

CURRICULUM VITAE

YIN-LONG QIU

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EMPLOYMENT and EDUCATION

- 2008-present Associate Professor (tenure) of Ecology & Evolutionary Biology
Department of Ecology & Evolutionary Biology,
University of Michigan, Ann Arbor
Research interests: land plant phylogeny, basal angiosperm phylogeny,
genome
- 2003-present Assistant Professor of Ecology & Evolutionary Biology
Department of Ecology & Evolutionary Biology,
University of Michigan, Ann Arbor
- 2000-2002 Assistant Professor of Biology
Biology Department, University of Massachusetts, Amherst
- 1998-1999 Assistant University Professor of Systematic Botany
Institute of Systematic Botany, University of Zurich, Switzerland
Research interests: land plant phylogeny, basal angiosperm phylogeny,
genome evolution in land plants
- 1996-1997 NIH Postdoctoral Fellow
1994-1995 Postdoctoral Fellow
Department of Biology, Indiana University, Bloomington
Research area: molecular evolution
Advisor: Prof. Jeffrey D. Palmer
- 1986-1993 Ph.D. in Biology
Department of Biology, University of North Carolina, Chapel Hill
Research area: plant molecular systematics
Advisors: Profs. Clifford R. Parks and Mark W. Chase
- 1984-1986 graduate study (no degree)
Jiangsu Institute of Botany, Nanjing, China

1980-1984 B.S. in Agricultural Sciences
Department of Horticultural Sciences
Nanjing Agricultural University, Nanjing, Jiangsu, China

PROFESSIONAL ACTIVITIES

Service on Editorial Boards:

Journal of Systematics and Evolution (China) (2006 – present, co-editor-in-chief)
Tropical Plant Biology (USA) (2007 – present)
Journal of Integrative Plant Biology (China) (2004 – present)
Genomics, Proteomics, and Bioinformatics (China) (2003 – present)
International Journal of Plant Sciences (USA) (2000 – present)
Journal of Plant Research (Japan) (2000 – 2005)

Service on Committees:

Member and Chair of Publicity Committee, American Society of Plant Taxonomists, 2004-7
Outside reviewer for Kunming Institute of Botany, Chinese Academy of Sciences, 2006
Outside reviewer for tenure promotion – New York Botanical Garden, 2003
Member of Karlin Award Committee, Botanical Society of America, 2000

Symposia Organized

2007 **Co-organizer** (with Zhiduan Chen and Deyuan Hong from Institute of Botany, Chinese Academy of Sciences, and Michael J. Donoghue from Yale University); "Evolutionary Biology in the 21st Century – Tracing Patterns of Evolution through the Tree of Life", June, 2007, Beijing, China. Some papers presented are to be published in a special issue of Journal of Systematics and Evolution in 2008.

2005 **Organizer**; "Origin and Early Evolution of Land Plants: Current Perspectives – Part I: Molecular Phylogenetics and Organellar Genomics; Part II (William E. Friedman from University of Colorado, Boulder as the organizer): Developmental Biology, Paleobotany, and Ecology ", XVII International Botanical Congress in Vienna, Austria. Some papers presented were published in a special section of the June issue of International Journal of Plant Sciences in 2007.

1999 **Co-organizer**; with Elizabeth A. Zimmer (Smithsonian Institutions, Washington DC, USA) as the organizer, "Current Perspective on Basal Angiosperms: Molecular and Developmental Aspects", XVI International Botanical Congress in St. Louis, Missouri, USA. All papers presented were published in a special issue of International Journal of Plant Sciences in 2000.

