University.
- 1977 Phi Kappa Phi, Iowa State University.
- 1974-77 "High Scholarship Student" awards, Iowa State University.
- 1974-77 Goke Advanced Curriculum Scholarship, Iowa State University.
- 1974-75 Deere Scholarship, Iowa State University.
- 1973 Admitted "With Recognition," Iowa State University.

Professional Societies

American Association for the Advancement of Science
 Ecological Society of America
 Entomological Society of America
 International Society of Chemical Ecology

Professional Service

Editorial Board, *Journal of Chemical Ecology*. 2016-20.
 German Research Foundation (DFG). Onsite review and evaluation of the German Centre for Integrative Biodiversity Research, Leipzig, Germany. 2020.
 Science Advisory Board, Western Aspen Alliance. 2008-20.
 Michigan State University. Onsite review and evaluation of Kellogg Biological Station, Hickory Corners, MI. 2017.
 Steering Committee, Aspen Free Air CO₂ Enrichment (FACE) Research Site, Phase II. 2009-12.
 Editorial Board, *Ecology Letters*. 2006-11.
 National Science Foundation Advisory workshop “Exploring Science Needs for Predicting Organismal Responses to Rapid Directional Environmental Change,” Arlington, VA. 2008.
 Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. Vice-chair, 2004; Chair, 2007.
 National Science Foundation. Site review/assessment team for Kellogg Biological Station Long Term Ecological Research Program. 2007.
 Pew Foundation and the Institute of Forest Biotechnology. Invited participant for workshop: “Genetically Engineered Trees: A Workshop to Identify Priorities for Ecological Risk Assessment”, Raleigh, NC. 2007.
 National Academy of Sciences. Invited participant for workshop: “Genetically Engineered Organisms, Wildlife and Habitats”, Irvine, CA. 2007.
 Editorial Board, *Oecologia*. 1998-2005.
 National Science Foundation, Ecological Studies Program, panel member, Washington D.C. 1995-96, 1998-99, 2001-02.
 Editorial Board, *Biochemical Systematics and Ecology*. 1991-98
 Local Arrangements Committee, Meeting of the Ecological Society of America, Madison, WI. 1993.
 USDA National Research Initiative Competitive Grants Program, Plant Pest Interactions/Invertebrates Panel, Washington, D.C. April 23-26, 1991.
 Wisconsin Representative to USDA Regional Project NE-143 (gypsy moth research). 1990-92. Secretary, 1991-92.
 USDA Competitive Research Grants Program, Insect Pest Science Panel, Washington D.C. 1989.
 Symposium organizer (with L. Brattsten): Biochemical and physiological adaptations of herbivores to plant chemical defenses. Meeting of the Ecological Society of America, Toronto, Canada. 1989.

Teaching Experience

Plant-Insect Interactions—lectures, University of Wisconsin.

Insect Ecology--lectures, University of Wisconsin.

General Ecology--lectures and laboratories, University of Illinois, Illinois State University.

Ecosystem Ecology--lectures, Illinois State University.

Ecotoxicology: Toxicant Effects on Ecosystems--lectures, University of Wisconsin.

Population and Community Ecology--laboratories, University of Illinois.

Use of Chemicals in Agricultural Pest Control--lectures, University of Wisconsin.

Introductory Biology--lectures and laboratories, University of Wisconsin, University of Illinois, Illinois State University.

Biology and Ecology Seminars--discussion classes with undergraduate and graduate students, University of Wisconsin, Illinois State University.

Graduate Student Training

Alycia K. Ashburn, Gaylord Nelson Institute for Environmental Studies

Christine J. Buhl, Entomology (Ph.D. 2013)

Hilary L. Baker (Bultman), Zoology (Ph.D. 2018)

Olivia L. Cope, Zoology

John J. Couture, Entomology (Ph.D. 2011)

Jack R. Donaldson, Zoology (Ph.D. 2005)

Michael A. Falk, Entomology (M.S. 2017)

Amy L. Flansburg, Forestry (M.S. 2018)

Christopher W. Habeck, Zoology (Ph.D. 2011)

Andrew E. Helm, Forestry

Jocelyn D.C. Hemming, Environmental Toxicology (Ph.D. 1998)

Michael L. Hillstrom, Entomology (Ph.D. 2010)

Melanie (Kim) Holton, Zoology (M.S. 2001)

Shaw-Yhi Hwang, Entomology (Ph.D. 1997)

Karl K. Kinney, Entomology (Ph.D. 1996)

Brian J. Kopper, Entomology (Ph.D. 2001)

Zheng-zhen (Liz) Li, graduate research intern from Minzu University, China ((2014-16)

Clay J. Morrow, Forestry

Tod L. Osier, Entomology (Ph.D. 2001)

Nicholas L. Pomplun, Forestry

Sherry K. Roth, Entomology (M.S. 1993; Ph.D. 1996)

Michael T. Stevens, Botany (Ph.D. 2005)

Robert L. Thiboldeaux, Environmental Toxicology (J. Tracy, co-advisor; Ph.D. 1996)

Cindy L. Thompson (Platz), Environmental Toxicology (Ph.D., 1996)

Johnny A. Uelmen, Entomology (M.S. 2014)

Leanne M. Vigue, Zoology (M.S. 2010)

Postdoctoral Training

Jep H. Agrell (1996-97)

Caroline S. Awmack (2000-03)

Alison E. Bennett (2008-09)

Michael A. Eisenring (2018-19)

Michael L. Hillstrom (2010)

Liza M. Holeski (2007-11)

Mary A. Jamieson (2012-2013)
 Kenneth M. Keefover-Ring (2008-13)
 Michael D. Madritch (2003-08)
 Evan P. McDonald (1994-97)
 Timothy D. Meehan (2006-08)
 Edward B. Mondor (2003-05)
 William F.J. Parsons (1998-2002)
 Brian J. Rehill (2001-03)
 Jennifer F. Riehl (2015-19)
 Kennedy R. Rubert, IV (2008-13)
 Sherry K. Roth (1996-97)
 Ezra Schwartzberg (2011-12)
 John C. Volin (1994-95)
 Gundolf Wende (1996)
 Stuart C. Wooley (2003-07)
 Mark R. Zierden (2018-19)

Assistant/Associate Scientist Training

Christopher T. Cole (2016-19)
 Liza M. Holeski (2011-13)
 Mary A. Jamieson (2013-15)
 Kenneth M. Keefover-Ring (2013-15)
 Michael D. Madritch (2008)
 Kennedy R. Rubert-Nason (2013-18)

Undergraduate Independent Study (funded fellowships)

Anthony Weiss, UW Hilldale Undergraduate/Faculty Research Fellowship, 1991
 Anita Feuker, NSF Research Experiences for Undergraduates, 1991-92
 Gavin Arteel, NSF Research Experiences for Undergraduates, 1992-93
 Gavin Arteel, UW Hilldale Undergraduate/Faculty Research Fellowship, 1993
 Kari Klein, NSF Research Experiences for Undergraduates, 1994-95
 Amy Moschell, UW Hilldale Undergraduate/Faculty Research Fellowship, 1994
 Janice Pinero, UW Letters and Science Experience in Research (LASER) Program, 1995
 Ryan Herringa, UW Holstrom Environmental Fellowship, 1996
 Jill Keen, NSF Research Experiences for Undergraduates, 1996-97
 Michael Fryda, UW Hilldale Undergraduate/Faculty Research Fellowship, 1997
 Dana Poindexter, NSF Research Experiences for Undergraduates, 1997-98
 Jennifer Dahms, NSF Research Experiences for Undergraduates, 1998-99
 Eleanor Erwin, Howard Hughes Scholars Undergraduate Fellowship, 1998-99
 Sarah Wood, NSF Research Experiences for Undergraduates, 1999-2000
 Aimee Weldon, NSF Research Experiences for Undergraduates, 2000-01
 Scott Esser, NSF Research Experiences for Undergraduates, 2001-02
 Helen M. Bothwell, NSF Research Experiences for Undergraduates, 2002-03
 Laura Mortimore, NSF Research Experiences for Undergraduates, 2003-04
 Helen M. Bothwell, UW Hilldale Undergraduate/Faculty Research Fellowship, 2003
 Kristina E. Goodman, NSF Research Experiences for Undergraduates, 2004-05
 Lisa M. Jordan, NSF Research Experiences for Undergraduates, 2005-06
 Sarah C. Brown, UW Hilldale Undergraduate/Faculty Research Fellowship, 2005
 Samantha L. Greene, NSF Research Experiences for Undergraduates, 2006-07

Andrew J. Shuman, NSF Research Experiences for Undergraduates, 2007-08
 Daniel J. Ferguson, NSF Research Experiences for Undergraduates, 2008-09
 Michael S. Crossley, UW Holstrom Undergraduate/Faculty Research Fellowship, 2010
 Cecilia X. Welch, NSF Research Experiences for Undergraduates, 2010-11
 Benjamin D. Hable, NSF Research Experiences for Undergraduates, 2011-12
 Michael P. Montenero, UW Hilldale Undergraduate/Faculty Research Fellowship, 2011
 Marlana Hartman-Filson, NSF Research Experiences for Undergraduates, 2012
 Heather R. Smaby, UW Holstrom Undergraduate/Faculty Research Fellowship, 2013
 Leah Vivian Patullo, NSF Research Experiences for Undergraduates, 2013-14
 Elizabeth A. Gryzmala, Welton Summer Sophomore Honors Apprenticeship Award, 2014
 Madeline K. Berkvam, UW Hilldale Undergraduate/Faculty Research Fellowship, 2014
 Max G. Wrobbel, UW Hilldale Undergraduate/Faculty Research Fellowship, 2015
 Samuel J. Jaeger, NSF Research Experiences for Undergraduates, 2016-17
 Danielle M. Rutkowski, NSF Research Experiences for Undergraduates, 2017
 Simone Shen, NSF Research Experiences for Undergraduates, 2018-19
 Samuel J. Jaeger, UW Holstrom Undergraduate/Faculty Research Fellowship, 2018-19
 Thomas M. Matoska, UW Sophomore Research Fellowship, 2018-19
 Yujie (Maggie) Guo, UW Holstrom Undergraduate/Faculty Research Fellowship, 2019-20

High School Student Mentoring

Randal Hughes, University of Wisconsin Summer Science Institute. 2013
 Abigail Staples, University of Wisconsin Summer Science Institute. 2013
 Jay Lema, University of Wisconsin Summer Science Institute. 2014
 Ameera Ahmad, University of Wisconsin Summer Science Institute. 2014
 Jarret E. Henning, Dane County Youth Apprenticeship Program – Biotechnology. 2016-17
 Claire I.S. Larsen. Dane County Youth Apprenticeship Program – Biotechnology. 2016-17
 Quinlyn A. Klade. Dane County Youth Apprenticeship Program – Biotechnology. 2017-18
 Trevor C. Pitcel. Dane County Youth Apprenticeship Program – Biotechnology. 2017-18

Grants Awarded

National Science Foundation (Population and Community Ecology Program, DEB- 1914433).
 Consequences of phenotypic plasticity for gene-to-ecosystem linkages: multi-stress experiments across the climatic range of a foundation species. (R.J. Best, G.J. Allan, R.L. Lindroth, and T.G. Whitham). 2019-2023. \$859,239.

USDA McIntire-Stennis Program. Consequences of disturbance-mediated shifts in structure and genetic composition for ecosystem function in experimental forest stands. (R.L. Lindroth, E.L. Kruger, and E. Marin-Spiotta). 2019-2021. \$128,795.

University of Wisconsin, Office of the Vice Chancellor for Research and Graduate Education. Chemical ecology in community genetics perspective: phenotypic plasticity in *Populus* phytochemistry across a steep climate gradient. (R.L. Lindroth). 2019-20. \$7,000.

University of Wisconsin, Holstrom Undergraduate/Faculty Research Fellowship. Challenging a longstanding concept: are condensed tannins specific rather than broad-spectrum anti-herbivore defense compounds? (Yujie Guo, student). 2019. \$4,000

University of Wisconsin, Holstrom Undergraduate/Faculty Research Fellowship. A test of plant allocation theory: implications for plantation forest production. (S.J. Jaeger, student). 2018. \$4,000.

University of Wisconsin, UW Sophomore Research Fellowship. Uncovering the genetic architecture of chemical defense in *Populus*. (T.M. Matoska, student). 2018. \$3,000.

- University of Wisconsin, UW2020 Program. Full-range imaging spectrometer enables innovative linkage of genetic, plant trait and remote sensing/spectroscopy data. (P. Townsend, E. Kruger, P. Bethke, D. Waller, A. Charkowski, S. Conley, A. Desai, R.L. Lindroth and S. Loheide). 2016-2018. \$405,910.
- USDA AFRI (Award no. 2015-07428). Genetic components of plant-insect interactions: association mapping of insect assemblages on a foundation tree species. (R.L. Lindroth). 2016-2019. \$485,000.
- USDA Hatch Program. Genetic and ecological components of superior productivity in aspen, a woody bioenergy species. (R.L. Lindroth and J.F. Riehl). 2016-20. \$165,050.
- National Science Foundation (Population and Community Ecology Program, DEB-1456592). Growth-defense tradeoffs, context dependency and genetic variation in aspen: implications for plant-insect interactions. (R.L. Lindroth, E.L. Kruger, and K.M. Keefover-Ring). 2015-18. \$168,323.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Effects of triploidy and drought on physiology and growth of *Populus tremuloides*. (M.G. Wrobbel, student). 2015. \$4,000.
- USDA McIntire-Stennis Program. Impacts of genotype, environment, and G x E interactions on stand productivity in a woody biofuel crop. (R.L. Lindroth, E.L. Kruger, and K.M. Keefover-Ring). 2015-2019. \$263,451.
- National Science Foundation (Dimensions of Biodiversity, DEB-1342778). Dimensions NASA: Linking remotely sensed optical diversity to genetic, phylogenetic, and functional diversity to predict ecosystem processes. (J.M. Cavender-Bares, S.E. Hobbie, R.A. Montgomery, M.D. Madritch, P.A. Townsend, J.J. Couture, R.L. Lindroth, A.I. Zyguelbaum, and J. Gamon). 2014-2019. \$1,999,944.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. From genes to communities: identifying the genetic components of pathogen damage and community composition in *Populus*. (M.K. Berkvam, student). 2014. \$4,000.
- USDA McIntire-Stennis Program. Implications of polyploidy for the ecology of trembling aspen, a foundation species in Wisconsin forests. (E.L. Kruger, R.L. Lindroth, and K.E. Mock). 2014-2017. \$225,428.
- University of Wisconsin, Holstrom Undergraduate/Faculty Research Fellowship. Effects of global climate change on insect herbivory and volatile organic compound emission in *Populus tremuloides*. (H.R. Smaby, student). 2013. \$4,000.
- USDA McIntire-Stennis Program. The genetic and ecological bases of traits influencing sustainable use of aspen as a biofuel crop. (R.L. Lindroth and L.M. Holeski). 2012-2016. \$160,000.
- USDA AFRI (Award no. 2011-67013-30147). Climate warming of the southern boreal forest: consequences for tree-insect interactions. (R.L. Lindroth, K.F. Raffa, and P.B. Reich). 2011-2014. \$450,985.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Herbivory defense in *Mimulus guttatus* (yellow monkeyflower): consequences for generalist and specialist herbivores. (M.P. Montenero, student). 2011. \$5,000.
- U.S. Forest Service. The Northern Forest Ecosystem Experiment (Aspen FACE Phase II). (M.E. Kubiske, A.J. Burton, R.L. Lindroth, K.S. Pregitzer, A. Rogers, and D.R. Zak). 2010-2013. \$2,775,000.

