Curriculum Vitae

Stephen Shawhan Mulkey

Environmental Science Program, 216 Morrill Hall, University of Idaho, Moscow ID 83844-3006
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Education

Ph. D. 1986 (Biology/Ecology), The University of Pennsylvania
M.A. 1979 (Biology/Ecology), The University of Missouri-Columbia
B.S. 1975 (Forestry, Fisheries, Wildlife) The University of Missouri-Columbia

Positions

2010 – present. Director, Professional Science Master's in Environmental and Natural Resource Sciences, University of Idaho
2008 – present. Director, Environmental Science Program, University of Idaho
2007. Science Advisor to the Century Commission for a Sustainable Florida
2005-2007. Director of Research and Outreach/Extension, School of Natural Resources and Environment (SNRE), University of Florida
2001-2008. Research Associate, School of Forest Resources and Conservation, University of Florida
1997-2008. Associate Professor of Botany with tenure, University of Florida
1997-2002. Research Associate, Smithsonian Institution, Tropical Research Institute
1996-1997. Director, International Center for Tropical Ecology
1995-1996. Associate Director, International Center for Tropical Ecology
1994-1997. Research Affiliate, Smithsonian Tropical Research Institute, Smithsonian Institution
1993-1997. Associate Professor of Biology with tenure, University of Missouri at St. Louis
1990-1991. Visiting Assistant Professor, Botany Department, University of California, Davis
1989. Founding member and principal, International Center for Tropical Ecology
1986-2000. Research Associate, Missouri Botanical Garden
1986-1993. Assistant Professor of Biology, University of Missouri at St. Louis

Program development since spring 2005

Indigenous center for STEM research and graduate education – August 2009 – August 2010. Part of program development with Marcos Galindo (PI). NSF proposal to be submitted October 2010 ~$5 million.

Collaborative development of a climate change curriculum for classrooms in the Intermountain West. August 2009 – present.

Professional Science Master's program for the University of Idaho – September –November 2009. Program development leader. Principal author of application to Idaho State Board of Education.

Environmental Science Program Graduate Interdisciplinary Enhancement Fund (GIEF) – January 2009 to present. Competitively available funds to increase the interdisciplinary component of the Environmental Science graduate dissertations and theses. $10,000 available in $2,000 awards. Ongoing.

Request for Innovations (RFI) Review Committee – spring 2009. Served as a member of the Provost's review board for the RFI evaluation committee. Assisted in development and redevelopment of submissions.

Environmental Science Program Funds for Interdisciplinary Teams (FIT) Intramural Grants Competition – March 2009. Partners include Waters of the West, Building Sustainable Communities Initiative, Sustainable Idaho Strategic Initiative, College of Graduate Studies, College of Natural Resources, College of Agriculture and Life Sciences, and the Research Office. $70,000 distributed to 5 projects. As of fall 2010, this seed fund had generated $2.5M in extramural funding.

Environmental Science Program (Director), University of Idaho, August – December 2008. A program review has been conducted conducted, resulting in development of new strategic plan for development of integrative, interdisciplinary curricula, support of faculty and graduate student research, and deployment of outreach capacity.

People and Land Use Strategies - PLUS - Faculty Work Group (founder and chair, 2006). Hosted by the School of Natural Resources and Environment, PLUS is an interdisciplinary program for research, outreach and faculty development in land use. This group created a major report for the state commission on sustainability entitled *Towards a Sustainable Florida - A Review of Environmental, Social and Economic Concepts for Sustainable Development in Florida* (S. Mulkey editor and author).

Climate Change Faculty Work Group (founder and chair, 2006). Hosted by the School of Natural Resources and Environment, the Climate Change Faculty Work Group is an interdisciplinary program for research, outreach and faculty development in climate change with focus on mitigation and adaptation. This group has produced a technical white paper funded by Environmental Defense entitled *Greenhouse Gas Mitigation Through Forestry and Agriculture in Florida* (S. Mulkey, editor and author). This report was released in early November 2007.

Program to create a land use institute for Florida (lead administrator, 2005-2007). Starting in spring 2006, the School of Natural Resources began outreach and fund-seeking activities to create a land use institute for Florida. A major donor has contributed and the effort is ongoing.

National Ecological Observatory Network -NEON (co-organizer, 2007). This effort led to a multi-institutional meeting in fall 2006, resulting in successful submission to NEON Inc. of a preliminary research proposal for the Southeast.

