BAILIAN LI, Ph. D.

Vice Provost for International Affairs
Professor of Forestry and Environmental Resources
North Carolina State University, Raleigh, North Carolina

PROFESSIONAL EXPERIENCE

2006 – Present: Vice Provost for International Affairs, North Carolina State University
2004 – 2006**:** Co-Director, Tree Improvement Research Coop, NC State University
2004 – Present**:** Professor, Department of Forestry and Environmental Resources, North Carolina State University.
1995 – 2004: Assistant**-**Associate Professor, Department of Forestry, North Carolina State University, Raleigh, North Carolina.
1990 – 1995***:*** Co-Director**,** the Aspen/Larch Genetics, 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 EXPERIENCE

Vice Provost for International Affairs at NC State University:

- Lead the development and implementation of the strategic vision for university's global engagement and international programs to strengthen NC State's international presence in an ever-changing global society;
- Provide leadership and administration for all international units, centers and programs encompassed by the Office of International Affairs (OIA) to promote global perspectives in teaching, research, and extension/ engagement. OIA has 50 full-time staff and managed over 8 million annual budget;
- Develop university-wide international programs in cooperation with college deans and leaders of other university units to promote and establish strategic partnerships and global initiatives;
- Lead the university diplomacy for strategic initiatives, manage collaborative and exchange agreements, and facilitate internal and external media coverage of the

university's international activities and involvement;
- Manage budget for all international units and supporting 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 Educational Leadership (Associations/Consortiums):

- Chair of the Executive Committee, University Global Partnership Network (UGPN), 2010-2014
- Steering Committee, Academic Consortium 21 (AC21) with 20 member of global universities, 2006-present
- Executive Committee, International Commission, Association of Land-grant and Public University (APLU), 2010-2012
- Member of Association of International Education Administrators (AIEA)
- Member of NAFSA, Association of International Educators, Served in the Paul Simon Award Committee 2015 & 2016
- Session chairs/presenters for UGPN, AC21, APLU, AIEA, NAFSA, Going Global (British Council), APAIE (Asian Pacific Association of International Educators)

Leadership in Academic Communities:

- Chair, Division 2 of Genetics and Physiology, International Union of Forest Research Organizations (IUFRO), 2005-2010.
- Chair, the Conifer Breeding and Genetic Resources, Division 2 of IUFRO, 2000-2005.
- Associate Editor, Forest Science (USA), 2003-2008.
- Associate Editor, Canadian Journal of Forest Research (Canada), 2003-2006.
- Editorial Board, Annals of Forest Science (France), 2002-2010.
- Editorial Board, Forest Science and Practice, 2004-present.
- Editorial Board, Scientia Silvae Sinicae, 2005-present.
- Honorable National Changjiang Scholar, Ministry of Education, China, 2005-Present.

International Academic Experience in Teaching and Research:

- Extensive experience with international academic communities, experience in teaching, research and collaboration with international universities/ institutions, and living and working in foreign countries immersed in multiple cultures and societies.
- Experience in developing and leading Study Abroad programs and experience as an international student with valuable cross-cultural experience and insights on challenges and best ways to serve international students.
- Visiting and Adjunct Professor, Swedish University of Agricultural Sciences, Sweden, 2002-2008.
- Adjunct Professor, 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, 2003-2006.
- 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.

TEACHING AND RESEARCH CONTRIBUTIONS

Teaching Experience – taught various undergraduate and graduate courses in forest genetics, tree improvement techniques, and quantitative genetic methods; supervised over 25 graduate students and eight post-doc scientists.

Research Interests - As a professor in the Department of Forestry and Environmental Resources, 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, over 20 research grants with a total of $7,542,000 have been obtained while at NC State University. These research projects involved quantitative genetics, molecular markers and biotechnology, tree breeding, physiology, and wood and fiber quality.

PUBLICATIONS (Selected Journal Articles)

Chen, J. H., Xie, J. B., Chen, B. B., Quan, M. Y., Li, Y., Li, B. L., & Zhang, D. Q. (2016). Genetic variations and miRNA-target interactions contribute to natural phenotypic variations in Populus. New Phytologist, 212(1), 150-160.

Xie, J. B., Tian, J. X., Du, Q. Z., Chen, J. H., Li, Y., Yang, X. H., Li, B. L., & Zhang, D. Q. (2016). Association genetics and transcriptome analysis reveal a gibberellin-responsive pathway involved in regulating photosynthesis. Journal of Experimental Botany, 67(11), 3325-3338.

Du, Q. Z., Gong, C. R., Wang, Q. S., Zhou, D. L., Yang, H. J., Pan, W., Li, B. L., & Zhang, D. Q. (2016). Genetic architecture of growth traits in Populus revealed by integrated quantitative trait locus (QTL) analysis and association studies. New Phytologist, 209(3), 1067-1082.

Zapata-Valenzuela, Jaime A., Funda Ogut, Angela Kegley, Patrick Cumbie, Fikret Isik, Bailian Li, & Steven E. McKeand (2015) Seedling Evaluation of Atlantic Coastal and Piedmont Sources of Pinus taeda L. and Their Hybrids for Cold Hardiness. Forest Science 02/2015; 61(1). DOI:10.5849/forsci.12-610.

Du, Q. Z., Tian, J. X., Yang, X. H., Pan, W., Xu, B. H., Li, B. L., Ingvarsson, P. K., & Zhang, D. Q. (2015). Identification of additive, dominant, and epistatic variation conferred by key genes in cellulose biosynthesis pathway in Populus tomentosa. DNA Research, 22(1), 53-67.