- University of Wisconsin, Holstrom Undergraduate/Faculty Research Fellowship. Consequences of lignin modification in biofuel poplar: pest resistance and arthropod diversity. (M.S. Crossley, student). 2010. \$5,000.
- National Science Foundation (Ecology Program, DEB-0841609). Resistance and tolerance of aspen to mammalian herbivores: costs, benefits and selection in ontogenetic context. (R.L. Lindroth and E.L. Kruger). 2009-2014. \$537,701.
- NASA (Earth Science Division, Biodiversity). Remote sensing of forest genetic diversity and assessment of belowground microbial communities in *Populus tremuloides* forests. (M. Madritch, P.T. Wolter, P.A. Townsend, R.L. Lindroth, and K.E. Mock). 2009-2012. \$616,091.
- USDA Hatch Program. Insect resistance in biofuel poplars. (R.L. Lindroth). 2008-2012. \$129,604.
- DOE (Office of Biological and Environmental Research). Impacts of interacting elevated atmospheric CO₂ and O₃ on the structure and functioning of a northern forest ecosystem: operating and decommissioning the Aspen FACE project. (D.F. Karnosky, K.S. Pregitzer, K.E. Percy, N. Nelson, A. Rogers, J. Nagy, M.E. Kubiske, R.L. Lindroth, and D.R. Zak). 2008-2012. \$4,142,794.
- National Science Foundation (Ecology Program, DEB-0638848). 2007 Plant-Herbivore Interactions Gordon Research Conference. (R.L. Lindroth). 2007-2008. \$37,080.
- DOE (Office of Biological and Environmental Research, DE-FG02-06ER64232). Impact of elevated CO₂ and O₃ on insect-mediated ecosystem processes in a northern deciduous forest. (R.L. Lindroth). 2006-2009. \$534,630.
- DOE (Office of Biological and Environmental Research, DE-FG02-05ER64112). A genomics investigation of partitioning into and among flavonoid-derived condensed tannins and carbon sequestration in *Populus*. (S.A. Harding, C.-J. Tsai and R.L. Lindroth). 2005-2008. \$1,386,389.
- Worldwide Universities Network (WUN Development Fund). Ecological interactions in a changing environment. (R.L. Lindroth, K.F. Raffa, C. Gratton, G. Poppy, D. Goulsen, G. Taylor and L. Kirkendall). 2005-2008. \$23,000.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Ecological genetics: effects of intraspecific genetic variation on multitrophic interactions. (S.C. Brown, student). 2005. \$5,000.
- National Science Foundation (Frontiers in Integrative Biological Research, 0425908). FIBR: Community genetics, heritability and evolution: consequences of extended phenotypes. (T.G. Whitham, S. Shuster, C.A. Gehring, G.J. Allan, J.C. Marks, S.C. Hart, P.S. Keim, R.L. Lindroth, S.P. DiFazio, B.M. Potts). 2004-2009. \$4,981,000.
- DOE (Office of Biological and Environmental Research, DE-FG02-95ER62125). Impacts of elevated CO₂ and O₃ alone and in combination, on the structure and functioning of a northern forest ecosystem: operating the Aspen FACE user facility (D.F. Karnosky, K.S. Pregitzer, K.E. Percy, N. Nelson, G.R. Hendrey, J. Nagy, M.E. Kubiske, R.L. Lindroth, and D.R. Zak). 2005-2008. \$5,197,336.
- National Science Foundation (Ecosystem Studies, Ecology, and Population Biology Programs, DEB-0344019). Genetic variation and herbivory in aspen: consequences for ecosystem processes. (R.L. Lindroth and M.D. Madritch). 2004-2009. \$824,996.
- USDA Hatch Program. Impacts of air pollutants on forest insect communities. (R.L. Lindroth). 2004-2008. \$109,000.

- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Biogeography of chemical defense in birch. (H. Bothwell, student) 2003. \$5,000.
- DOE (Office of Biological and Environmental Research, DE-FG02-95ER62125). Genetic differences and resulting life histories interact with atmospheric CO₂ and O₃ to control the rate and fate of photosynthate accumulation and the cycling of C and N in northern forests. (D. Karnosky, K.S. Pregitzer, D.R. Zak, R.L. Lindroth, M.E. Kubiske, K.E. Percy, G.R. Hendrey and J.G. Isebrands). 2002-2005. \$2,976,039.
- British Ecological Society (Small Ecological Project grant). Plant community composition and productivity: the effects of climate change. (C.S. Awmack, G.J. Masters and R.L. Lindroth). 2002-2003. \$2,100.
- National Science Foundation (Ecology Program, DEB-0129123). Global environmental change: consequences for multitrophic interactions across genotypes and scales. (R.L. Lindroth and C. Awmack). 2002-2005. \$306,000.
- National Science Foundation (Ecology Program, DEB-0074427). Costs and benefits of anti-herbivore defenses in aspen. (R.L. Lindroth). 2000-2005. \$394,959.
- National Science Foundation (Integrated Research Challenges in Environmental Biology, DEB-0078280). Plant genetic structure as a controlling factor in community and ecosystem functioning: studies using natural and synthetic hybrids of a dominant riparian tree. (T. Whitham, S. Hart, P. Keim, R. Lindroth, and G. Martinsen). 2000-2005. \$3,030,111.
- USDA National Research Initiative Competitive Grants Program (000-2982). Ecological consequences of multiple global change factors: CO₂, O₃, and tree-insect interactions. (R.L. Lindroth). 2000-02. \$102,000.
- USDA McIntire-Stennis Program. Effects of air pollutants on trophic interactions. (R.L. Lindroth). 2000-2004. \$90,792.
- NSF/DOE/NASA/USDA Joint Program on Terrestrial Ecology and Global Change (TECO). Interacting CO₂ and O₃ effects on litter production, chemistry and decomposition in an aggrading northern forest ecosystem. (R. Lindroth and J. Bockheim). 1998-2002. \$539,978 + \$21,127 supplement (Funds administered by DOE, Office of Biological and Environmental Research, DE-FG02-98ER62680.)
- NSF/DOE/NASA/USDA Joint Program on Terrestrial Ecology and Global Change (TECO). Impacts of greenhouse gases (CO₂, O₃) on carbon sequestration and storage in a regenerating northern hardwood forest: the FACTS II (Aspen FACE) study. (D. Karnosky, R. Lindroth and 8 other co-PIs). 1998-2001. \$1,922,686 (Funds administered by DOE, Office of Biological and Environmental Research, DE-FG02-95ER62125.)
- National Science Foundation (Ecology Program, DEB-9707263). Ecological consequences of global environmental change: plant-insect interactions. (R. Lindroth and S. Roth). 1997-2000. \$187,000.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Feeding responses of herbivorous mammals to plants grown in elevated carbon dioxide environments. (M. Fryda, student; D. Dearing and W. Karasov co-PIs) 1997. \$4,000.
- Fulbright Scholar Award. Research on the consequences of enhanced UV radiation for New Zealand grassland ecology. 1997. \$28,000.
- New Zealand/United States Science and Technology Cooperative Science Programme (CSP95/09). UV radiation effects on plant-endophyte-insect interactions. (B. Campbell and R. Lindroth). 1997. \$NZ 4,000.

- National Science Foundation (Division of International Studies). NSF travel supplement request. \$9,200 awarded for 1997; declined in lieu of Fulbright award.
- University of Wisconsin, Holstrom Environmental Scholarship. Effects of rooting volume on photosynthesis and growth of aspen seedlings in enriched carbon dioxide. (Ryan Herringa, student.) 1996. \$4,000.
- USDA Hatch Program. Phytochemical resistance mechanisms in aspen - gypsy moth interactions. (R.L. Lindroth). 1996-2000. \$92,750.
- NSF/DOE/NASA/USDA Joint Program on Terrestrial Ecology and Global Change (TECO). Community and ecosystem dynamics of a northern temperate forest exposed to elevated CO₂ and O₃ in a FACE system. (D. Karnosky, R. Lindroth and 15 other co-PIs). 1997-99. \$588,406. (Funds administered by NSF, Grant IBN-9652675.)
- National Science Foundation (Academic Research Infrastructure [ARI] Program). Acquisition of essential monitoring and control equipment for a long-term multi-institutional free-air carbon dioxide and ozone enrichment facility. (D. Karnosky, R. Lindroth and 12 other co-PIs). 1996-99. \$250,000.
- McKnight Foundation. The ecological biochemistry of proanthocyanidins (condensed tannins) and related flavonoids in Zimbabwean small-scale farming systems in semi-arid areas. (J. Reed, R. Lindroth and 10 other co-PIs). 1995-98. \$744,000.
- NSF/DOE/NASA/USDA Joint Program on Terrestrial Ecology and Global Change (TECO). Forest-atmosphere carbon transfer and storage - II (FACTS II): Interacting effects of elevated CO₂ and O₃ on aspen forest ecosystems. (D. Karnosky, R. Lindroth and 7 other co-PIs). 1995-98. \$949,564. (Funds administered by DOE, Office of Biological and Environmental Research, DE-FG-02-95ER62125.)
- USDA National Research Initiative Competitive Grants Program (95-37302-1810). Intraspecific variation in aspen chemistry: effects on aspen - gypsy moth interactions. (R.L. Lindroth). 1995-98. \$180,000.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Intraspecific variation in aspen chemistry: Impact on performance of forest tent caterpillar. (A. Moschell, student.) 1994. \$4,000.
- National Science Foundation (Ecology Program, DEB-9306981). Ecological effects of global change: tree-insect interactions. (R.L. Lindroth). 1994-97. \$299,431.
- USDA National Research Initiative Competitive Grants Program (93-37100-8856). Tree response to elevated CO₂ and herbivory: growth, physiology and insect performance. (E. Kruger, R. Lindroth and J. Volin). 1993-96. \$190,000.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Responses of three saturniid species to paper birch grown in elevated atmospheric CO₂. (G. Arteel, student.) 1993-94. \$4,000.
- USDA Forest Service (Gypsy Moth Research and Development Program, 23-720) Clonal variation in gypsy moth - aspen interactions: Effects of leaf quality on susceptibility to *Bt*. (R.L. Lindroth). 1993-94. \$30,000.
- National Science Foundation (Instrumentation and Instrument Development Program, BIR-9220326). Microwave lamps for solar simulation in Biotron. (T. Tibbitts, R. Lindroth, L. Graham, E. Kruger and T. Sharkey). 1992-93. \$57,232.
- USDA Forest Service (Gypsy Moth Research and Development Program, 23-720) Clonal variation in gypsy moth - aspen interactions: Effects of leaf quality on susceptibility to *Bt*. 1992-93. \$23,000.

- USDA Hatch Program. Biochemical ecology of interactions between aspen and forest insect pests. (R.L. Lindroth). 1992-96. \$73,600.
- University of Wisconsin, Hilldale Undergraduate/Faculty Research Fellowship. Consequences of elevated atmospheric CO₂ for plant-pest interactions: enzymatic detoxication capacity in the fall armyworm. (A. Weiss, student.) 1991-92. \$4,000.
- USDA National Research Initiative Competitive Grants Program (91-37302-6294). Aspen-Lepidoptera interactions: phytochemical and biochemical mechanisms. (R.L. Lindroth). 1991-94. \$190,000.
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184. Barker, H.L., D. Smith, G. Stanosz, and R.L. Lindroth. 2016. Host genetics and environment shape fungal pathogen incidence on a foundation forest tree species, *Populus tremuloides*. *Canadian Journal of Forest Research* 46:1167-1172. DOI: 10.1139/cjfr-2016-0116
185. Couture, J.J., T.D. Meehan, K.F. Rubert-Nason, and R.L. Lindroth. 2017. Effects of elevated atmospheric carbon dioxide and tropospheric ozone on phytochemical composition of trembling aspen (*Populus tremuloides*) and paper birch (*Betula papyrifera*). *Journal of Chemical Ecology* 43:26-38. DOI: 10.1007/s10886-016-0798-4
186. Moorhead, L.C., L. Souza, C. Habeck, R.L. Lindroth, and A.T. Classen. 2017. Small mammal activity alters plant community composition and microbial activity in an old-field ecosystem. *Ecosphere* 8:e01777. DOI: 10.1002/ecs2.1777
187. Buhl, C.B., R. Meilan, and R.L. Lindroth. 2017. Genetic modification of lignin in hybrid poplar (*Populus alba* x *Populus tremula*) does not substantially alter plant defense or arthropod communities. *Journal of Insect Science* 17:76; 1-8. DOI: 10.1093/jisesa/iex052
188. Rubert-Nason, K.F., J.J. Couture, E.A. Gryzmala, P.A. Townsend and R.L. Lindroth. 2017. Vernal freeze damage and genetic variation alter tree growth, chemistry, and insect interactions. *Plant, Cell and Environment* 40:2743-2753. DOI: 10.1111/pce.13042
189. Rubert-Nason, K.F., K. Keefover-Ring, and R.L. Lindroth. 2018. Purification and analysis of salicinoids. *Current Analytical Chemistry* 14: 424-429. DOI: 10.2174/1573411014666171221131933
190. Woolbright, S.A., B.J. Rehill, R.L. Lindroth, S.P. DiFazio, G.D. Martinsen, M.S. Zinkgraf, G.J. Allan, P. Keim and T.G. Whitham. 2018. Large effect quantitative trait loci for salicinoid phenolic glycosides in *Populus*: implications for gene discovery. *Ecology and Evolution* 2018:8:3726–3737. DOI: 10.1002/ece3.3932
191. Falk, M.A., R.L. Lindroth, K. Keefover-Ring, and K.F. Raffa. 2018. Genetic variation in aspen phytochemical patterns structure windows of opportunity for gypsy moth larvae. *Oecologia* 187:471–482. DOI: org/10.1007/s00442-018-4160-0
192. Cope, O.L., and R.L. Lindroth. 2018. Clonal ramets of trembling aspen do not coordinate defense induction. *Journal of Chemical Ecology* 44:1045-1050. DOI: 10.1007/s10886-018-1006-5
193. Barker, H.L., L.M. Holeski, and R.L. Lindroth. 2018. Genotypic variation in plant traits shapes herbivorous insect and ant communities on a foundation tree species. *PLoS ONE* 13(7):e0200954. DOI: 10.1371/journal.pone.0200954
194. Rubert-Nason, K.F., and R.L. Lindroth. 2019. Analysis of condensed tannins in *Populus* spp. using reversed phase UPLC-PDA(-)esi-MS following thiolytic depolymerization. *Phytochemical Analysis* 30:257–267. DOI: 10.1002/pca.2810
195. Buhl, C., S.H. Strauss, and R.L. Lindroth. 2019. Genetic down-regulation of gibberellin results in semi-dwarf poplar but few non-target effects on chemical resistance and tolerance to defoliation. *Journal of Plant Ecology* 12:124-136. DOI: 10.1093/jpe/rty003

196. Mason, C.J., D.C. Long, R.L. Lindroth, and K. Hoover. 2019. Divergent host plant utilization by adults and offspring is related to intra-plant variation in chemical defences. *Journal of Animal Ecology* 88:1789-1798. DOI: 10.1111/1365-2656.13063
197. Barker, H.L., L.M. Holeski, and R.L. Lindroth. 2019. Independent and interactive effects of plant genotype and environment on plant traits and insect herbivore performance: a meta-analysis with Salicaceae. *Functional Ecology* 33:422–435. DOI: 10.1111/1365-2435.13249
198. Selmants, P.C., J.A. Schweitzer, K.L. Adair, L.M. Holeski, R.L. Lindroth, S.C. Hart, and T.G. Whitham. 2019. Genetic variation in tree leaf chemistry predicts the abundance and activity of autotrophic soil microorganisms. *Ecosphere* 10(8):e02795. DOI: 10.1002/ecs2.2795
199. Cope, O.L., E.L. Kruger, K.F. Rubert-Nason, and R.L. Lindroth. 2019. Chemical defense over decadal scales: ontogenetic allocation trajectories and consequences for fitness in a foundation tree species. *Functional Ecology* 33:2105–2115. DOI: 10.1111/1365-2435.13425
200. Barker, H.L., J.F. Riehl, C. Bernhardsson, K.F. Rubert-Nason, L.M. Holeski, P.K. Ingvarsson, and R.L. Lindroth. 2019. Linking plant genes to insect communities: identifying the genetic bases of plant traits and community composition. *Molecular Ecology* 28:4404–4421. DOI: 10.1111/mec.15158
201. Falk, M.A., J. Donaldson, M.T., Stevens, K.F. Raffa, and R.L. Lindroth. 2020. Phenological responses to prior-season defoliation and soil-nutrient availability vary among early- and late-flushing aspen (*Populus tremuloides* Michx.) genotypes. *Forest Ecology and Management* (in press). DOI: 10.1016/j.foreco.2019.117771
202. Kruger, E.L., K.M. Keefover-Ring, L.M. Holeski, and R.L. Lindroth. 2020. To compete or defend: genotypic variation in leaf traits mediates life-history trade-offs in a foundation tree species. *Oecologia* (in press).
203. Bennett, A.E., K.R. Rubert-Nason, and R.L. Lindroth. 2020. Response of aspen genotypes to browsing damage is not influenced by soil community diversity. *Plant and Soil* (in press).
204. Cole, C.T., H.L. Barker, K.F. Rubert-Nason, C.J. Morrow, J.F.L. Riehl, T.G. Köllner, N.D. Lackus, and R.L. Lindroth. 2020. Growing up aspen: ontogeny and tradeoffs shape growth, defence, and reproduction in a foundation species. *Annals of Botany* (submitted).

