

BAILIAN LI, Ph. D.

PROFESSIONAL EXPERIENCE

- 2006 – Present: Vice Provost for International Affairs, North Carolina State University, Raleigh, North Carolina.
- 2004 – 2006: Co-Director, NCSU Tree Improvement Program, North Carolina State University, Raleigh, North Carolina.
- 2004 – Present: Professor, Department of Forestry and Environmental Resources, North Carolina State University, Raleigh, North Carolina.
- 1995 – 2004: Assistant-Associate Professor, Department of Forestry, North Carolina State University, Raleigh, North Carolina.
- 1990 – 1995: Co-Director, the Aspen/Larch Genetics Program, Department of Forest Resources, University of Minnesota
- 1989 – 1990: Post-Doctoral Research Scientist, Southern Forest Research, Weyerhaeuser Company.
- 1983 – 1989: Graduate Research Assistant, Department of Forestry, North Carolina State University, Raleigh, NC.

EDUCATION

- Ph.D. 1989 North Carolina State University, Raleigh, North Carolina
- M.S. 1986 North Carolina State University, Raleigh, North Carolina
- B. S. 1982 Beijing Forestry University, Beijing, China

LEADERSHIP FOR INTERNATIONAL PROGRAMS

As the Vice Provost for International Affairs at NC State University since 2006, major leadership responsibilities included:

- Facilitating the development and implementation of a strategic vision for the university's international programs to strengthen NC State's international presence in an ever-changing global society;
- Leadership and administration of international units, centers and programs encompassed by the Office of International Affairs - promoting a global perspective into all functions of teaching, research, and extension/engagement;
- Innovation of university-wide international programs in cooperation with college deans and leaders of other academic units – promoting and establishing new university partnerships and international initiatives;
- Leadership for university diplomacy - hosting a large number of visiting international dignitaries, managing exchange agreements, and facilitating internal

and external media coverage of the university's international activities and involvement;

- Budgetary responsibilities and coordinating support services for international students and visiting scholars, undergraduate and graduate study abroad, development of joint faculty research projects with international partners, and special training programs.

INTERNATIONAL EXPERIENCE

Extensive International Experience for leadership in international academic communities, academic experience in teaching, research and collaboration with international universities/institutions, and living and working in foreign countries immersed in multiple cultures and societies. Collaborative experience with foreign universities, research institutes and governmental agencies in many countries, such as Australia, Canada, Chile, China, Finland, Greece, India, Japan, Korea, Malaysia, New Zealand, Sweden, and Turkey.

Study Abroad – Experience in developing and leading a study abroad program as a faculty director to China, China Forestry Study Program, May 2006, College of Natural Resources, NC State University.

International Student – Experience as an international student at NC State University for six years, which provided valuable cross-cultural experience and insights on challenges and best ways to serve international students.

Foreign Living Experience – Born in China and proficient in Chinese language. Other foreign travel experience includes Australia, Canada, China, Chile, Finland, Japan, Malaysia, New Zealand, Sweden, and Turkey.

International Leadership in Academic Communities:

- Chair, Division 2 of Genetics and Physiology, International Union of Forest Research Organizations (IUFRO), 2005-Present.
- Coordinator, Unit of the Conifer Breeding and Genetic Resources, Division 2 of IUFRO, 2000-2005.
- Associate Editor, Forest Science (USA), 2003-Present.
- Associate Editor, Canadian Journal of Forest Research (Canada), 2003-2006.
- Editorial Board, Annals of Forest Science (France), 2002-Present.

Academic Experience in Teaching and Research Collaboration:

- Honorable National Changjiang Scholar in Forest Genetics, Ministry of Education, China, 2005-2008.

- Visiting and Adjunct Professor, Swedish University of Agricultural Sciences, Sweden, 2002-Present.
- Adjunct Professor and graduate faculty for Ph.D. students' supervising and lectures, Beijing Forestry University, China, 1999-Present.
- Technical advisor and adjunct faculty, University of Concepción, Chile, Short courses and research collaborations, 2004-Present.
- Adjunct Professor, Wuhan Institute of Botany, Chinese Academy of Sciences, Short courses and seminars, 2003-Present.
- Visiting Professor and Ph.D. examiner, University of Helsinki, Finland, 1999.
- External examiner of Ph.D. programs, University of Queensland, Australia, 2000.
- Technical advisor for program review, Queensland Forestry Research Institute, Australia, 2001.

