

Curriculum vitae

Thomas J. Givnish

Education

1969-1973 Princeton University, Department of Mathematics: A. B. *summa cum laude*
1973-1976 Princeton University, Department of Biology: M. A., Ph. D.

Professional experience

1976 Instructor of Biology, Harvard University
1976-1981 Assistant Professor of Biology, Harvard University
1981-1984 Associate Professor of Biology, Harvard University
1984-1985 Lecturer on Biology, Harvard University
1985-1986 Assistant Professor of Botany, University of Wisconsin-Madison
1986-1990 Associate Professor of Botany, University of Wisconsin-Madison
1990-present Professor of Botany, University of Wisconsin-Madison
1992-present Professor of Environmental Studies, University of Wisconsin-Madison
1999-2003 Visiting Professor of Botany, University of Hawaii
2003-present Henry Allen Gleason Professor of Botany, University of Wisconsin-Madison
2004-2005 Visiting Fellow, Research School of Biological Sciences, Australian National University
2009-present Member, J. F. Crow Institute for the Study of Evolution, UW-Madison
2009-present Member, Center of Rapid Evolution, UW-Madison

Courses taught

HARVARD Population biology: evolution; Patterns in the structure and diversity of plant communities; Speciation and adaptation; Plant population biology; Tropical ecology; Topics in population and community ecology

YALE SCHOOL OF FORESTRY & ENV. AFFAIRS Tropical forest ecology

ORGANIZATION FOR TROPICAL STUDIES Fundamentals of ecology field course (resource person)

UNIVERSITY OF WISCONSIN General ecology (Botany / Forestry / Zoology 460); Advanced topics in plant ecology (Botany 950); Vegetation of Wisconsin (Botany 455); Advanced plant community ecology (Botany 801); Introduction to ecology research at UW-Madison (Botany / FWE / Zoology 953); Geology, ecology, human evolution & ethnobotany in the Pacific (UW Extension) • **co-taught** Plants and man (Botany 240), Population genetics (Botany 575), Tropical field biology capstone course (Botany / Zoology 639 / 640: 1995 / 6 - Venezuela; 1998 / 9 - Hawaii), Plant physiological ecology (Botany 802)

Awards and Distinctions

1973-1976 NSF Graduate Fellow
1973-1976 Danforth Graduate Fellow
1998- present Fellow, Linnean Society of London
1999-2001 Vilas Research Associateship, University of Wisconsin (\$60,000)
2003-present Fellow, American Association for the Advancement of Science
2006 Distinguished Ecologist Lecture series, Colorado State University

Awards and Grants

- 1971-1972 NSF grant GY-9110. Ecology of Atlantic white cedar (*Chamaecyparis thyoides*) and related species in the Pine Barrens of New Jersey
- 1976-1978 Milton Fund Grants: studies of leaf form, temporal community structure in forest herbs, serotiny in *Pinus rigida*
- 1978-1982 Clark Fund Grants: allometry and adaptive patterns of leaf shape in forest herbs; carnivory in *Brocchinia* (Bromeliaceae)
- 1981-1982 Atkins Garden Grant: transition between shrubby and arboreal growth forms along rainfall and edaphic gradients in sw Australia and New Caledonia
- 1981-1983 Milton Fund Grant: mechanical constraints on evolution of plant form
- 1983-1984 Grants from the Maria Moors Cabot Foundation, E. I. Dupont de Nemours, Pfeizer-Dekalb, Monsanto Corporation, and Cambridge University Press to support an international symposium on Evolutionary Constraints on Primary Productivity: Adaptive Strategies of Energy Capture in Plants (\$11,000)
- 1984-1986 National Geographic Society Grant: Adaptive radiation and evolution of carnivory in the bromeliad genus *Brocchinia* of the Guayana Highlands (\$19,600)
- 1986-1987 Wisconsin Alumni Research Foundation Grant: Ecological causes of depth zonation in aquatic plants (\$12,407)
- 1986-1987 Nave Fund, University of Wisconsin [with K. J. Sytsma]: Molecular evolution in the plant family Rapateaceae endemic to the Guayana Shield (\$4,780)
- 1987-1988 Wisconsin Alumni Research Foundation Grant: Causes of depth zonation in emergent and floating-leaved macrophytes (\$11,599)
- 1988-1991 National Science Foundation Grant BSR-8806520 (PI, with K. J. Sytsma as co-PI): Molecular evolution and adaptive radiation in the bromeliad genus *Brocchinia* (\$93,689) (including a \$4,000 REU grant)
- 1988-1990 National Geographic Society 133-N680 (PI, with K. J. Sytsma as co-PI): Molecular evolution, adaptive radiation, and speciation in the fleshy-fruited Hawaiian lobelioids (\$20,674)
- 1990-1992 National Science Foundation BSR-9007293 (PI, with K. J. Sytsma as co-PI): Molecular evolution in *Brocchinia*, the Pitcairnioideae, and allied monocots (\$142,200) (including a \$10,800 supplement)
- 1990-1992 National Science Foundation (co-PI, with P. Reich (PI) and J. Volin (co-PI)): Effects of elevated levels of carbon dioxide and ozone on plant growth and photosynthesis (\$80,000)
- 1991 Nave Fund, University of Wisconsin: Molecular evolution in the Pitcairnioideae (\$4,000)
- 1991-1992 Hilldale Committee (PI): The role of competition in determining depth zonation in aquatic plants (\$4,000 award to support undergraduate research)
- 1991-1994 National Science Foundation (PI): Causes of depth zonation in emergent and floating aquatic plants (\$165,000) DEB-9107379
- 1992-1993 National Science Foundation (PI): Trends in the stature, allocation to support tissue, and diversity of submersed aquatic plants along a natural fertility gradient (\$6,500 Research Experience for Undergraduates Award)
- 1992-1993 National Science Foundation (PI, with K. J. Sytsma as co-PI): Molecular evolution and adaptive radiation in the monocot family Rapateaceae, endemic to the Guayana Shield (\$5,000 Research Experience for Undergraduates Award)
- 1992-1993 Hilldale Committee (PI): Energetic costs of simple vs. compound leaves (\$4,000 award to support undergraduate research)
- 1992-1993 Hilldale Committee (PI): Competition between the waterlilies *Brasenia schreberi* and *Nymphaea odorata* (\$4,000 to support undergraduate research)
- 1992-1993 Hilldale Committee (co-PI, with PI K. J. Sytsma) Phylogenetic reconstruction using cpDNA sequencing from the *rbcL-atpβ* spacer region (\$4,000 to support

- undergraduate research)
- 1992-1995 Friends of the University of Wisconsin Arboretum (PI): Experimental reconstruction of oak savannas (\$55,000)
- 1993-1996 Department of Defense - U. S. Fish and Wildlife Service (PI): Ecology of the endangered Karner Blue Butterfly (\$150,000)
- 1993-1994 Hilldale Committee (PI): Molecular evolution and adaptive radiation in Pacific Coast lilies (\$4,000 to support undergraduate research)
- 1993-1994 Hilldale Committee (PI): Dominance by shrubs vs. herbs in relation to light availability along a forested gradient in southern Wisconsin (\$4,000 to support undergraduate research)
- 1993-1995 National Science Foundation (PI, with K. J. Sytsma as co-PI): Molecular evolution in the Rapateaceae and allied monocot families (\$120,000)
- 1994-1997 U. S. Forest Service (PI): Trends in the composition, structure, and diversity of forest understories along climatic and edaphic gradients in the Upper Great Lakes (\$85,000)
- 1995-1997 American Orchid Society (PI, J. Hapeman as co-PI): Molecular evolution and adaptive radiation in the rein orchids (*Platanthera*: Orchidaceae) (\$10,800)
- 1995-1998 National Science Foundation (PI, with K. J. Sytsma as co-PI): Molecular evolution, adaptive radiation, and geographic speciation in the Hawaiian lobelioids (\$180,000)
- 1995-1997 National Science Foundation (PI, with T. Patterson as co-PI): Molecular evolution and adaptive radiation in *Calochortus* (Liliaceae) (\$10,000)
- 1998-2000 National Science Foundation (PI, with A. Mast as co-PI): Molecular evolution and adaptive radiation in *Banksia* (Proteaceae) (\$10,000)
- 1998-1999 Hilldale Committee (PI): Evolution of leaf anatomy in relation to shade tolerance in the Hawaiian lobeliads (\$4,000 to support undergraduate research)
- 1998-1999 Hilldale Committee (PI): Molecular systematics of *Clermontia* (Campanulaceae) (\$4,000 to support undergraduate research)
- 1998-1999 Wisconsin Alumni Research Foundation (PI): Quantification of light regimes and photosynthetic rates in the Hawaiian lobeliads (\$26,000)
- 1999-2003 National Science Foundation (PI, with G. Goldstein as co-PI): Ecology and evolution of photosynthetic light responses in the Hawaiian lobeliads (\$430,000)
- 2000-2006 National Science Foundation (co-PI, with P. Berry as PI and K. Sytsma as co-PI): Molecular evolution and biogeography of endemic elements of the Guayana Highlands flora (\$260,000)
- 2001-2005 Andrew W. Mellon Foundation (PI): Leaf phenology and hydraulic conductance as determinants of shade tolerance in southern Appalachian trees. (\$370,000 direct costs)
- 2001-2003 National Park Service (co-PI, with J. Volin as PI): Development of a simulation model relating hydrology, topography and edaphic factors to landscape variation in plant community structure in the Florida Everglades (\$295,796)
- 2001-2002 National Science Foundation (PI, with F. Landis as co-PI): The effects of light and arbuscular mycorrhizae on oak savanna plant community composition (\$5,224)
- 2002-2003 University of Wisconsin, retention package - \$100,000 flexible funds
- 2002-2012 University of Wisconsin, gift funds - \$20,000/yr
- 2002-2007 National Park Service (T. Givnish and J. Volin [Florida Atlantic University] PIs, Paul Glaser [University of Minnesota] co-PI): Landscape model of ridge and slough topography: integration of hydrology and biological processes (\$800,000)
- 2003-2005 National Science Foundation (PI, with J. D. Coop as co-PI): Environmental determinants of subalpine forest-grassland ecotones in the southern Rockies (\$9,626)
- 2004-2005 Wisconsin Alumni Research Foundation (PI): Phylogenography, geographic cohesion, speciation, and the scale of genetic differentiation in *Calochortus* (Liliaceae) (\$31,410)
- 2005-2008 National Science Foundation (PI): Phylogeography and spatial scales of genetic differentiation and incipient mating barriers in *Calochortus* (\$449,938)
- 2008-2013 National Science Foundation (Lead PI): From *Acorus* to *Zingiber*: Assembling the

- phylogeny of the monocotyledons (\$2,895,000 total; \$500,005 UW budget)
- 2010 National Science Foundation (PI): REU Supplement – Amplification and next-generation sequencing of whole plastid genomes (\$7,500)
- 2010-2015 National Science Foundation (coPI, with PI Don Waller, coPI Ken Cameron, and coPI Ken Sytsma): Dimensions: roles of functional, phylogenetic, and genetic diversity in structuring and sustaining plant communities through environmental change (\$2,934,940)
- 2011-2013 National Science Foundation (PI, with coPI Emily Sessa): Dissertation research: investigating phylogeny, reticulate evolution, and gene tree discordance in New World *Dryopteris* (Dryopteridaceae) (\$14,864)
- 2011-2013 National Science Foundation (PI, with coPI Stephanie Lyon): Dissertation research: molecular systematics, evolution, and historical biogeography of *Corybas* (Orchidaceae) (\$14,950)
- 2015-2018 National Science Foundation (PI): Phylogeny, historical biogeography, and floral evolution in *Lilium* (Liliaceae), with a focus on the North American nodding-flowered clade (in review)
- 2015-2018 National Science Foundation (PI): Phylogeny and historical biogeography of the Hawaiian lobeliads (in review)
- 2015-2018 National Science Foundation (PI): Integrated adaptations to moisture supply and cross-over in growth among *Eucalyptus* species along an Australian rainfall gradient (in review)

