

CURRICULUM VITAE

JAMES COLLIER RANDOLPH

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Education

1972	Ph.D.	Ecology	Carleton University; Ottawa, Ontario, Canada
1968	M.A.	Ecology	The University of Texas at Austin
1966	B.A.	Zoology	The University of Texas at Austin

Professional Positions

2008-	Director, Center for Research in Energy and the Environment
2004-2008	Director, M.S. in Environmental Science Program
2000-2007	Director, Ph.D. in Environmental Science Program
1990-2007	Director, Midwestern Regional Center for Global Environmental Change Indiana University, Bloomington
1989-1990	Executive Consultant (sabbatical) Utility Graphics Consulting (UGC), Inc., Englewood, Colorado
1986-1989	Associate Dean for Research and External Programs
1983-	Professor of Environmental Science
1983-	Professor of Biology (part-time)
1977-1986	Director, Graduate Environmental Science Programs
1977-1983	Associate Professor of Environmental Science
1977-1983	Associate Professor of Biology (part-time)
1974-1977	Assistant Professor of Environmental Science
1974-1977	Assistant Professor of Zoology (part-time) Indiana University, Bloomington
1972-1974	Research Ecologist, Environmental Sciences Division Oak Ridge National Laboratory. Oak Ridge, Tennessee
1968-1972	Graduate study in physiological ecology With H.G. Merriam, Carleton University, Ottawa, Canada
1966-1968	Graduate study in population biology With H.G. Merriam, The University of Texas at Austin

Research Interests

Forest ecology. Ecological aspects of global environmental change, with particular interests in forestry and agriculture. Environmental aspects of energy development and use. Applications of geographic information systems (GIS) and remote sensing in environmental and natural resources management. Physiological ecology of woody plants and of small mammals.

Post-Doctoral Research Associates

Jane Southworth, Ph.D., Indiana University. Research Associate, 2000-2002
Jasmeet Judge, Ph.D., University of Michigan. Research Associate, 2000-2001
Nicole T. Welch, Ph.D., University of Tennessee. Research Associate, 1998-2000
Weihong Fan, Ph.D., Colorado State University. Research Associate, 1993-1995
Jae Lee, Ph.D., Indiana State University. Research Associate, 1991-1993

Graduate Research Committees

Thomas Moore, Ph.D. in Environmental Science, 2009-
Amina Salamova, Ph.D. in Environmental Science, 2009-
Cheryl Sullivan, Ph.D. in Environmental Science, 2009-
Daniel Abrams, Ph.D. in Environmental Science, 2008-
Sarah Mincey, Ph.D. in Environmental Science, 2008-
Monica Priebe, Ph.D. in Environmental Science, 2008-
Mikaela Schmitt-Harsh, Ph.D. in Environmental Science, 2008-
Kevin Robertson, Ph.D. in Geological Sciences, 2008-
Francisco Sousa, Ph.D. in Environmental Science, 2007-
Michael Cox, Ph.D. in Public Policy, 2006-2009
Lauren Reker, M.S. in Environmental Science (chair), 2006-2008
Prakash Kashwan, Ph.D. in Public Policy, 2005-
Ellen Jameson, M.S. in Environmental Science, 2005-2008
Marta Venier, Ph.D. in Environmental Science, 2005-2008
Craig Tapscott, M.S. in Environmental Science (chair), 2005-2006
Anthony Cak, Ph.D. in Environmental Science, 2004-
Candice Smith, Ph.D. in Environmental Science (chair), 2004-2008
Richard Thurau, Ph.D. in Environmental Science (chair), 2004-
Lauren Persha, Ph.D. in Environmental Science (chair), 2003-2008
Evelyn Namubiru, Ph.D. in Public Policy, 2003-2008
David Welch, Ph.D. in Environmental Science, 2001-2007
Nathan Vogt, Ph.D. in Environmental Science (chair), 2000-2005
Ashok Regemi, Ph.D. in Public Policy, 2000-2006
Jon Belmont, Ph.D. in Environmental Science (chair), 1999-2004
Theresa Burcsu, Ph.D. in Environmental Science, 1999-2006
Craig Wayson, Ph.D. in Environmental Science (chair), 1999-2005
Mateus Batistella, Ph.D. in Environmental Science, 1998-2001
Dale Weigel, Ph.D. in Environmental Science (chair), 1998-
Jane Southworth, Ph.D. in Environmental Science (chair), 1997-2000
Sally Letsinger, Ph.D. in Geological Sciences, 1997-2001
Esther Mwangi, Ph.D. in Public Policy, 1997-2003
Maria Clara Silva-Fosberg, Ph.D. in Environmental Science, 1996-2000
Edwin Castellanos, Ph.D. in Environmental Science (chair), 1995-2001
Alissa Packer, Ph.D. in Ecology, 1995-2000
Angelia Honea-Floyd, M.S. in Environmental Science and M.A. in Ecology, 1995-1999
Jeffrey Ehman, Ph.D. in Environmental Science (chair), 1994-2001
Jerry Johnston, Ph.D. in Environmental Science (chair), 1994-2001
Nives Dolsak, Ph.D. in Public Policy (co-chair), 1994-2000
Jack Wittman, Ph.D. in Environmental Science, 1993-2001
Donald Winslow, Ph.D. in Ecology, 1993-2003
Paul Turner, Ph.D. in Public Policy, 1993-1999
Mark Demanes, M.S. in Environmental Science and M.A. in Geography, 1993-1995
Patrick Doran, M.S. in Environmental Science and M.A. in Ecology, 1993-1995
Chana Frenkel, M.S. in Environmental Science (chair), 1993-1995
Steven Koch, M.S. in Environmental Science and M.A. in Ecology, 1993-1995
Michelle Mattix, M.S. in Environmental Science and M.A. in Geography, 1993-1995
Eduardo Brondizio, Ph.D. in Environmental Science, 1992-1996
Victor Kelson, Ph.D. in Environmental Science, 1992-2000
Charles Schweik, Ph.D. in Public Policy, 1992-1998
Matthew Koukol, M.S. in Environmental Science and M.A. in Ecology, 1992-1994
Martin Crossland, Ph.D. in Business, Kelley School of Business, 1991-1993