RESEARCH CONTRIBUTIONS

Research Interests - As professor in the Department of Forestry and Environmental Resources and Co-Director of the North Carolina State University Industry Tree Improvement Program, main research has focused on forest genetics, biotechnology, genomics and tree improvement. Some of these research projects have significant international dimensions and collaborations with scientists in different countries.

Research Funding - Major research funds are from industry supports, competitive grants from DOE, USDA, NSF, other governmental agencies and foundations. As a PI or co-PI, more than 12 competitive research grants have been obtained with a total of \$6,667,000 while at NCSU. These research projects involved quantitative genetics, molecular markers and biotechnology, tree breeding, physiology, and wood and fiber quality. Examples of several research grant projects participated:

- NSF- 2005-2009 Molecular Breeding of Southern Pines
- DOE- 2003-2007 Performance and Value of CAD-Deficient Pine
- USDA- 2001-2006 Genetic Variation in Wood Properties
- USDA- 2001-2006 Integrated Biotechnological and Genetics System

TEACHING EXPERIENCE

- FOR 610A Current Topics in Forest Genetics
- FOR 727 Tree Improvement Techniques (with J.B. Jett)
- FOR 728 Quantitative Forest Genetic Methods (with Gary Hodge)
- Guest lectures in several undergraduate and graduate courses
- Advised or co-advised 17 graduate students and 8 post-doc scientists

PUBLICATIONS (Selected Journal Articles)

- Isik F., H. V. Amerson, R. W. Whetten, S. A. Garcia, B. Li, and S. E. McKeand. 2008. Resistance Assessments of Elite Loblolly Pine Families to Fusiform Rust Inocula in Greenhouse Testing. *Canadian J. Forest Research* 38:2687-2696.
- Isik, F., M. Gumpertz, B. Li, B. Goldfarb, and X. Sun. 2008. Analysis of cellulose microfibril angle using a linear mixed model in *Pinus taeda* clones. *Canadian J. Forest Research*. 38:1676-1689.
- Isik, F., B. Li, B. Goldfarb, S.E. McKeand. 2008. Prediction of wood density breeding values of *Pinus taeda* elite parents from unbalanced data: A method for adjustment of site and age effects using common checklots. *Annals of Forest Science*. 65: 406-413.
- McKeand, S.E., B. Li, J.E. Grissom, F. Isik, and K.J.S. Jayawickrama. 2008. Genetic parameter estimates for growth traits from diallel tests of loblolly pine throughout the southeastern United States. *Silvae Genetica* 57(3):101-110.
- Li, H., S. Ghosh, H. Amerson and B. Li. 2006. Major gene detection for fusiform rust resistance using Bayesian complex segregation analysis in loblolly pine. *Theor. and Appl. Genetics* 113:921-929.
- Sykes, R., B. Li, F. Isik, J. Kadala, H.M. Chang. 2006. Genetic variation and genotype by environment interaction of juvenile wood properties in *Pinus taeda* L. *Annals of Forest Science* 63:897-904.
- Hu, X. S., B. Li. 2006. Additive genetic variation and the distribution of QTN effects among sites. *Journal of Theoretical Biology* 243:76-85.
- Alizoti, P., B. Li, and S.E. McKeand. 2006. Early evaluation of intra- and inter-provenance hybrids of loblolly pine for planting in Piedmont regions of the Southern U.S. *Forest Science* 52:557-567.
- McKeand, S.E., E.J. Jokelab, D.A. Huberb, T.D. Byram, H.L. Allen, B. Li, T.J. Mullin. 2006. Performance of improved genotypes of loblolly pine across different soils, climates, and silvicultural inputs. *Forest Ecology and Management* 227:178-184.
- Yu, Q., B. Li, C.D. Nelsen, S.E. McKeand, V.B. Batista and T.J. Mullin. 2006. Association of the cad-nl allele with increased stem growth and wood density in full-sib families of loblolly pine. *Tree Genetics & Genomics* 2:98-108.
- McKeand, S.E., R.C. Abt, H.L. Allen, B. Li, and G.P. Catts. 2006. What are the best loblolly pine genotypes worth to landowners? *J. For.* 104:352-358.
- Lstiburek, M., Mullin, T.J., Mackay, T.F.C., Huber, D., and Li, B. 2005. Positive assortative mating with family size as a function of parental breeding values. *Genetics* 171:1311-1320.
- Isik, F., D.D. Boos and B. Li. 2005. The distribution of genetic parameter estimates and confidence intervals from small disconnected diallels. *Theor. and Appl. Genetics* 110:1236-1243.
- Sykes, R., B. Li, G. Hodge, B. Goldfarb, J. F. Kadla and H-m. Chang, Robert Sykes, Bailian Li, Gary Hodge, Barry Goldfarb, John Kadla, and H-m. Chang. 2004. Rapid prediction of wood properties of loblolly pine using transmittance near infrared spectroscopy. *Canadian J. For. Research* 35:2423-2431
- Li, H., H. Amerson and B. Li. 2005. Genetic Models of Host-Pathogen Gene Interaction Based on Inoculation of Loblolly Pine Seedlings with the Fusiform Rust Fungus. *New Forests* 31:245-252.

