

SUSAN J. WIEGREFE

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EDUCATION

- May 1992 DOCTOR OF PHILOSOPHY DEGREE, Plant Breeding and Plant Genetics; Botany minor
University of Wisconsin-Madison, Madison, WI
 Dissertation: "Molecular Genetic Variation in the Ulmaceae: Phylogenetic Implications"
 Major/Minor Professors: Dr. Raymond P. Guries /Dr. Kenneth J. Sytsma
- May 1985 MASTER OF SCIENCE DEGREE, Horticulture
University of Wisconsin-Madison, Madison, WI
 Specialization: Woody plant culture, public horticulture, and adult and education; non-thesis option. Advisor: Dr. Edward R. Hasselkus
- March 1981 BACHELOR OF SCIENCE DEGREE, WITH DISTINCTION, Horticultural Science
University of Minnesota, Saint Paul, MN
 Concentration: Floriculture

PROFESSIONAL EXPERIENCE

- October 2010 to present RESEARCH ASSOCIATE
Badgersett Research Corporation, Canton, MN
 Design and conduct research on propagation and production issues of hybrid chestnuts (*Castanea* ×), hickory-pecans (*Carya* ×), and hazelnut (*Corylus* ×). Assist with production, harvest, nut processing, grower consultations and educational programs as needed.
- October 2010 to September 2011 GRANT COORDINATOR (USDA-Specialty Crop Block Grant)
Wisconsin Nursery Association
 Spearheaded the development of a survey to assess the extent of culture of 63 plants under review for potential invasiveness by Wisconsin nursery growers and relative proportion of revenues and production capacity comprised by these taxa. Consulted industry representatives and WI-DNR in survey development, tabulated and communicated results to WNA and USDA.
- February to June 2010 GRANT WRITER
Freelance Agent
 Coordinated and led the writing and submission of competitive grants for the Wisconsin Nursery Association (Specialty Crop Block Grant) and the St. Croix Institute for Sustainable Community Development (Sustainable Agriculture Research and Education).
- May to October 2010 TREE INVENTORY SPECIALIST
Wachtel Tree Science and Service, Merton, WI
 Identified street trees, assessed their condition, and entered data into ArcPad/Access database for the City of Madison. Also, provided public interface for the project to citizens.
- August 2005 to June 2009 ASSISTANT PROFESSOR OF HORTICULTURE
University of Wisconsin, Department of Plant and Earth Science, River Falls, WI
 Instructed freshmen through seniors in foundation, required, and elective courses in plant science, including: Introduction to Plant Science (Laboratory), Plants and Society, Plant Propagation, Ornamental (Woody) Plants, Interior Landscaping, Plant Tissue Culture,

Arboriculture and Nursery Management, and Independent Study. Advised and mentored students in career development, performed original externally funded research, and served on committees as assigned.