Book Chapters:

1. Scriber, J.M., M.T.S. Hsia, P. Sunarjo, and R.L. Lindroth. 1987. Allelochemicals as determinants of insect damage across the North American continent: biotypes and biogeography. Pp. 439-448, in *Allelochemicals: Role in Agriculture and Forestry* (G. Waller, ed.) *American Chemical Society*, Washington, D.C.
2. Lindroth, R.L. 1988. Adaptations of mammalian herbivores to plant chemical defenses. Pp. 415-445, in *Chemical Mediation of Coevolution* (K.C. Spencer, ed.) Academic Press, New York, NY.
3. Lindroth, R.L. 1989. Mammalian herbivore - plant interactions. Pp. 163-206, in *Plant-Animal Interactions* (W.G. Abrahamson, ed.) McGraw-Hill Publishing Company, New York, NY.
4. Lindroth, R.L. 1991. Differential toxicity of allelochemicals to insects: roles of enzymatic detoxication systems. Pp. 1-33, in *Insect-Plant Interactions*, Vol. 3. (E.A. Bernays, ed.) CRC Press, Boca Raton, FL.
5. Lindroth, R.L. 1996. CO₂-mediated changes in tree chemistry and tree-Lepidoptera interactions. Pp. 105-120, in *Carbon Dioxide and Terrestrial Ecosystems*. (G.W. Koch and H.A. Mooney, eds.) Physiological Ecology Series, Academic Press, San Diego.

6. Lindroth, R.L. 1996. Consequences of elevated atmospheric CO₂ for forest insects. Pp. 347-361, in *Carbon Dioxide, Populations, and Communities*. (C. Körner and F.A. Bazzaz, eds.) Physiological Ecology Series, Academic Press, San Diego, CA
7. Lindroth, R.L., and S.-Y. Hwang. 1996. Diversity, redundancy and multiplicity in chemical defense systems of aspen. Pp. 25-56, in *Phytochemical Diversity and Redundancy in Ecological Interactions*. (J.T. Romeo, J.A. Saunders and P. Barbosa, eds.) Recent Advances in Phytochemistry, Vol. 30. Plenum Press, New York, NY.
8. Lindroth, R.L. 2001. Adaptations of quaking aspen for defense against damage by herbivores and related environmental agents. Pp. 273-284, in *Sustaining Aspen in Western Landscapes: Symposium Proceedings; 13-15 June 2000; Grand Junction, CO*. U.S.D.A. Forest Service, Rocky Mountain Experiment Station. Proceedings RMRS-P-18. Fort Collins, CO.
9. Lindroth, R.L., and M.D. Dearing. 2005. Herbivory in a world of elevated CO₂. Pp. 468-486, in *A History of Atmospheric CO₂ and Its Effect on Plants, Animals, and Ecosystems*. (J.R. Ehleringer, T.E. Cerling, and M.D. Dearing, eds.) Springer Science, Inc. New York, NY.
10. Pelini, S.L., K.M. Prior, D.J. Parker, J.D.K. Dzurisin, R.L. Lindroth, and J.J. Hellmann. 2009. Climate change and temporal and spatial mismatches in insect communities. Pp. 215-231, in *Climate Change: Observed Impacts on Planet Earth*. (T. Letcher, ed.) Elsevier, Inc., Amsterdam.
11. Constabel, P.C., and R.L. Lindroth. 2010. The impact of genomics on advances in herbivore defense and secondary metabolism in *Populus*. Pp. 279-305 in *The Genetics and Genomics of Populus*. Plant Genetics and Genomics, Vol. 8 (S. Jansson, R. Bhalerao, and A. Groover, eds). Springer-Verlag, Inc., New York.
12. Lindroth, R.L. 2012. Atmospheric change, plant secondary metabolites, and ecological interactions. Pp. 120-153, in *The Ecology of Plant Secondary Metabolites: From Genes to Global Processes*. Ecological Reviews (G.R. Iason, M. Dicke and S.E. Hartley, eds.). Cambridge University Press, Cambridge.
13. Couture, J.J., and R.L. Lindroth. 2013. Impacts of atmospheric change on forest-arthropod interactions. Pp. 227-248, in *Climate Change, Air Pollution and Global Challenges: Understanding and Perspectives from Forest Research*. (R. Matyssek, N. Clarke, P. Cudlin, T.N. Mikkelsen, J.-P. Tuovinen, G. Weiser, and E. Paoletti, eds.) Elsevier, Inc., Amsterdam.
14. Lindroth, R.L., and K.F. Raffa. 2017. Experimental approaches for assessing invertebrate responses to global change factors. Pp. 30-45, in *Global Climate Change and Terrestrial Invertebrates*. (S.N. Johnson and T.H. Jones, eds.) Wiley Blackwell Press, Oxford.
15. Rubert-Nason, K.F., and R.L. Lindroth. 2020. Causes and consequences of condensed tannin variation in *Populus*: a molecules to ecosystems perspective. in *Recent Advances in Polyphenol Research*. Volume 7. John Wiley Press (in press).

Book Reviews:

1. Lindroth, R.L. 1987. Insect-Plant Interactions (J.R. Miller and T.A. Miller, eds.) *Quarterly Review of Biology* 62:329.
2. Lindroth, R.L. 1988. Molecular Aspects of Insect-Plant Associations (L.B. Brattsten and S. Ahmad, eds.) *Ecology* 69:301.
3. Lindroth, R.L. 1992. Phytochemical Induction by Herbivores (D.W. Tallamy and M.J. Raupp, eds.) *Bioscience* (42:372-373).

Jury-Selected Essays:

1. Lindroth, R.L. 2009. Man freezes out family. Pp. 158-159, in *Thoreau's Legacy: American Stories about Global Warming*. (R. Hayes, ed.) Penguin Classics, Cambridge, MA.

Miscellaneous Reports and Proceedings:

1. Lindroth, R.L. 1992. More thoughts on setting objectives for courses in ecology. *Bulletin of the Ecological Society of America*. 73:256-257.
2. Lindroth, R.L. 1992. Nutritional ecology of gypsy moth - host interactions. Pp. 30-31, in *Proceedings, U.S. Department of Agriculture Interagency Gypsy Moth Research Forum 1992* (K.W. Gottschalk and M.J. Twery, eds) Jan. 13-16, Annapolis, MD. Gen. Tech. Rep. NE-170, U.S.D.A. Forest Service, Radnor, PA.
3. Lindroth, R.L. 1993. Effects of aspen defensive chemistry on efficacy of *Bt* against gypsy moths. I. Ecological context. Pp. 78-79, in *Proceedings, U.S. Department of Agriculture Interagency Gypsy Moth Research Forum 1993* (S.L. Fosbroke and K.W. Gottschalk, eds.) Jan. 19-22, 1993. Annapolis, MD. Gen. Tech. Rep. NE-179, U.S.D.A. Forest Service, Radnor, PA.
4. Lindroth, R.L. 1993. Food conversion efficiencies of insect herbivores. *The Food Insects Newsletter* 6:1,9-11.
5. Lindroth, R.L., S.-Y. Hwang, M.E. Montgomery and K.S. Shields. 1994. Effects of aspen chemistry on gypsy moth susceptibility to *Bt*. Pp. 41, in *Proceedings, U.S. Department of Agriculture Interagency Gypsy Moth Research Forum 1994* (S.L. Fosbroke and K.W. Gottschalk, eds.) Jan. 18-21, 1994. Annapolis, MD. Gen. Tech. Rep. NE-179, U.S.D.A. Forest Service, Radnor, PA.
6. Kling, G.W., K. Hayhoe, L.B. Johnson, J.J. Magnuson, S. Polasky, S.K. Robinson, B.J. Shuter, M.M. Wander, D.J. Wuebles, D.R. Zak, R.L. Lindroth, S.C. Moser and M.L. Wilson. 2003. *Confronting Climate Change in the Great Lakes Region: Impacts on our Communities and Ecosystems*. Union of Concerned Scientists, Cambridge, MA, and Ecological Society of America, Washington, D.C.
7. Lindroth, R.L. 2003. Keeping the faith. *Frontiers in Ecology and the Environment* 1:179.
8. Lindroth, R.L. 2012. Genetics, environment, and G x E effects on chemical defenses in *Populus*. Pp. 26, in *Proceedings of the North American Forest Insect Work Conference*. May 9-12, 2011. Portland, OR. <http://www.fsl.orst.edu/wfiwc/proceedings.htm#procs>

Invited Presentations

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| 1984 | Department of Biology, Illinois State University, Normal, IL. The role of plant chemical defenses in the nutritional ecology of voles. April 2. |
| 1985 | Department of Biology, University of South Florida, Tampa, FL. Vegetation vs. voles: the role of secondary plant compounds. Jan. 8. |
| 1985 | Department of Biology, Illinois Wesleyan University, Bloomington, IL. Plant toxins and the nutritional ecology of voles. Or...What they don't tell you at the local health food store. April 12. |
| 1985 | AIBS symposium on "Chemical Mediation of Coevolution," Gainesville, FL. Physiological and behavioral responses of mammalian herbivores to plant chemical defenses. Aug. 14. |
| 1986 | Department of Entomology, University of Wisconsin, Madison, WI. Vegetation vs. voles: the role of plant chemical defenses. Feb. 3. |
| 1986 | International Society of Chemical Ecology, symposium on "Defensive Strategies Against Tannins," Berkeley, CA. Roles of plant tannins in the nutritional ecology of small mammals. June 24. |

- 1986 Seventh Midwest Conference on Population Biology, Northern Illinois University, DeKalb, IL. Phytochemical aspects of host plant use by tiger swallowtail butterflies. Nov. 9.
- 1986 Departments of Entomology and Fisheries and Wildlife, University of Minnesota, St. Paul, MN. Roles of plant chemical defenses in food utilization and population dynamics of herbivores. Dec. 4.
- 1986 Department of Biology, University of Nevada, Reno, NV. Roles of plant chemical defenses in food utilization and population dynamics of herbivores. Dec. 8.
- 1987 Department of Entomology, University of Wisconsin, Madison, WI. Nutritional ecology of the tiger swallowtail: mediation of host use by allelochemicals. April 30.
- 1989 Department of Entomology, Rutgers University, New Brunswick, NJ. Biochemical ecology of tree-feeding Lepidoptera. April 21.
- 1989 Ecological Society of America symposium on "Biochemical and Physiological Adaptations of Herbivores to Plant Chemical Defenses," Toronto, Canada. Biochemical and physiological adaptations: introduction and overview. Aug. 10.
- 1989 Department of Entomology, Pennsylvania State University, University Park, PA. Allelochemicals and enzymes as determinants of host use by tree-feeding Lepidoptera. Oct. 9.
- 1990 Central States Entomological Society, symposium on "Chemical Ecology of Insect-Plant Interactions," Kansas State University, Manhattan, KS. Chemical mediation of host use by tree-feeding Lepidoptera. April 7.
- 1990 Department of Botany and Range Science, Brigham Young University, Provo, UT. Chemical ecology of aspen-Lepidoptera interactions. Aug. 3.
- 1990 College of Agriculture and Life Sciences, symposium on "Natural Products in Agriculture and Agricultural Biotechnology," North Carolina State University, Raleigh, NC. Detoxication enzymes and differential toxicity of allelochemicals to tree-feeding insects. Oct. 25.
- 1990 Wisconsin Association of Professional Agricultural Consultants, symposium on "Energy, the Environment and Agriculture," Madison, WI. Consequences of elevated atmospheric carbon dioxide for agriculture. Dec. 13.
- 1991 Environmental Toxicology Center, University of Wisconsin, Madison, WI. Ecotoxicology of plant-insect interactions. March 14.
- 1991 Office of Agricultural Biotechnology, Purdue University, West Lafayette, IN. Plant-insect interactions: phytochemistry, biochemistry and global change. Oct. 22.
- 1992 USDA Gypsy Moth Research Forum, Annapolis, MD. Nutritional ecology of gypsy moth - host interactions. Jan. 16.
- 1992 Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Oxnard, CA. Roles of non-oxidative detoxication enzymes in plant-insect interactions. Jan. 27.
- 1992 Forestry Sciences Laboratory, USDA Forest Service, Rhinelander, WI. Changes in leaf phytochemistry in plants grown with elevated CO₂, and performance of tree-feeding insects. July 22.
- 1992 AuSable Institute of Environmental Studies, Mancelona, MI. Forests, insects and people in a changing world. July 31.
- 1992 Department of Natural Sciences, University of Michigan, Dearborn, MI. Gypsy moth - tree interactions in temperate deciduous forests: present and future. Oct. 2.

- 1993 USDA Gypsy Moth Research Forum, Annapolis, MD. Effects of aspen defensive chemistry on efficacy of *Bt* against gypsy moths. I. Ecological context. Jan. 21.
- 1993 Department of Entomology and Nematology, University of Florida, Gainesville, FL. Biochemical ecology of interactions between deciduous trees and tree-feeding insects. Feb. 25.
- 1993 IGBP Global Change in Terrestrial Environments symposium on "Terrestrial Ecosystem Response to Elevated CO₂," S. Miniato, Italy. CO₂-mediated changes in tree chemistry and tree-Lepidoptera interactions. Oct. 18.
- 1994 Department of Biological Sciences, Syracuse University, Syracuse, NY. Tree-insect interactions: Biochemistry to global change. Jan. 21.
- 1994 IGBP Global Change in Terrestrial Environments symposium on "Community and Evolutionary Implications of Elevated CO₂," Holstein, Switzerland. Consequences of elevated atmospheric CO₂ for forest insects. Aug. 18.
- 1994 Swedish University of Agricultural Sciences, Uppsala, Sweden. Chemical ecology of tree-insect interactions in the northcentral United States. Oct. 14.
- 1994 Swedish University of Agricultural Sciences, Umea, Sweden. Instructor for short-course: Plant-Animal Interactions, Plant Defenses and Climatic Change. Oct. 17-21.
- 1994 Great Lakes Global Change Education Workshop, Sea Grant Institute, University of Wisconsin, Madison, WI. Ecological consequences of global change. Nov. 16.
- 1995 Department of Wildlife Ecology, University of Wisconsin, Madison, WI. Trophic interactions in forest systems: Secondary compounds, "bugs" and global change. Feb. 23.
- 1995 Phytochemical Society of North America symposium on "Phytochemical Redundancy in Ecological Systems," Sault Ste. Marie, Canada. Diversity and redundancy in the chemical defense systems of aspen. Aug. 16.
- 1995 Department of Botany, University of Wisconsin, Madison, WI. Plant-insect interactions: Chemical ecology to global change. Sept. 14.
- 1995 Department of Biological Sciences, University of Wisconsin, Whitewater, WI. Chemical ecology of tree-insect interactions. Oct. 6.
- 1997 Department of Entomology and Animal Ecology, Lincoln University, Canterbury, New Zealand. Plant-insect interactions in the northern USA: Chemical ecology to global change. Feb. 11.
- 1997 AgResearch, Grasslands Research Centre, Palmerston North, New Zealand. Plant-insect interactions and global change. March 7.
- 1997 Department of Plant Biology, Massey University, Palmerston North, New Zealand. Plant-insect interactions: chemical ecology to global change. May 19.
- 1997 AgResearch, Grasslands Research Centre, Palmerston North, New Zealand. UV effects on insects: preliminary observations. June 20.
- 1997 Department of Zoology, Australian National University, Canberra, Australia. Chemical ecology of interactions between trees and tree-feeding insects. July 2.
- 1997 Department of Zoology, James Cook University, Townsville, Australia. Chemical ecology of plant-insect interactions in the northern USA. July 10.
- 1997 Department of Zoology and Tropical Ecology, James Cook University, Cairns, Australia. Environmental effects on nutritional ecology of tree-feeding insects. July 15.

