

## CURRICULUM VITAE for JENNY QIU-YUN XIANG

Associate Professor  
Department of Botany  
North Carolina State University  
Raleigh, NC 27695-7612

phone: 919-515-2728  
fax: 919-515-3436  
email: jenny\_xiang@ncsu.edu

### RESEARCH INTERESTS

Plant molecular systematics, evolution, and biogeography. Using molecular data to determine phylogenetic relationships, genetic diversity and structures; Using phylogeny as a framework to understand molecular and morphological evolution, biogeography, and gene introgression; evolutionary developmental genetics on inflorescences of dogwoods and relatives.

### EDUCATION

B. S. 1982 Zhongshan University, Guangzhou, China, in Plant Genetics  
Ph.D. 1995 Washington State University, in Botany-Plant Molecular Systematics

### PROFESSIONAL POSITIONS

July 2006 – Present. Tenured Associate Professor, Dept. of Botany, North Carolina State University.

Jan. 2001 – June 2006. Assistant Professor, Dept. of Botany, North Carolina State University.

Aug. 1997 – Dec. 2000. Assistant Professor, Dept. of Biological Sciences, Idaho State University.

Aug. 1997 – Dec. 2000. Curator of the R. J. Davis Herbarium, Idaho Museum of Natural History.

Aug. 1995 - July 1997 Post-doctoral Research associate; Ohio State University (OSU).

Aug. 1992 - May 1995 Graduate Teaching Assistant, Washington State University (WSU).

June - Aug. 1994 Technique Assistant to Larry Hufford (director), Marion Ownbey Herbarium, WSU.

June - Aug. 1993 Research, Dept. of Botany, WSU.

June - Aug. 1992 Research Assistant, Dept. of Botany, WSU.

Jan. 1990 - Dec. 1991 Curatorial Assistant, Marion Ownbey Herbarium, WSU.

July 1989 - Jan. 1990 Research Associate, Arnold Arboretum, Harvard University.

Mar. 1989 - June 1989 Visiting Scientist, Dept. of Botany, National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA.

Aug. 1982 - Jan. 1990. Assistant Researcher, Dept. of Taxonomy, Institute of Botany, The Chinese Academy of Sciences, Beijing, China.

### PUBLICATIONS Since 2006 (stars indicate students, postdocs, research specialist or visiting scholars/students I advised)

Xiang, QY(J), DT Thomas, QP Xiang. In review. Resolving and dating the phylogeny of Cornales—Effects of taxon sampling, data partitions, and fossil calibrations. *Molecular Phylogeny and Evolution*

Douglas\*, N, Wall, W; Xiang, J; Wentworth, T; Hoffmann, W; Hohmann, M. In review. Recent vicariance and the origin of the rare, edaphically specialized Sandhills Lily,