Yang, X. H., X G Li · B L Li & D Q Zhang. (2014). Genome-wide transcriptional profiling reveals molecular signatures of secondary xylem differentiation in Populus tomentosa. Genetics and molecular research: GMR 11/2014; 13(4):9489-9504

Xi, Xiaojun, Liqin Guo,Wenting Xu,Jinfeng Zhang, & Bailian Li (2014). Megasporogenesis, megagametogenesis, and induction of 2n eggs with colchicine in poplar section Aigeiros. Scandinavian Journal of Forest Research 08/2014; 29(6):527-536.

Wei, Zunzheng, Guanyu Zhang, Qingzhang Du, Jinfeng Zhang, Bailian Li & Deqiang Zhang (2014). Association mapping for morphological and physiological traits in Populus simonii. BMC Genetics 06/2014; 15(Suppl 1):S3. DOI:10.1186/1471-2156-15-S1-S3

Du, Q.Z., Baohua Xu, Chenrui Gong, Xiaohui Yang, Wei Pan, Jiaxing Tian, Bailian Li & Deqiang Zhang (2014) Variation in growth, leaf, and wood property traits of Chinese white poplar (Populus tomentosa), a major industrial tree species in Northern China. Canadian Journal of Forest Research 04/2014; 44(4):326-339.

Tian, Jiaxing, Qingzhang Du, Bailian Li, & Deqiang Zhang (2014). Single-nucleotide polymorphisms in the 5′ UTR of UDP-glucose dehydrogenase (PtUGDH) associate with wood properties in Populus tomentosa. Tree Genetics & Genomes 04/2014; 10(2). DOI:10.1007/s11295-013-0689-6

Yang, Xiaohui, Xinguo Li, Bailian Li & Deqiang Zhang (2014). Identification of Genes Differentially Expressed in Shoot Apical Meristems and in Mature Xylem of Populus tomentosaPlant Molecular Biology Reporter 04/2014; 32(2). DOI:10.1007/s11105-013-0660-6

Du, Q. Z., Baohua Xu, Wei Pan, Chenrui Gong, Qingshi Wang, Jiaxing Tian, Bailian Li & Deqiang Zhang (2013). Allelic Variation in a Cellulose Synthase Gene (PtoCesA4) Associated with Growth and Wood Properties in Populus tomentosa. G3-Genes Genomes Genetics 09/2013; 3(11). DOI:10.1534/g3.113.007724.

Du, Q. Z., Wei Pan, Jiaxing Tian, Bailian Li & Deqiang Zhang (2013). The UDP-Glucuronate Decarboxylase Gene Family in Populus: Structure, Expression, and Association Genetics. PLoS ONE 04/2013; 8(4):e60880.

Du, Q. Z., Pan, W., Xu, B. H., Li, B. L., & Zhang, D. Q. (2013). Polymorphic simple sequence repeat (SSR) loci within cellulose synthase (PtoCesA) genes are associated with growth and wood properties in *Populus tomentosa*. New Phytologist, 197(3), 763-776.

Du, Q. Z., Xu, B. H., Pan, W., Gong, C. R., Wang, Q. H., Tian, J. X., Li, B. L., & Zhang, D. Q. (2013). Allelic variation in a cellulose synthase gene (PtoCesA4) associated with growth and wood properties in *Populus tomentosa*. G3-Genes Genomes Genetics, 3(11), 2069-2084.

Xi, X. J., Jiang, X. B., Li, D., Guo, L. Q., Zhang, J. F., Wei, Z. Z., & Li, B. L. (2011). Induction of 2n pollen by colchicine in Populus X popularis and its triploids breeding. Silvae Genetica, 60(3-4), 155-160.

Cumbie, W. P., Isik, F., Li, B. L., & Goldfarb, B. (2011). Effects of propagule type on genetic parameters of wood density and growth in a loblolly pine progeny test at ages 10 and 11 years. Tree Genetics & Genomes, 7(6), 1147-1158.

Zhang, D. Q., Yang, X. H., Zhang, Z. Y., & Li, B. L. (2010). Expression and nucleotide diversity of the poplar COBL gene. Tree Genetics & Genomes, 6(2), 331-344.

Aspinwall, M. J., Li, B. L., McKeand, S. E., Isik, F., & Gumpertz, M. L. (2010). Prediction of whole-stem alpha-cellulose yield, lignin content, and wood density in juvenile and mature loblolly pine. Southern Journal of Applied Forestry, 34(2), 84-90.

Eckard, J. T., Isik, F., Bullock, B., Li, B. L., & Gumpertz, M. (2010). Selection efficiency for solid wood traits in pinus taeda using time-of-flight acoustic and micro-drill resistance methods. Forest Science, 56(3), 233-241.

Zhang, J. F., Wei, Z. Z., Li, D., & Li, B. L. (2009). Using SSR markers to study the mechanism of 2n pollen formation in Populus x euramericana (Dode) Guinier and P. x popularis. Annals of Forest Science, 66(5).

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.

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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.

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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.

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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.

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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.

Li, B. 2001. Hybrid aspen heterosis and breeding. In: P. Pulkkinen , P. M.A. Tigerstedt and V. Raija (eds.), Aspen in paper making. P. 8-25, University of Helsinki Press, Helsinki, Finland.

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.

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Li, B., S. McKeand and R. Weir. 1999. Tree Improvement and sustainable forestry- impact of two cycles of loblolly pine breeding in the U.S.A. Forest Genetics 6(4):229-234.

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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

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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.

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