GRANTS and AWARDS

2005, September – 2010, August, **NSF Research Grant**, National Science Foundation, USA (DEB 0531689. Project: ATOL: Assembling the Liverwort Tree of Life: a Window into the Evolution and Diversification of Early Land Plants. \$2,839,578, PI, Jon Shaw; \$435,543 to co-PI, Y.-L. Qiu)

- 2004, September – 2009, August, **NSF Research Grant**, National Science Foundation, USA (DEB 0431239. Project: ATOL: The Angiosperm Tree of Life: Resolving the Trunk of the Tree and 12 of its Thorniest Nodes. \$3,000,000, PI, Doug Soltis; \$244,948 to co-PI, Y.-L. Qiu)
- 2003, Rackham Faculty Research Grant, University of Michigan (Project: A Molecular Phylogenetic Study of Land Plants with Emphasis on New Zealand Endemics. \$15,000). 2003 – 2005, **Oversea Outstanding Young Scholar Award**, National Natural Science Foundation, China (30228004. Project: A Molecular Phylogenetic Study of Endemic and Important Genera of Cryptogames in China and Eastern Asia. 400,000 Yuan (~\$50,000), co-PI, Zhiduan Chen, Institute of Botany, Chinese Academy of Sciences, Beijing)
- 2001, April – present, **NSF Early Career Award**, National Science Foundation, USA (DEB 0093012 in UMass and DEB 0332298 in UMich. Project: Mitochondrial Genome Evolution and Land Plant Phylogeny. \$600,000, direct cost only). 2000, December – 2001, November, Faculty Research Grant, University of Massachusetts, Amherst, Faculty Research Council (Project: Intron Distribution in the Charophyte Mitochondrial Genome. \$15,000).
- 1999, Hermann-Klaus-Stiftung, Union Bank of Switzerland, Bahnhofstr. 45, 8001 Zurich, Switzerland (Project: Molecular Phylogeny of and Distribution of Bioactive Compounds in Magnoliaceae. SFr.10,000)
- 1998, October -2001, September, **Swiss National Science Foundation Research Grant**, Bern, Switzerland (3100-053602. Project: Mitochondrial Genome Evolution and Land Plant Phylogeny. SFr.364,500 (~\$280,000), direct cost only. Terminated at the end of May, 2001 due to my departure from University of Zurich)
- 1996-1997, **NIH Postdoctoral Fellowship**, National Institutes of Health, Bethesda, Maryland, USA (GM17923-01. Project: Intron Evolution in Land Plant Organellar Genomes. \$58,000) 1992, University Dissertation Fellowship, The Graduate School, University of North Carolina, Chapel Hill, North Carolina, USA
- 1992, W. C. Coker Fellowship, Department of Biology, University of North Carolina, Chapel Hill, North Carolina, USA
- 1991, American Society of Plant Taxonomists Research Grant, American Society of Plant Taxonomists
- 1990, Alma Holland Beers Scholarship, Department of Biology, University of North Carolina, Chapel Hill, North Carolina, USA

I. Peer-reviewed Journal Articles (indicates representative publications):

- 49. Qiu, Y.-L. & G. F. Estabrook.** 2008. Inference of phylogenetic relationships among key

angiosperm lineages using a compatibility method on a molecular data set. *Journal of Systematics and Evolution* 46: 130-141.

48. Jian, S., P. S. Soltis, M. A. Gitzendanner, M. J. Moore, R. Li, T. A. Hendry, **Y.-L. Qiu**, A. Dhingra, C. D. Bell, D. E. Soltis. 2008. Resolving an ancient, rapid radiation in Saxifragales. *Systematic Biology* 57: 38-57.

47. Zhu, X.-Y., M. W. Chase, **Y.-L. Qiu**, H.-Z. Kong, J.-H. Li, D. L. Dilcher, & Z.-D. Chen. 2007. Mitochondrial *matR* sequences help to resolve deep phylogenetic relationships in rosids. *BMC Evolutionary Biology* 7: 217.

46. Liu, H.-M., X.-C. Zhang, W. Wang, **Y.-L. Qiu**, & Z.-D. Chen. 2007. Molecular phylogeny of the fern family Dryopteridaceae inferred from chloroplast *rbcL* and *atpB* genes. *International Journal of Plant Sciences* 168: 1311-1323.