Charlotte Wolfe, Ph.D. in Environmental Science, 1991-1999
 Esther Schneider, M.S. in Environmental Science and M.A. in Ecology (chair), 1991-1993
 James Van Kley, Ph.D. in Forestry, Forestry and Natural Resources, Purdue University, 1990-1993
 Cindy Huebner, M.S. in Environmental Science and M.A. in Ecology (chair), 1989-1991
 William Rudy, M.S. in Environmental Science and M.A. in Ecology (chair), 1989-1992
 Mark Storck, M.S. in Environmental Science and M.A. in Geology, 1988-1989
 Daniel Levine, Ph.D. in Environmental Science (chair), 1987-1992
 Jeff Myers, Ph.D. in Anthropology, 1987-1991
 Brian Redmond, Ph.D. in Anthropology, 1987-1990
 Robert Kraemer, M.A. in Geography, 1987-1989
 Tom Behymer, Ph.D. in Chemistry, 1983-1988
 Mary Ann Hughes, Ph.D. in Ecology, 1983-1989
 Steven Kraemer, Ph.D. in Environmental Science, 1983-1985
 Timothy Cochrane, Ph.D. in Folklore, 1983-1987
 Timothy McDaniel, M.S. in Environmental Science (chair), 1983-1985
 Jean Czuczwa, Ph.D. in Chemistry, 1982-1985
 Bruce McVeety, Ph.D. in Chemistry, 1982-1986
 Molly Morris, Ph.D. in Ecology, 1982-1987
 Cory Tuckfield, Ph.D. in Ecology, 1982-1986
 Ted Melcer, Ph.D. in Psychology, 1982-1988
 Chad Gubala, Ph.D. in Environmental Science, 1981-1985
 Craig Stewart, Ph.D. in Ecology (co-chair), 1981-1986
 Jan Fullenwider, M.S. in Environmental Science (chair), 1981-1983
 Donald Gilbert, Ph.D. in Ecology, 1980-1983
 Gustavo Romero, Ph.D. in Ecology, 1980-1986
 Phillipe LePrestre, Ph.D. in Political Science, 1980-1983
 Bruce Bromley, M.S. in Environmental Science and M.A. in Geology, 1980-1982
 Robert Swanson, Ed.D. in Environmental Education, School of Education, 1979-1981
 John Wrazen, Ph.D. in Ecology (chair), 1978-1981
 Yahya Abolkair, Ph.D. in Geography, 1978-1981
 Larry Enochs, Ed.D. in Environmental Education, School of Education, 1978-1980
 James Lubbers, Ed.D. in Environmental Education, School of Education, 1978-1980
 Mark Epstein, M.S. in Environmental Science and M.A. in Geology, 1978-1980
 William Giles, Ph.D. in Geography, 1977-1982
 Lawrence Wong, M.S. in Environmental Science (chair), 1977-1979
 Gary Durrant, Ph.D. in Physiology, School of Medicine, 1976-1980
 Mary Smith, M.A. in Ecology (chair), 1975-1977
 Kevin Mattingly, Ph.D. in Ecology (co-chair), 1974-1980

Peer-reviewed Publications

- Persha, L. and J.C. Randolph. Convergent outcomes of disparate anthropogenic forest disturbance patterns on Afro-montane tropical forest structure and composition. *Ecological Applications* (In progress).
- Smith, C. and J.C. Randolph. C, N and P additions to sugar maples and white oaks: Effects on soil CO₂ efflux and fine root biomass. *Forest Ecology and Management* (In progress).
- Randolph, J.C., C.A. Wayson, E. J. Castellanos, J. L. Ehman, and J. J. Johnston. Carbon storage and accumulation in a successional deciduous forest chronosequence in the midwestern United States. *Ecosystems* (In progress).
- Wayson, C.A., J.L. Ehman, and J. C. Randolph. Temporal variability in Autumnal litterfall along a stand chronosequence in a mixed deciduous forest. *American Midland Naturalist* (In progress).