- August 2000
to October 2009
- PLANT SOCIETY EXECUTIVE (Volunteer)**
The Maple Society, North American Branch, Lisle, IL
Catalyzed the formation of a North American branch of an international plant society. Coordinated initial organizational meeting, filed the for 501(c)3 incorporation, served as president for 6 years, and oversaw distribution of quarterly newsletters and membership.
- September 1996
to July 2005
- RESEARCH TREE BREEDER**
The Morton Arboretum, Lisle, IL.
Established program to breed and select superior trees and shrubs for the upper Midwest. Main projects involve maples, hornbeams, ornamental pears, and nannyberry viburnum relatives. Other responsibilities: coordinate international symposium of particular relevance, obtain external funding, interact with arborist, nursery and public garden professionals and arboretum members.
- October 2001,
November 2004
- LECTURER**
University of Illinois, Champaign-Urbana, IL
Lectured as part of scientific methods survey course in the off-campus program for students pursuing a Masters Degree in Urban Horticulture.
- September 1999,
September 2000
- INSTRUCTOR**
Illinois Arborist Association, Downers Grove, IL
Conducted evening classes for adult students studying for their certified arborist exam in woody plant structures and functions (1999), and tree identification and selection (2000).
- October 1992 to
September 1996
- POSTDOCTORAL RESEARCH ASSOCIATE**
University of Minnesota, Department of Horticultural Science, Saint Paul, MN.
Worked on multiple projects, including: small maple crossability study, seed dormancy study, and drought resistance screen development.
- August 1984 to
May 1985.
- TEACHING ASSISTANT**
University of Wisconsin, Department of Horticulture, Madison, WI.
Instructed students in the identification, attributes, and limitations of woody plants useful for Wisconsin landscapes. Developed, administered, and evaluated exams.
- April to
October 1992
- FIELD ASSISTANT**
University of Wisconsin, Department of Forestry, Madison, WI.
Assisted in site preparation and documentation of site conditions, vegetation composition and growth in forest ecology research project assessing the impact of controlled fires, canopy density, and browsing on forest species' regeneration.
- June 1985 to
August 1991
- RESEARCH ASSISTANT**
University of Wisconsin, Department of Forestry, Madison, WI.
Project work: Investigated methods for isozyme characterization of germplasm accessions in the university's 40-acre elm collection. Initiated computerization of maps and accession records. Assisted in inoculation and evaluation of accessions and control-crossed progenies for disease resistance and ornamental traits.
- June to
August 1987
- SUMMER INTERN**
USDA-Forest Service, Institute of Forest Genetics, Placerville, CA.
Surveyed genetic variation in *Cronartium ribicola* (White Pine Blister Rust Fungus) from populations of *Pinus lambertiana* (Sugar Pine) in the Sierra Nevada using isozyme analysis.

RELATED HORTICULTURAL WORK EXPERIENCE

- August 2011
to present **SUSTAINABLE FARM AND ORCHARD PROPRIETOR**
Prairie Plum Farm, Mabel, MN
Establishing an enterprise integrating animals, forages, and woody perennial plants to produce food and energy for local consumption using sustainable agricultural techniques.
- May to
August 1984 **SUMMER HORTICULTURE AGENT**
Walworth County UW Extension Service, Elkhorn, WI.
Assisted county residents with horticulture problems via telephone and home visits, and weekly newspaper column. Conducted educational programs for youth.
- May 1983 to
May 1984 **CURATORIAL INTERN**
Morris Arboretum of the University of Pennsylvania, Philadelphia, PA.
Maintained accession records and maps. Also worked with outside contracts, educational programs, plant clinic, herbarium, seed exchange, library, and newsletter.
- September 1982
to May 1983 **SALESPERSON/ GREENHOUSE WORKER, and later, CREW SUPERVISOR**
Felly's Greenhouse, Madison, WI.
Involved in all phases of tropical foliage and bedding plant production and sales (30 hrs./wk.)
- April to
August 1982 **SALESPERSON**
Windsor Landscaping Co., Maplewood, MN.
Provided customers with information about attributes and requirements of landscape plants. Assisted with maintenance of plant and accessory displays.
- August 1981 to
January 1982 **SALESPERSON/ STORE MANAGER**
Faribault Orchards, Faribault, MN
Began season grading and selling apples. Later, managed sales outlet of locally grown apples, Washington state pears, fruit baskets, and specialty food items.
- April 1981 to
August 1981 **SALESPERSON**
Malmborg's Greenhouse and Garden Center, Brooklyn Center, MN
Advised customers with purchasing decisions of plants and plant care items, and maintained plants and displays.
- March 1978 to
April 1981 **DATA PROCESSING TECHNICIAN TRAINEE**
University of Minnesota, Department of Horticulture, Saint Paul, MN
Entered data, ran computer analyses, and constructed summary tables and graphs for physiological research on floricultural crops.
- June to
September 1980 **HORTICULTURAL INTERN**
Matthaei Botanical Garden, University of Michigan, Ann Arbor, MI
Assisted in the propagation of research materials and the maintenance of temperate and tropical greenhouses, various outdoor plant displays, nature trails, and stream.
- June to
September 1979 **EXCHANGE STUDENT FOR PRACTICAL EXPERIENCE**
Hagemann Staudenkulturen, Hannover, Federal Republic of Germany
Worked in outdoor production of potted herbaceous perennials, including; native wildflowers, ferns, water lilies, and ornamental grasses.
- April 1978 to
April 1980 **GREENHOUSE COMMITTEE CHAIRPERSON, and later, PRESIDENT**
University of Minnesota Horticulture Club, Saint Paul, MN