- 1997 Madison Chaos and Complex Systems Seminar, University of Wisconsin, Madison, WI. Chemical ecology of aspen: environment-plant-insect-pathogen interactions. Oct. 14.
- 1998 Department of Ecology, Ethology and Evolution, University of Illinois, Urbana, IL. Tree-insect interactions in the upper midwest: chemical ecology to global change. April 29.
- 1998 NERC - TIGER Synthesis Workshop, "Herbivory and Trophic Level Interactions in Global Climate Change Research." Birmingham, England. Interactions and complexities in plant-herbivore relationships: multispecies, multifactor and trophic level interactions in "natural" systems. May 6.
- 1998 Madison Ecology Group, 1998 Ecology Symposium, University of Wisconsin, Madison, WI. The chemical ecology of aspen. Sept. 18.
- 1999 Department of Ecology, Evolution and Behavior, University of Minnesota, St. Paul, MN. Chemical mediation of ecological interactions: biochemistry to global change. April 22.
- 1999 Department of Ecology, Evolution and Behavior, University of Minnesota, St. Paul, MN. Challenges and opportunities facing the discipline of ecology. April 23.
- 1999 XVI International Botanical Congress, symposium on "Multiple Ecological and Evolutionary Roles of Secondary Metabolites in Plants: Significance of Chemical Variation," St. Louis, MO. Secondary chemistry of aspen: multiple roles, diverse effects. Aug. 6.
- 2000 Wisconsin Interfaith Climate Change Campaign 2000, Green Lake, WI. Biological consequences of climate change. Aug. 23.
- 2000 Entomological Society of America symposium on "Specificity of Host Plant Resistance to Insects," Montreal, Canada. Broad-spectrum chemical defense systems in aspen. Dec. 3.
- 2001 Department of Biology, University of Utah, Salt Lake City, UT. Global environmental change and plant-herbivore interactions. Feb. 22.
- 2001 Department of Biology, University of Utah, Salt Lake City, UT. The ecology of anti-herbivore defense in aspen: biochemistry to global change. Feb. 23.
- 2001 Department of Biological Sciences, Northern Arizona University, Flagstaff, AZ. Chemical ecology of aspen in current and future environments. Oct. 26.
- 2001 University of Utah symposium on "History of Atmospheric CO₂ and Its Effects on Plants, Animals and Ecosystems," Snowbird, UT. Herbivory in an elevated CO₂ world. Dec. 7.
- 2002 Department of Biological Sciences, University of Quebec at Montreal, Montreal, Quebec. The chemical ecology of aspen: current and future environments. April 19.
- 2004 Wisconsin Interfaith Climate and Energy Campaign conference on "Next Steps for Earth Stewardship," Oshkosh, WI. Consequences of climate change for terrestrial ecosystems. Feb. 8.
- 2004 36th Air Pollution Workshop. Pre-workshop symposium on "Interactions of Elevated CO₂ and O₃," Rhinelander, WI. Impacts of interacting CO₂ and O₃ on forest insects. April 26.
- 2004 XXII International Congress of Entomology, symposium on "Costs of Plant Resistance to Herbivores: Why Aren't All Plants Resistant?," Brisbane, Australia. Costs and benefits of resistance and tolerance to herbivores: the importance of gene x environment effects. Aug. 18.
- 2004 XXII International Congress of Entomology, symposium on "Genes to Geography: The Influence of Genetically Based Plant Traits on Biodiversity and Ecosystem Processes," Brisbane, Australia. The extended phenotype of aspen: consequences of variation for ecological interactions. Aug. 18.

- 2005 Department of Forest, Range, and Wildlife Sciences, Utah State University, Logan, UT. Chemical ecology of aspen: physiological, community and ecosystem level effects. June 30.
- 2005 Michigan Technological University, Ecosystem Science Center, and US Forest Service - North Central Research Station, Houghton, MI. Distinguished Ecologist Lecture Series. What can chemistry tell us about ecology? Insights into the ecological and evolutionary success of a principal North American tree species. Oct. 27.
- 2007 Seattle Pacific University, Seattle, WA. Keynote address for the 5th Annual Erickson Conference. The "butterfly effect" in scientific research: an ecological odyssey. May 18.
- 2007 Oak Ridge National Laboratory, Oak Ridge, TN. A chemocentric perspective on the evolutionary ecology of *Populus*. Sept. 24.
- 2008 Chemistry/Biology/Molecular Biosciences Lecture Series, Wichita State University, Wichita, KS. The chemistry of ecology and ecology of life. Feb. 4.
- 2008 Department of Entomology, University of California-Riverside, Riverside, CA. The chemistry of ecology and ecology of life: nature, nurture and G x E interactions. Feb. 11.
- 2008 International Association for Landscape Ecology - U.S. Regional Association, professional development workshop on "Applying for Fellowships and Grants: Tips from the Pros," Madison, WI. Insights from a successful (but not confident) grant writer. April 6.
- 2008 Restoring the West Conference 2008: Frontiers in Aspen Restoration. Logan, UT. Chemical ecology of aspen: herbivory and ecosystem consequences. Sept. 17.
- 2008 Department of Zoology, Miami University, Oxford OH. The chemistry of ecology and ecology of life: an aspen story. Nov. 6.
- 2009 Department of Biology, University of North Dakota, Grand Forks, ND. Chemical ecology of *Populus*: a "genes to ecosystem" perspective. Feb. 13.
- 2009 Department of Ecology and Evolutionary Biology, University of Colorado, Boulder, CO. Chemical ecology of *Populus*: from genes to ecosystems. March 13.
- 2009 17th Plant Biology Symposium, "Plant-Soil Interactions in Future Climates," University Park, PA. Consequences of atmospheric change for plant-insect interactions in forest ecosystems. May 20.
- 2009 Silverstein-Simeone Keynote Lecture, Annual Meeting of the International Society of Chemical Ecology, Neuchâtel, Switzerland. Chemical ecology of *Populus*: genes to ecosystems. Aug. 23.
- 2009 Department of Biological Sciences, Bowling Green State University, Bowling Green, OH. Chemical ecology of *Populus*: genes to ecosystems. Oct. 28.
- 2009 Department of Ecology, Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden. Chemical ecology of *Populus*: genes to ecosystems. Nov. 17.
- 2009 Plenary lecture, *Salix* Molecular Biology Activities (SAMBA) Workshop, Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden. Poplar ecology: genes to ecosystems. Nov. 18.
- 2010 Medical Department, Brookhaven National Laboratory, Upton, NY. Chemical ecology of *Populus*: genes to ecosystems. March 19.
- 2010 British Ecological Society symposium on "The Integrative Role of Plant Secondary Metabolites in Ecological Systems," University of Sussex, England. Global atmospheric change, plant secondary metabolites, and community processes. April 13.
- 2010 Kananaskis Field Station, Biogeoscience Institute, University of Calgary, Alberta, Canada. Chemistry and ecology of aspen: genes, herbivores and ecosystems. June 28.

- 2011 Plenary lecture, North American Forest Insect Work Conference, Portland, OR. Genetics, environment and G x E effects on chemical defense in *Populus*. May 11.
- 2011 Swedish University of Agricultural Sciences and Umeå Plant Science Centre, Umeå, Sweden. Chemo-eco-evo-devo perspectives on the biology of *Populus*. May 30.
- 2011 Swedish University of Agricultural Sciences and Umeå Plant Science Centre, Umeå, Sweden. Prelude to a defense: GM trees in societal and ecological context. May 31.
- 2012 2nd PaReTree Workshop, “Genetic Basis of Defences in Trees”, Umeå Plant Science Centre, Umeå, Sweden. Evolutionary ecology of herbivore defense in aspen. Feb. 22.
- 2012 Ecology Center Seminar Series, Utah State University, Logan, UT. The chemistry of ecology and ecology of life: molecules to ecosystems. March 21.
- 2012 Ecology Center Seminar Series, Utah State University, Logan, UT. The eco-evo-devo-chemo-biology of aspen. March 22.
- 2012 Western Aspen Alliance symposium on “Resilience in quaking aspen: restoring ecosystem processes through applied science,” High Lonesome Ranch, De Beque, CO. Paper (with S. St. Clair): Herbivore defense strategies in aspen. June 28.
- 2013 32nd New Phytologist symposium on “Plant interactions with other organisms: molecules, ecology and evolution,” Buenos Aires, Argentina. Global environmental change and plant-herbivore interactions. Nov. 22.
- 2014 Department of Biological Sciences, University of Alberta, Edmonton, Alberta. Global atmospheric change and plant-insect interactions in northern deciduous forests. March 20.
- 2014 E.H. Strickland Memorial Lecture, Department of Biological Sciences, University of Alberta, Edmonton, Alberta. Chemistry and ecology of aspen: molecules, herbivores, and ecosystems. March 21.
- 2014 International Union of Forest Research Organizations (IUFRO) symposium on “Mechanisms of Tree Defense Across Forest Insect Feeding Guilds: Can A Comparative Approach Help Predict Responses to Climate Change?”, Salt Lake City, UT. Mechanisms of aspen (*P. tremuloides*) defense against gypsy moths and forest tent caterpillars. Oct. 9.
- 2014 Department of Forest and Wildlife Ecology, University of Wisconsin, Madison, WI. Chemistry and ecology of aspen: molecules, herbivores and ecosystems. Oct. 31.
- 2016 USDA-NIFA Project Directors Meeting, AFRI Plant-Associated Insects and Nematodes Program, Orlando, FL. Genetic components of plant-insect interactions: association mapping of insect assemblages on a foundation tree species. Sept. 24.
- 2017 Department of Entomology, Pennsylvania State University, University Park, PA. Chemical and evolutionary ecology of herbivore defense in an iconic forest tree species. Jan. 27.
- 2017 German Centre for Integrative Biodiversity Research (iDiv), Leipzig, Germany. Phenotypic variation in an iconic tree species: implications for diversity of ecological structure and function at local to landscape levels. March 8.
- 2017 Max Planck Institute for Chemical Ecology, Jena, Germany. Chemical ecology of *Populus*: molecules, herbivores, and ecosystems. March 9.
- 2017 Entomological Society of America symposium on “Processes that Drive the Population Dynamics of Forest Insects: Celebrating the Contributions of Professor Ken Raffa,” Denver, CO. Architect, brick-layer, or design-builder? How to leave a legacy in forest entomology. Nov. 6.
- 2018 CMU Scientist in Residence Lecture, Canadian Mennonite University, Winnipeg, Ontario,

- Canada. Science as a way of knowing: the pursuit of truth in a post-truth world. Jan. 30.
- 2018 Department of Plant Biology, Michigan State University, East Lansing, MI. Phenotypic variation in an iconic tree species: implications for diversity of ecological structure and function from molecules to landscapes. Feb. 9.
- 2018 Department of Entomology, Purdue University, West Lafayette, IN. Chemical and evolutionary ecology of herbivore defense in an iconic tree species. March 8.
- 2018 Climate, People and Environment Program, Nelson Institute for Environmental Studies, University of Wisconsin, Madison, WI. Global environmental change and plant-insect interactions in northern deciduous forests. April 24.
- 2018 XXIX International Conference on Polyphenols & 9th Tannin Conference, Madison, WI. Plenary Variation in proanthocyanidin expression in *Populus*: a molecules to ecosystems perspective. July 17.
- 2018 Department of Entomology and Plant Pathology, North Carolina State University, Raleigh, NC. Chemical and evolutionary ecology of herbivore defense in an iconic forest tree species. Sept. 24.
- 2018 Entomological Society of America symposium on “Identifying and Overcoming Challenges to Integrating Tree Chemistry Into Our Understanding of Forest Insect Dynamics,” Vancouver, BC. Phenotypic variation in a *Populus* model system: implications for plant-insect interactions across scales of size, space, and time. Nov. 14.
- 2019 Department of Entomology, University of Nebraska, Lincoln, NE. Chemical and evolutionary ecology of herbivore defense in an iconic forest tree species. Jan. 29.
- 2019 Department of Biology and Chemistry, George Fox University, Newberg, OR. What can chemistry tell us about ecology? Insights into the ecological and evolutionary success of an iconic forest tree species. March 11.
- 2019 Ninth Annual Dalton Lecture, George Fox University, Newberg, OR. Two degrees of separation: climate change and the pursuit of truth in a post-truth world. March 11.
- 2019 BioLogos Conference, National Aquarium, Baltimore, MD. “Scientisting” life: lessons on creation care from biology, scripture and 5-year-olds. March 28.
- 2019 Department of Plant Biology, University of Vermont, Burlington, VT. Chemical and evolutionary ecology of herbivore defense in an iconic forest tree species. April 18.
- 2019 Departments of Entomology and Natural Resource Ecology and Management, Iowa State University, Ames, IA. Chemical and evolutionary ecology of herbivore defense in an iconic tree species. Nov. 1.
- 2019 Department of Plant and Environmental Sciences, Clemson University, Clemson, SC. Chemical and evolutionary ecology of herbivore defense in an iconic forest tree species. Nov. 22.

Contributed Papers

- 1982 Nutritional ecology of microtine rodents: effects of phenolics on growth of prairie voles (*Microtus ochrogaster*). Annual Meeting of the Ecological Society of America, University Park, PA. August 9. Lindroth, R.L., and G.O. Batzli.
- 1983 The effects of plant phenolics on prairie voles (*Microtus ochrogaster*). Gordon Research Conference on "Chemical Aspects of Plant-Herbivore Interactions," Ventura, CA. Jan. 10. Lindroth, R.L., and G.O. Batzli.