- Wayson, C. A., D. Dragoni, J.C. Randolph, C.S.B. Grimmond, J.L. Ehman and H. P. Schmid. Biometric and eddy-covariance: integrated carbon flux analysis in a mid-latitude deciduous forest. *Journal of Geophysical Research* (Under revision).
- Cameron, G.N., J. J. Johnston, and J.C. Randolph. 2009. Nutrient encounter by a generalist herbivore in a heterogeneous landscape. *American Midland Naturalist* **161**: 242-250.
- Tucker, C.M., J.C. Randolph, T.P. Evans, K.P. Andersson, L. Persha, and G.M. Green. 2008. An approach to assess relative degradation in dissimilar forests: Toward a comparative assessment of institutional outcomes. *Ecology and Society* **13**: 4-24. [online] URL: <http://www.ecologyandsociety.org/vol13/iss1/art4/Insight>
- Tucker, C.M., J.C. Randolph and E.J. Castellanos. 2007. Institutions, biophysical factors and history: An integrative analysis of private and communal forests in Guatemala and Honduras. *Human Ecology*. **35**: 259-274.
- Wayson, C.A., J.C. Randolph, P.J. Hanson, and H.P. Schmid. 2006. Influence of soil respiration in determining net ecosystem exchange in a mid-latitude deciduous forest. *Biogeochemistry* **80**: 195-216.
- Welch, N.T., J.M. Belmont, and J.C. Randolph. 2006. Herb layer biomass and nutrient contribution to aboveground litter in an Indiana temperate deciduous forest. *American Midland Naturalist* **157**: 11-26.
- Green, G.M., C.M. Schweik, and J.C. Randolph. 2005. Linking disciplines across space and time: useful concepts and approaches for land-cover change studies. Ch. 3 in Moran, E.F. and E. Ostrom (eds.) *Seeing the Forest and the Trees: Human-Environment Interactions in Forest Ecosystems*. MIT Press. Boston, MA. 442 pp.
- Green, G.M., C.M. Schweik, and J.C. Randolph. 2005. Retrieving land-cover change information from Landsat satellite images by minimizing other sources of reflectance variability. Ch. 6 in Moran, E.F. and E. Ostrom (eds.) *Seeing the Forest and the Trees: Human-Environment Interactions in Forest Ecosystems*. MIT Press. Boston, MA. 442 pp.
- Randolph, J.C., Green, G.M., J. Belmont, T. Burcsu and D. Welch. 2005. Forest ecosystems and the human dimensions. Ch. 5 in Moran, E.F. and E. Ostrom (eds.) *Seeing the Forest and the Trees: Human-Environment Interactions in Forest Ecosystems*. MIT Press. Boston, MA. 442 pp.
- Oliphant, A.J., C.S.B. Grimmond, H.N. Zutter, H.P. Schmid, H.-B. Su, S.L. Scott, B. Offerle, J.C. Randolph and J.L. Ehman. 2004. Observations of energy balance components in a temperate deciduous forest. *Agricultural and Forest Meteorology* **126**: 185-201.
- Curtis, P.S., P.J. Hanson, P. Bolstad, C. Barford, J.C. Randolph, H.P. Schmid, and K.B. Wilson. 2002. Biometric and eddy-covariance based estimates of ecosystem carbon storage in five eastern North American deciduous forests. *Agricultural and Forest Meteorology* **113**: 3-19.
- Davidson, E.A., K. Savage, P. Bolstad, D.A. Clark, P.S. Curtis, D.S. Ellsworth, P.J. Hanson, B.E. Law, Y. Luo, K.S. Pregitzer, J.C. Randolph, and D. Zak. 2002. Belowground carbon allocation in forests estimated from litterfall and IRGA-based soil respiration measurements. *Agricultural and Forest Meteorology* **113**: 39-51.
- Doering, O.C., J.C. Randolph, J. Southworth, and R.A. Pfeifer (eds.) 2002. *Effects of Climate Change and Variability on Agricultural Production Systems*. Kluwer Academic Publishers. Boston. 267 pp.
- Doering, O.C. and J.C. Randolph. 2002. Assessing global climate change impact on agriculture. Ch. 1 in Doering, O.C., J.C. Randolph, J. Southworth, and R.A. Pfeifer (eds.) *Effects of Climate Change and Variability on Agricultural Production Systems*. Kluwer Academic Publishers. Boston. 267 pp.

- Doering, O.C., J.C. Randolph, J. Southworth, and R. Pfeifer. 2002. Conclusions. Ch. 13 in Doering, O.C., J.C. Randolph, J. Southworth, and R.A. Pfeifer (eds.) *Effects of Climate Change and Variability on Agricultural Production Systems*. Kluwer Academic Publishers. Boston, MA. 267 pp.
- Ehman, J.L., H.P. Schmid, J.C. Randolph, C.S.B. Grimmond, P.J. Hanson, C.A. Wayson and F.D. Cropley. 2002. An initial intercomparison of micrometeorological and ecological inventory estimates of carbon sequestration in a mid-latitude deciduous forest. *Global Change Biology* **8**: 575-589.
- Ehman, J.L., W. Fan, J.C. Randolph, J. Southworth, and N.T. Welch. 2002. An integrated GIS and modeling approach to assess the transient response of forests of the southern Great Lakes region to a doubled CO₂ climate. *Forest Ecology and Management* **155**: 237-255.
- Moran, E.F., E. Ostrom, and J.C. Randolph. 2002. Ecological Systems and Multitier Human Organization. In Kiel, L.D. (ed.) *Encyclopedia of Life Support Systems (EOLSS)*. UNESCO, EOLSS Publishers. Oxford, UK.
- Pfeifer, R. and J.C. Randolph 2002. Expert panels' contributions to climate change research. Ch. 4 in Doering, O.C., J.C. Randolph, J. Southworth, and R.A. Pfeifer (eds.) *Effects of Climate Change and Variability on Agricultural Production Systems*. Kluwer Academic Publishers. Boston. 267 pp.
- Southworth, J., R.A. Pfeifer, M. Habeck, J.C. Randolph, O.C. Doering, and D.G. Rao. 2002. The sensitivity of winter wheat yields in the Midwestern United States to future changes in climate, climate variability, and CO₂ fertilization. *Climate Research* **22**: 73-86.
- Southworth, J., R.A. Pfeifer, M. Habeck, J.C. Randolph, O.C. Doering, J.J. Johnston, and D.G. Rao. 2002. Changes in soybean yields in the Midwestern United States as a result of future changes in climate, climate variability, and CO₂ fertilization. *Climatic Change* **53**: 447-475.
- Randolph, J.C. and G.N. Cameron. 2001. Consequences of diet choice by a small generalist herbivore. *Ecological Monographs* **71**: 99-118.
- Southworth, J., J.C. Randolph, M.A. Habeck, O.C. Doering, R.A. Pfeifer, D.G. Rao, and J.J. Johnston. 2000. Consequences of future climate change and changing climate variability on maize yields in the Midwestern United States. *Agriculture, Ecosystems, and Environment* **82**: 139-158.
- Ehman, J.L., H.P. Schmid, C.S.B. Grimmond, J.C. Randolph, P.J. Hanson, and F.D. Cropley. 2000. A preliminary intercomparison of micrometeorological and ecological estimates of carbon sequestration in a mid-latitude deciduous forest. Pp. 235-240 in R.J. de Dear, J.D. Kalma, T.R. Oke, and A. Auliciems (eds.) *Biometeorology and Urban Climatology at the Turn of the Millennium*. World Meteorological Organization.
- Fan, W., J.C. Randolph, and J. Ehman. 1998. Regional estimation of nitrogen mineralization in forest ecosystems using geographic information systems. *Ecological Applications* **8**: 734-747.
- Randolph, J.C., M.A. McKinney, C. Allen, and J.D. Peine. 1998. The Southern Appalachians: The Setting for the Case Study. Ch. 4 in Peine, J.D. (ed.) *Ecosystem Management for Sustainability*. Lewis Publishing. Albany, GA. 430 pp.
- Doering, O.C., J. Lowenberg-DeBoer, M. Habeck, J.C. Randolph, B.Z. Littlefield, J.J. Johnston, M. Mazzocco, M. Kinwa, and R.A. Pfeifer. 1997. Adaptations to global climate change: unforeseen consequences from agro-ecosystem change in the Midwestern Great Lakes States. *Journal of Soil and Water Conservation* **52**: 296-311.
- Doering, O.C., J.C. Randolph, and M.A. Mazzocco. 1997. Mitigation strategies and unforeseen consequences: a systematic assessment of the adaptation of upper Midwest agriculture to future climate change. *World Resource Review* **9**: 447-459.
- Randolph, J.C. and N. Dolsak. 1997. Will strategies for reduction of sulfur dioxide emissions from electric utilities increase carbon dioxide emissions? *World Resource Review* **9**: 337-358.