Oversaw the purchase, propagation, maintenance, and sale of club plants. Acted as liaison between the Department of Horticulture and the Horticulture Club. Coordinated club activities with executive board and members.

December 1976 LABORATORY ATTENDANT
to March 1978 *University of Minnesota, Department of Horticulture, Saint Paul, MN*
Collected data and cared for plants in plant physiological floriculture experiments.

PROFESSIONAL CERTIFICATIONS, RECOGNITION AND AWARDS

Award of Merit, Illinois Arborist Association, 2005
International Society of Arboriculture, Certified Arborist # WI 0811A, February 2, 2009

PUBLICATIONS - Refereed

- Wiegrefe, S. J., K. J. Sytsma, and R. P. Guries. 1998. The Ulmaceae, one family or two? Evidence from chloroplast DNA restriction site analysis. *Plant Systematics and Evolution* 210(3-4): 249-270.
- _____. 1994. Phylogeny of elms (*Ulmus*, Ulmaceae): molecular evidence for a sectional classification. *Systematic Botany* 19(4): 590-612.

PUBLICATIONS - Non-Refereed

- Wiegrefe, S. J. 2008. Maples For Minnesota. *Minnesota Shade Tree Advocate (Newsletter of The Minnesota Shade Tree Advisory Committee)* Fall 2008: 10-13.
http://www.mnstac.org/STA/2008/Fall_2008_Advocate.pdf
- Wiegrefe, S. J. and V. A. Bonnewell. 2004. Serendipitous science: The case of the cankered maple. *Landscape Plant News* 15(3): 11-15. (Also reprinted in *The Maple Society Newsletter* 14(4))
- Maloney, C., S. J. Wiegrefe, and K. Kim. 2004. Mad About Maples. *Seasons* (Sep/Oct): 12-13.
- Wiegrefe, S. J. 2004. Graft compatibility of hornbeam (*Carpinus*) species and hybrids. *Combined Proceedings International Plant Propagators' Society* 53: 549-554.
- Maloney, C. and S. J. Wiegrefe. 2003. Nursery boasts new arrivals! *Seasons* (Jul/Aug): 12-13.
- Wiegrefe, S. J. (2002) 2004. Opportunities and obstacles in the development of improved maple cultivars using interspecific hybridization, In: S. Wiegrefe and P. Gregory (eds.), *Proceedings of The International Maple Symposium*, October 3-5, 2002, Westonbirt Arboretum, Tetbury, England.
- Wiegrefe, S. J., C. A. Robacker, and S. M. Scheiber. 2002. Embryo rescue and embryo excision, what's the difference? *Combined Proceedings International Plant Propagators' Society* 51: 535-536.
- Wiegrefe, S. J. 2001. Hybrid maples and hornbeams enter evaluation phase. *Landscape Plant News* 12(4): 2001.
- Remes, S. and S. J. Wiegrefe. 2000. Transforming towering maples into curbside ornamentals. *Seasons* (Sep/Oct): 10-11.
- Peltier, P. and S. J. Wiegrefe. 2000. A cooperative search for a better nannyberry. *Seasons* (Jul/Aug): 10-11.
- Ayers, G. S., S. J. Wiegrefe, and M. M. Philip. 2000. Looking back on 1999. *American Beekeepers' Journal*.
- Wiegrefe, S. J. 1999b. Quest for superior native viburnums. *Landscape Plant News* 10(4): 9-11.