Mini-Grants Intramural Grants Competition (2005-2007). Revision and administration of the SNRE intramural grants competition for new faculty and seed funding of interdisciplinary research with emphasis on sustainability and land use. The annual budget pool for this was assembled by contributions from several colleges and the Vice President for Research at UF.

Administrative Experience

University of Idaho, Director, Environmental Science Program. I assumed the leadership of this interdisciplinary unit in August 2008. Environmental Science consists of over 100 affiliate faculty and administers a campus-wide undergraduate curriculum with academic tracks in social, natural, and physical science. Ninety-six graduate students work with faculty in 9 colleges. We are currently developing research and outreach capacity through administration of two intramural grant funds and building a close working relationship with the University of Idaho sustainability program. Academic programs are being redesigned to incorporate core environmental interdisciplinary courses. I have led the effort to produce the Professional Science Master's degree program, which received approval from the state board of education in June 2010.

University of Florida School of Natural Resources and Environment. From January 2005 through June 2007, I was Director of Research and Outreach/Extension for the School of Natural Resources and Environment at UF. I developed new interdisciplinary programs in land use and climate change, and led an effort to establish a land use institute for the state of Florida house within SNRE at UF. These efforts resulted in new programs for faculty, graduate students and undergraduates with research interests in sustainability science. While this position did not entail oversight of academic programs, I worked closely with the Academic Director to develop the SNRE Action Plan, which included creation of curricula for graduate students and undergraduates. I worked with UF/IFAS Extension to create the Sustainability Working Group, and I served on five campus-wide committees related to energy, greenhouse gas emissions, land use, and sustainability. Because of my statewide activities, I was appointed under contract as Science Advisor to the Century Commission for a Sustainable Florida, a legislatively-created state commission in Tallahassee.

University of Missouri - St. Louis. The centerpiece of my international program development experience has been the nationally ranked training and conservation program that I co-founded at the University of Missouri - St. Louis, and my ongoing efforts in curriculum development and training students from Latin America. The program at UM-St. Louis was in conjunction with the Missouri Botanical Garden. In 1992 we established the International Center for Tropical Ecology, which I directed during my final two years at UM-St. Louis. My efforts during the development phase of this program included curriculum development, fund raising for student fellowships, and design of a $1.5 million state-of-the-art tropical greenhouse. The program has attracted dozens of students from Latin America using funds generated from the World Ecology Medal (recipients include Jane Goodall, Richard Leaky, and Jacques Cousteau).

Recent Outreach/Engagement Activities

March-June 2010. Project leader for three state effort to develop climate change education proposal for NSF Climate Change Education Program, Phase I.
March-June 2010. Project leader in development of NASA Global Climate Change Education proposal involving stakeholders throughout the Intermountain West.
March-July 2009. Principal in interaction with stakeholders in the Spokane – Coeur d'Alene population corridor in the development of the Urban Long Term Research Activity NSF exploratory proposal.
February 2009. Organizer, moderator, and speaker for University of Idaho participation in the National Teach-In on Global Warming.
November 2008. Invited speaker, University of Idaho College of Law, Environmental Law Club.
October 2008. Speaker and panelist at the UI President's Sustainability Symposium, Boise.
March 2008. Plenary speaker and panelist at the 2008 Public Interest and Environment Conference, College of Law, University of Florida.
February 2008. Speaker – Climate change and land use. North Florida Sierra Club.
February 2008. Featured in two articles in Bay Soundings, regional publication for Tampa.
March 2008. Café Scientific, Gainesville. Science and politics of climate change.
January 2008. Featured speaker on climate change science, Focus The Nation - UF.
November 2007. Speaker and panelist at forest fragmentation conference sponsored by the Florida Forestry Association. Carbon Mitigation Options in Forestry.
November 2007. Keynote speaker on symposium on adaptation to climate change. The Ethics Center, University of North Florida, Jacksonville.
September 2007. Speaker and panelist at Florida State NAACP Conference. Environmental Justice and Climate Change.
July 2007. Organizer and moderator for workshop on Greenhouse Gas Mitigation Through Florida Forestry and Agriculture. Sponsored by Environmental Defense at the University of Florida.