- Johnston, J.J., D.R. Weigel, and J.C. Randolph. 1997. Satellite imagery as a tool for pine plantation management in the Central Hardwoods region. *Journal of Forestry* **6**: 16-20.
- Randolph, J.C., G.N. Cameron, and P.A. McClure. 1995. Nutritional requirements of reproduction in the hispid cotton rat, *Sigmodon hispidus*. *Journal of Mammalogy* **76**: 1113-1126
- Peine, J.D., J.C. Randolph, and J.J. Presswood, Jr. 1995. Evaluating the effectiveness of the management of the Class I area of Great Smoky Mountains National Park. *Environmental Management* **19**: 515-526.
- Huebner, C.D., J.C. Randolph, and G.R. Parker. 1995. Environmental factors affecting herb diversity in second-growth forests. *American Midland Naturalist* **134**: 155-165.
- Randolph, J.C. 1995. Climate change effects on forests of the eastern United States. Ch. 7 in Heit, M., H.D. Parker, and A. Shortreid (eds.) *GIS Applications in Natural Resources, Vol. 2*. GIS World Books. Fort Collins, CO. 610 pp.
- Randolph, J.C. and J.K. Lee. 1994. Effects of climate change on forests of the eastern United States. *Geocarto International* **9**: 15-30.
- Lee, J.K., J.C. Randolph, K.P. Lulla, and M.R. Helfert. 1993. Interfacing remote sensing and geographic information systems for global environmental change research. *Geocarto International* **8**: 7-18.
- Randolph, J.C., G.N. Cameron, and J.A. Wrazen. 1991. Dietary choice of a generalist grassland herbivore, *Sigmodon hispidus*. *Journal of Mammalogy* **72**: 145-176.
- Randolph, J.C., and G.L. Fowler. 1983. Energy policies and biomass resources in the Asia-Pacific region. *Public Administration Review* **43**: 528-536.
- Getz, T.J., J.C. Randolph, and W.E. Echelberger, Jr. 1983. Environmental application of aerial reconnaissance to search for open dumps. *Environmental Management* **7**: 553-562.
- Fowler, G.L. and J.C. Randolph. 1982. Issues in land-use planning for synthetic fuels from coal and biomass resources in the midwestern USA. *Energy* **7**: 1027-1030.
- Fowler, G.L., J.C. Randolph, and S.I. Gordon. 1982. The environmental impacts of synthetic liquid fuels development in the Ohio River Basin. Pp. 335-354 in Platt, R.H. and G. Macinko (eds.) *Beyond the Urban Fringe*. University of Minnesota Press. Minneapolis. 486 pp.
- Randolph, J.C. 1980. Daily energy metabolism of two rodents (*Peromyscus leucopus* and *Tamias striatus*) in their natural environment. *Physiological Zoology* **53**: 70-81.
- Randolph, J.C. 1980. Daily metabolic patterns of the short-tailed shrew (*Blarina brevicauda*) in three natural seasonal temperature regimes. *Journal of Mammalogy* **61**: 628-638.
- McClure, P.A. and J.C. Randolph. 1980. Relative allocation of energy to growth and development of homeothermy in the Eastern wood rat (*Neotoma floridana*) and the hispid cotton rat (*Sigmodon hispidus*). *Ecological Monographs* **50**: 199-219.
- Roberts, M.C., J.C. Randolph, and J.R. Chiesa, 1979. A land suitability model for the evaluation of land-use change. *Environmental Management* **3**: 321-335.
- Barlow, C.A., P.A. Randolph, and J.C. Randolph. 1977. Effects of pea aphids (*Acyrtosiphon pisum*) on growth and productivity of pea plants (*Pisum sativum*). *Canadian Entomologist* **109**: 1491-1502.
- Randolph, P.A., J.C. Randolph, D.K. Mattingly, and M.M. Foster. 1977. Energy costs of reproduction in the cotton rat, *Sigmodon hispidus*. *Ecology* **58**: 31-45.
- Randolph, J.C., P.A. Randolph, and C.A. Barlow. 1976. Temporal variations in energetic standing crop of some carabid beetle populations in eastern Canada. *Canadian Journal of Zoology* **54**: 10-18.