- Lilium pyrophilum* (Liliaceae): evidence from phylogenetic and coalescent analyses. *Molecular Ecology*.
- Boufford, DE, CX Fu, **QY(J) Xiang**, and YP Zhao. In Press. Observations on *Buckleya* (Thesiaceae) in China. *J. Bot. Res. Inst. Texas*.
- Manchester, SR, **QY (J) Xiang**, and XP Xiang. 2010. Fruits of Cornelian cherries (Cornaceae: Cornus Subg. Cornus) in the Paleocene and Eocene of the Northern Hemisphere. *International Journal of Plant Sciences*.171:882–891. 2010.
- Wall, AW, NA Douglas\*, **QY(J) Xiang**, WA Hoffmann, TR Wentworth, and MG Hohmann. 2010. Evidence for range stasis during the latter Pleistocene for the Atlantic Coastal Plain endemic genus, *Pysidanthera* Michaux. *Molecular Ecology* 19: 4302-4314.
- Feng\*, CM, SR, Manchester, **QY(J) Xiang**. 2009. Phylogeny and biogeography of Alangiaceae (Cornales) inferred from DNA sequences, morphology, and fossils. *Molecular Phylogenetics and Evolution*. 51:201-214.
- Feng\*, CM, R. Qu, LL Zhou, DY Xie, and **QY(J) Xiang**. 2009. Shoot regeneration of dwarf dogwood (*Cornus canadensis* L.) and morphological characterization of the regenerated plants. *Plant Cell Tiss Organ Cult*. 97:27-37.
- Harris\*, AJ and **QY(J) Xiang**, 2009. Estimating ancestral distributions of lineages with uncertain sister groups: a statistical approach to dispersal–vicariance analysis and a case using *Aesculus* L. (Sapindaceae) including fossils. *Journal of Systematics and Evolution*. 47: 349–368.
- Harris\* AJ, **QY(J) Xiang**, and DT Thomas\*. 2009. Molecular and morphological inference of the phylogeny, origin, and biogeographic History of *Aesculus* L. (Sapindaceae or Hippocastanaceae). *TAXON* 58:1-19.
- Peters\*, M., **QY(J) Xiang**, and J Stucky. 2009. Genetic analyses of the federally endangered *Echinacea laevigata* using amplified fragment length polymorphisms (AFLP) - Inferences in population genetic structure and mating system. *Conservation Genetics*. 10: 1-14.
- Xiang, QP, **QY(J), Xiang**, YY Guo, and XC Zhang. 2009. Phylogeny of *Abies* (Pinaceae) inferred from ITS sequence data. *TAXON* 58: 141-152.
- Manchester, SR, **QY(J) Xiang**, TM Kodrul, and M Akhmetiev. 2009. Leaves of *Cornus* (Cornaceae) from the Paleocene of North America and Asia confirmed by trichome characters. *International Journal of Plant sciences*. 170:132–142.
- Post\*, AR; JC Neal, A Krings, BR Sosinski, **QY Xiang**. 2009. New Zealand bittercress (*Cardamine corymbosa*; Brassicaceae): new to the United States. *Weed Technology* 23: 604-607.
- Post\*, AR., A Krings, **QY Xiang**, BR Sosinski, and JC Neal. 2009. Lectotypification of *Cardamine flexuosa* (Brassicaceae). *J. Bot. Res. Inst. Texas* (formerly SIDA) 3(1):227-230.
- Xiang QY(J)**, JL Thorne, TK Seo, WH Zhang\*, DT Thomas\*, RE Ricklefs. 2008. Rates of nucleotide substitution in Cornaceae (Cornales) - pattern of variation and underlying causal factors. *Molecular Phylogenetics and Evolution*. 49: 327–342.
- Krings\*, A., D, T, Thomas\*, and **(J) QY Xiang**. 2008. On the generic circumscription of *Gonolobus* (Apocynaceae:Asclepiadoideae): evidence from molecules and morphology. *Systematic Botany* 33:403-415.
- Xiang QY(J)** and DT Thomas\*. 2008. Tracking character evolution and biogeographic history through time in Cornaceae – Does choice of methods matter? *Journal of Systematics and Evolution*. 46: 349-374.
- Zhang\*, WH, **QY (J) Xiang**, DT Thomas\*, BM Wiegmann, MW Frohlich and DE Soltis. 2008. Molecular evolution of *PISTILLATA*-like genes in the dogwood genus *Cornus* (Cornaceae). *Molecular Phylogeny and Evolution*. 47:175-195.

- Thomas\*,DT, AR. Ahedor, CF Williams, C DePamphilis, DJ Crawford, QY(J) Xiang. 2008. Microsatellite analysis of a broad hybrid zone in *Aesculus* (Sapindales) – Inferences in genetic structure and evolution. *International Journal of Plant Sciences*. 169: 647-657.
- Fan\*, CZ.,QY(J) Xiang, DL Remington, MD Purugganan, BM Wiegmann. 2007. Evolutionary pattern of *antR*-*Cor* gene in the dwarf dogwoods complex (*Cornus*, Cornaceae). *Genetica*. 130: 19-34.
- Manchester, SR, **QY(J) Xiang**, QP Xiang\*. 2007. *Curtisia* (Cornales) from the Eocene of Europe and its phylogeographic significance. *Botanical Journal of Linnean Society*. 155:127-137.
- Xiang, Q.-Y. (J.)**, David T. Thomas\*, Wenheng Zhang\*, Steven R. Manchester, and Zack Murrell. 2006. Species level phylogeny of the Dogwood genus *Cornus* (Cornaceae) based on molecular and morphological evidence– implication in taxonomy and Tertiary intercontinental migration. Invited paper for the 2004 IAPT (International Association of Plant Taxonomy) symposium in Japan. *TAXON* 55: 9-30.
- Modliszewski\*, J. L., D. T. Thomas\*, C. Z. Fan\*, D. J. Crawford, C. W. dePamphilis, **Q.-Y. (J.) Xiang**. 2006. Ancestral Chloroplast Polymorphism and Historical Secondary Contact in a Broad Hybrid Zone of *Aesculus* (Sapindaceae). *American Journal of Botany* 93: 377-388.