45. Liu, Y., Y. Jia, W. Wang, Z.-D. Chen, E. C. Davis, & **Y.-L. Qiu**. 2007. Phylogenetic relationships of two endemic genera from eastern Asia: *Trichocoleopsis* and *Neotrichocolea* (Hepaticae). *Annals of the Missouri Botanical Garden* (in press).

44. Hendry, T. A., B. Wang, Y. Yang, E. C. Davis, J. E. Braggins, R. M. Schuster, & **Y.-L. Qiu**. 2007. Evaluating phylogenetic positions of four liverworts from New Zealand, *Neogrollea notabilis*, *Jackiella curvata*, *Goebelobryum unguiculatum* and *Herzogianthus vaginatus*, using three chloroplast genes. *The Bryologist* 110: 738-751.

43. **Qiu, Y.-L.**, L. Li, B. Wang, Z. Chen, O. Dombrowska, J. Lee, L. Kent, R. Li, R. W. Jobson, T. A. Hendry, D. W. Taylor, C. M. Testa, & M. Ambros. 2007. A non-flowering land plant phylogeny inferred from nucleotide sequences of seven chloroplast, mitochondrial and nuclear genes. *International Journal of Plant Sciences* 168: 691-708.

42. Liu, H. M., X. C. Zhang, Z. D. Chen, & **Y.-L. Qiu**. 2007. Inclusion of the eastern Asia endemic genus *Sorolepidium* in *Polystichum* (Dryopteridaceae): evidence from the chloroplast *rbcL* gene and morphological characteristics. *Chinese Science Bulletin* 52: 631-638.

41. **Qiu, Y.-L.**, L. Li, T. A. Hendry, R. Li, D. W. Taylor, M. J. Issa, A. J. Ronen, M. L. Vekaria, & A. M. White. 2006. Reconstructing the basal angiosperm phylogeny: evaluating information content of the mitochondrial genes. *Taxon* 55: 837-856.

40. **Qiu, Y.-L.**, L. Li, B. Wang, Z. Chen, V. Knoop, M. Groth-Malonek, O. Dombrowska, J. Lee, L. Kent, J. Rest, G. F. Estabrook, T. A. Hendry, D. W. Taylor, C. M. Testa, M. Ambros, B. Crandall-Stotler, R. J. Duff, M. Stech, W. Frey, D. Quandt, & C. C. Davis. 2006. The deepest divergences in land plants inferred from phylogenomic evidence. *Proceedings of the National Academy of Sciences, USA* 103: 15511-15516.

39. Leebens-Mack, J., T. Vision, E. Brenner, J. E. Bower, S. Cannon, M. J. Clement, C. W. Cunningham, C. W. dePamphilis, R. deSalle, J. J. Doyle, J. A. Eisen, X. Gu, J. Harshman, R.

K.Jansen, E. A. Kellogg, E. V. Koonin, B. D. Mishler, H. Philippe, J. C. Pires, **Y.-L. Qiu**, S. Y. Rhee, K. Sjolander, D. E. Soltis, P. S. Soltis, D. W. Stevenson, K. Wall, T. Warnow, & C. Zmasek. 2006. Taking the first steps towards a standard for reporting on phylogenies: minimal information about a phylogenetic analysis (MIAPA). *OMICS, A Journal of Integrative Biology* 10: 231-237.

38. Wang, B. & **Y.-L. Qiu**. 2006. Phylogenetic distribution and evolution of mycorrhizas in land plants. *Mycorrhiza* 16: 299-363.