- 1983 Diet selection by meadow voles (*Microtus pennsylvanicus*) in tallgrass prairie. Annual Meeting of the Ecological Society of America, Grand Forks, ND. Aug. 8. Lindroth, R.L., and G.O. Batzli.
- 1984 Nutritional ecology of voles: the role of secondary plant compounds. Annual Meeting of the Ecological Society of America, Fort Collins, CO. Aug. 9. Lindroth, R.L., and G.O. Batzli.
- 1985 Do induced plant defenses cause vole population cycles? Annual Meeting of the International Society of Chemical Ecology, Madison, WI. June 10. Lindroth, R.L., and G.O. Batzli.
- 1985 Effects of phytochemicals from two prairie plants on digestion efficiencies and growth of voles. Annual Meeting of the Ecological Society of America, Minneapolis, MN. June 19. Lindroth, R.L., and G.O. Batzli.
- 1986 Multi-component chemical defense of quaking aspen: differential effects on tiger swallowtail subspecies. Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Oxnard, CA. Jan. 21. Lindroth, R.L., J.M. Scriber and M.T.S. Hsia.
- 1986 Multi-component defense of quaking aspen: differential responses of tiger swallowtails. Annual Meeting of the Ecological Society of America, Syracuse, NY. Aug. 13. Lindroth, R.L., J.M. Scriber and M.T.S. Hsia.
- 1986 Differential responses of tiger swallowtails to phenolic glycosides. Annual Meeting of the Entomological Society of America, Reno, NV. Dec. 9. Lindroth, R.L., J.M. Scriber and M.T.S. Hsia.
- 1987 Differential effects of phenolic glycosides on larvae of the tiger swallowtail butterfly. Annual Meeting of the Ecological Society of America, Columbus, OH. Aug. 10. Lindroth, R.L., J.M. Scriber and M.T.S. Hsia.
- 1987 Biochemical defense mechanism of *Papilio glaucus canadensis* to phenolic glycosides. Annual Meeting of the Entomological Society of America, Boston, MA. Dec. 2. Lindroth, R.L.
- 1988 Evolutionary and ecological aspects of detoxication metabolism in the tiger swallowtail (*Papilio glaucus*). Annual Meeting of the Entomological Society of America, Louisville, KY. Dec. 7. Lindroth, R.L.
- 1989 Biochemical ecology of swallowtail-Salicaceae interactions. Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Oxnard, CA. Jan. 30. Lindroth, R.L.
- 1989 Swallowtails and food plants. Meeting of the Wisconsin Entomological Society, Milwaukee, WI. April 1. Lindroth, R.L.
- 1990 Interactive effects of protein and juglone on the gypsy moth. Annual Meeting of the Ecological Society of America, Snowbird, UT. Aug. 2. Lindroth, R.L., B.D. Anson and A.V. Weisbrod.
- 1991 Effects of dietary protein and phenolic glycosides on forest tent caterpillars (*Malacosoma disstria*). Meeting of the Entomological Society of America, North Central Branch, Milwaukee, WI. March 19. Lindroth R.L. and M.S. Bloomer.
- 1991 Response of forest tent caterpillar, *Malacosoma disstria*, to CO₂-mediated changes in foliar chemistry of deciduous trees. Meeting of the Entomological Society of America, North Central Branch, Milwaukee, WI. March 18. Kinney, K.K., and R.L. Lindroth.
- 1991 Responses of gypsy moth detoxication enzymes to host plants grown under ambient and elevated CO₂ environments. Meeting of the Entomological Society of America, North Central Branch, Milwaukee, WI. March 19. Thiboldeaux, R.L., and R.L. Lindroth.
- 1991 Chemical mediation of aspen-Lepidoptera interactions. Meeting of the Entomological Society of America, North Central Branch, Milwaukee, WI. March 19. Hemming, J.D.C., and R.L. Lindroth.

- 1991 Responses of gypsy moths to host plants grown under elevated carbon dioxide. Meeting of the Entomological Society of America, North Central Branch, Milwaukee, WI. March 19. Platz, C.L., and R.L. Lindroth.
- 1991 Interactions between the forest tent caterpillar and deciduous trees grown in an enriched CO₂ atmosphere: herbivory, plant growth and foliar chemistry. Meeting of the Michigan Entomological Society, Traverse City, MI. May 31. Kinney, K.K., and R.L. Lindroth.
- 1991 Consequences of elevated atmospheric CO₂ for deciduous trees: phytochemistry and insect resistance. Annual Meeting of the Ecological Society of America, San Antonio, TX. Aug. 5. R.L. Lindroth.
- 1991 Responses of forest Lepidoptera to deciduous trees grown in an enriched CO₂ atmosphere. Annual Meeting of the Entomological Society of America, Reno, NV. Dec. 11. Kinney, K.K., and R.L. Lindroth.
- 1992 Effects of enriched CO₂ on tree chemistry and insect performance. Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Oxnard, CA. Jan. 28. Lindroth, R.L., K.K. Kinney and C.L. Platz.
- 1992 Chemical mediation of aspen-Lepidoptera interactions. Meeting of the Entomological Society of America, North Central Branch, Kansas City, MO. March 16. Hemming, J.D.C., and R.L. Lindroth.
- 1992 Mediation of differential host use in the *Papilio glaucus* complex by enzymatic detoxication mechanisms. Meeting of the Entomological Society of America, North Central Branch, Kansas City, MO. March 16. Platz, C.L., and R.L. Lindroth.
- 1992 Responses of the gypsy moth, *Lymantria dispar*, to nitrate- and CO₂-mediated changes in the foliar chemistry of deciduous trees. Meeting of the Entomological Society of America, North Central Branch, Kansas City, MO. March 18. Kinney, K.K., and R.L. Lindroth
- 1992 Effects of nitrogen- and CO₂-mediated changes in foliar chemistry on gypsy moth performance. Annual Meeting of the Entomological Society of America, Baltimore, MD. Dec. 8. Kinney, K.K., R.L. Lindroth, and S.M. Jung.
- 1993 Toxicity of juglone (5-hydroxy-1,4-naphthoquinone) and related naphthoquinones in saturniid moths. Meeting of the Society of Toxicology, New Orleans, LA. March 17. Thiboldeaux, R.L., R.L. Lindroth, and J.W. Tracy.
- 1993 Effects of defoliation and carbon dioxide-mediated changes in foliar chemistry on gypsy moth performance. Meeting of the Entomological Society of America, North Central Branch, Fargo, ND. March 22. Kinney, K.K., and R.L. Lindroth.
- 1993 Gypsy moth performance on deciduous trees exposed to enriched atmospheric carbon dioxide and artificial defoliation. Meeting of the Kansas (Central States) Entomological Society, Lincoln, NE. April 3. Kinney, K.K., and R.L. Lindroth.
- 1993 Gypsy moth performance on deciduous trees exposed to enriched atmospheric carbon dioxide and artificial defoliation. Meeting of the Michigan Entomological Society, Pellston, MI. May 21. Kinney, K.K., and R.L. Lindroth.
- 1993 Effects of atmospheric carbon dioxide and soil nitrate on tree-insect interactions. I. Phytochemical responses. Annual Meeting of the Ecological Society of America, Madison, WI. Aug. 1. Lindroth, R.L., and K.K. Kinney.
- 1993 Effects of atmospheric carbon dioxide and soil nitrate on tree-insect interactions. II. Herbivory. Annual Meeting of the Ecological Society of America, Madison, WI. Aug. 1. Kinney, K.K., and

- R.L. Lindroth.
- 1993 Interactive effects of foliar ascorbic acid and phenolics on the gypsy moth (*Lymantria dispar*). Annual Meeting of the Ecological Society of America, Madison, WI. Aug. 1. Roth, S.K., R.L. Lindroth, and M.E. Montgomery.
- 1993 Effects of aspen leaf quality on gypsy moth susceptibility to *Bacillus thuringiensis* (*Bt*). Annual Meeting of the Ecological Society of America, Madison, WI. Aug. 2. Hwang, S.-Y., and R.L. Lindroth.
- 1993 Intraspecific variation in aspen foliar chemistry: effects on gypsy moths and forest tent caterpillars. Annual Meeting of the Ecological Society of America, Madison, WI. Aug. 3. Hemming, J.D.C., and R.L. Lindroth.
- 1993 Differential tiger swallowtail tolerance of phenolic glycosides: mediation by enzymatic detoxication mechanisms. Annual Meeting of the Ecological Society of America, Madison, WI. Aug. 3. Platz, C.L., and R.L. Lindroth.
- 1993 Response of saturniid moths to juglone and related naphthoquinones. Annual Meeting of the Ecological Society of America, Madison, WI. Aug. 3. Thiboldeaux, R.L., R.L. Lindroth, and J.W. Tracy.
- 1993 Enriched atmospheric carbon dioxide and artificial defoliation mediate changes in phytochemistry and gypsy moth performance. Annual Meeting of the Entomological Society of America, Indianapolis, IN. Dec. 13. Kinney, K.K., and R.L. Lindroth.
- 1993 Variation in gypsy moth - aspen interactions: effects of leaf quality on susceptibility to *Bt*. Annual Meeting of the Entomological Society of America, Indianapolis, IN. Dec. 15. Hwang, S.-Y., R.L. Lindroth, and M.E. Montgomery.
- 1993 Effects of CO₂-mediated changes in foliar chemistry on gypsy moth performance. Annual Meeting of the Entomological Society of America, Indianapolis, IN. Dec. 15. Roth, S.K., and R.L. Lindroth.
- 1993 Interaction of aspen phenolic glycosides and *Bacillus thuringiensis* in the gypsy moth midgut. Annual Meeting of the Entomological Society of America, Indianapolis, IN. Dec. 15. Shields, K.S., R.L. Lindroth, and S.-Y. Hwang.
- 1994 Effects of aspen chemistry on gypsy moth susceptibility to *Bt*. USDA Gypsy Moth Research Forum, Annapolis, MD. Jan. 19. Lindroth, R.L., S.-Y. Hwang, M.E. Montgomery, and K.S. Shields.
- 1994 How will enriched atmospheric carbon dioxide and defoliation mediate changes in deciduous trees and gypsy moth performance? Meeting of the Entomological Society of America, North Central Branch, Springfield, IL. March 15. Kinney, K.K., and R.L. Lindroth.
- 1994 Effects of elevated atmospheric CO₂ on tree chemistry and insect performance. First Global Change in Terrestrial Environments (GCTE) Conference, Woods Hole, MA. May 26. Lindroth, R.L., K.K. Kinney, and S.K. Roth.
- 1994 Changes in the carbon-nutrient balance of aspen: effects on gypsy moths and forest tent caterpillars. Annual Meeting of the Ecological Society of America, Knoxville, TN. Aug. 8. Hemming, J.D.C., and R.L. Lindroth.
- 1994 Elevated atmospheric carbon dioxide: effects on tritrophic interactions. Annual Meeting of the Ecological Society of America, Knoxville, TN. Aug. 8. Roth, S.K., and R.L. Lindroth.
- 1994 The effect of foliar phytochemical variation in aspen clones on performance of two forest pests. Annual Meeting of the Entomological Society of America, Dallas, TX. Dec. 16. Hwang, S.-Y.,

- and R.L. Lindroth.
- 1995 Do CO₂-mediated changes in tree chemistry alter gypsy moth - parasitoid interactions? Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Oxnard, CA. Jan. 24. Roth, S.K., and R.L. Lindroth.
- 1995 Effect of genetic and phenological variation in aspen chemistry on gypsy moth and tiger swallowtail performance. Phytochemical Society of North America, Sault Ste. Marie, Canada. Aug. 14. Hwang, S.-Y., and R.L. Lindroth.
- 1995 The interactive effects of CO₂ and drought on physiological responses of quaking aspen seedlings. Annual Meeting of the Ecological Society of America. Snowbird, UT. July 31. McDonald, E.P., and R.L. Lindroth.
- 1995 Responses of tree-feeding herbivores to environmentally-mediated variation in phytochemistry. Annual Meeting of the Entomological Society of America. Las Vegas, NV. Dec. 19. Roth, S.K., and R.L. Lindroth.
- 1996 Consequences of enriched atmospheric CO₂ and defoliation for tree-insect interactions. I. Foliar chemistry. Annual Meeting of the Ecological Society of America. Providence, RI. Aug. 13. Lindroth, R.L., S. Roth, E.L. Kruger, and J.C. Volin.
- 1996 Consequences of enriched atmospheric CO₂ and defoliation for tree-insect interactions. II. Insect performance. Annual Meeting of the Ecological Society of America. Providence, RI. Aug. 13. Roth, S., R.L. Lindroth, J.C. Volin, and E.L. Kruger.
- 1996 The impact of elevated CO₂ and defoliation on the growth and physiology of sugar maple and trembling aspen seedlings. Annual Meeting of the Ecological Society of America. Providence, RI. Aug. 13. Volin, J.C., E.L. Kruger, and R.L. Lindroth.
- 1997 Effects of CO₂ and light on resource allocation in trees: growth vs. defense. Annual Meeting of the Ecological Society of America. Albuquerque, NM. Aug. 13. McDonald, E.P., J. Agrell, and R.L. Lindroth.
- 1997 Phytochemical variation in quaking aspen and effects on gypsy moth growth. Annual Meeting of the Ecological Society of America. Albuquerque, NM. Aug. 14. Osier, T.L., S.-Y. Hwang, and R.L. Lindroth.
- 1998 Gene x environment effects on aspen phytochemistry. Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Ventura, CA. Feb. 25. Osier, T.L., and R.L. Lindroth.
- 1998 G x E effects on aspen chemistry: consequences for gypsy moths Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Ventura, CA. Feb. 25. Lindroth, R.L., and T.L. Osier.
- 1998 Consequences of gene x environment effects on aspen chemistry for gypsy moth performance. Annual Meeting of the Ecological Society of America. Baltimore, MD. Aug. 3. Lindroth, R.L., and T.L. Osier.
- 1998 Growth versus defense: strong evidence of an environmentally-mediated, evolutionary tradeoff between growth and defense in quaking aspen. Annual Meeting of the Ecological Society of America. Baltimore, MD. Aug. 3. Osier, T.L., and R.L. Lindroth.
- 1998 Quaking aspen genotype, resource availability and their interaction: consequences for the gypsy moth and the evolution of defense in quaking aspen. Meeting of the North Central Forest Pest Workshop. Dubuque, IA. Sept. 17. Osier, T.L., and R.L. Lindroth.
- 1998 Effects of elevated CO₂ and leaf phenology on insect performance. Annual Meeting of the

- Entomological Society of America. Las Vegas, NV. Nov. 11. Kopper, B.J., and R.L. Lindroth.
- 1999 Secondary compounds in seedling and mature aspen in Yellowstone National Park. 1999 Sesquicentennial Undergraduate Research Symposium, University of Wisconsin. Madison, WI. Feb. 10. Erwin, E.E., R.L. Lindroth, D. Nelson, and M.G. Turner.
- 1999 Genotype by environment effects on aspen chemistry: consequences for gypsy moth performance. Meeting of the North Central Branch of the Entomological Society of America. Des Moines, IA. March 30. Osier, T.L., and R.L. Lindroth.
- 1999 Response of insect performance to season-long exposure to elevated CO₂. Annual Meeting of the North Central Branch of the Entomological Society of America. Des Moines, IA. March 30. Kopper, B.J., and R. L. Lindroth.
- 1999 Secondary compounds in seedling and mature aspen in Yellowstone National Park. 1998-99 Howard Hughes Scholars Undergraduate Research Symposium, University of Wisconsin. Madison, WI. April 15. Erwin, E.E., M.G. Turner, R.L. Lindroth, and D. Nelson.
- 1999 Short-term induction, resource availability and plant genotype: quaking aspen foliar chemistry and effects on a generalist herbivore. Annual Meeting of the Ecological Society of America. Spokane, WA. Aug. 10. Osier, T.L., and R.L. Lindroth.
- 1999 Caterpillar response to season-long exposure of aspen and birch to elevated CO₂. Annual Meeting of the Ecological Society of America. Spokane, WA. Aug. 10. Kopper, B. J., and R. L. Lindroth.
- 1999 Ozone and CO₂ enrichment alters N resorption efficiency in *Populus tremuloides*. Annual Meeting of the Soil Science Society of America. Snowbird, UT. Nov. 2. Parsons, W.F.J., R.L. Lindroth, and J.G. Bockheim.
- 1999 Field scale responses of sap-feeding herbivores to elevated CO₂ and O₃. Meeting of the British Ecological Society. Leeds, United Kingdom. Dec. 21. Awmack, C.S., and R.L. Lindroth.
- 2000 Effects of elevated CO₂ and chronic O₃ on aspen blotch leafminer and trembling aspen. Meeting of the Entomological Society of America, North Central Branch. Minneapolis, MN. March 27. Kopper, B.J., and R.L. Lindroth.
- 2000 Responses of gypsy moth larvae to variation in quaking aspen phytochemistry: roles of induction, resource availability and plant genotype. Meeting of the Entomological Society of America, North Central Branch. Minneapolis, MN. March 27. Osier, T. L., and R.L. Lindroth.
- 2000 Global climate change and the population dynamics of aphids and their natural enemies. 19th International Meeting for Specialists in Air Pollution Effects on Forest Ecosystems (International Union of Forestry Research Organizations), Houghton, MI. May 30. Awmack, C.S., and R.L. Lindroth.
- 2000 *Populus tremuloides* and *Betula papyrifera* decomposition at Aspen-FACE (FACTS-II): leaf litter production and decay under individual and interactive effects of elevated CO₂ and O₃. 19th International Meeting for Specialists in Air Pollution Effects on Forest Ecosystems (International Union of Forestry Research Organizations), Houghton, MI. May 30. Parsons, W.F.J., Bockheim, J.G., and R.L. Lindroth.
- 2000 Effects of elevated CO₂ and O₃ on aspen foliar quality and leafminer performance. 19th International Meeting for Specialists in Air Pollution Effects on Forest Ecosystems (International Union of Forestry Research Organizations), Houghton, MI. May 30. Kopper, B.J., and R.L. Lindroth.
- 2000 Chemical ecology of aspen: causes and consequences of variation. Symposium on "Sustaining Aspen in Western Landscapes," Grand Junction, CO. June 14. R.L. Lindroth