### **INVITED PRESENTATIONS AT PROFESSIONAL SYMPOSIA SINCE 2005**

- 2010 Invited speaker at international symposium “ New Frontiers in Plant Systematics and Evolution, Beijing, July 7-9.
- 2009 Invited speaker at symposium “Biogeographic Disjunctions between Asia and the Americas”. 4<sup>th</sup> International Conference of International Biogeography Society. Merida, Mexico, Jan. 2009.
- 2007 Invited speaker at symposium “Evolutionary Biology in the 21st Century – Tracing Patterns of Evolution through the Tree of Life.” Organized by Yinglong Qiu (U. Michigan) and Mike Donoghue (Yale), sponsored by Institute of Botany and Institute of Zoology of Chinese Academy of Sciences (Beijing) and College of Life Sciences, Fudan University (Shanghai), August, Beijing
- 2005 XVII International Botanical Congress – Symposium 04-22, Biogeographic dynamics in the northern hemisphere. Vienna, Austria, July 2005.

### **INVITED SEMINARS SINCE 2006**

- 2008 Invited lecture, School of Life Sciences, Zhongshan University, Guangzhou, China (by Prof. Suhau Shi). Reconstructing ancestral state – impacts of choice of methods.
- 2008 Invited lecture, Fairy Lake Botanical Garden, Shengzheng, China (By Dr. Tao Chen). Evolution, biodiversity, and horticulture values of dogwoods – with emphasis on reconstructing ancestral state of key morphological characters.
- 2007 Spring, Biochemistry Department, NCSU.
- 2007 Spring, for Friends of the JC Raulston Arboretum
- 2007 State Key Laboratory in Systematic & Evolutionary Botany, Institute of Botany, Chinese Academy of Sciences, Beijing
- 2006 Zhejiang University, Hangzhou, China
- 2006 State Key Laboratory in Systematic & Evolutionary Botany, Institute of Botany, Chinese Academy of Sciences, Beijing

### **CONTRIBUTED CONFERENCE PAPERS AT PROFESSIONAL MEETINGS SINCE 2006**

For authors indicated by a “\*”, see above in PUBLICATIONS.