- _____. 1999a. Embryo excision for accelerated and uniform germination of hard-to-germinate maple species. *Combined Proceedings of The International Plant Propagators' Society* 48: 347-353.
- Taubman, S. and S. J. Wiegrefe. 1999. Dreaming of the perfect pear tree. *Seasons* (Mar/Apr): 10-11.
- Wiegrefe, S. J. and L. C. Berg. 1998. Interspecific hornbeam hybrids bred for improved tolerances to environmental stresses. In: T. Raney (ed.), *Proceedings of the Metropolitan Tree Improvement Alliance held in conjunction with the Landscape Plant Development Center*, St. Louis, MO, September 30 – October 1, 1998. <http://fletcher/ces.state.nc.us/programs/nursery/metria/metria10/carpinus/carpinus.html>
- Wiegrefe, S. J. 1998. Tree breeding nursery becomes reality for The Morton Arboretum in 1998. *Landscape Plant News* 9(4): 14-15.
- _____. 1997. Effortless Beauty. *Grounds Maintenance*. (September): 15-18.
- _____. 1996. Breeding small-statured maples. Pp. 73-75. In: *Proceedings of the Symposium on Landscape Plants - Exploration, Breeding, and Evaluation*, June 27-29, 1996, Minneapolis, MN.
- _____. 1996. Progress made in quest for hardier Japanese-type maples. *Landscape Plant News* 7(1): 8-10.
- _____. 1995. Maple crossability study: year 3, establishing credibility of crossability. *Landscape Plant News* 6(2): 4-6.
- _____. 1994. Maple crossability update. *Landscape Plant News* 5(4): 14-18.
- _____. 1994. Spring 1994 maple breeding report. *Landscape Plant News* 5(2):1-3.
- _____. 1994. Breeding maples: exploring the possibilities for combining small stature and hardiness. Pp. 103-104. In: F. Santamour, Jr. and A. M. Townsend (eds.), *Proceedings of the Eighth Conference of the Metropolitan Tree Improvement Alliance*, June 22-24, U. S. National Arboretum, Washington, DC.
- _____. 1994. Overcoming dormancy in maple seeds without stratification. *Landscape Plant News* 5(2):8-13. (Also reprinted in *North American Plant Propagator*.)
- _____, R. P. Guries, E. B. Smalley, and K. J. Sytsma. (1992)1993. Genetic diversity in elms: What molecular data tell us. Pp. 227-238. In: M. B. Sticklen and J. L. Sherald (eds.), *Dutch Elm Disease Research: Cellular and Molecular Approaches, Proceedings of the International Dutch Elm Disease Workshop*, East Lansing, MI, August 1-4.

ABSTRACTS, POSTERS, PRESENTATIONS, AND OTHER PUBLIC INTERACTIONS

- Wiegrefe, S. J. 2012. Propagation. (Presentation) *Badgersett 2012 Annual Woody Ag Short Course*, March 30 to April 1, Lanesboro, MN.
- Wiegrefe, S. J., B. L. Rutter-Daywater, P. A. Rutter. 2012. Preliminary success with division propagation of neo-hybrid hazelnut (*Corylus* ×) removes roadblock in development of new nut crop. (Poster) *8th International Hazelnut Conference*, March 19-21, Temuco, Chile.
- _____. 2011. (Advanced Tour) Recent advances in vegetative propagation of hazels. *Badgersett Research Corporation Field Day* August 20, Canton, MN.
- Celley, A. J. and S. J. Wiegrefe. 2010. The effects of pot construction on root structure and development in tap rooted trees. (Poster) *National Conference on Undergraduate Research*, April 15-17, Missoula, MT.