- 2000 Long-term induction, soil nutrient availability and plant genotype: quaking aspen growth, foliar chemistry and effects on a generalist herbivore. Annual Meeting of the Ecological Society of America. Snowbird, Utah. Aug. 8. Osier, T.L., and R.L. Lindroth.
- 2000 Consequences of enriched CO₂ and O₃ for forest insects. Annual Meeting of the Ecological Society of America. Snowbird, Utah. Aug. 6. Lindroth, R.L., B.J. Kopper, and C.S. Awmack.
- 2000 Field scale responses of aphids and their natural enemies to elevated CO₂ and O₃. XXI International Congress of Entomology and XVIII Brazilian Congress of Entomology, Foz do Iguassu, Brazil. Aug. 21. Awmack, C.S., and R.L. Lindroth.
- 2001 Effects of enriched CO₂ and O₃ on tritrophic interactions. Gordon Research Conference on "Chemistry of Plant-Herbivore Interactions," Ventura, CA. Feb. 27. Lindroth, R.L., B.J. Kopper and M.K. Holton.
- 2001 Effects of elevated CO₂ and O₃ on aspen foliar quality and forest tent caterpillar performance. Meeting of the Entomological Society of America, North Central Branch. Fort Collins, CO. March 28. Kopper, B.J., and R.L. Lindroth.
- 2001 Effects of elevated atmospheric CO₂ and O₃ on tree-insect-parasitoid interactions. Annual Meeting of the Ecological Society of America. Madison, WI. Aug. 6. Holton, K., and R.L. Lindroth.
- 2001 *Populus tremuloides* and *Betula papyrifera* decomposition under independent and interactive effects of elevated CO₂ and O₃. Annual Meeting of the Ecological Society of America. Madison, WI. August 6. Parsons, W.F.J., R.L. Lindroth, and J.G. Bockheim.
- 2001 Response of forest tent caterpillars to trembling aspen exposed to elevated levels of CO₂ and O₃. Annual Meeting of the Ecological Society of America. Madison, WI. Aug. 7. Kopper, B.J., and R.L. Lindroth.
- 2001 Effects of elevated atmospheric CO₂ and O₃ on canopy insect biodiversity. Annual Meeting of the Ecological Society of America. Madison, WI. Aug. 8. Ashburn, A.K., and R.L. Lindroth.
- 2001 Aphid individual, population and natural enemy responses to elevated CO₂ or O₃. Annual Meeting of the Ecological Society of America. Madison, WI. Aug. 10. Awmack, C.S., R. Harrington, and R.L. Lindroth.
- 2001 Litter decay under elevated CO₂ and O₃. DOE Terrestrial Ecosystem and Carbon Cycle Science Team Meeting, Argonne National Laboratory. Argonne, IL. Oct. 30. Parsons, W.F.J., R.L. Lindroth, and J.G. Bockheim.
- 2001 Do paper birch condensed tannins affect whitemarked tussock moth (Lepidoptera: Lymantriidae) performance? Annual Meeting of the Entomological Society of America. San Diego, CA. Dec. 10. Kopper, B.J., V.N. Jakobi, T.L. Osier, and R.L. Lindroth.
- 2001 Insect individual and population responses to elevated CO₂ and O₃. Winter meeting of the British Ecological Society. Warwick, U.K. Dec. 20. Awmack, C.S., and R.L. Lindroth.
- 2002 Genetic determinants of condensed tannins in aspen. Annual Meeting of the Ecological Society of America. Tucson, AZ. August 5. Stevens, M.T., and R.L. Lindroth.
- 2002 Effects of aspen budbreak phenology and leaf chemistry on levels of defoliation during a forest tent caterpillar outbreak. Annual Meeting of the Ecological Society of America. Tucson, AZ. Aug. 5. Donaldson, J.R., and R.L. Lindroth.
- 2002 Ecologically relevant chemistry is highly variable in a hybrid cottonwood system. Annual Meeting of the Ecological Society of America. Tucson, AZ. August 5. Rehill, B.J., G.D. Martinsen, J.A. Schweitzer, R.L. Lindroth, and T.G. Whitham.

- 2002 Long-term effects of elevated CO₂ and O₃ on tritrophic interactions. Winter meeting of the British Ecological Society. York, U.K. Dec 20. Awmack, C.S., K.P. Percy, and R.L. Lindroth.
- 2003 Chemical diversity affects beetle performance in a hybrid cottonwood system. Meeting of the Entomological Society of America, North Central Branch. Madison, WI. 19 March. Rehill, B.J., J.A. Schweitzer, T.G. Whitham, and R.L. Lindroth.
- 2003 Ozone moderates a diverse set of responses to elevated CO₂ in an aggrading northern hardwood forest: results from the Aspen FACE project. 35th Annual Air Pollution Workshop. Vancouver, B.C., Canada. Apr. 7. Karnosky, D.F., M.E. Kubiske, K.S. Pregitzer, K.E. Percy, D.R. Zak, R.L. Lindroth, B.J. Kopper, C.S. Awmack, J.S. King, A. Hopkin, B. Mankovska, J. Sober, W.S. Jones, and G.R. Hendrey.
- 2003 Consequences of elevated carbon dioxide and ozone atmospheres for leaf litter decomposition at Aspen FACE. Annual Meeting of the Ecological Society of America. Savannah, GA. Aug. 4. Lindroth, R.L., W.F.J. Parsons, and J.G. Bockheim.
- 2003 Costs of tolerance to herbivory in aspen. Annual Meeting of the Ecological Society of America. Savannah, GA. Aug. 6. Stevens, M.T., and R.L. Lindroth.
- 2003 The effects of genotype, soil fertility and below ground competition on defensive chemistry and growth in aspen (*Populus tremuloides*). Annual Meeting of the Ecological Society of America. Savannah, GA. Aug. 6. Donaldson, J.R., E.L. Kruger, and R.L. Lindroth.
- 2003 Plant community composition and productivity: the effects of global environmental change. Meeting of the British Ecological Society. Manchester, England. Sept. 10. Masters, G., C.S. Awmack, R.L. Lindroth, and J. Farrell.
- 2003 FACE'ing the future: aphids alter alarm responses under climate change. Joint meeting of the Entomological Society of British Columbia and the Entomological Society of Canada, Kelowna, BC, Canada, Nov. 5. Mondor, E.B., M.N. Tremblay, C.S. Awmack, and R.L. Lindroth.
- 2004 Tolerance to folivory: aspen are risky investors. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. March 2. Stevens M.T., R.L. Lindroth, and E.L. Kruger.
- 2004 Benefits of chemical defense in aspen: linking leaf chemistry, gypsy moths, and defoliation. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. March 2. Donaldson J.R., and R.L. Lindroth.
- 2004 Potential ecological consequences of developmental trajectories in the phytochemistry of a dominant riparian tree. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. March 2. Rehill, B.J., T.G. Whitham, R.L. Lindroth, J.A. Schweitzer, and J.K. Bailey.
- 2004 High tolerance to herbivory pre-adapts aspen to invasive herbivores. Annual Meeting of the American Institute of Biological Sciences. Washington, D.C. March 16. Stevens M.T., D.M. Waller, and R.L. Lindroth.
- 2004 Impacts of global change on forest pests: results from Aspen FACE. 36th Annual Air Pollution Workshop. Rhinelander, WI. Apr. 26. Karnosky, D.F., R.L. Lindroth, W.J. Mattson, K.E. Percy, B.J. Kopper, and A. Hopkin.
- 2004 Effects of enhanced CO₂ and O₃ on aspen leaf beetle (*Chrysomela crotchi*) performance in a northern deciduous forest ecosystem. 36th Annual Air Pollution Workshop. Rhinelander, WI. Apr. 28. Vigue, L. and R.L. Lindroth.
- 2004 Transgenerational phenotypic plasticity under enriched atmospheres. 36th Annual Air Pollution Workshop. Rhinelander, WI. Mondor, E.B., M.N. Tremblay, and R.L. Lindroth.
- 2004 Genetic variation in tolerance in *Populus tremuloides*. Evolution Conference 2004. Fort Collins,

- CO. June 29. Stevens M.T., R.L. Lindroth, and D.M. Waller.
- 2004 The hidden belowground response to defense: does high defense require more roots? Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 4. Fischer, D.G., S.C. Hart, R.L. Lindroth, B.J. Rehill, and T.G. Whitham.
- 2004 Ontogenetic shifts in trembling aspen (*Populus tremuloides* Michx.) leaf chemistry: ecological implications of heteroblastic defenses. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 3. Donaldson, J.R., M.T. Stevens, H.R.H. Barnhill, and R.L. Lindroth.
- 2004 The genetic components of community structure and ecosystem processes: conservation implications. International Congress of Entomology. Brisbane, Australia. Aug. 18. Whitham, T.G., J.K. Bailey, J.A. Schweitzer, R.K. Bangert, G.M. Wimp, S.M. Shuster, E.V. Lonsdorf, R.L. Lindroth, and P. Keim.
- 2004 Genetic variation in leaf chemistry influences ecosystem processes during decomposition. International Congress of Entomology. Brisbane, Australia. Aug. 18. Madritch, M.D., M.D. Hunter, and R.L. Lindroth.
- 2004 *Populus* chemistry: a mechanistic link to extended phenotypes. 12th New Phytologist Symposium: Functional genomics of environmental adaptation in *Populus*. Gatlinburg, TN. Oct. 11. Rehill, B.J., S.C. Wooley, G.M. Wimp, T.G. Whitham, and R.L. Lindroth.
- 2004 Genetics and ecology of chemical defense in aspen (*Populus tremuloides*). 12th New Phytologist Symposium: Functional genomics of environmental adaptation in *Populus*. Gatlinburg, TN. Oct. 11. Lindroth, R.L., J.R. Donaldson, M.D. Madritch, and T.L. Osier.
- 2004 Genetic variation and induction of extrafloral nectaries in aspen (*Populus tremuloides*). Annual Meeting of the Entomological Society of America. Salt Lake City, UT. Nov. 15. Wooley, S.C., M.T. Stevens, J.R. Donaldson, and R.L. Lindroth.
- 2004 Genotypic and phenotypic changes in herbivore populations under altered atmospheric conditions. Annual Meeting of the Entomological Society of America. Salt Lake City, UT. Nov. 16. Mondor, E.B., M.N. Tremblay, C.S. Awmack, and R.L. Lindroth.
- 2005 The *Populus* multiverse: room for aspen. Cottonwood Symposium. Flagstaff, AZ. March 15. Lindroth, R.L.
- 2005 From genetics to chemistry to herbivory: Interactions between North American porcupines and trembling aspens. Annual Meeting of the Ecological Society of America. Montreal, Canada. Aug. 9. Diner, B., D. Berteaux, R.L. Lindroth, and J. Fyles.
- 2005 The effects of elevated CO₂ and O₃ on litterfall in aspen stands and mixed stands of aspen and birch. Annual Meeting of the Ecological Society of America. Montreal, Canada. Aug. 8. Giardina, C., W. Parsons, J. King, W. Loya, K. Pregitzer, and R.L. Lindroth.
- 2005 Site and genetic variation in aspen (*Populus tremuloides*) affects leaf rollers and sawfly (*Phyllocolpa* sp) leaf galls. Annual Meeting of the Entomological Society of America. Ft. Lauderdale, FL Dec. 15. Wooley, S.W., R.L. Lindroth, and T.G. Whitham.
- 2005 Exposure of forest invertebrate communities to simulated global change leads to shifts in community structure. Annual Meeting of the Entomological Society of America. Ft. Lauderdale, FL. Dec. 15. Hillstrom, M.L., C.S. Awmack, E.B. Mondor, and R.L. Lindroth.
- 2005 The effects of elevated CO₂ on insect community structure. Annual Meeting of the Entomological Society of America. Ft. Lauderdale, FL. Dec. 18. Hillstrom, M.L., C.S. Awmack, E.B. Mondor, and R.L. Lindroth.
- 2006 Growth-defense tradeoffs differ by gender in *Populus tremuloides*. Evolution Conference 2006.

- Stony Brook, NY. June 26. Stevens M.T., and R.L. Lindroth.
- 2006 Tri-trophic effects of plant defenses: black-capped chickadees consume caterpillars based on host leaf chemistry. 24th International Ornithological Congress. Hamburg, Germany. Aug. 18. Müller, M.S., S.R. McWilliams, D. Podlesak, J.R. Donaldson, H.M. Bothwell, and R.L. Lindroth.
- 2006 Genetic diversity of aspen leaf litter: Effects on leaf decomposition in an aquatic system. Annual Meeting of the Ecological Society of America. Memphis, TN. Aug. 8. Wooley, S.C., and R.L. Lindroth.
- 2006 Canopy herbivory mediates the influence of plant genotype on soil processes through frass deposition. Annual Meeting of the Ecological Society of America. Memphis, TN. Aug. 9. Madritch, M.D., J.R. Donaldson, and R.L. Lindroth.
- 2006 Effects of genotype, elevated carbon dioxide, and ozone on aspen phytochemistry and performance of the aspen leaf beetle. Annual Meeting of the Ecological Society of America. Memphis, TN. Aug. 10. Vigue, L.M., and R.L. Lindroth.
- 2006 Impacts of elevated CO₂ and O₃ on forest insect communities. Annual Meeting of the Entomological Society of America. Ft. Lauderdale, FL. Dec. 11. Hillstrom, M.L., C.S. Awmack, E.B. Mondor, and R.L. Lindroth.
- 2007 Intraspecific variation in aspen drives belowground processes. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. Feb. 21. Madritch, M.D., and R.L. Lindroth.
- 2007 Effects of genotype, elevated carbon dioxide, and ozone on aspen phytochemistry and performance of the aspen leaf beetle. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. Feb. 21. Vigue, L.M., and R.L. Lindroth.
- 2007 Effects of global atmospheric change on forest insect communities. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. Feb. 21. Hillstrom, M.L., and R.L. Lindroth.
- 2007 Genetic diversity of aspen leaf litter: effects on leaf decomposition in an aquatic system. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA. Feb. 22. Wooley, S.C., and R.L. Lindroth.
- 2007 Different cottonwood genotypes support different aboveground fungal communities: a genetic basis to community structure. Annual Meeting of the Ecological Society of America. San Jose, CA. Aug. 7. Lamit, L.J., C.A. Gehring, S.C. Wooley, C.M. Schultz, R.L. Lindroth, and T.G. Whitham.
- 2007 Aspen genotypes create patches of ecosystem functioning that influence leaf litter decomposition. Annual Meeting of the Ecological Society of America. San Jose, CA. Aug. 9. Madritch, M.D., and R.L. Lindroth.
- 2007 QTL mapping in a foundation tree (*Populus*) reveals a potential relationship between introgression, ecologically significant traits, and community phenotypes. Annual Meeting of the Ecological Society of America. San Jose, CA. Aug. 9. Woolbright, S.A., M. Zinkgraf, G. Slavov, J.A. Schweitzer, G. Allan, B. Rehill, R.L. Lindroth, S. DiFazio, T. Whitham, and P. Keim.
- 2007 Biogeography of Alaska paper birch (*Betula neoalaskana*): latitudinal patterns in chemical defense and plant architecture. Annual Meeting of the Ecological Society of America. San Jose, CA. Aug. 9. Stevens M.T., J.P. Bryant, S.C. Brown, H.M. Bothwell, R.L. Lindroth, and D.M. Waller.
- 2007 Preference, fecundity and mortality of the weevil *Polydrusus sericeus* feeding on trees fumigated with elevated carbon dioxide and ozone. Annual Meeting of the Entomological Society of America. San Diego, CA. Dec. 11. Hillstrom, M.L., D.R. Coyle, L. Vigue, and R.L. Lindroth.