May 2007. Presenter and panelist at conference on journalism and the environment at Scripps Howard Institute on the Environment at Florida Atlantic University. Climate Change Impacts and Adaptation.
May 2007. Presenter and panelist at Florida state conference on climate change, Tampa.
May 2007. Presentation to Century Commission for a Sustainable Florida. Energy Wedges for Florida.
Spring 2007 - spring 2008. Member Alachua County Energy Conservation and Strategies Commission.
April 2007. Presentation to Florida Governor and Cabinet. Conversations on Climate Change. [video]
April 2007. Presenter and panelist at Step It Up climate conference, Jacksonville, FL.
March 2007. Moderator of Century Commission panel during annual Public Interest and Environment Conference, College of Law, University of Florida.
March 2007. Presentation to select committee of the Florida House and Senate. Climate and Energy in Florida.
March 2007. Presentation to Florida Energy Commission on climate and energy alternatives.
February 2007. Presentation to Century Commission for a Sustainable Florida. Realities and Opportunities of Climate Change in Florida. [video of this talk for UF Alumni Association]
January 2007. Presentation at state conference on Facets of Sustainability. Climate Change and Land Use in Florida.
December 2006. Presentation to Global Underwater Explorers International on Climate Change and Land Use.
September 2006. Presentation to Century Commission for a Sustainable Florida. Applied Sustainability.
September 2006. Presentation to Sarasota Board of County Commissioners on creation of a land institute for Florida resulting in an earmark of $2 million.
Fall 2006 - spring 2007. Member and principal of UF/IFAS Sustainability Working Group.
Summer 2006. Lead author and organizer of proposal to create a state center of excellence for land use, The Center for Progressive Land Use.

Awards and Grants

My work has been supported by grants from NSF, NASA, and major support from the University of Florida and the University of Missouri. Additional support has been provided by Environmental Defense, the Andrew Mellon Foundation, and several grants from the Smithsonian. After December 2004, my work turned to administration as Director of Research and Outreach/Extension in the School of Natural Resources and Environment at the University of Florida. During spring 2007 I also worked under contract for the Florida state commission on sustainability.

2010-2013. NSF
$691,716. Science Master's Program in Environmental and Natural Resource Sciences for the University of Idaho. S. Mulkey PI.
2010-2013. NASA
$547,727. Collaborative development of a climate change curriculum for classrooms in the Intermountain West. Global Climate Change Education Program. S. Mulkey PI.
2009-2012. NSF
$144.883. An Interdisciplinary Team-Based International Research Experience in Biodiversity Conservation and Sustainable Community Development. S. Mulkey Co-PI.
2006-2007. Environmental Defense
$75,000 for development of a white paper on climate mitigation through Florida forestry and agriculture; S. Mulkey PI with J. Alavalapati, A. Hodges, A. Wilkie, S. Grunwald.
2000-2004. The Andrew Mellon Foundation
$480,000. Characteristics of regrowth forest in Eastern Amazonia; with Daniel Zarin, co-PI.
1998-1999. NSF. Functional and Integrative Biology (SGER-9805908)
$50,000. Branch carbon balance and allocation during an extreme El Niño and La Niña in a wet neotropical forest

1998-1999. University of Florida Research Board
$28,000. Branch carbon balance and allocation during an extreme El Niño and La Niña in a wet neotropical forest
1998-1999. Andrew Mellon Foundation
$140,000. Carbon balance in the canopies of two neotropical forests with contrasting seasonality
1998. Loundsberry Foundation
$160,000. With S. J. Wright and K. Winter. The carbon balance of tropical forest canopies
1997. UM Research Board
$28,000. Functional convergence in two neotropical forests.
1995-1997. NSF. Bioinstrumentation (BIR-9419994)
$206,500. Plant physiology and plant ecology
1995-1997. UM Research Board
$9,800. Regional carbon flux in two Neotropical forests
1994. NSF. Functional and Integrative Biology (IBN-9220759)$11,000. Research Opportunity Award, Elizabeth Newell Co-PI. Phenology of nonstructural carbohydryate flux in a tropical canopy.
1993-1997. NSF. Functional and Integrative Biology (IBN-9220759)
$188,866. Variation in resource availability and consequences for interdependent physiological and morphological leaf traits in two Neotropical canopy tree species
1992. Scholarly Studies Program of the Smithsonian Institution
$52,000. The phenology and ecophysiology of tropical forest trees
1993. NSF. Ecology (DEB-9311079)
$7,000. Nutrient translocation through VA mycorrhizal and the effects on plant performance and early succession under differential light in lowland tropical moist forest, with Damond Kyllo

Publications

Book

Mulkey, S. S., R. L. Chazdon, A. P. Smith (ed). 1996. *Tropical Forest Plant Ecophysiology.* Chapman and Hall, NY. 675 pp.