Participation in invited international symposia

- 1975 Symposium on Theoretical Plant Morphology
XIIth International Botanical Congress, Leningrad
- 1976 Cabot Symposium on Tropical Trees as Living Systems
Harvard Forest, Petersham MA
- 1977 Symposium on Plant Population Biology
Ithaca College, New York
- 1981 Symposium on the Evolutionary Biology of Plants
XIIIth International Botanical Congress, Sydney
- 1982 Symposium on Recent Advances in Plant Community Ecology
Ecological Society of America, State College PA
- 1983 Symposium on Physiological Ecology of Plants in the Wet Tropics
Universidad Autonoma Nacional, Mexico City
- 1983 Cabot Symposium on Evolutionary Constraints on Primary Productivity
(Convener) Harvard Forest, Petersham, MA
- 1986 Symposium on Comparative Plant Ecology
University of Sheffield, Sheffield, Great Britain
- 1987 Robertson Symposium on Ecology of Photosynthesis in Sun and Shade
Australian National University, Canberra
- 1987 Symposium on Adaptive Aspects of Vegetation Structure (Co-convener)
Utrecht, Netherlands
- 1987 Symposium on Species Diversity Patterns in Vegetation
Utrecht, Netherlands
- 1988 Symposium on Predictive Theory and Empirical Testing
Davis, California
- 1990 Symposium on The Use of Phylogeny in Understanding the Evolution
of Tropical Plant-Animal Interactions
Richmond, Virginia
- 1991 Symposium on Hawaiian Evolution
Hilo, Hawaii
- 1992 Symposium on Evolution of the Hawaiian biota
Honolulu, Hawaii
- 1993 Symposium on the Ecology of Aquatic Plants

- XVth International Botanical Congress, Tokyo
- 1994 Symposium on the Ecology of Plant Stems
Newport, Oregon
- 1994 Symposium on the Ecology of Lupine
Bodega Bay Biological Station, California
- 1995 Symposium on Molecular Evolution and Adaptive Radiation
(joint convener, with K. J. Sytsma)
Montreal, Canada
- 1997 Plant Evolution on Islands (Willi Hennig Society)
Washington, D. C.
- 1998 International Workshop on Plant Plasticity
Tel Aviv, Israel
- 1998 2nd International Symposium on Monocotyledons
Sydney, Australia
- 1998 Symposium on Adaptive Radiation and Molecular Systematics
Kyoto, Japan
- 1998 Symposium in Conjunction with the International Prize in Biology
Hayama, Japan
- 1999 Plant Evolution on Islands: Classical Patterns, Molecular Data, New Insights
(Convener, with co-convener U.-R. Böhle)
XVI International Botanical Congress, St. Louis
- 2000 Optimality in Plant Ecology: Prospects and Challenges
Hyttälä Field Station, University of Helsinki
- 2001 Evolution of Plant Physiology
Kew Botanical Gardens, Surrey
- 2001 Adaptive Radiation
National Center for Ecological Analysis and Synthesis, Santa Barbara
- 2001 Deep Morphology: Toward a Renaissance in the Use of Morphology in Systematics
Institute of Botany, University of Vienna
- 2001 Molecular and Morphological Data in Modern Systematics
University of São Paulo
- 2002 Hawaiian Biogeography
Stanford University
- 2002 Tropical Biogeography (co-convener, with Susanne Renner)
Botanical Society of America/ American Society of Plant Taxonomists
- 2002 Plant species-level systematics: patterns, processes and new applications
Nationaal Herbarium Nederlands, Leiden
- 2002 Molecular genetics and ecology of plant adaptation
University of British Columbia Botanical Gardens, Vancouver
- 2003 Monocots III
Rancho Santa Ana Botanic Gardens
- 2003 Science and Restoration of the Greater Everglades and Florida Bay Ecosystem
Palm Harbor, Florida
- 2003 Plant Speciation (New Phytologist Trust)
Canadian Association of Botany, St. Francis Xavier University
- 2003 Why Are There So Many Different Kinds of Tropical Plants?
Association for Tropical Biology and Conservation, University of Aberdeen
- 2004 Origin, adaptive radiation, and geographic diversification of the bromeliads
Bromeliad Society International, Chicago
- 2005 Evolution of the Bromeliaceae
XVII International Botanical Congress, Vienna
- 2005 Maximum tree height and hydraulic integration
University of New South Wales, Sydney
- 2007 Tree islands of the Central Everglades
Florida Atlantic University, Boca Raton
- 2008 Monocots IV – Phylogeny of Poales *and* Phylogeny of Bromeliaceae
Natural History Museum of Denmark, Copenhagen
- 2009 Angiosperm Phylogeny and Biotic Evolution

2011	56 th Annual Fall Symposium, Missouri Botanical Garden Monocot Phylogeny and Evolution (organizer)
2011	XVIII International Botanical Congress, Melbourne Bromeliad Evolution (co-organizer)
2013	XVIII International Botanical Congress, Melbourne Orchid Relationships, from Species to Subfamily
2013	Monocots V, NY Botanical Garden Phylogenetics of Bromeliaceae Monocots V, NY Botanical Garden

Seminars (1980-2005) – Australian National University 2004, 2005, 2012; Boston University 1980; Cambridge University 1982, 1998; Coe College 2009; Colorado State University 2006abc; CSIRO Canberra 2008; Duke University 2003; Florida Atlantic University 2001, 2007; Harvard University 1983, 2014; Imperial College 2014; Indiana University 1985; Iowa State University 1988, 2012; Kyoto University 2012; Liverpool University 1982; Miami University of Ohio 1997; Michigan State University 1997, 2005; National Park Service, Miami 2007; National Tropical Botanical Garden 1999, 2005; Northern Illinois University 2009; Ohio University 2001; Oxford University 1982, 1998, 2014; Princeton University 1982, 1985; Royal Botanical Gardens, Kew, 1998; Royal Botanical Gardens, Sydney 2005; Rutgers University 1985; Sheffield University 1982; Stanford University 1982; Universidad de los Andes 1982, 1995; University of California at Berkeley 1982; University of California at Davis 1986; University of California at Santa Barbara 2008; University of Canterbury 2005; University of Cape Town 2004; University College of North Wales 1982; University of Connecticut at Storrs 1980, 2007; University of Florida 2002; University of Georgia 1983; University of Hawaii 1997; University of Minnesota 1985, 2008; University of Missouri-St. Louis 1997; University of Oslo 2003; University of New Hampshire 1989; University of New South Wales, 2005; University of North Carolina 1988; University of Rochester 1983; University of Toronto 1980; University of Uppsala 1998; University of Utah 1997; University of Washington 1982; University of Wisconsin-Madison 1985, 1986, 1988, 1992, 2004, 2005, 2006abc, 2010, 2014; University of Wisconsin-Stevens Point 1997; University of Wisconsin-Whitewater 2008; University of Zürich 2001; Vanderbilt University 1991; Washington University 1982, 1997; Wellesley College 1980; Yale University 1982.

American Society of Plant Taxonomists 1990, 1992, 1994, 1995, 1996, 1998, 2000, 2002, 2006, 2010, 2012, 2013, 2014; Association for Tropical Biology 1990, 1992, 2003; Botanical Society of America 1982, 1998, 2001, 2002, 2004, 2007, 2009, 2010, 2012, 2013, 2014; Canadian Botanical Association 2003; Ecological Society of America 1982, 1988, 1990, 1992, 1996, 2001, 2002, 2007; Greater Everglades Ecological Restoration Conference 2003, 2006, 2008; International Botanical Congress 1982, 1993, 1999, 2005, 2011; International Congress on Systematic and Evolutionary Biology 1980; International Society for Ecological Modeling 1988; Midwest Symposium on Population Biology 1987, 1988 (convener); Society for the Study of Evolution 1982, 1984, 1991, 1995, 1999, 2007, 2008; US Park Service (Homestead FL) 2007; Willi Hennig Society 1997.

PUBLICATIONS

Givnish, T. J., and G. J. Vermeij. 1976. Sizes and shapes of liane leaves. *American Naturalist* 110: 743-778.

Givnish, T. J. 1978. On the adaptive significance of compound leaves, with particular reference to tropical trees. Pp. 351-380 in P. B. Tomlinson and M. H. Zimmermann (eds.), *Tropical trees as living systems*. Cambridge University Press, Cambridge.

Givnish, T. J. 1978. Ecological aspects of plant morphology: leaf form in relation to environment. *Acta Biotheoretica* 27: 83-142.

Givnish, T. J. 1979. On the adaptive significance of leaf form. Pp. 375-407 in O. T. Solbrig, S. Jain, G. B. Johnson, and P. H. Raven (eds.), *Topics in plant population biology*. Columbia University Press, New York.

Givnish, T. J. 1980. Ecological constraints on the evolution of breeding systems in seed plants: dioecy and dispersal in gymnosperms. *Evolution* 34: 959-972.

- Givnish, T. J. 1980. Evolution of form and function [a review of T. H. Frazetta, Complex adaptations in evolving populations]. *BioScience* 30: 839.
- Givnish, T. J. 1981. Serotiny, geography, and fire in the Pine Barrens of New Jersey. *Evolution* 35: 101-123.
- Givnish, T. J. 1982. Outcrossing vs. ecological constraints in the evolution of dioecy. *American Naturalist* 119: 849-865.
- Aronson, R. B., and T. J. Givnish. 1982. Optimal central place foraging: a comparison with null hypotheses. *Ecology* 64:395-399.
- Givnish, T. J. 1982. On the adaptive significance of leaf height in forest herbs. *American Naturalist* 120: 353-381.
- Givnish, T. J. 1982. Quantitative plant geography [a review of E. O. Box's Macroclimate and plant form: an introduction to predictive modeling in phytogeography]. *BioScience* 33: 392-393.
- Givnish, T. J. 1983. Convergent evolution of crown form in woody plants of southwestern Australia and New Caledonia. *American Philosophical Society Yearbook* 1983: 136.
- Givnish, T. J. 1984. Leaf and canopy adaptations in tropical forests. Pp. 51-84 in E. Medina, H. A. Mooney, and C. Vásquez-Yánes (eds.), *Physiological ecology of plants of the wet tropics*. Dr. Junk, The Hague.
- Givnish, T. J., E. L. Burkhardt, R. E. Happel, and J. W. Weintraub. 1984. Carnivory in the bromeliad *Brocchinia reducta*, with a cost/benefit model for the general restriction of carnivorous plants to sunny, moist, nutrient-poor habitats. *American Naturalist* 124: 479-497.
- Benzing, D. H., T. J. Givnish, and D. L. Bermudez. 1985. Absorptive trichomes in *Brocchinia reducta* (Bromeliaceae) and their evolutionary significance. *Systematic Botany* 10: 81-91.
- Givnish, T. J. 1986. Biomechanical constraints on self-thinning in plant populations. *Journal of Theoretical Biology* 119: 139-146.
- Givnish, T. J. (ed.). 1986. **On the Economy of Plant Form and Function**. Cambridge University Press, Cambridge.
- Givnish, T. J. 1986. On the use of optimality arguments. Pp. 3-9 in T. J. Givnish (ed.), *On the economy of plant form and function*. Cambridge University Press, Cambridge.
- Givnish, T. J. 1986. Economics of gas exchange. Pp. 11-24 in T. J. Givnish (ed.), *On the economy of plant form and function*. Cambridge University Press, Cambridge.
- Givnish, T. J. 1986. Optimal stomatal conductance, allocation of energy between leaves and roots, and the marginal cost of transpiration. Pp. 171-213 in T. J. Givnish (ed.), *On the economy of plant form and function*. Cambridge University Press, Cambridge.
- Givnish, T. J. 1986. Economics of support. Pp. 413-420 in T. J. Givnish (ed.), *On the economy of plant form and function*. Cambridge University Press, Cambridge.
- Givnish, T. J. 1986. Biomechanical constraints on canopy geometry in forest herbs. Pp. 525-583 in T. J. Givnish (ed.), *On the economy of plant form and function*. Cambridge University Press, Cambridge.