- Wiegrefe, S. J. 2009. Maples for Minnesota. (Presentation) *Minnesota Nursery and Landscape Association's Minnesota Green Expo*, January 8, Minneapolis, MN.
- Markle, D. S., S. J. Wiegrefe, K. Peterson, and T. Lyden. 2008. Effects of plant regulators on essential oil production in *Mentha spicata* L. shoots *in vitro*. *Research, Scholarly, and Creative Activity (RSCA) Day*
- Wiegrefe, S. J. 2008. Breeding and Selection of Woody Landscape Plants for the Midwest. (Poster) *Des Moines, IA*
- _____. 2008. Tropical Plants in Northern Homes. (Presentation and Activity) *Pierce County UW Extension, 4H Plant Science Workshop*, March 27, River Falls, WI.
- _____. 2007. Starting Seedlings Indoors. (Presentation and Activity) *Pierce County UW Extension, 4H Plant Science Workshop*, March 20, River Falls, WI.
- _____. 2007. The Challenge of Maintaining Urban Forest Diversity. (Presentation) *Wisconsin Arborist Association/ WI-DNR Winter Workshop*, February 4, Green Bay, WI.
- _____. 2006. Preliminary Graft Compatibility Among Selected Hardy Ornamental *Prunus*. (Poster) *International Plant Propagators Society – Eastern Region Annual Conference*, Grand Rapids, MI, October 4-7, 2006.
- _____. 2006. Cutting Propagation of Common House Plants. (Presentation and Activity) *Pierce County UW Extension, 4H Plant Science Workshop*, April 22, River Falls, WI.
- _____. 2006. Developing Musclewood with More Muscle for the Midwest. (Lecture) *University of Minnesota – Twin Cities, Horticultural Science Departmental Seminar*. February 15, St. Paul, MN.
- _____. 2004. Breeding Ornamental Pears for Early Fall Color. (Lecture) *University of Illinois Champaign-Urbana, NRES 405*, November 29, Oakbrook, IL.
- Miller, F. and S. J. Wiegrefe. 2004. Relative suitability and feeding preferences of *Carpinus* taxa for the Japanese Beetle (*Popillia japonica*). (Poster) *Metropolitan Tree Improvement Alliance Conference 13: Increasing Tree Diversity for Sustainable Urban Forests*, June 16-19, Lisle, IL. AND *International Society of Arboriculture 80th Annual Conference and Trade Show*, August 9-11, Pittsburgh, PA.
- Wiegrefe, S. J. 2004. Trees of Tomorrow. (Presentation) *The Morton Arboretum Education Program*, August 4, Lisle, IL.
- _____. 2004. (Organizer, Grant Writer & Administrator, Host, and Moderator, in part) *Metropolitan Tree Improvement Alliance Conference 13: Increasing Tree Diversity for Sustainable Urban Forests*, June 16-19, Lisle, IL.
- _____. 2004. (Lecture & Tour) *Northeast Municipal Foresters' Luncheon Series*, May 17, Lisle, IL.
- _____. 2004. Breeding Trees for Tough Sites. (Presentation) *Wisconsin Arborist Association Winter Conference*, February 1-3, Green Bay, WI.
- _____. 2003. Graft compatibility of hornbeam (*Carpinus*) species and hybrids. (Poster) *International Plant Propagators' Society Eastern Region 51st Annual Meeting*, October 21-25, Portland, ME.
- _____. 2003. Tree Breeding: From Concept to Commercialization. (Presentation) *2003 The Polly Hill Arboretum Guest Lecturer Series*, October 20, West Tisbury, MA.
- Graves, W. R. and S. J. Wiegrefe. 2003. Drought and inundation stress responses of hornbeam (*Carpinus*) species and hybrids. (Poster, Abstract) *HortScience* 38: 845-846. AND *International Society of Arboriculture 79th Annual Conference and Trade Show*, August, Montreal, ON.