Randolph, P.A., J.C. Randolph, and C.A. Barlow. 1975. Age-specific energetics of the pea aphid, *Acyrothosiphon pisum*. *Ecology* **56**: 359-369.

Randolph, J.C. 1973. Ecological energetics of a homeothermic predator, the short-tailed shrew. *Ecology* **54**: 1166-1187.

Technical Reports and Reviews

- 1994 Field Guide: Ecological Classification of the Hoosier National Forest and Surrounding Areas of Indiana. With J.E. Van Kley, G.R. Parker, and D.P. Franzmeier. USDA Forest Service. 89pp.
- 1991 A Comparison of Three Emission Control Strategies in the Electric Utility Industry in Indiana. With J. Fesenmaier, T. Sinski, K. Temple, and K. Reininga. State Utility Forecasting Group. Technical Report No. 104. Indiana Utility Regulatory Commission. 55 pp.
- 1991 Global Climate Change, Electric Utilities, and Energy Policy. With A. Mathews. State Utility Forecasting Group Technical Report No. 103. Indiana Utility Regulatory Commission. 93 pp.
- 1989 Acid Rain: Science and Policy. With A. Mathews. State Utility Forecasting Group Technical Report No. 102. Indiana Utility Regulatory Commission. 150 pp.
- 1988 An Analysis of the Significance of Emissions Control Regulations Upon the Electrical Utility Industry in the State of Indiana. With A. Mathews, S. Redman, K. Reininga, and T. Spranger. State Utility Forecasting Group Technical Report No. 101. Indiana Utility Regulatory Commission. 110 pp.
- 1986 Five Year Review of Existing Programs: SPEA Environmental Programs. School of Public and Environmental Affairs. Indiana University. 210 pp.
- 1985 An Analysis of an Electrophoretic Technique for Reduction of Sulfur Content in Indiana Coal. With J. Dunning and J. White. Indiana Corporation for Science and Technology. 126 pp.
- 1981 SPEA Environmental Programs: Interface of Science and Policy. *SPEA Review* 2: 14-17.
- 1980 Five Year Review of Existing Programs: SPEA Environmental Programs. Indiana Commission for Higher Education. 55 pp.
- 1980 Data Search for Open Dump Inventory: Aerial Search. Indiana State Board of Health. 25 pp.
- 1980 Ohio River Basin Energy Study: Land Use and Terrestrial Ecology. With W.W. Jones. U.S. Environmental Protection Agency Report No. 600/7-81-062. 163 pp.
- 1980 Ohio River Basin Energy Facility Siting Model. With G.L.Fowler, S.I. Gordon, and R.E. Bailey. U.S. Environmental Protection Agency Report No. 600/7-81-042. 175 pp.
- 1980 Ohio River Basin Energy Study Summary Report. With 13 co-authors. U.S. Environmental Protection Agency Report No. 600/7-81-084. 311 pp.
- 1979 Cedar Lake Restoration Feasibility Study. With W. Echelberger and W.W. Jones.. Indiana Department of Natural Resources. 248 pp.
- 1979 Fish and Wildlife Resources of the Great Lakes Coastal Wetlands within the United States (C.E. Herdendorf and S.M. Hartley, eds.). Indiana University Project Coordinator for Volume Five: Lake Michigan. U.S. Fish and Wildlife Service. 1252 pp.
- 1979 Municipal and Industrial Wastewater Sludge Inventory in Indiana Chemical Characterizations. With W. Echelberger. Indiana State Board of Health. 202 pp.
- 1977 An Automatic Gas Analysis System for Continuous Monitoring of Oxygen and Carbon Dioxide Exchange in Terrestrial Ecosystems. With F.M. Rau. Oak Ridge National Laboratory Technical Report TM-5024. 34 pp.