- Givnish, T. J. 1986. Economics of biotic interactions. Pp. 667-680 in T. J. Givnish (ed.), *On the economy of plant form and function*. Cambridge University Press, Cambridge.
- Givnish, T. J., R. W. McDiarmid, and W. R. Buck. 1986. Fire adaptation in *Neblinaria celiæ* (Theaceae), a high-elevation rosette shrub endemic to a wet equatorial tepui. *Oecologia* 70: 481-485.
- Givnish, T. J. 1987. Comparative studies of leaf form: assessing the relative roles of selective pressures and phylogenetic constraints. *New Phytologist* 106(Suppl.): 131-160.
- Givnish, T. J. 1987. Comparative studies of leaf form: assessing the relative roles of selective pressures and phylogenetic constraints. Pp. 131-160 in I. H. Rorison, J. P. Grime, R. Hunt, G. A. F. Hendry, and D. H. Lewis (eds.), *Frontiers of Comparative Plant Ecology*. Academic Press, London. [Reprint of preceding paper]
- Givnish, T. J. 1988. Adaptation to sun vs. shade: a whole-plant perspective. *Australian Journal of Plant Physiology* 15: 63-92.
- Givnish, T. J. 1988. Adaptation to sun vs. shade: a whole-plant perspective. Pp. 63-92 in C. B. Osmond, D. B. Hall, and S. von Caemmerer (eds.), *Ecology of Photosynthesis in Sun and Shade*. CSIRO Press, Canberra. [Reprint of preceding paper]
- Ashton, P. S., Givnish, and S. Appanah. 1988. Staggered flowering in the Dipterocarpaceae: new insights into floral induction in the aseasonal tropics. *American Naturalist* 132: 44-66.
- Givnish, T. J., E. S. Menges, and D. F. Schweitzer. 1988. Minimum-area requirements for long-term conservation of the Albany Pine Bush and the Karner Blue Butterfly. 120 pp. Published report to Malcolm Pirnie, Inc. and the City of Albany, NY.
- Givnish, T. J. 1989. The roots of modern approaches to macroevolution. *Ecology* 70: 1552-1553.
- Givnish, T. J. 1989. Ecology and evolution of carnivorous plants. Pp. 243-290 in W. G. Abrahamson (ed.), *Plant-animal interactions*. McGraw-Hill, New York.
- Givnish, T. J. 1990. Leaf mottling: relation to growth form and leaf phenology, and possible role as camouflage. *Functional Ecology* 6: 463-474.
- Givnish, T. J. 1991. Leafy canopies [a review of *Plant Canopies: Their Growth, Form and Function*, edited by G. Russell, B. Marshall, and P. G. Jarvis, Cambridge University Press]. *BioScience* 41:178-179.
- Givnish, T. J. 1992. Nature green in leaf and tendril. *Science* 256: 1339-1341.
- Givnish, T. J. 1993. From plant to planet. *Science* 261: 115-117.
- Sytsma, K. J., T. J. Givnish, J. F. Smith, and W. J. Hahn. 1993. Obtaining and storing land plant samples for macromolecular comparisons. In E. A. Zimmer, T. J. White, R. L. Cann, and A. C. Wilson (eds.), *Molecular Evolution: Producing the Biochemical Data*. *Methods in Enzymology* 224: 23-37.
- Givnish, T. J., K. J. Sytsma, J. F. Smith, and W. S. Hahn. 1994. Thorn-like prickles and heterophylly in *Cyanea*: adaptations to extinct avian browsers on Hawaii? *Proceedings of the National Academy of Sciences, U. S. A.* 91: 2810-2814.
- Lammers, T. G., T. J. Givnish, and K. J. Sytsma. 1994. Merger of the endemic Hawaiian genera *Cyanea* and *Rollandia* (Campanulaceae: Lobelioideae). *Novon* 3: 437-441.

- Givnish, T. J. 1994. Does diversity beget stability? *Nature* 371: 113-114.
- Givnish, T. J. 1994. The golden bough. *Science* 266: 1590-1591.
- Givnish, T. J., K. J. Sytsma, J. F. Smith, and W. S. Hahn. 1995. Molecular evolution, adaptive radiation, and geographic speciation in *Cyanea* (Campanulaceae, Lobelioideae). Pp. 288-337 *in* W. L. Wagner and V. Funk (ed.), *Hawaiian Biogeography: Evolution on a Hot Spot Archipelago*. Smithsonian Institution Press, Washington, D. C.
- Givnish, T. J. 1995. Plant stems: biomechanical adaptations for energy capture and influence on species distributions. Pp. 3-49 *in* B. L. Gartner (ed.), *Plant Stems: Physiology and Functional Morphology*. Chapman and Hall, New York.
- Hahn, W. J., T. J. Givnish, and K. J. Sytsma. 1995. Evolution of the monocot chloroplast inverted repeat: I. Evolution and phylogenetic implications of the ORF 2280 deletion. Pp. 579-587 *in* P. J. Rudall, P. J. Cribb, D. F. Cutler, and C. J. Humphries (eds.), *Monocots: Systematics and Evolution*. Kew Botanical Gardens, England.
- Givnish, T. J. 1995. Botanical scaling [review of K. Niklas – *Plant Allometry*]. *Science* 268: 313-314.
- Leach, M. K., and T. J. Givnish. 1996. Ecological determinants of species loss in prairie remnants. *Science* 273: 1555-1558.
- Montague, T. G., and T. J. Givnish. 1996. Distribution of black spruce vs. eastern larch along peatland gradients: relationship to relative stature, growth rate, and shade tolerance, and the significance of larch's deciduous habit. *Canadian Journal of Botany* 74: 1514-1532.
- Givnish, T. J., and T. E. Dawson. 1996. Nutrients in senesced leaves – keys to the search for potential resorption proficiency. *Ecology* 77: 1716.
- Peters, R., D. Waller, B. Noon, S. Pickett, T. Givnish, D. Murphy, R. Kiester, J. Cracraft, W. Kuhlman, and O. Houk. 1997. Standard scientific procedures for implementing ecosystem management on public lands. Pp. 320-336 *in* S. Pickett (ed.), *Enhancing the Ecological Basis of Conservation*. Island Press, New York.
- Givnish, T. J., and K. J. Sytsma. 1997. Consistency, characters, and the likelihood of correct phylogenetic inference. *Molecular Phylogenetics and Evolution* 7: 320-330.
- Sun, C., T. C. Moermond, and T. J. Givnish. 1997. Nutritional determinants of diet in three turacos in a tropical montane forest. *Auk* 114: 200-211.
- Givnish, T. J., and K. J. Sytsma (eds.). 1997. **Molecular Evolution and Adaptive Radiation**. Cambridge University Press, New York.
- Givnish, T. J. 1997. Adaptive radiation and molecular systematics: aims and conceptual issues. Pp. 1-54 *in* T. J. Givnish and K. J. Sytsma (eds.), *Molecular Evolution and Adaptive Radiation*. Cambridge University Press, New York.
- Givnish, T. J., and K. J. Sytsma. 1997. Homoplasy in molecular vs. morphological data: the likelihood of correct phylogenetic inference. Pp. 55-101 *in* T. J. Givnish and K. J. Sytsma (eds.), *Molecular Evolution and Adaptive Radiation*. Cambridge University Press, New York.
- Givnish, T. J., K. J. Sytsma, J. F. Smith, W. J. Hahn, D. H. Benzing, and E. M. Burkhardt. 1997. Molecular evolution and adaptive radiation in *Brocchinia* (Bromeliaceae: Pitcairnioideae) atop tepuis of the

- Guayana Shield. Pp. 259-311 in T. J. Givnish and K. J. Sytsma (eds.), *Molecular Evolution and Adaptive Radiation*. Cambridge University Press, New York.
- Givnish, T. J. 1998. Adaptive radiation of plants on oceanic islands: classical patterns, molecular data, new insights. Pp. 281-304 in P. Grant (ed.), *Evolution on Islands*. Oxford University Press, New York.
- Leach, M. K., and T. J. Givnish. 1998. Identifying highly restorable savanna remnants. *Transactions of the Wisconsin Academy of Sciences, Arts and Letters* 86: 119-128.
- Volin, J. C., P. B. Reich, and T. J. Givnish. 1998. Elevated CO₂ ameliorates the effects of ozone on photosynthesis and growth: species respond similarly regardless of photosynthetic pathway or plant functional group. *New Phytologist* 138: 315-325.
- Vázquez, J. A., G., and T. J. Givnish. 1998. Altitudinal gradients in tropical forest composition, structure, and diversity in the Sierra de Manantlán. *Journal of Ecology* 86: 999-1020.
- Givnish, T. J. 1999. On the causes of gradients in tropical tree diversity. *Journal of Ecology* 87: 193-210.
- Leach, M. K., and T. J. Givnish. 1999. Gradients in the composition, structure, and diversity of remnant oak savannas in southern Wisconsin. *Ecological Monographs* 69: 353-374.
- Givnish, T. J., T. M. Evans, J. C. Pires, and K. J. Sytsma. 1999. Polyphyly and convergent morphological evolution in Commelinales and Commelinidae: evidence from *rbcL* sequence data. *Molecular Phylogenetics and Evolution* 12: 360-385.
- Givnish, T. J. 1999. Adaptive radiation, dispersal, and diversification of the Hawaiian lobeliads. Pp. 67-90 in M. Kato (ed.), *The Biology of Biodiversity*. Springer-Verlag, Tokyo.
- Leach, M. K., R. A. Henderson, and T. J. Givnish. 2000. A caution against grazing. *BioScience* 49: 599-600.
- Givnish, T. J., and T. B. Patterson. 2000. Adaptive radiation: concerted convergence and the crucial contribution of molecular systematics. Pp. 97-110 in K. Iwatsuki (ed.), *IIAS International Symposium on Biodiversity*. International Institute for Advanced Studies, Kyoto.
- Givnish, T. J., and K. J. Sytsma (eds.). 2000. **Molecular Evolution and Adaptive Radiation**, paperback edition. Cambridge University Press, New York.
- Givnish, T. J., T. M. Evans, M. L. Zjhra, T. B. Patterson, P. E. Berry, and K. J. Sytsma. 2000. Molecular evolution, adaptive radiation, and geographic diversification in the amphiatlantic family Rapateaceae: evidence from *ndhF* sequences and morphology. *Evolution* 54: 1915-1937.
- Chase, M. W., D. E. Soltis, P. S. Soltis, P. J. Rudall, M. F. Fay, W. H. Hahn, S. Sullivan, J. Joseph, T. Givnish, K. J. Sytsma, J. C. Pires, 2000. Higher-level systematics of the monocotyledons: an assessment of current knowledge and a new classification. Pp. 3-16 in K. L. Wilson and D. A. Morrison [eds.], *Monocots: systematics and evolution*. CSIRO Publishing, Collingwood, Victoria, Australia
- Givnish, T. J. 2001. The rise and fall of plant species: a population biologist's perspective. *American Journal of Botany* 88: 1928-1934.
- Patterson, T. B., and T. J. Givnish. 2002. Phylogeny, concerted convergence, and phylogenetic niche conservatism in the core Liliales: insights from *rbcL* and *ndhF* sequence data. *Evolution* 56: 233-252.
- Givnish, T. J. 2002. On the adaptive significance of evergreen vs. deciduous leaves: solving the triple