37. Parkinson, C. L., J. P. Mower, **Y.-L. Qiu**, A. J. Shirk, K. Song, N. D. Young, C. W. dePamphilis, & J. D. Palmer. 2005. Multiple major increases and decreases in mitochondrial substitution rates in the plant family Geraniaceae. *BMC Evolutionary Biology* 5: 73. **36.** Liu, Y., Y. Jia, W. Wang, Z.-D. Chen, & **Y.-L. Qiu**. 2005. A taxonomic reassessment of *Microdendron* inferred from molecular and morphological evidence. *The Bryologist* 108: 591-599.

35. **Qiu, Y.-L.**, O. Dombrovska, J. Lee, L. Li, B. A. Whitlock, F. Bernasconi-Quadroni, J. S. Rest, C. C. Davis, T. Borsch, K. W. Hilu, S. S. Renner, D. E. Soltis, P. S. Soltis, M. J. Zanis, J. J. Cannone, R. R. Gutell, M. Powell, V. Savolainen, L. W. Chatrou, & M. W. Chase. 2005. Phylogenetic analysis of basal angiosperms based on nine plastid, mitochondrial, and nuclear genes. *International Journal of Plant Sciences* 166: 815-842.

34. Cho, Y., J. P. Mower, **Y.-L. Qiu**, & J. D. Palmer. 2004. Mitochondrial substitution rates are extraordinarily elevated and variable in a genus of flowering plants. *Proceedings of the National Academy of Sciences, USA* 101: 17741-17746.

33. Nickrent, D. L., A. Blarer, **Y.-L. Qiu**, R. Vidal-Russell, & F. E. Anderson. 2004. Phylogenetic inference in Rafflesiales: the influence of rate heterogeneity and horizontal gene transfer. *BMC Evolutionary Biology* 4: 40.

32. Soltis, D. E., V. A. Albert, V. Savolainen, K. Hilu, **Y.-L. Qiu**, M. W. Chase, J. S. Farris, J. D. Palmer, & P. S. Soltis. 2004. Angiosperm relationships, genome-scale data, and "ending incongruence": a cautionary tale in phylogenetics. *Trends in Plant Science* 9: 477-483.

31. Kocyan, A., **Y.-L. Qiu**, P. K. Endress, & E. Conti. 2004. A phylogenetic analysis of Apostasioideae (Orchidaceae) based on ITS, *trnL-F* and *matK* sequences. *Plant Systematics and Evolution* 247: 203-213.

30. **Qiu, Y.-L.** & J. D. Palmer. 2004. Many independent origins of *trans*-splicing of a plant mitochondrial group II intron. *Journal of Molecular Evolution* 59: 80-89.

29. Dombrovska O. & **Y.-L. Qiu**. 2004. Distribution of introns in the mitochondrial gene *nad1* in land plants: phylogenetic and molecular evolutionary implications. *Molecular Phylogenetics and Evolution* 32: 246-263.