Peer-reviewed papers

Watkins, J. E. Jr., M. C. Mack, T. R. Sinclair, and S. S. Mulkey. 2007. Ecological and evolutionary consequences of desiccation tolerance in tropical fern gametophytes. *New Phytologist 176:1-10.*

Watkins, J. E. Jr., M. C. Mack, and S. S. Mulkey. 2007. Gametophyte ecology and demography of epiphytic and terrestrial tropical ferns. *American Journal of Botany 94: 701-708.*

Avalos, G., S. S. Mulkey, K. Kitajima, S. J. Wright. 2007. Canopy colonization strategies of two liana species in a tropical dry forest. *Biotropica 39:393-399.*

Santiago, L. S. and S. S. Mulkey. 2005. Leaf productivity along a precipitation gradient in lowland Panama: patterns from leaf to ecosystem. *Trees – Structure and Function 19:349-356.*

Gamon, J. A., S. S. Mulkey, and K. Kitajima, L. Serrano, S. J. Wright. 2005. Diverse optical and photosynthetic properties in a neotropical forest during the dry season: implications for remote estimation of photosynthesis. *Biotropica 37:547-560.*

Aragão, D. V., L. B. Fortini, S. S. Mulkey, D. J. Zarin, M. M. Araujo, and C. J. R. de Carvalho. 2005. The role of drought and reproduction in gas exchange in an understory tropical plant Miconia ciliata (Melastomataceae): correlation but no causation between leaf nitrogen and maximum assimilation. *American Journal of Botany 92:456-461.*

Kitajima, K., S. S. Mulkey, and S. J. Wright. 2005. Variation in crown light utilization characteristics among tropical canopy trees. *Annals of Botany 95: 1-13.*Santiago, L. S., S. S. Mulkey. 2003. A test of gas exchange measurements on excised canopy branches of ten tropical tree species. *Photosynthetica 41:343-347.*

Fortini, L., S. S. Mulkey, D. J. Zarin, S. S. Vasconcelos, and C. J. R. de Carvalho. 2003. Drought constraints on leaf gas exchange by Miconia ciliata (Melastomataceae) in the understory of an Eastern Amazonian regrowth forest stand. *American Journal of Botany 90:1064-1070.*

Graham, E. A., S. S. Mulkey, S. J. Wright, K. Kitajima, and N. G. Phillips. 2003. Cloud cover limits productivity in a tropical rain forest tree during La Niña. *Proceedings of the National Academy of Science (USA) 100: 572-576.*

Kitajima, K., S. S. Mulkey, M. Samaniego, and S. J. Wright. 2002. Decline of photosynthetic capacity with leaf age and position in two tropical pioneer tree species. *American Journal of Botany 89: 1925-1932.*

Newell, E., S. S. Mulkey, and S. J. Wright. 2002. Seasonal patterns of carbohydrate storage in four tropical tree species. *Oecologia 131:333-342.*

Terwilliger V. J., K. Kitajima, D. J. Le Roux-Swarthout, S. S. Mulkey, and S. J. Wright. 2002. Influences of heterotrophic and autotrophic resource use on carbon and hydrogen isotopic compositions of tropical tree leaves. *Isotopes in Environmental and Health Studies 38:133-160.*

Terwilliger V. J., K. Kitajima, D. J. Le Roux-Swarthout, S. S. Mulkey, and S. J. Wright. 2001. Intrinsic water-use efficiency and heterotrophic investment in tropical leaf growth of two Neotropical pioneer tree species as estimated from delta 13-C values. *New Phytologist 152:267-281.*

Avalos, G. and S. S. Mulkey. 1999. Photosynthetic acclimation of the liana Stigmaphyllon lindenianum to light changes in a tropical dry forest canopy. *Oecologia 120:475-484.*

Avalos, G. and S. S. Mulkey. 1999. Seasonal changes in liana cover in the upper canopy of a Neotropical dry forest. *Biotropica 31:186-192.*

Avalos, G. S. S. Mulkey, and K. Kitajima. 1999. Optical properties of tree and liana foliage in the canopy of a tropical dry forest. *Biotropica 31:517-520.*

Stork, N. E., S. J. Wright, and S. S. Mulkey. 1997. Craning for a better view: the Canopy Crane Network. *Trends in Ecology and Evolution 12:418-419.*

Kitajima, K., S. S. Mulkey, and S. J. Wright. 1997. Seasonal leaf phenotypes in the canopy of a tropical dry forest: photosynthetic characteristics and associated traits. *Oecologia 109:490-498.*