- paradox. *Silva Fennica* 36: 703-743.
- Mäkela, A., T. J. Givnish, F. Berninger, T. N. Buckley, G. D. Farquhar, and P. Hari. 2002. Challenges and opportunities of the optimality approach in plant ecology. *Silva Fennica* 36: 605-614.
- Mast, A. R., and T. J. Givnish. 2002. Historical biogeography and the origin of stomatal protection in *Banksia* and *Dryandra* (Proteaceae) based on their cpDNA phylogeny. *American Journal of Botany* 89: 1311-1323.
- Givnish, T. J. 2002. Ecological constraints on the evolution of plasticity in plants. *Evolutionary Ecology* 16: 213-242.
- Givnish, T. J. 2003. How a better understanding of adaptations can yield better use of morphology in plant systematics: towards eco-evo-devo. *Taxon* 53: 273-296.
- Evans, T. M., K. J. Sytsma, R. B. Faden, and T. J. Givnish. 2003. Phylogenetic relationships in the Commelinaceae: II. A cladistic analysis of *rbcL* sequences and morphology. *Systematic Botany* 28: 270-292.
- Givnish, T. J., R. A. Montgomery, and G. Goldstein. 2004. Adaptive radiation of photosynthetic physiology in the Hawaiian lobeliads: light regimes, static light responses, and whole-plant compensation points. *American Journal of Botany* 91: 228-246.
- Patterson, T. B., and T. J. Givnish. 2004. Geographic cohesion and parallel adaptive radiations in *Calochortus* (Calochortaceae): evidence from a cpDNA sequence phylogeny. *New Phytologist* 161: 253-264.
- Givnish, T. J., and S. R. Renner. 2004. Tropical intercontinental disjunctions: Gondwana breakup, immigration from the boreotropics, and transoceanic dispersal. *International Journal of Plant Sciences* 165: S1-S6.
- Givnish, T. J., K. C. Millam, T. M. Evans, J. C. Hall, J. C. Pires, P. E. Berry, and K. J. Sytsma. 2004. Ancient vicariance or recent long-distance dispersal? Inferences about phylogeny and South American-African disjunctions in Rapateaceae and Bromeliaceae. *International Journal of Plant Sciences* 165: S35-S54.
- Chung, M. M., G. Gelembiuk, and T. J. Givnish. 2004. Population genetic variation and phylogeography of endangered *Oxytropis campestris* var. *chartacea* and relatives: arctic-alpine disjuncts in eastern North America. *Molecular Ecology* 13: 3657-3673.
- Landis, F. C., A. Gargas, and T. J. Givnish. 2004. Relationships among arbuscular mycorrhizal fungi, vascular plants, and environmental conditions in Wisconsin (USA) oak savannas. *New Phytologist* 164: 493-504.
- Givnish, T. J. 2005. Hallmarks of the New World [review of D. H. Benzing – Bromeliaceae: Portrait of an adaptive radiation. Cambridge University Press, New York]. *Systematic Biology* 54: 340-344.
- Givnish, T. J., J. C. Pires, S. W. Graham, M. A. McPherson, L. M. Prince, T. B. Patterson, H. S. Rai, E. R. Roalson, T. M. Evans, W. J. Hahn, K. C. Millam, A. W. Meerow, M. Molvray, P. Kores, H. E. O'Brien, W. J. Kress, J. Hall, and K. J. Sytsma. 2005. Repeated evolution of net venation and fleshy fruits among monocots in shaded habitats confirms *a priori* predictions: evidence from an *ndhF* phylogeny. *Proceedings of the Royal Society of London, Series B* 272: 1481-1490.
- Landis, F. C., A. Gargas, and T. J. Givnish. 2005. The influence of arbuscular mycorrhizae and light on Wisconsin (USA) sand savanna understories. 1. Plant community composition. *Mycorrhiza* 15:

- Landis, F. C., A. Gargas, and T. J. Givnish. 2005. The influence of arbuscular mycorrhizae and light on Wisconsin (USA) sand savanna understories. 2. Plant competition. *Mycorrhiza* 15: 555-562.
- Givnish, T. J., J. C. Pires, S. W. Graham, M. A. McPherson, L. M. Prince, T. B. Patterson, H. S. Rai, E. R. Roalson, T. M. Evans, W. J. Hahn, K. C. Millam, A. W. Meerow, M. Molvray, P. Kores, H. E. O'Brien, W. J. Kress, J. Hall, and K. J. Sytsma. 2006. Phylogeny of the monocotyledons based on the highly informative plastid gene *ndhF*: evidence for widespread concerted convergence. Pp. 28-51 in J. T. Columbus, E. A. Friar, J. M. Porter, L. M. Prince, and M. G. Simpson (eds.) *Monocots: Comparative Biology and Evolution (excluding Poales)*. Rancho Santa Ana Botanic Garden, Claremont, CA.
- Chase, M. W., M. F. Fay, D. S. Devey, O. Maurin, N. Rønsted, J. Davies, Y. Pillon, G. Petersen, O. Seberg, M. N. Tamura, C. B. Asmussen, K. Hilu, T. Borsch, J. I. Davis, D. W. Stevenson, J. C. Pires, T. J. Givnish, K. J. Sytsma, M. M. McPherson, S. W. Graham, and H. S. Rai. 2006. Multi-gene analyses of monocot relationships: a summary. Pp. 63-75 in J. T. Columbus, E. A. Friar, J. M. Porter, L. M. Prince, and M. G. Simpson (eds.) *Monocots: Comparative Biology and Evolution (excluding Poales)*. Rancho Santa Ana Botanic Garden, Claremont, CA.
- Pires, J. C., I. J. Maureira, T. J. Givnish, K. J. Sytsma, O. Seberg, G. Petersen, J. I. Davis, D. W. Stevenson, P. J. Rudall, M. F. Fay, and M. W. Chase. 2006. Phylogeny, genome size, and chromosome evolution of Asparagales. Pp. 287-304 in J. T. Columbus, E. A. Friar, J. M. Porter, L. M. Prince, and M. G. Simpson (eds.) *Monocots: Comparative Biology and Evolution (Poales)*. Rancho Santa Ana Botanic Garden, Claremont, CA.
- Givnish, T. J., K. C. Millam, P. E. Berry, and K. J. Sytsma. 2007. Phylogeny, adaptive radiation, and historical biogeography of Bromeliaceae inferred from *ndhF* sequence data. Pp. 3-26 in J. T. Columbus, E. A. Friar, J. M. Porter, L. M. Prince, and M. G. Simpson (eds.) *Monocots: Comparative Biology and Evolution – Poales*. Rancho Santa Ana Botanic Garden, Claremont, CA.
- Coop, J. D., and T. J. Givnish. 2007. Gradient analysis of reversed treelines and grasslands of the Valles Caldera, New Mexico. *Journal of Vegetation Science* 18: 43-54.
- Coop, J. D., and T. J. Givnish. 2007. Spatial and temporal patterns of recent forest encroachment in montane grasslands of the Valles Caldera, New Mexico, USA. *Journal of Biogeography* 34: 914-927.
- Dunn, R. R., A. D. Gove, T. G. Barraclough, T. J. Givnish, and J. D. Majer. 2007. Convergent evolution of an ant-plant mutualism across plant families, continents, and time. *Evolutionary Ecology Research* 9: 1349-1362.
- Givnish, T. J., J. C. Volin, V. D. Owen, V. C. Volin, J. D. Muss, and P. H. Glaser. 2007. Vegetation differentiation in the patterned landscape of the Central Everglades: importance of local and landscape drivers. *Global Ecology and Biogeography* DOI: 10.1111/j.1466-8238.2007.00371.x • **ALSO:** 2008 *Global Ecology and Biogeography* 17: 384-402.
- Coop, J. D., and T. J. Givnish. 2008. Constraints on tree seedling establishment in montane grasslands of the Valles Caldera National Preserve, New Mexico. *Ecology* 89: 1101-1111.
- Montgomery, R. A., and T. J. Givnish. 2008. Adaptive radiation of photosynthetic physiology in the Hawaiian lobeliads: dynamic photosynthetic responses. *Oecologia* 155: 455-467.
- Montgomery, R. A., G. Goldstein, and T. J. Givnish. 2008. Photoprotection of PSII in Hawaiian lobeliads from diverse light environments. *Functional Plant Biology* 35: 595-605.
- Lopez, O. R., K. Farris-Lopez, R. A. Montgomery, and T. J. Givnish. 2008. Leaf phenology in relation to