- Yu, Q., McKeand, S. E., Nelson, C. D., Li, B., and Mullin, T.J. 2005. Differences in wood density and growth of fertilized and non-fertilized loblolly pine associated with a mutant gene, *cad-n1*. *Can. J. For. Res.* 35:1723–1730.
- Isik, F., B. Goldfarb, A. LeBude, B. Li and S. McKeand. 2005. Predicted genetic gains and testing efficiency from two loblolly pine clonal trials. *Can. J. For. Res.* 35:1754-1766.
- Li, B. and S. McKeand, eds. 2004. *Forest Genetics and Tree Breeding in the Age of Genomics: Progress and Future*, IUFRO Joint Conference of Division 2, Conference Proceedings.
- Zeng, W., S. Ghosh and B. Li. 2004. Blocking Gibbs Sampling with a Mixed Inheritance for Major Gene Detection. *Genetical Research* 84:1-12.
- Kegley, A.J., S.E. McKeand, and B. Li. 2004. Seedling evaluation of Atlantic Coastal and Piedmont sources of loblolly pine and their hybrids for height growth. *South. J. Appl. For.* 28(2): 83-90.
- Jansson, G. and B. Li. 2004. Genetic gains of full-sib families from disconnected diallels in loblolly pine. *Silvae Genetica* 53(2):60-64.
- Isik, F., B. Li, J. Frampton, and B. Goldfarb. 2004. Efficiency of seedlings and rooted cuttings for testing and selection in *Pinus taeda*. *For. Sci.* 50:44-53.
- Isik, F., B. Li, J. Frampton, and B. Goldfarb. 2003. Efficiency of seedlings and rooted cuttings for testing and selection in *Pinus taeda*. *For. Sci.* 50:44-53.
- Zhang, D., Z. Zhang, K. Yang and B. Li. 2003. Genetic mapping in (*Populus tomentosa* × *P. bolleana*) and *P. tomentosa* Carr. using AFLP markers. *Theor. and Appl. Genetics* 108:657-662.
- Sykes, R., F. Isik, B. Li, J. Kadla, and H-m. Chang. 2003. Genetic variation of juvenile wood properties in a loblolly pine progeny test. *TAPPI* 86(12): 3-8.
- Xiang, B., B. Li, and F. Isik. 2003. Time trend of genetic parameter estimates in growth traits of *Pinus taeda* L. *Silv. Genet.* 52:114-121.
- Jansson, G., B. Li, and K. Hannrup. 2003. Time trends in genetic parameters for height and optimal age for parental selection in Scots pine. *Forest Science* 49:696-705.
- Xiang, B. and B. Li. 2003. Best Linear Unbiased Prediction of Clonal Breeding Values and Genetic Values from Full-sib Mating Designs. *Can. J. For. Res.* 33:2036-2043.
- Isik, F. and B. Li. 2003. Rapid assessment of wood density of live trees using the Resistograph for selection in tree improvement programs. *Can. J. For. Res.* 33:2426-2435.
- Hu, X.S., W. Zeng and B Li. 2003 Impacts of one-way gene flow on genetic variance components in a natural population. *Silvae Genetica* 51:18-24.
- Xiang, B., B. Li, and S.E. McKeand. 2003. Genetic gain and selection efficiency of loblolly pine in three geographic regions. *For. Sci.* 49: 49:192-208.
- Isik, F., B. Li, and J. Frampton. 2003. Additive, dominance and epistatic genetic variance estimates from a replicated clonal test of loblolly pine. *For. Sci.* 49:77-88.
- Hu, X.S. and B. Li. 2003. On migration load of seeds and pollen grains in a local population. *Heredity* 90:162-168.
- Zeng, W. and B. Li. 2003. Power and robustness of statistical tests for major gene detection in diallel progeny test data. *For. Sci.* 48: 268-278.
- McKeand, S.E., H.V. Amerson, B. Li, and T.J. Mullin. 2003. Families of loblolly pine that are most stable for resistance to fusiform rust are the least predictable. *Can. J. For. Res.* 33:1335-1339.
- Hu, X.S. and B Li. 2002 Linking the evolutionary qualitative genetics to conservation of genetic resources in natural forest populations. *Silvae Genetica* 51:20-31.
- Hu, X. and B. Li. 2002. Seed and pollen flow and cline discordance among genes with different models of inheritance. *Heredity* 88:212-217.
- Olsson, T., D. Lindgren, and B. Li. 2001. Balancing genetic gain and relatedness in seed orchards. *Silvae Genetica* 50:222-227.