- 2008 Recent advances in *Populus* phytochemistry. Cottonwood Symposium. Flagstaff, AZ. March 6. Lindroth, R.L., L.M. Holeski, A.E. Hagerman, and S.C. Wooley.
- 2008 *Populus* genetic variation and the leaf economics spectrum. Cottonwood Symposium. Flagstaff, AZ. March 6. Wooley, S.C., L.M. Holeski, and R.L. Lindroth.
- 2008 Genetic mosaics and ecosystem functioning: the influence of aspen clones on ecosystem processes across natural landscapes. Annual Meeting of the International Association for Landscape Ecology - U.S. Regional Association. Madison, WI. Apr. 7. Madritch, M.D., S.L. Greene, and R.L. Lindroth.
- 2008 A synthesis of plant-insect interactions at Aspen FACE. Facing the Future: a Joint AspenFACE, SoyFACE and SFB Meeting. Rhinelander, WI. April 3. Lindroth, R.L., T.D. Meehan, M.L. Hillstrom, J.J. Couture, and E.B. Mondor.
- 2008 Integration of herbivore defense in *Populus tremuloides*: ontogeny of resistance and tolerance. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Aug. 4. Lindroth, R.L., M.T. Stevens and J.R. Donaldson.
- 2008 Chemical changes in plants grown under enriched CO₂ and O₃ influence prairie vole (*Microtus ochrogaster*) growth. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Aug. 4. Loaiza, V., C.W. Habeck, R.L. Lindroth.
- 2008 Impact of atmospheric change on community herbivory in a northern temperate forest. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Aug. 4. Couture, J.J., T.D. Meehan, and R.L. Lindroth.
- 2008 Genetic variation in a foundation species influences associated primary producers: cottonwoods and lichens. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Aug. 5. Lamit, L.J., M.A. Bowker, L.M. Holeski, S.C. Wooley, M.S. Zinkgraf, R.L. Lindroth, T.G. Whitham, and C.A. Gehring.
- 2008 How rising CO₂ levels are affecting tree growth and inbreeding effects in quaking aspen. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Aug. 5. Cole, C., R.L. Lindroth, and J.E. Anderson.
- 2008 Terrestrial isopod performance on birch and aspen leaf litter produced under elevated CO₂ and O₃ conditions. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Aug. 5. Vigue, L.M., and R.L. Lindroth.
- 2008 Variation in the composition of condensed tannin in cottonwood due to genetic, ontogenetic, and environmental factors. Annual Meeting of the Ecological Society of America. Milwaukee, WI. Aug. 8. Scioneaux, A.N., M.A. Moore, M.A. Schmidt, R.L. Lindroth, S.C. Wooley, and A.E. Hagerman.
- 2008 Rising atmospheric CO₂ and O₃ levels: effects on tree chemistry, insect community composition and ecosystem processes at Aspen-FACE. Symposium: Forest Entomology: Changes Impacting Our Discipline. Annual Meeting of the Entomological Society of America. Reno, NV. Nov. 16. Hillstrom, M.L., and R.L. Lindroth.
- 2008 Herbivory induced spatial patterns in plant physiology and gene expression under predicted future climate conditions. Annual Meeting of the Entomological Society of America. Reno, NV. Nov. 17. Nability, P.D., M.L. Hillstrom, R.L. Lindroth, and E.H. DeLucia.
- 2009 Ontogeny of phytochemical induction in cottonwoods. Annual Cottonwood Symposium. Flagstaff, AZ. March 6. Holeski, L.M., T.G. Whitham, and R.L. Lindroth.
- 2009 Mineral nutrient dynamics of trembling aspen and paper birch under elevated CO₂ and O₃.

- Annual Meeting of the Soil Ecology Society. Burlington, Vermont. July 13. Parsons, W.F.J., J.G. Bockheim, and R.L. Lindroth.
- 2009 Litter chemistry and litter dwelling arthropod abundance are influenced by a genetic gradient created by plant hybridization. Annual Meeting of the Ecological Society of America. Albuquerque, NM. Aug. 7. Wojtowcz, T., L.A. Hanna, L.M. Holeski, L.J. Lamit, R.L. Lindroth, T.G. Whitham, and C.A. Gehring.
- 2009 Nutrient availability and enriched CO₂ indirectly affect mammalian herbivores via changes in plant chemistry. Annual Meeting of the Ecological Society of America. Albuquerque, NM. Aug. 7. Habeck, C., and R.L. Lindroth.
- 2009 Effects of elevated CO₂ and O₃ on herbivory by forest insects. National investigator meeting, DOE Program for Ecosystem Research. Washington, D.C. Nov. 18. Couture, J.J., T.D. Meehan and R.L. Lindroth.
- 2010 Just browsing, thanks: the eco-evo-devo-chemo biology of *Populus* and other exciting stuff. Annual Cottonwood Symposium. Flagstaff, AZ. Feb. 10. Lindroth, R.L., K.M. Keefover-Ring, and K.R. Rubert.
- 2010 Transgenerational phytochemical induction in cottonwoods. Annual Cottonwood Symposium. Flagstaff, AZ. Feb. 11. Holeski, L.M., T.G. Whitham, and R.L. Lindroth.
- 2010 Impact of atmospheric change on foliar quality and community-level herbivory in a northern temperate forest. Gordon Research Conference: Plant-Herbivore Interactions. Galveston, TX. Feb. 24. Couture, J.J., T.D. Meehan, and R.L. Lindroth.
- 2010 Developmental variation and induction in cottonwood. Gordon Research Conference: Plant-Herbivore Interactions. Galveston, TX. Feb. 24. Holeski, L.M., T.G. Whitham, and R.L. Lindroth.
- 2010 Mammalian herbivore response to CO₂- and O₃-mediated changes in plant chemistry. Gordon Research Conference: Plant-Herbivore Interactions. Galveston, TX. Feb. 24. Habeck, C.W., and R.L. Lindroth.
- 2010 Secondary chemical identity and natural variation in yellow monkeyflower, *Mimulus guttatus*. Gordon Research Conference: Plant-Herbivore Interactions. Galveston, TX. Feb. 24. Keefover-Ring, K., L.M. Holeski, and R.L. Lindroth.
- 2010 Climate change and plant-soil feedbacks in *Populus tremuloides*. Plant Population Biology Meetings. Njimegen. Netherlands. May 15. Bennett, A.E. and R.L. Lindroth.
- 2010 Phytochemical variation in *Mimulus guttatus* (yellow monkeyflower). Annual meeting of the Society for the Study of Evolution. Portland, OR. June 29. Holeski, L.M., K. Keefover-Ring, M.D. Bowers, and R.L. Lindroth.
- 2010 Climate change alters plant-soil feedbacks in *Populus tremuloides*. Annual Meeting of the Ecological Society of America. Pittsburgh, PA. Aug. 5. Bennett, A.E., and R.L. Lindroth.
- 2010 Consequences of atmospheric change for plant-insect interactions in forest ecosystems. Annual Meeting of the Ecological Society of America. Pittsburgh, PA. Aug. 5. Hillstrom, M.L., J.J. Couture, T.D. Meehan, E.B. Mondor, and R.L. Lindroth.
- 2010 Experimental approaches to test climate change effects on tree-pest dynamics and coevolution. Symposium on "Eco-Evolutionary Approaches to Understanding and Predicting the Response of Species Range to Climate Change." Hakozaki, Japan. Aug. 29. Albrechtsen, B.R., and R.L. Lindroth.
- 2011 Transgenerational induction in cottonwood. Gordon Research Conference: Ecological and

- Evolutionary Genomics. Biddeford, ME. July 13. Holeski, L.M., M. Zinkgraf, T.G. Whitham, and R.L. Lindroth.
- 2011 Responses of trembling aspen to simulated browsing and application of ungulate saliva. Annual Meeting of the Ecological Society of America. Austin, TX. Aug. 9. Keefover-Ring, K., K.F. Rubert-Nason, A.E. Bennett, and R.L. Lindroth.
- 2011 Remote sensing of forest genetic diversity and assessment of belowground microbial communities in *Populus tremuloides* forests. NASA Carbon Cycle and Ecosystems/Biodiversity and Ecological Forecasting Team Meeting. Alexandria, VA. Oct. 5. Madritch, M.D., P.A. Townsend, K.E. Mock, and R.L. Lindroth.
- 2011 Consequences of lignin modification in biofuel poplar for insect pest susceptibility: do we have a green light? Annual Meeting of the Entomological Society of America. Reno, NV. Nov. 15. Crossley, M.S., C. Buhl, and R.L. Lindroth.
- 2011 Chemical ecology and climate change: insect-plant interactions in a future climate. International Society of Chemical Ecology Annual Meeting, Vancouver, Canada. Aug. 27. Schwartzberg, E.G., P.B. Reich, K.F. Raffa, and R.L. Lindroth.
- 2012 Ecological trade-offs in western aspen: differences in resistance and tolerance between aspen clones. Annual Meeting of the Society for Range Management. Spokane, WA. Feb. 2. Gardner, R.S., R.J. DeRose, R.L. Lindroth, and K.E. Mock.
- 2012 Remote sensing of forest genetic diversity and assessment of belowground microbial communities in *Populus tremuloides* forests. NASA Biodiversity and Ecological Forecasting Team Meeting. Seattle, WA. April 26. Madritch, M.D., P.A. Townsend, K.E. Mock, and R.L. Lindroth.
- 2012 Genetic modification of cellulosic biofuel crops: implications for plant defense. International Biomass Conference and Expo. Denver, CO. April 18. Buhl, C.J., R.L. Lindroth, and R. Meilan.
- 2012 Genotype and soil nutrient environment influence aspen litter chemistry and in-stream decomposition. Annual Meeting of the Society for Freshwater Science. Louisville, KY. May 21. LeRoy, C.J., S.C. Wooley, and R.L. Lindroth.
- 2012 Plant phenological responses to experimental warming at the temperate-boreal ecotone. Annual Meeting of the Botanical Society of America. Columbus, OH. July 12. Montgomery, R., P.B. Reich, R. Rich, A. Stefanski, E.G. Schwartzberg, K.F. Raffa, and R.L. Lindroth.
- 2012 Hyperspectral remote sensing links aspen genotype with belowground processes at landscape scales. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 7. Madritch, M.D., K.E. Mock, R.L. Lindroth, and P.A. Townsend.
- 2012 Altered phenological synchrony in a warmer climate: forest tent caterpillars at B4Warmed. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 7. Schwartzberg, E.G., K.F. Raffa, P.B. Reich, and R.L. Lindroth.
- 2012 Genetic modification of cellulosic biofuel crops: implications for pest susceptibility. Annual Meeting of the Ecological Society of America. Portland, OR. August 7. Buhl, C.J., and R.L. Lindroth.
- 2012 Linking mycorrhizal fungal communities to tree genotype, litter chemistry and plant growth traits. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 7. Lamit, L.J., S.C. Wooley, R.L. Lindroth, T.G. Whitham, and C.A. Gehring.
- 2012 Genotype and environment modulate the response of trembling aspen to simulated ungulate browsing. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 9. Rubert-

- Nason, K.F., L.M. Holeski, K. Keefover-Ring, and R.L. Lindroth.
- 2012 Genetically modified poplar as biofuel: another opportunity for insect exploitation? XXIV International Congress of Entomology. Daegu, Korea. Aug. 21. Crossley, M.S., C.J. Buhl, and R.L. Lindroth.
- 2012 Effect of simulated climate warming and population source on synchrony of forest tent caterpillar (*Malacosoma disstria* Hübner) egg hatch and host leaf phenology. Annual Meeting of the Entomological Society of America. Knoxville, TN. Nov. 12. Uelmen, J.A., E.G. Schwartzberg, R.L. Lindroth, and K.F. Raffa.
- 2013 Climate warming in the southern boreal forest: consequences for plant-herbivore interactions. Gordon Research Conference on Plant-Herbivore Interaction. Ventura, CA. Feb. 25. Jamieson, M.A., E.G. Schwartzberg, P.B. Reich, K.F. Raffa, and R.L. Lindroth.
- 2013 Genetic variation among *Mimulus guttatus* populations in resistance to a generalist and a specialist herbivore. Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. Feb. 26. Holeski, L.M., J.J. Couture, and R.L. Lindroth.
- 2013 Chemical defense is a major growth cost for quaking aspens (*Populus tremuloides*). Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. Feb. 26. Cole, C.T., J. Anderson, R.L. Lindroth, M.T. Stevens, C. Habeck.
- 2013 Climate-induced phenological asynchrony between forest tent caterpillars and their host trees. Northeast Natural History Conference, Springfield, MA. April 13. Schwartzberg, E.G., K. Raffa, P. Reich, and R. Lindroth.
- 2013 Variability in imaging spectroscopy data across aspen stands is due to differences in genotype and foliar biochemistry. NASA Carbon Cycle and Ecosystems/Biodiversity and Ecological Forecasting Team Meeting. Washington, D.C. April 23. Townsend, P.A., Madritch M.D., Kingdon C.L., Singh A., Mock K.E., and R. L. Lindroth.
- 2013 Impact of rodents on composition and chemistry of transitional plant communities. Annual Meeting of the American Society of Mammalogists. Philadelphia, PA. June 18. Habeck, C.W., N. DeMelfy, A. Classen, R. Norby, and R.L. Lindroth.
- 2013 Root chemistry in *Populus tremuloides*: effects of soil nutrients, defoliation, and genotype. Annual Meeting of the Society for the Study of Evolution. Snowbird, UT. June 25. Stevens, M.T., A.C. Gusse, and R.L. Lindroth.
- 2013 Influence of genotype and soil fertility on the susceptibility of *Populus tremuloides* to deer browsing. Annual Meeting of the Ecological Society of America. Minneapolis, MN. Aug. 8. Rubert-Nason, K.F., S. McKenzie, and R.L. Lindroth.
- 2013 Diurnal changes in leaf UV-absorbing compounds and epidermal UV transmittance. Annual Meeting of the Ecological Society of America. Minneapolis, MN. August 8. Barnes, P.W., M.A. Tobler, S.D. Flint, R.J. Ryel, K.M. Keefover-Ring, and R.L. Lindroth.
- 2013 Insect population source and temperature influence synchronicity of forest tent caterpillars with host plants: incorporating dispersal potential into climate change predictions. Annual Meeting of the Entomological Society of America. Austin, TX. Nov. 11. Uelmen, J., P.B. Reich, E.G. Schwartzberg, P.C. Tobin, R.L. Lindroth, and K.F. Raffa.
- 2013 Simulated climate warming alters host tree quality for forest tent caterpillar. Annual Meeting of the Entomological Society of America. Austin, TX. Nov. 13. Jamieson, M.A., E.G. Schwartzberg, P.B. Reich, K.F. Raffa, and R.L. Lindroth.
- 2013 Effects of elevated temperature on tree phytochemistry and insect herbivory. 32nd New