28. Zanis, M. J., P. S. Soltis, **Y.-L. Qiu**, E. A. Zimmer, & D. E. Soltis. 2003. Phylogenetic analyses and perianth evolution in basal angiosperms. *Annals of the Missouri Botanical Garden* 90: 129-150.
27. **Qiu, Y.-L.** & J. Yu. 2003. *Azolla*: a model organism for plant genomic studies. *Genomics, Proteomics, and Bioinformatics* 1: 15-25.
26. Nickrent, D. L., A. Blarer, **Y.-L. Qiu**, D. E. Soltis, P. S. Soltis, & M. Zanis. 2002. Molecular data place Hydnoraceae with Aristolochiaceae. *American Journal of Botany* 89: 1809-1817.
25. Adams, K. L., **Y.-L. Qiu**, M. Stoutemyer, & J. D. Palmer. 2002. Punctuated evolution of mitochondrial gene content: High and variable rates of mitochondrial gene loss and transfer during angiosperm evolution. *Proceedings of the National Academy of Sciences, USA* 99: 9905-9912.
24. Gugerli, F., C. Sperisen, U. Büchler, I. Brunner, S. Brodbeck, J. D. Palmer, & **Y.-L. Qiu**. 2001. The evolutionary split of Pinaceae from other conifers: evidence from an intron loss and a multigene phylogeny. *Molecular Phylogenetics and Evolution* 21: 167-175.
23. **Qiu, Y.-L.**, J. Lee, B. A. Whitlock, F. Bernasconi-Quadroni, & O. Dombrowska. 2001. Was the ANITA rooting of the angiosperm phylogeny affected by long branch attraction? *Molecular Biology and Evolution* 18: 1745-1753.
22. Adams, K. L., M. Rosenblueth, **Y.-L. Qiu**, & J. D. Palmer. 2001. Multiple losses and transfers to the nucleus of two mitochondrial respiratory genes during angiosperm evolution. *Genetics* 158: 1289-1300.
21. **Qiu, Y.-L.**, J. Lee, F. Bernasconi-Quadroni, D. E. Soltis, P. S. Soltis, M. Zanis, E. A. Zimmer, Z. Chen, V. Savolainen, & M. W. Chase. 2000. Phylogeny of basal angiosperms: analyses of five genes from three genomes. *International Journal of Plant Sciences* 161: S3-S27.
20. **Qiu, Y.-L.** & J. Lee. 2000. Transition to a land flora: a molecular phylogenetic perspective. *Journal of Phycology* 36: 799-802.
19. Adams, K. L., D. O. Daley, **Y.-L. Qiu**, J. Whelan, & J. D. Palmer. 2000. Repeated, recent and diverse transfers of a mitochondrial gene to the nucleus in flowering plants. *Nature* 408: 354-357.
18. von Balthazar, M., P. K. Endress, & **Y.-L. Qiu**. 2000. Molecular phylogenetics of Buxaceae based on nuclear ITS and plastid *ndhF* sequences. *International Journal of Plant Sciences* 161:785-792.
17. Palmer, J. D., K. L. Adams, Y. Cho, C. L. Parkinson, **Y.-L. Qiu**, & K. Song. 2000. Dynamic evolution of plant mitochondrial genomes: mobile genes and introns, and highly variable mutation rates. *Proceedings of the National Academy of Sciences, USA* 97:

6960-6966.

16. Savolainen, V., M. W. Chase, S. B. Hoot, C. M. Morton, D. E. Soltis, C. Bayer, M. F. Fay, A. Y. de Bruijn, S. Sullivan, & **Y.-L. Qiu**. 2000. Phylogenetics of flowering plants based on combined analysis of plastid *atpB* and *rbcL* gene sequences. *Systematic Biology* 49: 306-362.

15. Hoertensteiner, S., S. Rodoni, M. Schellenberg, F. Vicentini, O. I. Nandi, **Y.-L. Qiu**, & P. Matile. 2000. Evolution of chlorophyll degradation: the significance of RCC reductase. *Plant Biology* 2: 63-67.

14. Besendahl, A., **Y.-L. Qiu**, J. Lee, J. D. Palmer, & D. Bhattacharya. 2000. The endosymbiotic origin and vertical evolution of the plastid tRNA^{Leu} group I intron. *Current Genetics* 37: 12-23.

13. **Qiu, Y.-L.**, J. Lee, F. Bernasconi-Quadroni, D. E. Soltis, P. S. Soltis, M. Zanis, E. A. Zimmer, Z. Chen, V. Savolainen, & M. W. Chase. 1999. The earliest angiosperms: evidence from mitochondrial, plastid and nuclear genomes. *Nature* 402: 404-407.

12. **Qiu, Y.-L.** & J. D. Palmer. 1999. Phylogeny of basal land plants: insights from genes and genomes. *Trends in Plant Science* 4: 26-30.

11. Cho, Y., **Y.-L. Qiu**, P. Kuhlman, & J. D. Palmer. 1998. Explosive invasion of plant mitochondria by a group I intron. *Proceedings of the National Academy of Sciences, USA* 95:14244-14249.