- 1977 Environmental Assessment of the Indiana University Alumni Association Family Camp. Project Director. Indiana University Alumni Association. 232 pp.
- 1977 Preliminary Technology Assessment Report. Ohio River Basin Energy Study. Volume II-A. Indiana University - The Ohio State University - Purdue University Team. U.S. Environmental Protection Agency. 1693 pp.
- 1976 Assessment of the Environmental Impact on Terrestrial Ecosystems of the Proposed Clark Maritime Centre on the Ohio River. Project Director. U.S. Army Corps of Engineers. 178 pp.
- 1976 Lake Monroe Land Suitability Study: Computer Program User's Manual. With J.R. Chiesa. School of Public and Environmental Affairs. Indiana University. 20 pp.
- 1976 Assessment of Environmental Impacts of Proposed Wastewater Treatment Facilities for Region IX-East of DuPage County, Illinois. Project Director. Morris Environmental Engineering. 117 pp.
- 1976 Environmental and Socioeconomic Impact Assessment for Expansion of Wastewater Treatment Facilities at Woodstock, Illinois. Project Director. Morris Environmental Engineering. 233 pp.
- 1976 Structural Niches in the Forest Floor Small Mammal Community. With R.D. Dueser and H.H. Shugart, Jr. Oak Ridge National Lab Technical Report TM-5004. 118 pp.
- 1975 Terrestrial Ecology. Pp. 161-272 in Lake Monroe Land Suitability Study: A Technical Report on a Selected Portion of the Lake Monroe Watershed. School of Public and Environmental Affairs. Indiana University.
- 1975 A Land Capability Model for the Lower Lake Monroe Watershed. With J. Chiesa, M.C. Roberts, and R.S. Howe. Technical Report No. 66. Water Resources Research Center. Purdue University. 27 pp.
- 1974 Homeotherm Energetics. (Book review) *Ecology* **55**: 219-220.
- 1974 Suggested Procedures for Preparation of Environmental Impact Statements as Required by Indiana Code, B-1-10-3. With N.L. White, M.G. Smith, and T.J. Kubiak. Occasional Paper No. 3. School of Public and Environmental Affairs, Indiana University. 48 pp.
- 1974 Environmental Statement Related to the Proposed Comanche Peak Steam Electric Station, Units 1 and 2, Texas. Dockets Nos. 50-445 and 50-446. Terrestrial ecology sections. U.S. Atomic Energy Commission.
- 1973 Environmental Statement Related to the Proposed Newbold Island Nuclear Generating Station, Units 1 and 2, New Jersey. Dockets Nos. 50-354 and 50-355. Terrestrial ecology sections. U.S. Atomic Energy Commission.
- 1973 Environmental Statement Related to the Proposed Alvin W. Vogtle Nuclear Plant, Units 1, 2, 3, and 4, Georgia. Dockets Nos. 50-242, 50-425, 50-427. Terrestrial ecology sections. U.S. Atomic Energy Commission.
- 1973 Environmental Statement Related to the Proposed Perry Nuclear Power Plant, Units 1 and 2, Ohio. Dockets Nos. 50-440 and 50-441. Terrestrial ecology sections. U.S. Atomic Energy Commission.

Participation in Major Multi-disciplinary Projects

National Institute for Global Environmental Change. U.S. Department of Energy. Director, Midwestern Regional Center. 1990-2007.

Integrated Assessment of Economic Adaption Strategies for Climate Change: Impacts on Midwestern Agriculture. U.S. Environmental Protection Agency. Co-principal investigator with Otto Doering, Purdue University. 1996-2001.

Center for the Study of Institutions, Population, and Environmental Change (CIPEC). National Science Foundation. Co-principal investigator with Elinor Ostrom and Emilio Moran, directors. 1996-2006.

State Electric Utility Forecasting Project. Indiana Utility Regulatory Commission. Associate director with Otto Doering, Purdue University, director. 1985-1992.

Ohio River Basin Energy Study. U.S. Environmental Protection Agency. Core team member and Co-principal investigator with James J. Stukel, University of Illinois, Champaign-Urbana, director. 1976-1981.

Teaching

- SPEA E419/E519 Applied Remote Sensing of the Environment
Applications of remotely sensed data and raster geographic information systems in environmental research. Concepts of remote sensing and spatial analysis. Image acquisition from different sensors. Image processing, classification, and analysis.
- SPEA E527 Applied Ecology
Ecosystem concepts in natural resource management. Techniques of ecosystem analysis. Principles and practices of ecological natural resource management.
- SPEA E528 Forest Ecology and Management
Field and laboratory exercises in quantitative analysis of forest ecosystems. Sampling and data collection methodologies. Data analysis and interpretation. Concepts in forest ecology and forest management.
- SPEA E529 Applications of Geographic Information Systems
Conceptual and technical aspects of geographic information systems (GIS). Applications of raster and vector GIS in various fields of public affairs and environmental science.
- SPEA E549 Environmental Planning
Concepts and methodologies in environmental planning. The planning process. Topics include: environmental impact assessment, use of computer models in environmental planning; geographic information systems in environmental planning, and environmental indices. Team projects with planning agencies.
- SPEA E555 Topics in Environmental Science: Agricultural Ecosystems
Comparative analysis of agriculture examined from ecological and cultural perspectives. Co-taught with Emilio Moran, Department of Anthropology.
- SPEA E555 Topics in Environmental Science: Global Environmental Change
Examination of causes and consequences of various types of global environmental change including physical, biological and human dimensions. Co-taught with Emilio Moran, Department of Anthropology.
- SPEA E555 Topics in Environmental Science: Energy and the Environment
Overview of energy systems by major sources: electricity and liquid fuels, including conventional fossil fuels, renewable energy, and emerging energy technologies. Environmental consequences of energy production, distribution, and use.
- SPEA E710 Advanced Topics in Environmental Science: Carbon Dynamics
Selected readings and discussions on sinks, sources, and processes of the carbon cycle from local to global scale.
- SPEA V600 Capstone in Public and Environmental Affairs

Project-oriented course. Topics vary and have included: Green Building Design, Indiana Biofuels, Future of Electricity, Carbon Management. Co-taught with Clint Oster.

Biology L560 Physiological Ecology
Influences of the abiotic environment on energy and material transfers in individual organisms.