2010. Feng\*, CM, R Franks, and **QY(J) Xiang**, Evolutionary developmental study of inflorescence in *Cornus*. Botanical Society of America, annual conference, Aug. 1-4, Providence, RI.
2010. **Xiang, QY(J)**, CM Feng\*, X Liu\*, and R. Franks, Floral and petaloid bract development in dogwoods (*Cornus*, Cornaceae) – testing the role of B-class genes . Botanical Society of America, annual conference, Aug. 1-4, Providence, RI.
2010. **Xiang, QY(J)** and AJ Harris\*. Accounting for phylogenetic uncertainty and fossil distribution in biogeographic analysis using S-DIVA and LAGRANGE – a case study in Cornales. Botanical Society of America, annual conference, Aug. 1-4, Providence, RI.
2010. Wall. W, N Douglas\*, **QY(J) Xiang**, W Hoffmann, T Wentworth, Jt Gray, and M. Hohmann Phylogeography of *Pyxidanthera* (Diapensiaceae). Annual meeting of ASB (Association of Southeastern Biologists), Ashville, NC. April, 2010. Abstract submitted.
2010. Douglas\*, N, W Wall , **QY(J) Xiang**, W Hoffmann, T Wentworth, J Gray, and M Hohmann. Origin and relationship of the rare plant, *Lilium pyrophilum*, to other southeastern pendent lilies Annual meeting of ASB (Association of Southeastern Biologists), Ashville, NC. April, 2010. Abstract submitted
2009. **Xiang, QY(J)**, South China Institute of Botany, Guanzhou, China. Dogwoods as a model for studying biogeography and morphological evolution.
- 2009 **Xiang, QY(J)**, SA Smith, WK Harris, & CM Feng. Use of fossils in biogeographic analysis – challenges and possible solutions. Invited talk at symposium “Biogeographic Disjunctions between Asia and the Americas”. 4<sup>th</sup> International Conference of International Biogeography Society. Merida, Mexico, Jan.
2009. Wentworth, T., N. Douglas\*, J. Gray, W. Hoffmann, M Hohmann, K. Kostelnik, R. Marchin, W. Wall, **J. Xiang**. Ecological and Genetic Studies of Rare Species at Fort Bragg and Camp Mackall, North Carolina. Annual meeting of ASB (Association of Southeastern Biologists), Birmingham, AL, April 1-4, 2009.
2009. N. Douglas\*, W. Wall, **QY(J)Xiang**, W. Hoffmann, T. Wentworth, J. Gray, M. Hohmann. Relationship of the narrowly endemic *Lilium pyrophilum* (Liliaceae) to other pendent lilies in eastern North America. Annual BSA (Botanical Society of America) meeting in Snowbird, UT, July.
2009. W. Wall, N. Douglas\*, **QY(J) Xiang**, W. Hoffmann, T. Wentworth, J. Janet Gray, M. Hohmann. Incongruence between morphological, ecological, and geographical differences and genetic structure: genetic analysis of *Pyxidanthera* (Diapensiaceae) using AFLP markers. Annual BSA (Botanical Society of America) meeting in Snowbird, UT, July.
2008. Douglas\* N, R. Peet, M. Allen\*, DT Thomas\*, & **QY (J) Xiang**. Phylogeography and species delimitation of *Nyssa sylvatica* complex from Eastern North America – an application of coalescence and Bayesian methods. Contributed paper at BSA in Vancouver, Canada, July, 2008.
2008. CM (Mia) Feng\*, Bob Franks, **QY(J) Xiang**. Comparative developmental study of inflorescence in *Cornus*. Contributed paper at BSA in Vancouver, Canada, July, 2008. Travel supported by Development and Structure Section.
2007. **Xiang, QY (J)**, DT Thomas\*, WH Zhang\*, and CM Feng\* (Presenter: Mia). Genome duplication and origin of polyploid species in the herbaceous dogwoods (*Cornus* subg. *Artocrania*). Joined BSA, ASPT, ASPB meeting in Chicago, July. 2007.
- 2007 **Xiang, QY (J)**, DT Thomas\*, and SR Manchester. Phylogeny and Biogeography of Cornales -Increased sampling in taxa and characters, placement of Hydrostachys,

- BEAST vs. Multidivtime, and DIVA vs. AreA. Joined BSA, ASPT, ASPB meeting in Chicago, July. 2007.
2007. Krings\*, A, DT Thomas\*, and **QY (J) Xiang**. On the generic circumscription of *Gonolobus* (Apocynaceae, Asclepiadoideae): Evidence from molecules and morphology. Joined BSA, ASPT, ASPB meeting in Chicago, July. 2007.
- 2007 Harris\*, AJ, DT Thomas\*, **QY (J) Xiang**. Inferring Biogeography in the Face of Phylogenetic uncertainty: An example using *Aesculus* L. Joined BSA, ASPT, ASPB meeting in Chicago, July. 2007.
2006. **Xiang, Q.-Y. (J.)**, B. Moore, J. Thorne, and D. T. Thomas. Biogeographic and biological correlates of diversification in dogwoods: migration and evolution of fruits and inflorescences in space and time. Contributed paper, Annual meeting of the Society for the Study of Evolution. Stony Brook, NY.
2006. Zhang\*, W. H., **Q.-Y. (J.) Xiang**. Diversification pattern, gene duplication, and positive selection of **PISTILLATA-like** genes – A case in the dogwood genus *Cornus* (Cornaceae). Contributed paper, Annual meeting of the Society for the Study of Evolution. Stony Brook, NY.
2006. Feng\*, C. M., D. T., Thomas, **Q.-Y. (J.) Xiang**. Phylogenetic relationships and biogeography of Alangiaceae – integrating evidence from DNA sequences, morphology, and fossils. Contributed paper, annual meeting of the Botanical Society of America (BSA). Chico, CA.
2006. Harris\*, W., D. T. Thomas, **Q.-Y. (J.) Xiang**. Phylogeny and biogeography of the buckeye genus Sapindaceae) – A reevaluation with broader sampling, new method of phylogenetic dating, and new fossil evidence. Contributed paper, annual meeting of the Botanical Society of America (BSA). Chico, CA.
2006. Manchester. S. R., M. Deng, M., **Q.-Y. (J.) Xiang**. Systematics and fruit morphology of extant and fossil Mastixiaceae. Contributed paper, annual meeting of the Botanical Society of America (BSA). Chico, CA.
2006. Harris\*, W., D. T. Thomas, **Q.-Y. (J.) Xiang**. Phylogeny and biogeography of the buckeye genus Sapindaceae) – A reevaluation with broader sampling, new method of phylogenetic dating, and new fossil evidence. Contributed paper, 32<sup>nd</sup> annual meeting of SEEPAGE (South-East Ecology, Population Genetics and Evolution), September, Greensborough, NC.
2006. Feng\*, C. M., D. T., Thomas, **Q.-Y. (J.) Xiang**. Phylogenetic relationships and biogeography of Alangiaceae – integrating evidence from DNA sequences, morphology, and fossils. Contributed paper, 32<sup>nd</sup> annual meeting of SEEPAGE (South-East Ecology, Population Genetics and Evolution), September, Greensborough, NC.