- canopy closure in southern Appalachian trees. *American Journal of Botany* 95: 1395-1407.
- Givnish, T. J., K. C. Millam, T. T. Theim, A. R. Mast, T. B. Patterson, A. L. Hipp, J. M. Henss, J. F. Smith, K. R. Wood, and K. J. Sytsma. 2008. Origin, adaptive radiation, and diversification of the Hawaiian lobeliads (Asterales: Campanulaceae). *Proceedings of the Royal Society of London, Series B*, DOI: 10.1098/rspb.2008.1204. • **ALSO:** 2009 *Proceedings of the Royal Society of London, Series B* 276: 407-416.
- Givnish, T. J. 2010. Giant lobelias exemplify convergent evolution. *BMC Biology* 8: article 3.
- Givnish, T. J. 2010. Ecology of plant speciation. *Taxon* 59: 1326-1366.
- Givnish, T. J., M. Ames, J. R. McNeal, M. R. McKain, P. R. Steele, C. W. dePamphilis, S. W. Graham, J. C. Pires, D. W. Stevenson, W. B. Zomlefer, B. G. Briggs, M. R. Duvall, M. J. Moore, D. E. Soltis, P. S. Soltis, K. Thiele, and J. H. Leebens-Mack. 2010. Assembling the tree of the monocotyledons: plastome phylogeny and evolution of order Poales. *Annals of the Missouri Botanical Gardens* 97: 584-616.
- Larsen, L.G., N. Aumen, C. Bernhardt, V. Engel, T. Givnish, S. Hagerthey, J. Harvey, L. Leonard, P. McCormick, C. McVoy, G. Noe, M. Nungesser, K. Rutchey, F. Sklar, T. Troxler, J. Volin, and D. Willard. 2011. Recent and historic drivers of landscape change in the Everglades ridge, slough, and tree island mosaic. *Critical Reviews in Environmental Science & Technology* 41(S): 1-38.
- Givnish, T. J., M. H. J. Barfuss, B. Van Ee, R. Riina, K. Schulte, R. Horres, P. A. Gonsiska, R. S. Jabaily, D. M. Crayn, J. A. C. Smith, K. Winter, G. K. Brown, T. M. Evans, B. K. Holst, H. E. Luther, W. Till, G. Zizka, P. E. Berry, and K. J. Sytsma. 2011. Phylogeny, adaptive radiation, and historical biogeography in Bromeliaceae: insights from an 8-locus plastid phylogeny. *American Journal of Botany* 98: 872-895.
- Sessa, E. B., E. A. Zimmer, and T. J. Givnish. 2012. Phylogeny, divergence times and historical biogeography of New World *Dryopteris* (Dryopteridaceae). *American Journal of Botany* 99: 1-21.
- Sessa, E. B., E. A. Zimmer, and T. J. Givnish. 2012. Reticulate evolution on a global scale: a nuclear phylogeny for *Dryopteris* (Dryopteridaceae), with a focus on New World taxa and intercontinental hybridizations. *Molecular Phylogenetics and Evolution* 64: 563-581.
- Sessa, E. B., E. A. Zimmer, and T. J. Givnish. 2012. Unraveling reticulate evolution in North American *Dryopteris* (Dryopteridaceae). *BMC Biology* 12: 104.
- Glaser, P. H., J. Volin, T. Givnish, B. C. S. Hansen, and C. A. Stricker. 2012. Carbon and sediment accumulation in the Everglades (USA) during the 4000 years: rates, drivers, and sources of error. *Journal of Geophysical Research – Biogeosciences* 117: G03026.
- Davis, J. I., J. R. McNeal, C. F. Barrett, M. W. Chase, J. I. Cohen, M. R. Duvall, T. J. Givnish, S. W. Graham, G. Petersen, J. C. Pires, O. Seberg, D. W. Stevenson, and J. H. Leebens-Mack. 2013. Contrasting patterns of support among plastid genes and genomes for major clades of the monocotyledons. Pp. 315-349 in P. Wilkin and S. Mayo (eds.), *Early events in monocot evolution*. Systematics Association special volume, Cambridge University Press, Cambridge.
- Henss, J. M., J. R. Moeller, T. J. Theim, and T. J. Givnish. 2013. Geographic scales of genetic differentiation and gene flow in *Calochortus albus* (Liliaceae). *Ecology and Evolution* 3: 1461-1470.
- Givnish, T. J., G. Bean, M. Ames, S. P. Lyon, and K. J. Sytsma. 2013. Phylogeny, floral evolution, and inter-island dispersal in Hawaiian *Clermontia* (Lobeliaceae) based on ISSR variation and plastid spacer sequences. *PLoS ONE* 8: e62566.

- Glaser, P. H., B. C. S. Hansen, J. J. Donovan, T. J. Givnish, C. A. Stricker, and J. C. Volin. 2013. Holocene dynamics of the Florida Everglades with respect to climate, dustfall, and tropical storms. *Proceedings of the National Academy of Sciences, USA* 110: 17211-17216.
- Givnish, T. J., M. H. J. Barfuss, B. Van Ee, R. Riina, K. Schulte, R. Horres, P. A. Gonsiska, R. S. Jabaily, D. M. Crayn, J. A. C. Smith, K. Winter, G. K. Brown, T. M. Evans, B. K. Holst, H. E. Luther, W. Till, G. Zizka, P. E. Berry, and K. J. Sytsma. 2014. Adaptive radiation, correlated and contingent evolution, and determinants of net species diversification in Bromeliaceae. *Molecular Phylogenetics and Evolution* 71: 55-78.
- Sessa, E. B., and T. J. Givnish. 2014. Field studies of leaf form and photosynthetic physiology in *Dryopteris* species distributed along light gradients in eastern North America. *Functional Ecology* 28: S108-S123.
- Givnish, T. J., and R. A. Montgomery. 2014. Common-garden studies on adaptive radiation of photosynthetic physiology among Hawaiian lobeliads. *Proceedings of the Royal Society of London, Series B* 281: 20132944.
- Theim, T. J., R. Y. Shirk, and T. J. Givnish. 2014. Spatial genetic structure in four understory *Psychotria* species and implications for tropical forest diversity. *American Journal of Botany* 101: 1189-1199.
- Moeller, J., N. Moehn, D. M. Waller, and T. J. Givnish. 2014. Paramagnetic cellulose DNA isolation is a powerful alternative to silica-column and CTAB DNA isolation methods for diverse plant taxa. *Applications in Plant Sciences* 2: 1400048.
- Givnish, T. J., S. C. Wong, H. Stuart-Williams, M. Holloway-Phillips, and G. D. Farquhar. 2014. Determinants of maximum tree height of *Eucalyptus* along a rainfall gradient in Victoria, Australia. *Ecology* 95: 2991-3007.
- Givnish, T. J. 2015. New evidence on the origin of carnivorous plants. *Proceedings of the National Academy of Sciences, USA* 112: 10-11.
- Scoffoni, C., J. Kunkle, J. Pasquet-Kok, C. Vuong, A. J. Patel, R. A. Montgomery, T. J. Givnish, and L. Sack. 2015. Light-induced plasticity in leaf hydraulics, anatomy and gas exchange in ecologically diverse Hawaiian lobeliads. *New Phytologist* (in press).
- Givnish, T. J. 2015. Adaptive radiation vs. "radiation" and "explosive diversification": why conceptual distinctions are fundamental to understanding evolution. *New Phytologist* (in review).
- Givnish, T. J., D. Spalink, M. Ames, S. P. Lyon, S. J. Hunter, A. Zuluaga, M. A. Clements, M. T. K. Arroyo, J. Leebens-Mack, L. Endara, R. Kriebel, K. M. Neubig, W. M. Whitten, N. H. Williams, and K. M. Cameron. 2015. Orchid phylogenomics and multiple drivers of extraordinary diversification. *Proceedings of the Royal Society, Series B* (in review).
- Ross, T. G., C. F. Barrett, M. S. Gomez, V. K. Y. Lam, C. L. Henriquez, D. H. Les, J. I. Davis, A. Cuenca, G. Petersen, O. Seberg, M. Thadeo, T. J. Givnish, J. Conran, D. W. Stevenson, and S. W. Graham. 2015. Plastid phylogenomics and molecular evolution of Alismatales. *Cladistics* (in review).
- Wernerehl, R. W., and T. J. Givnish. 2015. Relative roles of soil moisture, nutrient supply, and mechanical impedance in determining tallgrass prairie composition and structure. *Journal of Ecology* (in review).

In preparation:

- Givnish, T. J., A. Zuluaga, V. K. Y. Lam, M. S. Gomez, W. J. D. Iles, D. Spalink, J. R. Moeller, S. P. Lyon, B. G. Briggs, C. B. Mennes, V. S. F. T. Merckx, W. B. Zomlefer, and S. W. Graham. 2015. Plastome phylogeny for the monocot order Liliales. To be submitted to *Systematic Biology*.
- Lyon, S. P., M. A. Clements, and T. J. Givnish. Phylogeny, morphological evolution, and biogeography of the orchid subtribe Acianthinae, with focus on the genus *Corybas*. To be submitted to *Molecular Phylogenetics and Evolution*.

ABSTRACTS (1990-present)

- Givnish, T. J. 1990. Causes of depth zonation of emergent, floating-leaved, and submerged aquatic macrophytes. *Bulletin of the Ecological Society of America* 71:166.
- Givnish, T. J., K. J. Sytsma, and J. F. Smith. 1990. Adaptive radiation, plant-animal interactions, and molecular evolution in the bromeliad genus *Brocchinia*. *American Journal of Botany* 77:147-175.
- Givnish, T. J., K. J. Sytsma, and J. F. Smith. 1990. A re-examination of relationships among the three bromeliad subfamilies using cpDNA restriction site variation. *American Journal of Botany* 77:133.
- Givnish, T. J. 1992. Determinants of shade tolerance in temperate forest trees, with implications for trends in forest structure and diversity. *Bulletin of the Ecological Society of America*.
- Givnish, T. J., and K. J. Sytsma. 1992. Phylogenies based on cpDNA restriction sites show less homoplasy than those based on morphology or DNA sequence data. *American Journal of Botany* 79:145.
- Givnish, T. J., K. J. Sytsma, J. F. Smith, and W. S. Hahn. 1992. Molecular evolution, adaptive radiation, and geographic speciation in the endemic Hawaiian lobeliads. *American Journal of Botany* 79: 127.
- Givnish, T. J., K. J. Sytsma, J. F. Smith, and W. S. Hahn. 1992. Molecular evolution, phylogeny, and geography in the Pitcairnioideae (Bromeliaceae). *American Journal of Botany* 79:145.
- Givnish, T. J., K. J. Sytsma, J. F. Smith, and W. S. Hahn. 1993. Thorns and heterophylly in *Cyanea* are adapted to extinct avian browsers on Hawaii. *Bulletin of the Ecological Society of America* 74S:250-251.
- Givnish, T. J. 1993. Causes of depth zonation in aquatic plants. XV International Botanical Congress Bulletin.
- Givnish, T. J., K. J. Sytsma, J. F. Smith, and W. S. Hahn. 1993. Molecular evolution, adaptive radiation, and geographic diversification in *Cyanea*. XV International Botanical Congress Bulletin.
- Givnish, T. J., T. M. Evans, and K. J. Sytsma. 1994. Molecular evolution, adaptive radiation, and geographic speciation in the Rapateaceae. *American Journal of Botany* 8:158.
- Givnish, T. J., T. M. Evans, and K. J. Sytsma. 1995. The order Commelinales is polyphyletic and represents a striking case of convergent evolution in monocots. *American Journal of Botany* 82S: 132.
- Givnish, T. J., K. J. Sytsma, T. B. Patterson, and J. R. Hapeman. 1996. Comparison of patterns of geographic speciation and adaptive radiation in *Cyanea* and *Clermontia* (Campanulaceae) based on an analysis of DNA sequence and restriction-site data. *American Journal of Botany* 83S: 159.
- Givnish, T. J., E. Knox, T. B. Patterson, J. R. Hapeman, J. D. Palmer, and K. J. Sytsma. 1996. The Hawaiian