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- Isik, F., K. Isik, T. Yildirim, and B. Li. 2001. Using shoot growth patterns to select desired genotypes and understanding adaptation of *Pinus brutia*. *Tree Physiology* 22:51-58.
- Hu, X. and B. Li. 2001. Assessment of the ratio of pollen to seed flow in a cline for genetic variation in a quantitative trait. *Heredity* 87:400-409.
- Wu, R., B. Li., S. S. Wu, and G. Casella. 2001. A maximum likelihood-based method for mining major genes affecting a quantitative character. *Biometrics* 57(3) 764-768.
- Xiang, B. and B. Li. 2001. A new mixed analytical method for genetic analysis of diallel data. *Canadian J. For. Research* 31: 1-8.
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- Frampton, J., B. Li, and B. Goldfarb. 2000. Early field growth of loblolly pine rooted cuttings and seedlings. *So. J. of App. For.* 24(2)98-105.
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- McKeand, E. S., B. Li and H. V. Amerson. 1999. Genetic variation in fusiform rust resistance in loblolly pine across a wide geographic range. *Silvae Genetica* 48(5):255-260
- Wu, R., B. Li, and Z.B. Zeng. 1999. Molecular dissection of quantitative traits: new perspectives from *Populus*. S.M. Jain and S.C. Minocha (ed.), *Molecular Biology of Woody Plants*. Vol. 1:475-490. Kluwer Academic Publishers, The Netherlands.
- Wu, R. and B. Li. 1999. A multiplicative epistatic model for analyzing interspecific differences in outcrossing species. *Biometrics* 55:355-365.
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- Li, B. and R. Wu. 1997. Heterosis and genotype environment interaction in juvenile aspen: The implications for tree breeding. *Canadian Journal of Forest Research* 27: 1525-1537.
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- Li, B. and R. Wu. 1996. Genetic causes of heterosis in juvenile aspen: a quantitative comparison across intra-and interspecific hybrids. *Theo. Appl. Genetics* 93:380-391
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- Enebak, S.A. and Li, B. 1996. Seedling response of two trembling aspen (*Populus tremuloides*) to infection by *Hypoxylon mammatum*. *Europ. J. For. Path.* 26:245-253
- Li, B. 1995. Aspen improvement strategies for western Canada - Alberta and Saskatchewan. *Forestry Chronicle* 71(6):720-724
- Li, B. and G.W. Wyckoff. 1994. Breeding strategies for *Larix decidua*, *L. leptolepis* and their hybrids in the United States. *Forest Genetics* 1(2):65-72.
- Li, B., G.W. Wyckoff, and D.W. Einspahr. 1993. Aspen hybrid performance and genetic gains. *Northern Journal of Applied Forestry* 10(3):117-122.
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- Li, B., S.E. McKeand, and H.L. Allen. 1991. Seedling shoot growth of loblolly pine families under two nitrogen levels as related to 12-year height. *Can. J. of For. Res.* 21:842-847.
- Li, B., S.E. McKeand, and H.L. Allen. 1991. Genetic variation in nitrogen use efficiency of loblolly pine seedlings. *Forest Science* 37(2):613-626.
- McKeand, S.E., and B. Li. 1990. Stability parameters of loblolly pine families growing in different regions in the southeastern United States. *Forest Science* 36:7-17.
- Li, B., and S.E. McKeand. 1989. Stability of loblolly pine families in the southeastern U.S. *Silvae Genetica* 38:96-101.