#### **CONTRIBUTED CONFERENCE POSTERS AT PROFESSIONAL MEETING SINCE 2006:**

2009. WK Harris\* and QY(J) Xiang. A statistical approach to biogeographic inference using DIVA under phylogenetic uncertainty. 4<sup>th</sup> International Conference of International Biogeography Society. Merida, Mexico, Jan. 2009. Page 88. Abstract.
2009. QY(J) Xiang. Biodiversity, Conservation, and Bioengineering of Dogwoods. CALS Research Conference and Innovation Fair. Jan. 22, 2009.
2008. Feng\*, M, QY(J) Xiang, SR Manchester. Phylogenetics and biogeography of the Tropical family Alangiaceae – integrating data from morphology, DNA sequences, and fossil (Note: *exact title may be slight different. I don't have it on the laptop I took with me to China*). NCSU 3rd Annual Graduate Research Symposium, **2<sup>nd</sup> prize in Life Sciences**.

- 2007 Allen\*, M, DT Thomas, R Peet, and **QY(J) Xiang**. A Molecular Systematic and Phylogeographic Study of *Nyssa sylvatica* in Eastern North America. 16<sup>th</sup> NCSU Undergraduate Symposium. April 2007. *Winner of the Biological section in Ecology, Environment, Conservation, Botanical*.
2006. Feng\*, C. M., D. T., Thomas, **Q.-Y. (J.) Xiang**. Phylogenetic relationships and biogeography of Alangiaceae. 32<sup>nd</sup> annual meeting of SEEPAGE (South-East Ecology, Population Genetics and Evolution), September, Greensborough, NC

**GRANTS SINCE 2006:**

- US National Science Foundation, Evolution of Floral Display Strategies in Dogwoods - A Synergistic Approach to Explore the Developmental and Molecular Mechanisms, PI. 08/2010-08/2015.
- US Department of Army. Ecological and Genetic studies of Rare Plant Species on Fort Bragg, North Carolina to Guide Conservation and Management. Co-P.I. 2007-2011.
- US National Science Foundation, Phylogenetic and biogeographic study of Cornales – integrating molecules, morphology, and fossil. P.I., 2005-2008,
- NCSU University Multidisciplinary Study for Faculty Research and Development Grant: Molecular basis and bioengineering of dogwood inflorescence – a multidisciplinary study integrating evolutionary biology, developmental biology, and molecular genetics. P.I. 2007-2008.
- US National Science Foundation, Phylogenetic and biogeographic study of the dogwoods genus *Cornus*, P.I., 2002-2006.
- Honorary Professor, State Key Laboratory in Systematic & Evolutionary Botany, the Chinese Academy of Sciences. 2006-present.
- Complementary Friends of the JC Raulston Arboretum
- NCSU, CALS, Small Equipment Grant, North Carolina State University 2006. P.I.
- NCSU International Seed Grant for developing new Study Abroad Program 2006. P.I.