Public and Professional Service

2005- Member, Clean Coal Technology Research Advisory Board, State of Indiana.
2000-2010 Member, STAR Program Review Panel, U.S. Environmental Protection Agency.
1996-2000 Member, Ecosystems Review Panel, U.S. Environmental Protection Agency.
1996-1998 Vice-chair, Indiana Biodiversity Initiative. U.S. Fish and Wildlife Service.
1995-1999 Member, Computational Biology Review Panel, National Science Foundation.
1992-1993 Co-chair, Conference on Air Quality in the Southern Appalachians. National Park Service.
1990-1991 Member, Future Activities Planning Committee. Ecological Society of America.
1989-1990 Chair, Transportation, Energy and Environment Committee. Indiana Corporation for Science and Technology.
1988-1989 Chair, Indiana Energy Development Board. Appointed by Governor Robert Orr.
1988-1991 Chair, Midwest Universities Energy Consortium.
1988-1993 Chair, Bloomington Tomorrow Workshop.
1988-1992 Member, Public Affairs Committee. Association of Ecosystem Research Centers.
1988-1990 Member, Public Responsibilities Committee. American Institute of Biological Sciences.
1987-1990 Chair, Corporate Award Committee. Ecological Society of America.
1987-1989 Chair, Applied Ecology Section. Ecological Society of America.
1987 Participant, Workshop on Policy Recommendations for Biomass for Energy Development in the Midwest. Great Lakes States Council of Governors.
1986-1991 Member, Executive Committee and Representative from Indiana University. Ohio River Basin Consortium for Research and Education.
1986-1989 Member, ESA Council. Ecological Society of America.
1986-1989 Member, Program Committee. Ecological Society of America
1986-1988 Chair, International Affairs Section. Ecological Society of America.
1986-1988 Vice-chair, Midwest Universities Energy Consortium.
1985 Co-chair, Conference on Energy Development in Indiana. Indiana Energy Development Board.
1985-1988 Member, Industrial By-Products Committee. Indiana Corporation for Science and Technology.
1985-1991 Member, Coal Mining and Reclamation Task Force. Indiana Department of Natural Resources.
1984-1987 Member, Public Affairs Committee. Ecological Society of America.
1984-1986 Consultant, Energy Committee. Indiana State Chamber of Commerce.
1984-1985 Member, Long-Term Environmental Research Committee. National Science Foundation.
1982-1992 Member, Environmental Biology Review Panel. U.S. Environmental Protection Agency.
1982-1986 Secretary, International Affairs Section. Ecological Society of America.
1982 Speaker and Workshop Participant, Conference on Siting of Coal-Fired Power Plants. Korean Institute of Energy and Resources and East-West Center.
1982 Consultant. Fondo Nacional de Investigaciones Agropecuarias. Government of Venezuela.
1982 Member, Priorities for Applied Ecological Science in the 1980s Committee. Division of Environmental Biology. National Science Foundation.
1982 Consultant, Natural History Unit. British Broadcasting Corporation.
1981 Chair, Land-Use Planning Workshop. Midwest Universities Energy Consortium.

- 1981 Speaker and Workshop Participant, Conference on Forest Diversity. Region 9. U.S.D.A. Forest Service.
- 1981-1983 Secretary, Applied Ecology Section. Ecological Society of America.
- 1980-1998 Delegate from Indiana University, Midwest Universities Energy Consortium.
- 1980-2007 Member, Indiana Energy Development Board. Appointed by Governor Otis Bowen. Reappointed by Governors Robert Orr, Evan Bayh, Frank O'Bannon, Joseph Kernan, and Mitch Daniels.
- 1980 Member, Energy Development in the Developing World Project. American Universities Field Staff.
- 1979-1981 Member, Solar Power Satellite Development Technology Assessment Panel. Office of Technology Assessment. U.S. Congress.
- 1979 Member, Workshop on Assessment and Policy Requirements of Multispecies Toxicology Testing Procedures. Environmental Sciences Division. Oak Ridge National Laboratory.
- 1977 Member, Issues in Environmental Management Project. Instituto de Estudios Superiores de Administracion. Caracas, Venezuela.

University Service (Only committees since 1985 listed)

- 2004-2006 SPEA Personnel Committee (chair)
- 2006 SPEA 35th Anniversary: William Ruckelshaus Event
- 2004-2007 SPEA Building Committee
- 2001-2002 SPEA Promotion and Tenure Advisory Committee (chair)
- 2000- SPEA Ph.D. in Environmental Science Admissions and Policy Committee (chair 2000-2007)
- 2000- Indiana University Research Advisory Committee
- 1993-1994 Indiana University Promotions Advisory Committee
- 1991-1996 Indiana University Research Advisory Committee
- 1990-1993 SPEA Graduate Policy Committee (chair)
- 1986-1989 SPEA Research and Public Service Coordinating Committee (chair)
- 1986-1989 SPEA Placement and Internship Policy Committee (chair)
- 1986-1989 SPEA Washington Leadership Program Committee (chair)
- 1986-1989 SPEA/Business Transportation Research Policy Committee
- 1985-1986 Indiana University Research Advisory Committee

Research Grants and Contracts

Carbon Sequestration in Indiana Forests. Indiana Department of Natural Resources, Division of Forestry. Principal investigator. \$125,000. 2008-2010.

Indiana Energy Report. Office of Energy and Defense Development. State of Indiana. Co-principal investigator with John Rupp. \$36,000. 2006-2007.

Comparative Analysis of Carbon Budgets in Temperate Deciduous Forests. National Institute for Global Environmental Change. U.S. Department of Energy. Principal investigator. \$538,444. 2002-2007.

Hoosier and Shawnee National Forest Ecological Analysis. U.S. Department of Agriculture Forest Service. Principal investigator. \$44,000. 2000-2002.

Geographic Information System (GIS) for the State Forest System. Indiana Department of Natural Resources, Division of Forestry. Principal investigator. \$17,890. 1999-2001.

Acquisition, Analysis, and Integration of Ecological Variables at the Morgan-Monroe State Forest AmeriFlux Site. U.S. Department of Energy. Principal investigator. \$446,648. 1999-2002.