Kitajima, K., S. S. Mulkey, and S. J. Wright. 1997. Decline of photosynthetic capacity with leaf age and leaf longevities for five tropical canopy tree species. *American J. Botany 84:702-708.*

Hunt, J. H., S. S. Mulkey, and S. J. Wright. 1996. Caste dimorphism in the wasp Epipona guerini

(Hymenoptera: Vespidae; Polistinae, Epiponini): Further evidence for larval determination. *Journal Kansas Entomological Society 69:362-369.*

Mulkey, S. S., K. Kitajima, and S. J. Wright. 1996. Plant physiological ecology of tropical forest canopies. *Trends in Ecology and Evolution 11:408-412.*

Mulkey, S. S., S. J. Wright, and A. P. Smith. 1996. Influence of seasonal drought on the carbon balance of tropical forest plants. *In:* S. S. Mulkey, R. Chazdon, A. P. Smith (eds.) *Tropical Forest Plant Ecophysiology.* Chapman and Hall. NY.

Mulkey, S. S., S. J. Wright, and K. Kitajima. 1995. Plant phenology and allocation in response to seasonal and vertical light gradients in the upper canopy of a tropical dry forest. *Selbyana 16:169-173.*

Mulkey, S. S., S. J. Wright, and A. P. Smith. 1993. Comparative physiology and demography of three Neotropical forest shrubs: alternative shade-adaptive character syndromes. *Oecologia 96:526-536.*

Wright, S. J., J. L. Machado, S. S. Mulkey, and A. P. Smith. 1992. The water relations of understory shrubs (Psychotria Rubiaceae) in a tropical moist forest. *Oecologia 89:457-463.*

Mulkey, S. S., A. P. Smith, S. J. Wright, J. L. Machado, and R. Dudley. 1992. Contrasting leaf phenotypes control seasonal variation in water loss in a tropical forest shrub. *Proceedings of the National Academy of Sciences (USA) 89:9084-9088.*

Mulkey, S. S., and R. W. Pearcy. 1992. Interactions between acclimation and photoinhibition of photosynthesis of a tropical forest understory herb, *Alocasia macrorrhiza* (L.) G. Don, during simulated canopy gap formation. *Functional Ecology 6:719-729.*

Mulkey, S. S., A. P. Smith, and S. J. Wright. 1991. Comparative life history and physiology of two understory Neotropical herbs. *Oecologia 88: 263-273.*

Mulkey, S. S., S. J. Wright, and A. P. Smith. 1991. Drought acclimation of an understory shrub in a seasonally dry tropical forest. *American Journal of Botany 78:579-587.*

Sternberg, L., S. S. Mulkey, and S. J. Wright. 1989. Oxygen isotope stratification in a tropical moist forest. *Oecologia 81:51-56.*

Sternberg, L. and S. S. Mulkey, with S. J. Wright. 1989. Ecological interpretation of leaf carbon isotope ratios: Influence of respired carbon dioxide. *Ecology 70:1317- 1324.*

Mulkey, S. S., A. P. Smith, and T. P. Young. 1984. Predation by elephants on *Senecio keniodendron* (Compositae) in the alpine zone of Mount Kenya. *Biotropica 16:246-248.*

Reports for policy makers

Mulkey, S. S. (editor and author) 2008. Opportunities for greenhouse gas reduction through forestry and agriculture in Florida. Environmental Defense Fund.

Mulkey, S. S. 2007. Climate change and land use in Florida: Interdependencies and opportunities. Century Commission for a Sustainable Florida.

Mulkey, S. S. and M. van Soestenbergen. 2007. Florida dependence on petroleum. Century Commission for

a Sustainable Florida.

Mulkey, S. S. 2007. Energy wedges for Florida. Century Commission for a Sustainable Florida.

Mulkey, S. S. (editor and author) 2006. Towards a sustainable Florida: A review of environmental, social, and economic concepts for sustainable development in Florida. Century Commission.