- Wiegrefe, S. J. 2003. Breeding improved trees for urban sites. (Presentation) *Indiana Arborists' Association Winter Conference*, January 14-16, Indianapolis, IN.
- _____. 2003. Right tree, right place, right performance. (Presentation) *America in Bloom Conference*, Chicago, IL.
- _____. 2003. Introducing the Morton Arboretum, including, especially, its tree breeding program. (Presentation) *Illinois Association of Garden Club Presidents' Conference*, Lisle, IL.
- _____. 2002. Opportunities and obstacles in the development of improved maple cultivars using interspecific hybridization. (Presentation). *International Maple Symposium*, October 3-5, Westonbirt Arboretum, Tetbury, England.
- _____. 2002. Developments in the LPDC/Morton Arboretum maple breeding program: effectiveness of pachlobutrazol in reducing generation time. (Presentation) *Metropolitan Tree Improvement Alliance Conference 12: Landscape Plant Symposium, Plant Development & Utilization*, May 23-25, Asheville, NC.
- _____. 2001. Maples, what we've learned and where we are headed. (Presentation) *Illinois Arborist Association Winter Workshop*, St. Charles, IL.
- _____. 2001. Breeding trees for urban environments. (Guest Lecture) University of Illinois Champaign-Urbana, NRES 405, October 31, Oakbrook, IL.
- _____. 2001. Breeding small-statured trees for tough sites. (Presentation) *International Society of Arboriculture Annual Conference*, Milwaukee, WI.
- _____. 2001. Maples in North American collections: A potential model for collaborative collection development. (Session Moderator) *AABGA Annual Meeting*, July 15, Denver, CO.
- _____. 2001. Breeding maples for the Midwest. (Presentation) *American Society for Horticultural Science Annual Meeting*, July 21-25, Sacramento, CA.
- _____. 2000. Variation in flowering in maples and implied opportunities for controlling fruit production. (Presentation) *Sexy, Messy Tree Conference*, October 2, 2002, Minnesota Landscape Arboretum, Chanhassen, MN.
- _____. 2000. Being time and cost efficient while collecting maximum genetic diversity. (Presentation) *AABGA Annual Meeting Workshop*, Asheville, NC.
- _____. 1999. Embryo excision for accelerated and uniform germination of hard-to-germinate maple species. (Presentation) *48th Annual Meeting of the International Plant Propagators Society*, October 6-10, Toronto, ONT.
- _____. Genetic diversity of temperate woody plants in U.S. arboreta. (Presentation) *AABGA Annual Conference*, June 30-July 3, Vancouver, BC.
- Shirazi, A. and S. J. Wiegrefe. 1998. Characterization of cold hardiness and dormancy levels in Paperbark Maple (*Acer griseum*) and Three-Flowered Maple (*A. triflorum*) throughout autumn, winter, and spring. (Poster) *International Society of Arboriculture 74th Annual Conference and Trade Show*, August 2-5, Birmingham, England.
- Velguth, P. and S. J. Wiegrefe. 1998. Nuclear DNA content and phylogeny in *Ulmus* species. (Poster) *International Elm Conference*, October 1-3, Oak Brook, IL.

- Wiegrefe, S. J. and L. C. Berg. 1998. New interspecific hornbeam hybrids bred for improved tolerances to environmental stresses. (Presentation) *Combined meetings of the Metropolitan Tree Improvement Alliance and the Landscape Plant Development Center*, September 30 - October 1, St. Louis, MO.
- Wiegrefe, S.J. 1997. Molecular markers: valuable and versatile tools in woody plant research. (Presentation) *Arboricultural and Urban Forestry Symposium for Researchers and Educators*, November 4-5, Lisle, IL.
- _____, E. Conti, K. J. Sytsma, and R. P. Guries. 1993. The Ulmaceae, one family or two? The molecular evidence. (Abstract) *American Journal of Botany* 80(6; Supplement): 540.
- Wiegrefe, S. J. and K. J. Sytsma. 1990. New information on phylogenetic relationships within Ulmaceae and Urticales from cpDNA restriction site mapping data. (Abstract) *American Journal of Botany* 77(6; Supplement): 165.
- _____. 1989. Phylogenetic relationships within *Ulmus* as determined by restriction site analysis. (Abstract) *American Journal of Botany* 76(6; Supplement.): 284.
- _____. 1988. Preliminary results of an investigation of the phylogeny of the genus *Ulmus* using restriction site analysis. (Abstract) *American Journal of Botany* 75 (6; Supplement): 218.