- lobelioids are the product of a single dispersal event to the central Pacific. *American Journal of Botany* 83S: 159.
- Givnish, T. J., and M. K. Leach. 1996. Determinants of plant species loss in remnant prairies: the ecology of local extinction. *Bulletin of the Ecological Society of America* 77:165.
- Leach, M. K., and T. J. Givnish. 1996. Direct gradient analysis of ground-layer vegetation in remnant oak savannas. *Bulletin of the Ecological Society of America* 77:255.
- Hapeman, J. R., T. J. Givnish, and K. Inoue. 1996. Floral evolution, pollinator ecology and speciation in *Platanthera* (Orchidaceae): inferences from nuclear ribosomal DNA sequence data and implications for the analysis of floral evolution in the Orchidaceae. *American Journal of Botany* 83S: 161.
- Hapeman, J. R., K. Inoue, and T. J. Givnish. 1996. Phylogenetic relationships, biogeography, and speciation in *Platanthera* (Orchidaceae): inferences from morphological and nuclear ribosomal DNA sequence data. *American Journal of Botany* 83S: 161.
- Patterson, T. B., T. J. Givnish, and K. J. Sytsma. 1996. Preliminary molecular phylogeny for *Calochortus* (Liliaceae s.l.) based on cpDNA spacer sequences. *American Journal of Botany* 83S: 185.
- Givnish, T. J. 1998. On the causes of gradients in tropical tree diversity: making the Janzen-Connell hypothesis context-specific. *American Journal of Botany* 85S: 34.
- Givnish, T. J., T. M. Evans, K. J. Sytsma, T. B. Patterson, and M. L. Zjhra. 1998. Molecular evolution, adaptive radiation, and origin of the amphiatlantic distribution of the family Rapateaceae. *American Journal of Botany* 85S: 132.
- Patterson, T. B., and T. J. Givnish. 1998. Phylogeny and evolutionary trends in Liliaceae s.s., Calochortaceae, and Uvulariaceae: insights from *ndhF* sequence data. *American Journal of Botany* 85S: 149-150.
- Patterson, T. B., T. J. Givnish, and K. J. Sytsma. 1998. Phylogeny, biogeography, and evolutionary trends in *Calochortus* (Calochortaceae) inferred from chloroplast non-coding sequence data. *American Journal of Botany* 85S: 150.
- Givnish, T. J., T. M. Evans, J. C. Pires, and K. J. Sytsma. 1998. Polyphyly and convergent morphological evolution in Commelinales and Commelinidae: evidence from *rbcL* sequence data. *Monocots II*: 22-23.
- Givnish, T. J., T. M. Evans, K. J. Sytsma, T. B. Patterson, and M. L. Zjhra. 1998. Molecular evolution, adaptive radiation, and the origin of the amphiatlantic distribution of the family Rapateaceae. *Monocots II*: 22.
- Givnish, T. J., T. B. Patterson, J. R. Hapeman, H. L. Corliss, and K. J. Sytsma. 1999. Origin, radiation, and diversity of the Hawaiian lobeliads. XVI International Botanical Congress Abstracts.
- Givnish, T. J., K. C. Millam, J. F. Smith, and K. J. Sytsma. 2000. Phylogeny and evolutionary patterns in Bromeliaceae based on *ndhF* sequences and cpDNA restriction sites. *American Journal of Botany* 87S: 130.
- Givnish, T. J., J. C. Pires, S. Graham, K. C. Millam, T. B. Patterson, T. M. Evans, E. H. Roalson, and K. J. Sytsma. 2000. Phylogeny of the monocotyledons based on *ndhF* sequence variation, with special emphasis on relationships within and among commelinoids, lilioids, and asparagoids. *American Journal of Botany* 87S: 130.

- Givnish, T. J., G. Bean, and K. J. Sytsma. 2000. Phylogeny, adaptive radiation, and patterns of inter-island dispersal in *Clermontia* (Lobeliaceae) based on ISSR variation. *American Journal of Botany* 87S: 129-130.
- Mast, A. R., and T. J. Givnish. 2000. Historical biogeography of *Banksia* and *Dryandra* (Proteaceae) in Australia's Southwest Botanical Province. *American Journal of Botany* 87S: 142.
- Givnish, T. J., R. A. Montgomery, and G. Goldstein. 2001. Putting the "adaptive" in adaptive radiation: static photosynthetic light responses in the Hawaiian lobeliads. *Ecological Society of America 2001 Meeting Schedule Online* <http://abstracts.allenpress.com/esa-cgi/document.cgi?YEAR=2001&ID=28858>
- Montgomery, R. A., and T. J. Givnish. 2001. Adaptation to different light regimes in the Hawaiian lobeliads: dynamic photosynthetic light responses and the outcome of *in silico* transplants. *Ecological Society of America 2001 Meeting Schedule Online* <http://abstracts.allenpress.com/esa-cgi/document.cgi?YEAR=2001&ID=28889>
- Leach, M. K., and T. J. Givnish. 2001. Experimental groundlayer restorations support description of Wisconsin oak savanna as "forblands," not "grasslands." *Ecological Society of America 2001 Meeting Schedule Online* <http://abstracts.allenpress.com/esa-cgi/document.cgi?YEAR=2001&ID=28802>
- Renner, S., and T. J. Givnish. 2002. Tropical intercontinental disjunctions: Gondwana break-up, immigration from the boreotropics, and transoceanic dispersal. *Botanical Society of America 2002 Meeting Schedule Online* <http://www.botany2002.org/sympos14/abstracts/10.shtml>
- Givnish, T. J., T. Evans, K. Millam, P. Berry, J. Hall, K. Sytsma. 2002. South American-African disjunctions in Rapateaceae and Bromeliaceae. *Botanical Society of America 2002 Meeting Schedule Online* <http://www.botany2002.org/sympos14/abstracts/11.shtml>
- Landis, F., A. Gargas, and T. Givnish. 2002. The plant tree, roots and clades: mycorrhizae and plant phylogeny. *Botanical Society of America 2002 Meeting Schedule Online* <http://www.botany2002.org/section13/abstracts/4.shtml>
- Landis, F., T. Givnish, and A. Gargas. 2002. Arbuscular mycorrhizal fungi and understory plant diversity along light gradients in Wisconsin oak savannas. *Botanical Society of America 2002 Meeting Schedule Online* <http://www.botany2002.org/section3/abstracts/49.shtml>
- Montgomery, R. A., and T. J. Givnish. 2002. Photoinhibition in the Hawaiian lobeliads across field and common-garden light gradients. *Ecological Society of America 2002 Meeting Schedule Online* – <http://199.245.200.45/pweb/document/?SOCIETY=esa&YEAR=2002&ID=17939>
- Givnish, T. J., and R. A. Montgomery. 2002. Common-garden studies of adaptive divergence in photosynthetic traits along a sun-shade gradient in the Hawaiian lobeliads. *Ecological Society of America 2002 Meeting Schedule Online* – Common-garden studies of adaptive divergence in photosynthetic traits along a sun-shade gradient in the Hawaiian lobeliads. *ESA 2002 Annual Program Online* – <http://199.245.200.45/pweb/document/?SOCIETY=esa&YEAR=2002&ID=17965>
- Givnish, T. J., and J. C. Volin. 2003. Tree-island landscapes in the Central Everglades: a model for the integration of hydrological and ecological processes. *GEER Program and Abstracts 2003:206-207*. <http://conference.ifas.ufl.edu/jc/GEER.pdf>
- Givnish, T. J., J. C. Pires, S. W. Graham, H. Rai, L. Prince, M. A. McPherson, K. C. Millam, T. B. Patterson, T. M. Evans, E. H. Roalson, M. Molvray, P. Kores, W. J. Kress, H. E. O'Brien, and K. J. Sytsma. 2003. Phylogeny of the monocotyledons based on *ndhF* sequence variation: concerted convergence of

- fleshy fruits and net venation. Monocots III Program:
<http://www.monocots3.org/general.htm>
- Givnish, T. J., K. C. Millam, and K. J. Sytsma. 2003. Origin, adaptive radiation, and biogeographic diversification of the Bromeliaceae inferred from *ndhF* sequences. Monocots III Program:
<http://www.monocots3.org/general.htm>
- Coop, J., and T. Givnish. 2004. Gradient analysis of inverted treelines and montane grasslands in the Valles Caldera, Jemez Mountains, New Mexico. Ecological Society of America 2004 Meeting Schedule Online – <http://abstracts.co.allenpress.com/pweb/esa2004/document/?ID=38104>
- Givnish, T. J., O. R. Lopez, R. A. Montgomery, and K. Farris Lopez. 2004. Leaf phenology and hydraulic conductance as determinants of shade tolerance in temperate forest trees. Botanical Society of America 2004 Meeting Schedule Online –
<http://www.botanyconference.org/engine/search/index.php?func=detail&aid=520>
- Montgomery, R. A., O. R. Lopez, K. Farris Lopez, and T. J. Givnish. 2004. Determinants of shade tolerance and its importance for local species distributions of S. Appalachian trees. Botanical Society of America 2004 Meeting Schedule Online –
<http://www.botanyconference.org/engine/search/index.php?func=detail&aid=805>
- Givnish, T. J., J. C. Pires, S. W. Graham, M. A. McPherson, L. M. Prince, T. B. Patterson, H. S. Rai, E. R. Roalson, T. M. Evans, W. J. Hahn, K. C. Millam, A. W. Meerow, M. Molvray, P. Kores, H. E. O'Brien, W. J. Kress, J. Hall, and K. J. Sytsma. 2004. Phylogeny of the monocotyledons based on *ndhF* sequence variation: evidence for widespread concerted convergence. Botanical Society of America 2004 Meeting Schedule Online –
<http://www.botanyconference.org/engine/search/index.php?func=detail&aid=545>
- Givnish, T. J. J. C. Volin, and P. H. Glaser. 2004. Self-assembly of patterned landscapes in the central Everglades: a model for the integration of hydrological, biogeochemical, and ecological processes. Botanical Society of America 2004 Meeting Schedule Online –
<http://www.botanyconference.org/engine/search/index.php?func=detail&aid=546>
- Farris Lopez, K., O. Lopez, R. Montgomery, and T. Givnish. 2004. Leaf flushing in relation to canopy closure as a determinant of shade tolerance in southern Appalachian trees. Ecological Society of America 2004 Meeting Schedule Online –
<http://abstracts.co.allenpress.com/pweb/esa2004/document/?ID=38013>
- Lopez, O., R. Montgomery, K. Farris Lopez, and T. Givnish. 2004. Sapling leaf phenology in relation to canopy closure, stand position, and tree shade tolerance in the southern Appalachians. Ecological Society of America 2004 Meeting Schedule Online –
<http://abstracts.co.allenpress.com/pweb/esa2004/document/?ID=38107>
- Hotchkiss, S., P. Vitousek, J. Price, B. Baldwin, D. Clague, R. Fleisher, R. Gillespie, T. Givnish, and P. O'Grady. 2004. Lineage and landscape – how history influences evolution on a hot-spot archipelago. Ecological Society of America 2004 Meeting Schedule Online –
<http://abstracts.co.allenpress.com/pweb/esa2004/document/?ID=36673>
- Volin, J., T. Givnish, P. Glaser, J. Muss, D. Owen, and V. Volin. 2004. Are spatially coupled positive and negative feedbacks among the most important determinants of hydrology, substrate, and vegetation in the Florida Everglades? Ecological Society of America 2004 Meeting Schedule Online –
<http://abstracts.co.allenpress.com/pweb/esa2004/document/?ID=36573>
- Givnish, T. J. 2005. Phylogeny of Bromeliaceae – implications for origin, adaptive radiation, and geographic diversification. XVII International Botanical Congress, Abstracts Book, p. 149.