University of Idaho Service

University and College

Dean's University Wide Programs council, 2008-present
Graduate Council, 2008-present
Graduate Directors group, 2008-present
Request for Innovation evaluation committee, December 2008-2009

University of Florida Service

University and College

University Faculty Senate 2007-2008
Ecology and Environment Committee of the College of Liberal Arts and Sciences 2005-2008
UF Water Institute Faculty Advisory Council 2005-2007
UF Florida Institute for Sustainable Energy Advisory Council 2005-2007
UF Sustainability Committee 2005-2007
UF/IFAS Sustainability Work Group 2006
Biology Degree Program Development 2003
Information Technology Advisor Committee 2001-2008
University Faculty Senate 1999-2001
Member Dean's Search Committee for Biological Sciences Coordinator 1998; 2002
Search Committee for Dean of Research - UF Liberal Arts and Sciences, 1998
Member University Center for Excellence in Teaching (UCET), 1997-2009

Department Committees

Seminar, 2008
Space, 2003-2006
Computing, 1997-2008, Chair 1997-2004
Plant Physiology Search, spring and fall 1998
Greenhouse, 2003-2005
Botany Curriculum, 2000-2001
Botany Departmental Budget, Chair 1998
Graduate, 1998-1999

Professional Societies and Professional Service

American Geophysical Union, joined 2006
Association for Tropical Biology and Conservation, Joined 1986
Botanical Society of America, Joined 1985
Ecological Society of America, Joined 1976
Founding Member International Canopy Crane Network 1997
Co-organizer (with S. J. Wright) Tropical Forest Canopy Symposium, March 1997
Panel Member NSF Ecological and Evolutionary Physiology. 1996-1997

Nominated Panel Member, NSF-DOE joint program in Terrestrial Ecology & Global Change, 1997
NSF FIRST committee 1998-2000
Session Chair Selby Botanical Garden Canopy Symposium. 1995; 1998
Nominated Panel Director, NSF Ecological and Evolutionary Physiology 1998
Member National Scientific Advisory Board for the Wind River Canopy Crane, 1995-98
Electronic Editor for Association for Tropical Biology web pages and electronic publications through 2002.
Electronic Editor for International Center for Tropical Ecology 1994-1996
Reviewer for grants to NSF and USDA competitive grants programs, 1998-2007

Reviewer (1998-2008): *Biotropica, Oecologia, Ecology, Forest Science, J. Ecol., Funct. Ecol. International J. Plant Science, Tree Physiology, Science*
NSF IGERT panelist, June 2008

Graduate Students and Post-doctoral Associates

Ricardo J. Santiago Garcia. Ph. D. expected 2014.
David Griffith. MS. Expected 2012
Amethyst Merchant. Ph. D. 2007
Eddie Watkins. Ph. D. 2006
Jason Hupp. M.S. 2006
Juan Posada. Ph. D. 2005
Kevin P. Hogan, Ph. D. 1987. University of Illinois. Post-doctoral associate 2004
Louis Santiago. Ph. D. 2003
Grace Crummer, M.S. 2003
Lisa Merry, M.S. 2002
Hillary Cherry, M.S. 2002
Damond Kyllo, Ph. D. 2000
Eric Graham, Ph. D. 1998. University of California, Los Angeles. Post-doctoral associate 1998-2000
Gerardo Avalos. Ph. D. 1999
Deborah Olander, M.S. 1996
Pedro Lopez-Valencia. M.S. 1993

Teaching Experience

University of Idaho

EnvS 501, Global Climate Change
EnvS 596, Capstone graduate seminar. Alternate fall semesters
EnvS 400, Capstone undergraduate seminar. Fall semesters
EnvS 497, Undergraduate Research. Spring semesters

University of Florida

Introductory Ecology PCB 3043 Lecture and Laboratories (recurring fall 1997-2003)
Advanced Plant Ecophysiology BOT 5655 (graduate course recurring fall 1998-2008)
Introductory Biology – Ecology, Evolution and Behavior BSC 2008 (recurring spring 2003-2008) Introductory Biology BSC 2008 – Biology of Global Change (recurring spring 2004-2008)
Biology for majors BSC 2011 (recurring spring 2003-2008)
Lecturer in the curriculum in Family Medicine 2002-2008, University of Florida School of Medicine.

> Topics: (1) Ecology for Docs: The Role of Global Change in Human Health. (2) Neurobiology and genetics of addiction

University of Missouri-St. Louis - 1986-1996; all new courses

Honors Ecology (H205 - undergraduate specialty course in tropical ecology)
Tropical Forest Plant Ecophysiology (B489 graduate seminar)
Environmental Plant Physiology (Functional Ecology, B450 - specialty graduate course)
General Ecology lecture and General Ecology lab (B220; B222 -principal undergraduate courses)
Physiological Ecology of Plants in Extreme Environments (B489 grad seminar)
General Plant Physiology and Development (B254)
Plant-Animal Interactions (B489 graduate seminar)
Quantitative Plant Ecology (B362 - graduate methods course)
General Biology for majors (B12)