- Phytologist Symposium. Plant Interactions with Other Organisms: Molecules, Ecology and Evolution. Buenos Aires, Argentina. Nov. 21. Jamieson, M.A., E.G. Schwartzberg, P.B. Reich, K.F. Raffa, and R.L. Lindroth.
- 2013 Insect population source and temperature influence synchronicity of forest tent caterpillars with host plants: Incorporating dispersal potential into climate change predictions. Entomological Society of America National Meeting, Austin, TX. Nov. 11. Uelmen, J., P. Reich, E.G. Schwartzberg, P. Tobin, R.L. Lindroth, and K.F. Raffa.
- 2014 Rapid changes in UV-shielding in plants: mechanisms, species patterns and physiological significance. European Union Cooperation in Science and Technology (COST) Action UV4growth Final Meeting, April 1. Bled, Slovenia. Barnes, P.W., M.A. Tobler, A.E. Barkley, S.D. Flint, R.J. Ryel, K. Keefover-Ring, and R.L. Lindroth.
- 2014 Imaging spectroscopy links aspen genotype with belowground processes at landscape scales. NASA Biodiversity and Ecological Forecasting Team Meeting, Silver Spring, MD. May 7. Madritch, M.D., C.C. Kingdon, A. Singh, K.E. Mock, R.L. Lindroth and P.A. Townsend.
- 2014 Plant genes and genetic by environment interactions link forests and streams. Joint Aquatic Sciences Meeting, Portland, OR. May 23. LeRoy, C. J., J.A. Schweitzer, J.K. Bailey, J.C. Marks, T.G. Whitham, D.G. Fischer, and R.L. Lindroth.
- 2014 Gypsy moth (*Lymantria dispar*) herbivory affects the spatial distribution of induced phytochemical defenses in trembling aspen (*Populus tremuloides*). Annual Meeting of the International Society of Chemical Ecology, Urbana, IL. July 9. Rubert-Nason, K.F., J.J. Couture, and R.L. Lindroth.
- 2014 Genotypic variation in tree response to elevated temperature and defoliation. Annual Meeting of the International Society of Chemical Ecology, Urbana, IL. July 9. Jamieson, M.A., K. Raffa, P. Reich, E. Kruger, and R.L. Lindroth.
- 2014 Determining the genetic underpinnings of phytochemistry and associated arthropod communities in aspen. Annual meeting of the International Society of Chemical Ecology. Urbana, IL. July 11. Bultman, H., L. Holeski, P. Ingvarsson, and R.L. Lindroth.
- 2014 Vole and deer feeding preferences for clonal variants of poplar: a role for NIR spectroscopic technology in predicting consumption based on known and unknown compounds in foliage and bark. Sixth International Poplar Symposium, Vancouver, Canada. July 22. Kallestad, J., K.R. Rubert-Nason, R.L. Lindroth, J. Vittetoe, and D. Nyquist.
- 2014 Testing growth-defense trade-offs among 14 willow and poplar species. Annual Meeting of the Ecological Society of America. Sacramento, CA. Aug. 12. Wei, X., A. Savage, K.M. Keefover-Ring, R.L. Lindroth, and J.M. Cavender-Bares.
- 2014 Genotype, temperature, and defoliation interact to influence tree growth and defense traits. Annual Meeting of the Entomological Society of America, Portland, OR. Nov. 16. Jamieson, M.J., K. Raffa, P. Reich, E. Kruger, and R.L. Lindroth.
- 2015 Climate warming of the southern boreal forest: consequences for tree-insect interactions. USDA-NIFA Project Directors Meeting, AFRI Plant-Associated Insects and Nematodes Program. Washington, D.C. April 28. Lindroth, R.L., M.A. Jamieson, K.F. Raffa and P.B. Reich.
- 2015 Remote sensing of belowground variation in trembling aspen forests. Annual Meeting of the Ecological Society of America. Baltimore, MD. Aug. 15. Madritch, M.D., K.E. Mock, A. Singh, R.L. Lindroth, and P.A. Townsend.
- 2015 Effects of vernal freeze damage on trembling aspen growth and colonization by *Chaitophorus stevensis*. Annual Meeting of the Ecological Society of America. Baltimore, MD. Aug. 15.

- Rubert-Nason, K.F., E.A. Gryzmala, J.J. Couture, and R.L. Lindroth.
- 2015 How defoliation of aspen affects host tree phenology. North Central Forest Pest Work Conference. Keshena, WI. Sept. 22. Falk, M.A., R.L. Lindroth, and K.F. Raffa.
- 2015 Phenological shifts in trembling aspen, *Populus tremuloides*, one year after defoliation by the forest tent caterpillar, *Malacosoma disstria*. Annual Meeting of the Entomological Society of America, Minneapolis, MN. Nov. 16. Falk, M., J. Donaldson, M. T. Stevens, K. Raffa, and R.L. Lindroth.
- 2015 Linking plant genes to associated insect communities. Annual Meeting of the Entomological Society of America, Minneapolis, MN. Nov. 16. Barker, H., J.F. Riehl, L. Holeski, P. Ingvarsson, and R.L. Lindroth.
- 2015 Climate change effects on tree-insect interactions. Annual Meeting of the Entomological Society of America, Minneapolis, MN. Nov. 17. Jamieson, M.A., K.F. Raffa, P.B. Reich, and R.L. Lindroth.
- 2016 Phytochemical patterns vary among trembling aspen genotypes during leaf expansion. North American Forest Insect Work Conference. Washington, DC. May 31. Falk, M., K.F. Raffa, and R.L. Lindroth.
- 2016 Community genomics: linking *Populus* genes to tree traits and insect communities. International Conference of Quantitative Genetics, Madison, WI. June 14. Barker, H., J.F. Riehl, L.M. Holeski, P. Ingvarsson, and R.L. Lindroth.
- 2016 The WisAsp resource for community genetics research: 1. Genotypic variation in an iconic forest tree species. Annual Meeting of the Ecological Society of America. Fort Lauderdale, FL. Aug. 8. Lindroth, R.L., H. Barker, and J.F. Riehl.
- 2016 The WisAsp resource for community genetics research: 2. The role of leaf phenology in shaping insect communities. Annual Meeting of the Ecological Society of America. Fort Lauderdale, FL. Aug. 8. Barker, H., J.F. Riehl, L.M. Holeski, P. Ingvarsson, and R.L. Lindroth.
- 2016 Sustained effects of vernal freeze damage on aspen growth, phenology, and chemical defense. Annual Meeting of the Ecological Society of America. Fort Lauderdale, FL. Aug. 9. Rubert-Nason, K.F., J.J. Couture, and R.L. Lindroth.
- 2016 Mechanisms underlying compensatory stimulation of leaf photosynthesis following defoliation in *Populus tremuloides*. Annual Meeting of the Ecological Society of America. Fort Lauderdale, FL. Aug. 10. Li, Z., E.L. Kruger, and R.L. Lindroth.
- 2016 Impacts of elevated atmospheric CO₂ and O₃ on canopy defoliation in a northern temperate forest system. International Congress of Entomology. Orlando, FL. Sept. 26. Lindroth, R.L., J.J. Couture, T.D. Meehan, and E.L. Kruger.
- 2017 Evolutionary constraints on chemical defense in aspen: different scales of selection. Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. Feb. 14. Cole, C.T., J.E. Anderson, P.K. Ingvarsson, V.H. Guo-Decker, B.R. Albrechtsen, M.T. Stevens, D.M. Waller, and R.L. Lindroth.
- 2017 The WisAsp resource for community genetics studies of plant-insect interactions. Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. Feb. 15. Lindroth, R.L., H.L. Barker, and J.F. Riehl.
- 2017 Rapid phytochemical changes following trembling aspen budbreak structure windows of vulnerability for gypsy moth. Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. Feb. 15. Falk, M.A., R.L. Lindroth, and K.F. Raffa.

- 2017 Consequences of atmospheric change for forest canopy insects: damage, deposition, and constraints on decarbonization. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 7. Lindroth, R.L., J.J. Couture, T.D. Meehan, and E.L. Kruger.
- 2017 Effects of warming and defoliation on tree physiology, growth, and defense. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 7. Jamieson, J.A., K.F. Raffa, P.B. Reich, K.F. Rubert-Nason, and R.L. Lindroth.
- 2017 Temperature and herbivory interact to increase volatile organic compound emission in *Populus tremuloides*. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 7. Keefover-Ring, K., M.A. Jamieson, H. Smaby, K.F. Raffa, P.B. Reich, and R.L. Lindroth.
- 2017 Effects of genotype and environment on the composition of foliar condensed tannins in aspen (*Populus tremuloides*). Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 8. Rubert-Nason, K.F., P. Yang, K. Yuan, and R.L. Lindroth.
- 2017 Long-term developmental trajectories in herbivore defense in a foundation tree species. Annual Meeting of the Ecological Society of America. Portland, OR. Aug. 10. Cope, O.L., E.L. Kruger, K.F. Rubert-Nason, and R.L. Lindroth.
- 2017 Rapid phenological changes in foliar chemistry impact gypsy moth performance: implications to altered synchrony induced by warming climate. International Union of Forest Research Organizations. Freiburg, Germany. Sept. 20. Falk, M.A., R.L. Lindroth, and K.F. Raffa.
- 2017 The WisAsp resource for community genetics studies of plant-insect interactions. USDA-NIFA Project Directors Meeting, AFRI Plant-Associated Insects and Nematodes Program. Washington, D.C. Oct. 30. Lindroth, R.L., J.F. Riehl, C.T. Cole, C.J. Morrow, H.L. Barker, K.R. Rubert-Nason, and P.K. Ingvarsson.
- 2017 Genetic variation in aspen (*Populus tremuloides* Michx.) phytochemical patterns structure windows of opportunity for gypsy moth (*Lymantria dispar* L.) larvae. Annual Meeting of the Entomological Society of America. Denver, CO. Nov. 5. Falk, M.A., R.L. Lindroth, and K.F. Raffa.
- 2018 It's about time: applying variable and changing temperatures to the management of two naturalized invasive pests, oak wilt fungus and gypsy moth. USDA Interagency Forum on Invasive Species. Annapolis, MD. Jan. 10. Raffa, K.F., M.A. Falk, S. Jagemann, J. Juzwik, R.L. Lindroth, and P.C. Tobin.
- 2018 Clonal ramets of trembling aspen do not coordinate defense function. North Central Branch Meeting of the Entomological Society of America. Madison, WI. March 19. Cope, O.L., and R.L. Lindroth.
- 2018 How are canopy insect communities structured by tree trait and genetic variation? North Central Branch Meeting of the Entomological Society of America. Madison, WI. March 21. Barker, H.L., J.F. Riehl, L.M. Holeski, P.K. Ingvarsson, and R.L. Lindroth.
- 2018 Uncovering the genetic architecture of growth-defense tradeoffs in a foundation forest tree species. 2018 Woody Crops International Conference. Rhinelander, WI. July 24. Riehl, J.F., C.T. Cole, C. Morrow, and R.L. Lindroth.
- 2018 Genotype and herbivory affect foliar condensed tannin composition in aspen (*Populus tremuloides*). Annual Meeting of the Ecological Society of America. New Orleans, LA. Aug. 9. Rubert-Nason, K.F., P. Yang, K. Yuan, and R.L. Lindroth.
- 2018 Genetic architecture of growth-defense tradeoffs in a foundation forest tree species. 2018 AFRI NIFA Fellows Program Project Directors Meeting. Washington, D.C. Aug. 24. Riehl, J.F., C.T. Cole, C. Morrow, and R.L. Lindroth.

- 2018 Insights into the genetic architecture of growth-defense tradeoffs in a foundation forest tree species. Fifth Annual Midwest Population Genetics Meeting. St. Paul, MN. Aug. 25. Riehl, J.F., C.T. Cole, C. Morrow, and R.L. Lindroth.
- 2018 Genetic variation in aspen phytochemical patterns mediates the effect of phenological asynchrony on gypsy moth larval performance. National Gypsy Moth Management Board, Annual Gypsy Moth Review. Indianapolis, IN. Nov. 6. Falk, M.A., R.L. Lindroth, K. Keefover-Ring, and K.F. Raffa.
- 2018 Does competition shape evolutionary trajectories of insect resistance in forest stands? Entomological Society of America Annual Meeting. Vancouver, BC. Nov. 12. Cope, O.L., K. Keefover-Ring, E.L. Kruger, and R.L. Lindroth.
- 2018 Genetic variation in aspen phytochemical patterns mediates herbivore responses to phenological shifts. Entomological Society of America Annual Meeting. Vancouver, BC. Nov. 13. Falk, M.A., R.L. Lindroth, K. Keefover-Ring, and K.F. Raffa.
- 2018 Understanding the effects of elevated temperature on ecological interactions between forest insect pests and host tree species. Entomological Society of America Annual Meeting. Vancouver, BC. Nov. 14. Jamieson, M.A., K.F. Raffa, P.B. Reich, and R.L. Lindroth.
- 2019 Canopy position and genotypic variation affect aspen phytochemistry and herbivore performance. Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. Feb. 25. Eisenring, M.A., S.B. Unsicker, and R.L. Lindroth.
- 2019 Competition-mediated costs of defense shape trajectories of herbivore resistance traits in aspen populations. Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. Feb. 25. Cope, O.L., K.M. Keefover-Ring, E.L. Kruger, and R.L. Lindroth.
- 2019 Understanding the genetic architecture of growth-defense tradeoffs in a foundation forest tree species. Midwest American Society of Plant Biologists Annual Meeting. Morgantown, WV. March 16. Riehl J.F., C.T. Cole, C.J. Morrow, and R.L. Lindroth.
- 2019 Aspen (*Populus tremuloides*) foliar condensed tannin quantity and quality covary with leaf age. Ecological Society of America Annual Meeting. Louisville, KY. Aug. 15. Rubert-Nason, K.F., E. Gleason, J.S. Schaefer, and R.L. Lindroth.
- 2019 Competition-mediated costs of defense and their consequences for aspen populations. Ecological Society of America Annual Meeting. Louisville, KY. Aug. 15. Cope O.L., K. Keefover-Ring, E.L. Kruger, and R.L. Lindroth.
- 2019 Supersites for superior forest science: integrated research on ecosystem-level climate change and air pollution responses. XXV International Union of Forest Research Organizations (IUFRO) World Congress. Curitiba, Brazil. Sept. 30. Sicard, P., R. Matyssek, A. Bytnerowicz, R. Ceulemans, P. Corona, A. De Marco, S. Fares, Z. Feng, L. Grünhage, J. King, A. Kozovits, D. Le Thiec, R.L. Lindroth, T. Mikkelsen, K. Pregitzer, H. Rennenberg, C. Reyer, G. Scarascia-Mugnozza, J-P. Tuovinen, G. Wieser, and E. Paoletti.
- 2019 *Populus tremuloides* genes underlie trait and insect variation. Entomological Society of America Annual Meeting. St. Louis, MO. Nov. 19. Morrow, C.J., J. Riehl, C.T. Cole, K.F. Rubert-Nason, and R.L. Lindroth.
- 2019 Effects of tree ontogeny and genotype on variation in insect resistance in trembling aspen. Entomological Society of America Annual Meeting. St. Louis, MO. Nov. 18. Cope O.L., E.L. Kruger, K.F. Rubert-Nason, and R.L. Lindroth.

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