- Givnish, T. J., K. C. Millam, A. Mast, T. B. Patterson, T. J. Theim, A. Hipp, J. M. Henss, J. F. Smith, K. Wood, and K. J. Sytsma. 2006. Origin, adaptive radiation, and diversification of the Hawaiian lobeliads (Campanulaceae). Botanical Society of America 2006 Meeting Schedule Online – <http://www.2006.botanyconference.org/engine/search/index.php?func=detail&aid=526>
- Givnish, T. J., T. J. Theim, and J. M. Henss. 2006. Phylogeography of the Bay Area clade of *Calochortus* (Liliaceae). Botanical Society of America 2006 Meeting Schedule Online – <http://www.2006.botanyconference.org/engine/search/index.php?func=detail&aid=571>
- Theim, T. J., and T. J. Givnish. 2006. Gene flow and fecundity in tropical forest understory *Psychotria*. Botanical Society of America 2006 Meeting Schedule Online – <http://www.2006.botanyconference.org/engine/search/index.php?func=detail&aid=596>
- Glaser, P. H., J. Volin, T. Givnish, and J. Donovan. 2006. Soil profiles from the Florida Everglades and their relationship to stratigraphy of boreal patterned peatlands. 2006 Greater Everglades Ecosystem Restoration Conference, Programs and Abstracts, p. 77.
- Volin, J. C., D. Owen, V. C. Volin, P. H. Glaser, T. J. Givnish, and J. Muss. 2006. Development of a predictive model relating hydrology and edaphic factors to landscape vegetation patterns in freshwater marshes. 2006 Greater Everglades Ecosystem Restoration Conference, Programs and Abstracts, p. 238.
- Givnish, T. J., B. van Ee, and M. W. Skinner. 2007. Phylogeny, floral evolution, and biogeography in North American *Lilium* (Liliaceae). Botanical Society of America 2007 Meeting Schedule Online – <http://www.2007.botanyconference.org/engine/search/index.php?func=detail&aid=1551>
- Montgomery, R. A., and T. J. Givnish. 2007. Adaptive radiation of photosynthetic physiology in the Hawaiian Campanulaceae. Society for the Study of Evolution 2007 Meeting Schedule Online – <http://www.evolution2007.com/downloads/Evolution2007Programme.pdf>
- Givnish, T. J., and J. C. Volin. 2008. Self-assembly of patterned landscapes and vegetation in the Central Everglades: importance of local and landscape drivers. Greater Everglades Ecosystem Restoration Conference, Programs and Abstracts, pp. 137-138.
- Glaser, P. H., J. Volin, and T. Givnish. 2008. Radiocarbon dating sediments in the Everglades of South Florida: Sources of Error and mass accumulation rates. Greater Everglades Ecosystem Restoration Conference, Programs and Abstracts, p. 139.
- Larsen, L., N. Aumen, C. Bernhardt, V. Engel, T. Givnish, S. Hagerthy, J. Harvey, L. Leonard, C. McVoy, G. Noe, M. Nungesser, K. Rutchev, F. Sklar, T. Troxler, J. Volin, and D. Willard. 2008. The role of flow and transport processes in ridge/slough/tree island pattern dynamics. Greater Everglades Ecosystem Restoration Conference, Programs and Abstracts, pp. 243-244.
- Givnish, T. J., J. H. Leebens-Mack, J. R. McNeal, M. Ames, N. I. Cacho, P. E. Berry, and K. J. Sytsma. 2009. A phylogenomic approach to bromeliad phylogeny. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=756>
- Ames, M., T. J. Givnish, M. Clements, N. H. Williams, J. C. Pires, M. S. Kinney, J. H. Leebens-Mack, C. Ané, J. I. Davis, C. W. dePamphilis, M. Gandolfo, S. W. Graham, D. W. Stevenson, and W. B. Zomlefer. 2009. A plastome- and nuclear-gene based phylogeny for the orchid subfamily Epidendroideae. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=692>
- Givnish, T. J., M. Ames, N. H. Williams, M. Clements, K. M. Cameron, K. M. Neubig, W. M. Whitten, M.

- Moore, J. Chris Pires, M. S. Kinney, J. H. Leebens-Mack, J. R. McNeal, C. Ané, J. I. Davis, C. W. dePamphilis, M. Gandolfo, S. W. Graham, D. W. Stevenson, and W. B. Zomlefer. A plastome-based phylogeny for the Orchidaceae. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=683>
- Gonsiska, P. A., and T. J. Givnish. 2009. A tale of two *Catopsis*: trichomes in two epiphytic bromeliads of contrasting light environment and trophic ecology. 2009 Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=590>
- Givnish, T. J., B. Van Ee, M. Barfuss, R. Riina, K. Schulte, R. Horres, P. A. Gonsiska, R. S. Jabaily, D. Crayn, A. Smith, K. Winter, G. K. Brown, T. M. Evans, B. K. Holst, H. E. Luther, W. Till, G. Zizka; P. E. Berry, and K. J. Sytsma. 2009. Classification, adaptive radiation, and geographic diversification in Bromeliaceae: insights from a new multi-locus phylogeny. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=753>
- Givnish, T. J., C. Ané, J. I. Davis, C. W. dePamphilis, M. Gandolfo, S. W. Graham, J. H. Leebens-Mack, J. Chris Pires, D. W. Stevenson, W. B. Zomlefer, R. McCombie, M. Ames, M. S. McKinney, J. R. McNeal, and M. Thadeo. 2009. From *Acorus* to *Zingiber* – assembling the phylogeny of the monocotyledons. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=705>
- Sessa, E. B., and T. J. Givnish. 2009. Relationships of North American *Dryopteris* based on plastid and nuclear sequences. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=135>
- Leebens-Mack, J. H., M. Thadeo, M. Ames, C. Ané, J. I. Davis, M. Gandolfo, S. W. Graham, T. J. Givnish, W. R. McCombie, J. Chris Pires, D. W. Stevenson, W. B. Zomlefer, and C. W. dePamphilis. 2009. The utility of monocot transcriptomes data for reconstructing phylogeny and characterizing ancient polyploidy. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=749>
- McNeal, J. R., J. I. Davis, C. W. dePamphilis, T. J. Givnish, M. R. McKain, M. Moore, J. Chris Pires, D. E. Soltis, P. S. Soltis, D. W. Stevenson, W. B. Zomlefer, and J. H. Leebens-Mack. 2009. Understanding the monocot tree of life using complete chloroplast genome sequences. Botanical Society of America 2009 Meeting – <http://2009.botanyconference.org/engine/search/index.php?func=detail&aid=626>
- Graham, S. W., W. J. D. Iles, S. Y. Smith, V. Lam, and T. J. Givnish. 2010. Progress in reconstructing the early splits in monocot phylogeny. Joint meeting Early Monocot Evolution sponsored the Linnean Society and the Royal Botanic Gardens, Kew.
- Givnish, T. J., M. S. Ames, M. R. McKain, P. R. Steele, C. W. dePamphilis, S. W. Graham, J. C. Pires, D. W. Stevenson, W. B. Zomlefer, B. Briggs, M. R. Duvall, M. Moore, D. F. Soltis, P. S. Soltis, K. Thiele, and J. H. Leebens-Mack. 2010. Plastome sequence phylogeny of commelinid monocots implies five origins of wind pollination in Poales. Botanical Society of America 2010 meeting – <http://2010.botanyconference.org/engine/search/index.php?func=detail&aid=222>
- Lam, V., H. Rai, J. H. Leebens-Mack, T. J. Givnish, J. I. Davis, D. W. Stevenson, J. C. Pires, G. Petersen, O. Seberg, C. W. dePamphilis, W. B. Zomlefer, C. Ané, and S. W. Graham. 2010. Retention of plastid genes in mycoheterotrophic monocots. Botanical Society of America 2010 meeting – <http://2010.botanyconference.org/engine/search/index.php?func=detail&aid=702>
- Sessa, E. B., T. J. Givnish, and E. Zimmer. 2010. Relationships of New World *Dryopteris* (Dryopteridaceae). Botanical Society of America 2010 meeting – <http://2010.botanyconference.org/engine/search/index.php?func=detail&aid=345>

- Lyon, S., T. J. Givnish, and M. Clements. 2010. Molecular systematics of *Corybas* (Orchidaceae). Botanical Society of America 2010 meeting – <http://2010.botanyconference.org/engine/search/index.php?func=detail&aid=746>
- Davis, J. I., D. W. Stevenson, C. Ané, C. W. dePamphilis, T. J. Givnish, S. W. Graham, J. H. Leebens-Mack, J. C. Pires, G. Petersen, O. Seberg, M. Thadeo, A. Cuenca, M. Ames, J. R. McNeal, and P. R. Steele. 2010. Botanical Society of America 2010 meeting – <http://2010.botanyconference.org/engine/search/index.php?func=detail&aid=638>
- Givnish, T., M. Barfuss, B. Van Ee, R. Riina, K. Schulte, R. Horres, P. Gonsiska, R. Jabaily, D. Crayn, A. Smith, K. Winter, B. Holst, H. Luther, W. Till, G. Zizka, P. Berry, and K. J. Sytsma. 2011. Origin, phylogeny, adaptive radiation, and geographic diversification of Bromeliaceae. XVIII International Botanical Congress, Melbourne, Abstract Book (http://www.ibc2011.com/downloads/IBC2011_Abstract_Book.pdf), p. 187.
- Leebens-Mack, J., N. Wickett, S. Ayyampalayam, M. Barker, M. B. Gonzales, T. J. Vision, J. McNeal, R. Steele, M. McKin, J. Duarte, J. C. Pires, D. Stevenson, W. R. McCombie, W. Zomlefer, T. Givnish, C. Ané, J. I. Davis, M. A. Gandolfo, M. Chase, A. Pineyro, E. Alvarez, R. Barrett, K. Thiele, G. K.-S. Wong, and C. dePamphilis. 2011. Phylogenomic analysis of transcriptomes sampled across monocot orders. XVIII International Botanical Congress, Melbourne, Abstract Book (http://www.ibc2011.com/downloads/IBC2011_Abstract_Book.pdf), p. 291.
- Sessa, E., E. Zimmer, and T. Givnish. 2011. Phylogeny, physiology, and reticulate evolution: an integrated approach to North American *Dryopteris* (Dryopteridaceae). XVIII International Botanical Congress, Melbourne, Abstract Book (http://www.ibc2011.com/downloads/IBC2011_Abstract_Book.pdf), p. 307.
- Ames, M., N. Williams, J. Leebens-Mack, M. Whitten, K. Neubig, M. Clements, and T. Givnish. 2011. Phylogeny and evolution of Orchidaceae: a phylogenomic perspective. XVIII International Botanical Congress, Melbourne, Abstract Book (http://www.ibc2011.com/downloads/IBC2011_Abstract_Book.pdf), p. 311.
- Givnish, T., M. Barfuss, B. Van Ee, R. Riina, K. Schulte, R. Horres, P. Gonsiska, R. Jabaily, D. Crayn, A. Smith, K. Winter, B. Holst, H. Luther, W. Till, G. Zizka, P. Berry, and K. J. Sytsma. 2012. Adaptive radiation, correlated evolution, and determinants of net diversification rates in Bromeliaceae: test of an *a priori* model. Botanical Society of America 2012 meeting, Columbus OH. (<http://www.botanyconference.org/engine/search/index.php?func=detail&aid=638>)
- Sessa, E., and Givnish T. Leaf form and photosynthetic physiology in eastern North American *Dryopteris* (Dryopteridaceae). Botanical Society of America 2012 meeting, Columbus OH. (<http://www.botanyconference.org/engine/search/index.php?func=detail&aid=738>)
- dePamphilis, C, N. Wickett, J. Duarte, J. Der, M. McCain, J. Leebens-Mack, P. Edger, J. Pires, E. Wafula, Y. Zhang, S. Ayyampalayam, C. Barrett, J. Davis, S. Graham, R. McCombie, W. Zomlefer, D. Stevenson, and T. Givnish. 2012. Large-scale transcriptome sequencing and phylogenetic hypotheses for monocots based on analyses of 970 (and up to 1888) low-copy nuclear genes. Botanical Society of America 2012 meeting, Columbus OH. (<http://www.botanyconference.org/engine/search/index.php?func=detail&aid=968>)
- Givnish, T. J., M. H. J. Barfuss, B. Van Ee, R. Riina, K. Schulte, R. Horres, P. A. Gonsiska, R. S. Jabaily, D. M. Crayn, J. A. C. Smith, K. Winter, G. K. Brown, T. M. Evans, B. K. Holst, H. Luther, W. Till, G. Zizka, P. E. Berry, and K. J. Sytsma. 2013. Adaptive radiation, historical biogeography, correlated and contingent evolution, and net rates of diversification in Bromeliaceae. Monocots V International Conference on the Comparative Biology of Monocots, New York Botanical Garden (<https://www.regonline.com/custImages/320000/329272/July8NYBGMonocotsVAbstractBook.pdf>)

f)