10. **Qiu, Y.-L.**, M. W. Chase, S. Hoot, E. Conti, P. R. Crane, K. J. Sytsma, & C. R. Parks. 1998. Phylogenetics of the Hamamelidae and their allies: parsimony analyses of nucleotide sequences of the plastid gene *rbcL*. *International Journal of Plant Sciences* 159: 891-905.

9. **Qiu, Y.-L.**, Y. Cho, J. C. Cox, & J. D. Palmer. 1998. The gain of three mitochondrial introns identifies liverworts as the earliest land plants. *Nature* 394: 671-674.
(*This paper received world-wide news coverage in ABC, BBC, die Zeit, London Times, The Daily Telegraph, and an Associated Press report that appeared in Washington Post, CNN, Fox News, Boston Globe, and Seattle Times, as well as several other newspapers.*)

8. **Qiu, Y.-L.**, M. W. Chase, & C. R. Parks. 1995. A chloroplast DNA phylogenetic study of the eastern Asia-eastern North America disjunct section *Rytidospermum* of *Magnolia* (Magnoliaceae). *American Journal of Botany* 82: 1582-1588.

7. **Qiu, Y.-L.**, C. R. Parks, & M. W. Chase. 1995. Molecular divergence in the eastern Asiaeastern North America disjunct section *Rytidospermum* of *Magnolia* (Magnoliaceae). *American Journal of Botany* 82: 1589-1598.

6. **Qiu, Y.-L.** & C. R. Parks. 1994. Disparity of allozyme variation levels in three *Magnolia* species from the southeastern United States. *American Journal of Botany* 81: 1300-1308.

5. Parks, C. R., J. F. Wendel, M. M. Sewell, & **Y.-L. Qiu**. 1994. The significance of allozyme variation and introgression in *Liriodendron tulipifera* complex (Magnoliaceae). *American Journal of Botany* 81: 878-889.

4. Chase, M. W., D. E. Soltis, R. G. Olmstead, D. Morgan, D. H. Les, B. D. Mishler, M. R. Duvall, R. A. Price, H. G. Hills, **Y.-L. Qiu**, K. A. Kron, J. H. Rettig, E. Conti, J. D. Palmer, J. R. Manhart, K. J. Sytsma, H. J. Michaels, W. J. Kress, K. G. Karol, W. D. Clark, M. Hedren, B. S. Gaut, R. K. Jansen, K.-J. Kim, C. F. Wimpee, J. F. Smith, G. R. Furnier, S. H. Strauss, Q.-Y. Xiang, G. M. Plunkett, P. S. Soltis, S. Swensen, S. E. Williams, P. A. Gadek, C. J. Quinn, L. E. Eguiarte, E. Golenberg, G. H. Learn, Jr., S. W. Graham, S. C. H. Barrett, S. Dayanandan & V. A. Albert. 1993. Phylogenetics of seed plants: an analysis of nucleotide sequences from the plastid gene *rbcL*. *Annals of the Missouri Botanical Garden* 80: 528-580.

3. Sewell, M. M., **Y.-L. Qiu**, C. R. Parks, & M. W. Chase. 1993. Genetic evidence for trace paternal transmission of plastids in *Liriodendron* and *Magnolia* (Magnoliaceae). *American Journal of Botany* 80: 854-858.

2. **Qiu, Y.-L.**, M. W. Chase, D. H. Les, & C. R. Parks. 1993. Molecular phylogenetics of the Magnoliidae: cladistic analyses of nucleotide sequences of the plastid gene *rbcL*. *Annals of the Missouri Botanical Garden* 80: 587-606.

1. Parks, C. R., J. F. Wendel, M. M. Sewell, & **Y.-L. Qiu**. 1990. Genetic control of isozyme variation in the genus *Liriodendron* L. (Magnoliaceae). *Journal of Heredity* 81: 317-323.