Center of Excellence in Applications of Remote Sensing to Regional and Global Integrated Environmental Assessments. NASA. Principal investigator. \$332,332. 1997-1998.

Comparative Analysis of Carbon Budgets in Successional Forests. National Institute for Global Environmental Change. U.S. Department of Energy. Principal investigator. \$761,954. 1996-2001.

Integrated Assessment of Economic Adaption Strategies for Climate Change: Impacts on Midwestern Agriculture. U.S. Environmental Protection Agency. Co-principal investigator with Otto Doering, Purdue University. \$1,393,879. 1996-2001.

Gap Analysis of Wildlife Habitat in Indiana. U.S. Fish and Wildlife Service. Principal investigator. \$167,500. 1993-1998.

GIS Internship Program with the City of Bloomington. City of Bloomington, Indiana. Project director. \$39,680. 1996-2002.

Climate Change Effects on Agriculture in the Great Lakes Region. National Institute for Global Environmental Change. U.S. Department of Energy. Principal investigator. \$172,633. 1993-1997.

Contrasting Successional Rates and Carbon Cycling in Eutrophic and Oligotrophic Ecosystems of Amazonia. National Institute for Global Environmental Change. U.S. Department of Energy. Co-principal investigator with Emilio Moran. \$447,485. 1993-1996.

Geographic Information Systems Requirements sub-project, Groundwater GIS Using Computer Guided Data Collection. U.S. Army Corps of Engineers. Sub-project director, \$150,244. Hendrik Haitjema, project director. \$605,164. 1993-1994.

Forest Ecosystem Response to Climate Change. National Institute for Global Environmental Change. U.S. Department of Energy. Principal investigator. \$77,946. 1992-1993.

Adaptation, Migration, or Extinction? A Study of the Influence of Climate Change on the Biodiversity and Biotic Productivity of Selected Biomes of North America. National Institute for Global Environmental Change. U.S. Department of Energy. Principal investigator. \$115,976. 1991-1992.

Fuel Switching Impacts on Carbon Dioxide Emissions from Midwestern Great Lakes States Electric Utilities. U.S. Department of Energy. Principal investigator. \$105,090. 1990-1991.

Development of an Ecological Classification System for the Hoosier National Forest. U.S.D.A. Forest Service. Co-principal investigator with George Parker, Purdue University. \$203,568. 1989-1993.

Using Geographic Information System Technology for Monroe Reservoir Watershed Database Operation and Analysis. Funded by multiple sources. Principal investigator. \$30,000. 1989-1990.

Emissions Control Regulations, Fuel Choice, and the Electrical Utility Industry in Indiana. Ameritech Foundation. Principal investigator. \$12,000. 1988-1989.

State Electric Utility Forecasting Project. Indiana Utility Regulatory Commission. Associate director and I.U. project coordinator. Otto Doering, Purdue University, director. Total award \$2,520,000; subcontract \$318,700. 1985-1992.

Development and Technological Assessment of an Electrophoretic Technique for Reduction of Sulfur Content in Indiana Coal. Indiana Corporation for Science and Technology. Co-principal investigator with Jeremy Dunning and Jeff White. \$156,109. 1984-1985.

Feeding Ecology of Cotton Rats. National Science Foundation. Co-principal investigator with Guy Cameron, University of Houston. \$95,000. 1980-1982.

Illinois Basin Coal Planning Project. U. S. Geological Survey. Co-principal investigator with Daniel Willard. \$285,000. 1980-1981.

Inventory of Open Dumps in Indiana. Indiana State Board of Health. Pilot and co-principal investigator with Wayne Echelberger. \$100,000. 1980.

Cedar Lake Restoration Feasibility Study. Indiana Department of Natural Resources. Co-principal investigator with Wayne Echelberger. \$60,000. 1979.

Water Quality Assessment Under Indiana's 208 Program. Indiana State Board of Health. Co-principal investigator with Wayne Echelberger. \$99,000. 1978-1979.

Municipal and Industrial Sludge Inventory in Indiana. Indiana State Board of Health. Co-principal investigator with Wayne Echelberger. \$90,000. 1978-1979.

Feeding Ecology of Cotton Rats. Indiana University Office of Research and Development. Principal investigator. \$900. 1978.

Coastal Wetlands of the Great Lakes. U. S. Fish and Wildlife Service. Co-principal investigator with Daniel Willard and C. E. Herdendorf, The Ohio State University. \$240,000. 1977-1978.

Environmental Assessment of the Lake Monroe Alumni Family Camp. Indiana University Alumni Association. Project director. \$6,800. 1977.

Ohio River Basin Energy Study: Terrestrial Ecology and Land Use. U.S. Environmental Protection Agency. Principal investigator. \$263,000. 1976-1981.

Environmental and Socio-economic Impact Assessment for Expansion of Wastewater Treatment Facilities at Woodstock, Illinois. Morris Environmental Engineering. Project director. \$13,000. 1976.

Assessment of Environmental Impacts of Proposed Wastewater Treatment Facilities for Region IX-East of DuPage County, Illinois. Morris Environmental Engineering. Project director. \$9,000. 1976.

Assessment of the Environmental Impacts on Terrestrial Ecosystems on the Proposed Clark Maritime Centre on the Ohio River. Sverdrup and Parcel and Associates. Project director. \$20,000. 1975.

Lake Monroe Land Suitability Study. Funded by multiple sources. One of five co-principal investigators. \$34,800. 1974-1975.

The Functional Roles of the Small Mammal Community in the Deciduous Forest Biome. Indiana University Office of Research and Development. Principal investigator. \$2,600. 1974-1975.

5 March 2010