- Givnish, T. J., M. Ames, S. P. Lyon, K. M. Cameron, K. M. Neubig, W. M. Whitten, M. K. Arroyo, J. Leebens-Mack, M. Clements, and N. H. Williams. 2013. The 39 steps: a plastome phylogeny for orchid tribes, with implications for the evolution of epiphytism, CAM photosynthesis, and net rates of species diversification. Monocots V International Conference on the Comparative Biology of Monocots, New York Botanical Garden (<https://www.regonline.com/custImages/320000/329272/July8NYBGMonocotsVAbstractBook.pdf>)
- Lyon, S. P., M. A. Clements, and T. J. Givnish. 2013. A multi-gene phylogeny of the Australasian orchid genus *Corybas*, with implications for historical biogeography, morphological evolution, and generic circumscription. Monocots V International Conference on the Comparative Biology of Monocots, New York Botanical Garden (<https://www.regonline.com/custImages/320000/329272/July8NYBGMonocotsVAbstractBook.pdf>)
- Pires, J. C., M. R. McKain, K. L. Hertweck, S. Unruh, D. Mayfield-Jones, J. D. Washburn, T. J. Givnish, M. A. Gandolfo, D. W. Stevenson, C. W. dePamphilis, J. Leebens-Mack. 2013. Phylogenomics of Asparagales. Monocots V International Conference on the Comparative Biology of Monocots, New York Botanical Garden (<https://www.regonline.com/custImages/320000/329272/July8NYBGMonocotsVAbstractBook.pdf>)
- Givnish, T. J., and G. D. Farquhar. 2013. Determinants of maximum tree height in *Eucalyptus* along a steep climatic gradient in Victoria, Australia. Botanical Society of America, New Orleans (<http://www.2013.botanyconference.org/engine/search/index.php?func=detail&aid=493>).
- Givnish, T. J., G. Bean, M. A. Sevillano, S. Lyon, and K. J. Sytsma. 2013. Phylogeny, floral evolution, and inter-island dispersal in Hawaiian *Clermontia* (Campanulaceae) based on ISSR variation and plastid spacer sequences. Botanical Society of America, New Orleans (<http://www.2013.botanyconference.org/engine/search/index.php?func=detail&aid=871>).
- Sessa, E., T. Givnish, and M. Barker. 2013. Sequencing a Lazarus transcriptome: resurrecting “*Dryopteris semicristata*”. Botanical Society of America, New Orleans (<http://www.2013.botanyconference.org/engine/search/index.php?func=detail&aid=625>).
- Givnish, T. J., A. Zuluaga, D. Spalink, W. Iles, V. Lam, J. Moeller, B. Briggs, and W. Zomlefer. 2014. Plastome phylogeny for the monocot order Liliales. Botanical Society of America, Boise (<http://2014.botanyconference.org/engine/search/index.php?func=detail&aid=669>).
- Lyon, S. P., M. Clements, and T. J. Givnish. 2014. Phylogeny, morphological evolution, and biogeography of the orchid subtribe Acianthinae. Botanical Society of America, Boise (<http://2014.botanyconference.org/engine/search/index.php?func=detail&aid=760>).
- Cameron K., K. J. Sytsma, D. H. Waller, T. J. Givnish, M. C. Pace, P. Li, D. Spalink, C. Drummond, J. Zaborsky, J. Rose, B. Alverson, and R. Kriebel. 2014. A molecular phylogeny of the Wisconsin flora. Botanical Society of America, Boise (<http://2014.botanyconference.org/engine/search/index.php?func=detail&aid=570>).
- Givnish, T. J., D. Spalink, M. Ames, S. P. Lyon, S. J. Hunter, A. Zuluaga, W. Iles, M. K. Arroyo, M. A. Clements, J. Leebens-Mack, K. M. Neubig, W. M. Whitten, N. H. Williams, and K. M. Cameron. 2014. Orchid phylogenomics, historical biogeography, and drivers of exceptional diversification. Radiations Symposium, University of Zürich

GRADUATE STUDENTS (1990 - present):

- Timothy Montague (M.A., Botany) Comparative growth and performance of black spruce and eastern larch along peatland gradients in northern Wisconsin – M.A. awarded, 1992
- Brian Pruka (M.S., IES) Distribution of savanna and woodland herbaceous species along light and soil depth gradients – M.S. awarded, 1993
- Kristin Westad (M.S., IES) Adaptive management plan for the New Jersey Pine Plains – M.S. awarded, 1995
- Antonio Vázquez (Ph.D., Botany) Ecology of montane rain forests in the Sierra de Manantlán, Mexico (co-advisor with H. H. Iltis) – Ph.D. awarded, 1995
- Peter Hujik (M.S., IES) Ecology of lowland Midwestern oak savannas – M.S. awarded, 1995
- Thomas Celebrezze (M.S., IES) Ecology of the endangered Karner Blue Butterfly (Rotary Foundation Fellow) – M.S. awarded, 1996; **designated outstanding Master's Thesis of 1996 at the University of Wisconsin.**
- Mark Leach (Ph.D., Botany) Experimental reconstruction of oak savannas and compositional turnover along sun-shade gradients in remnant savannas – Ph.D. awarded, 1996
- David Foster (Ph.D., Botany) Trends in the composition, structure, and diversity of forest understories along climatic and edaphic gradients in the Upper Great Lakes region (Support through USFS grant) – Ph.D. awarded, 1997
- Laurie Stockmeier (M.A., Botany) Vegetational patterning and the distribution of rare plant species in fens: test of a biogeochemical hypothesis – M.A. awarded, 1998
- Thomas Patterson (Ph.D., Botany) Molecular evolution and adaptive radiation in *Calochortus* (**NSF doctoral dissertation improvement grant**) Ph.D. awarded, 1998
- Austin Mast (Ph.D., Botany) Adaptive radiation and molecular evolution in Australian Proteaceae (**NSF Graduate Fellow; NSF doctoral dissertation improvement grant**) Ph.D. awarded, 2000 -> post-doctoral appointment, University of Zürich -> Assistant Professor, Florida State University
- Jeffrey Hapeman (M.A., Botany) Molecular evolution and adaptive radiation in the rein orchids (Orchidaceae: *Platanthera*) of North America (**NSF Graduate Fellow; AOS grant**) M.A. awarded, 2004
- Erica Cochrane (Ph.D., Botany/Zoology) Population dynamics and elephant seed dispersal in African rainforest trees (co-advisor with T. Moermond) (Support through **World Conservation Society grant**) Ph.D.'s awarded, 2001
- Melissa Chung (M.A., Botany) Genetic differentiation in endangered *Oxytropis* (**University of Wisconsin AOF fellowship**) M. S. awarded, 2001
- Frank Landis (Ph.D., Botany) Ecology of prairie and savanna mycorrhizae (**NSF doctoral dissertation improvement grant**) Ph.D. awarded, 2004
- Jonathan Coop (Ph.D., Botany) Causes of subalpine treelines in the Valles Caldera National Preserve (**University of Wisconsin Fellowship; NSF doctoral dissertation improvement grant**) Ph.D. awarded, 2005
- Tara Suring (M.A., IES) Metapopulation dynamics of the federally endangered Pitcher's thistle (*Cirsium pitcheri*) M. A. awarded, 2005
- Kendra Millam (Ph.D., Botany) Molecular systematics and phylogeography of the *Trillium erectum* complex. Ph.D. awarded, 2006
- Terra Theim (Ph.D., Botany) Geographic scale of genetic differentiation in gap-phase vs. understory species of *Psychotria* (Rubiaceae): relation to vagility of seed dispersers (**Nave Fund grant**) Ph.D. awarded, 2006
- Jillian Henss (M.A., Botany) Spatial scales of gene flow in *Calochortus* (Liliaceae) M.S. awarded, 2006
- Philip Gonsiska (Ph.D., Botany) Phylogeny and adaptive divergence in photosynthetic light responses in *Catopsis* (Bromeliaceae) Ph.D. awarded, 2010.
- Emily Sessa (Ph.D., Botany) Phylogeny and adaptive radiation in North American *Dryopteris* (**Smithsonian research grant; NSF doctoral dissertation grant**) Ph.D. awarded, 2012
- Kathryn Gerndt (M.S., IES) Structural habitat of the endangered pine marten in northern Wisconsin. M.S. awarded, 2013
- Robert Wernerehl (Ph.D., Botany) Causes of the distributions of dominant prairie grasses along dry-wet landform gradients. Ph.D. awarded, 2013

Stephanie Pimm Lyon (Ph.D., Botany) Phylogeny and geography of Australian *Corybas* (Orchidaceae) (NSF Graduate fellowship; NSF doctoral dissertation grant) Ph.D. awarded, 2014
 Steven Hunter (Ph.D., Botany; co-advised by K. J. Sytsma and C. Ané) New analytical approaches to the study of historical biogeography
 William Sparks (Ph.D., Botany) Ecology of carnivorous plants
 Evan Eifler (Ph.D., Botany) Ecology of endangered renosterveld communities, South Africa

Post-doctoral fellows

Rebecca A. Montgomery (1999-2003) Physiological adaptations to sun and shade in the Hawaiian lobeliads – Dr. Montgomery is now an Assistant Professor of Forest Resources at the University of Minnesota-Twin Cities
 Omar R. Lopez (2003-2006) Leaf phenology and hydraulic conductivity as determinants of shade tolerance in temperate forest trees – Dr. Lopez currently holds the prestigious 3-year Tupper Fellowship at the Smithsonian Tropical Research Institute in Panamá.
 Benjamin Van Ee (2006) Origin and radiation of the North American lilies – Dr. Van Ee held a Junior Fellowship at Harvard University, and now is an assistant professor at Black Hills State University, Spearfish SD.
 Mercedes Ames (2009-2012) Phylogeny of the monocotyledons; plastome phylogeny of tribes of Orchidaceae (now at Promega)
 Rebecca Kartzinel (2013-2015) Population genetics and spatial scales of gene flow in “winner” and “loser” understory species from forests in northern and southern Wisconsin

Recent service on Departmental and University committees:

Department of Botany

Awards Committee (Chair)	2002-2008, 2010-present
Awards Committee (member)	2008-2010
Budget	1998-2000, 2008-2010
Endowment Fund (Chair)	1986-2008
Finance and Development (Chair)	2008-2010
Finance and Development (member)	2010-2013
Graduate Admissions	2011-2013
Plant Physiological Ecology Search Committee (Chair)	2012-2013
Kate McCulloh Mentor Committee	2013-present
Sara Hotchkiss Mentor and Tenure Review Committee (Chair)	2005-2009

University of Wisconsin

Hilldale Undergraduate Research Awards (Chair, Biological Division)	1991-2004
Organization for Tropical Studies, Board	1994-2008
Recreational Sports Board (member)	2005-2011
Recreational Sports Board (chair)	2008-2010
Faculty Rights & Responsibilities	2011-2013
Faculty Rights & Responsibilities (Chair)	2013-2014