PROFESSIONAL ASSOCIATIONS

Illinois Arborist Association (Honorary Life Membership)
 International Plant Propagators Society
 International Society of Arboriculture
 The Maple Society, North American Branch
 Metropolitan Tree Improvement Alliance
 Landscape Plant Development Center
 Pi Alpha Xi, Honorary Ornamental Horticulture Society
 Wisconsin Arborist Association

FUNDING: GRANTS AND SOLICITED CONTRIBUTIONS RECEIVED

2010	USDA – Specialty Crop Block Grant (For/With Wisconsin Nursery Association) Survey of Wisconsin Nursery Growers: Revenue and Growing Trends of Putatively Invasive Plants	\$14,700
2008	UWRF – Professional Development Grant Subsidized attendance at 3 rd International Maple Symposium, Saitama, JAPAN	\$870
2008	Industry Grant - J. Frank Schmidt Family Charitable Trust Factors Effecting Plagiotropic Propagule Growth in Viburnums	\$4,450
2007	UWRF – Professional Development Grant Subsidized attendance at Maple Society Annual Meeting, Atlanta, GA	\$700
2007	Industry Grant - J. Frank Schmidt Family Charitable Trust Evaluating Suckering Propensity in Viburnums (sect. <i>Lentago</i>) Year 2	\$3,000
2007	Industry Grant – Wisconsin Nursery Association Embryo Rescue of Interspecific Nannyberry Viburnums and Relatives	\$4,000

2007	UWRF – Foundation RSCA Summer Stipend Effects of Plant Growth Regulators on Essential Oil Production in <i>Mentha spicata</i> L. Shoots in Vitro (Co-author: David Markle)	\$2,500
2007	UWRF – Professional Development Grant Subsidize attendance at Maple Society Annual Meeting, Philadelphia, PA	\$1,000
2006	Industry Grant - J. Frank Schmidt Family Charitable Trust Evaluating Suckering Propensity in Viburnums (sect. <i>Lentago</i>)	\$3,500
2006	Industry Grant – Wisconsin Nursery Association The Effect of Paclobutrazol on Flowering in Hornbeams	\$3,995
2004	USDA/ ARS NPGS Germplasm Evaluation Grant Multi-character Evaluation of 5 Midwestern species of <i>Viburnum</i> sect. <i>Lentago</i>	\$13,500
2004	Private Grant - Landscape Plant Development Center Grant Cross-Compatibility among Closely Related Individuals of <i>Acer</i> sect. <i>Palmata</i>	\$1000
2003	Private Grant - Daniel F. and Ada L. Rice Foundation Grant Partial funding of \$30,000 proposal to purchase skid steer for nursery maintenance	\$5000
2003	Industry Grant - J. Frank Schmidt Family Charitable Trust Long-Term Preservation of Ware Elm Germplasm	\$3000
2003	Private Grant - Landscape Plant Development Center Crossability Study in <i>Acer</i> sect. <i>Palmata</i>: Use of <i>A. pseudosieboldianum</i> as a Bridge Species	\$1000
2002	Industry Grant - J. Frank Schmidt Family Charitable Trust Developing Japanese-type Maples for the Upper Midwest	\$2000
2002	Private grant – Daniel F. and Ada L. Rice Foundation Grant Support for clearing, tiling, fencing, irrigation, and shade structure construction on 17-acre Tree Breeding Nursery extension	\$224,000
2001	Private Grant – Landscape Plant Development Center Support for propagation costs for hybrid plant testing.	\$1000
2000	Industry Grant - International Society of Arboriculture Tree Fund (co-author with Bill Graves) Drought and Root Inundation Responses of Hornbeam (<i>Carpinus</i>) species and Hybrids	\$5000
2000	Industry Contract – Bailey Nursery/ Johnsons Nursery Arborvitae Molecular Differentiation	\$1200
2000	Industry Donation – J. Frank Schmidt and Son, Nursery (in kind donation of plants and associated freight charges)	ca. \$1295
2000	Private grant – Landscape Plant Development Center The effects of paclobutrazol on the onset of flowering in <i>Acer</i> sect. <i>Palmata</i>	\$1000
1999 (2000)	Industry Grant - J. F. Schmidt Family Charitable Fund (co-author with Gary Watson) Norway Maple Rootstock Development	\$2500

1999	Private donation (for lab equipment)	\$5000
1999	Private donation (for intern labor)	\$1500
1998	Industry donation – J. Frank Schmidt & Son Nursery (in kind donation of plants and associated freight costs)	ca. \$236
1998	Industry donation – McKay Nursery (in kind donation of plants and associated freight costs)	ca. \$400
1998	Private grant – Landscape Plant Development Center Inter-Arboretum Interspecific Hybridizations of Hornbeams (<i>Carpinus</i>)	\$1000
1998	Private grant – Landscape Plant Development Center Seed collection of <i>Viburnum spp.</i>, sect. <i>Lentago</i>: Part II	\$1000
1998	Private donation – Mr. James C. Humbert (in kind - computer equipment)	\$2303
1998	Corporate donation – Interlake Corporation Foundation (for intern labor)	\$7000
1997	Private grant – Landscape Plant Development Center Multi-provenance seed collection of four <i>Viburnum spp.</i> sect. <i>Lentago</i>	\$1000
1997	Private donation (general support of tree breeding program)	\$1000

UNFUNDED PROPOSALS

2010	NCR – Sustainable Agriculture Research and Education (For/With SCISCD) St. Croix Applied Permaculture Solutions Education Center (SCAPSEC)	\$200,000
2008	Industry grant - Wisconsin Nursery Association Somatic Embryogenesis of Northern Oaks	\$13,484
2007	UWRF – Collaborative Research, Scholarly, and Creative Activity Grant Effects of Plant Growth Regulators on Essential Oil Production in <i>Mentha spicata</i> L. Shoots in Vitro (Co-author: David Markle)	\$1,500
2006	UW Teaching Fellows Program – UW System Development of Effective Supplemental Plant Identification and Character Awareness Materials	\$4,000
2006	Industry grant – Illinois Arborist Association Developing Small-Statured Ornamental Trees From Interspecific Hybrids of Native <i>Viburnum</i> Species (RFP retracted)	\$10,000
2004	USDA/ ARS NPGS Floral and Nursery Crop Initiative Long-Term Preservation of Elm Species Germplasm	\$38,000

2004	Private grant – Landscape Plant Development Center Partial support for purchase of weather-resistant tablet PC for greater efficiency in data collection	\$1000
2001	International Society of Arboriculture Tree Fund Drought and Root Inundation Responses of Hornbeam (<i>Carpinus</i>) species and Hybrids: Year 2	\$5000
2000	Private grant – Landscape Plant Development Center Leaf anatomy and tolerance of full sun conditions by <i>Acer</i> sect. <i>Palmata</i>	\$1000
1997	Industry grant – Horticulture Research Institute (Coauthor with Abbas Shirazi) Characterization of Responses to Photoperiod and Temperature of Plants from Known Provenances in North America and Northeast Asia	\$15,000