

**Jingjing Liang**  
*Curriculum Vitae*

**Academic Interests:**

Biodiversity and Ecosystem Functioning, Forest Conservation and Restoration, Global Forest Resources, Forest dynamics and climate change

**Education**

|                      |   |           |
|----------------------|---|-----------|
| Ph.D. (Forestry)     | <b>University of Wisconsin-Madison</b> , United States        | 2001-2005 |
|                      | Focus Areas: biodiversity, forest dynamics, forest management |           |
| B.S. (Environ. Sci.) | <b>Peking University</b> , China                              | 1997-2001 |
|                      | Focus Areas: Ecology, desertification                         |           |

**Professional Experience**

2011–present: tenure-tracked Assistant Professor of Forest Ecology  
Davis College of Agriculture, Natural Resources & Design, West Virginia University

2007–2011: tenure-tracked Assistant Professor of Forest Biometrics and Management  
School of Natural Resources and Agricultural Sciences, University of Alaska Fairbanks

2006-2007: Post-doctoral Biometrician  
U.S. Department of Agriculture, Rocky Mountain Research Station

2005-2006: Research Associate  
Department of Forest Ecology and Management, University of Wisconsin-Madison

**Editorship**

Associate Editor—Canadian Journal of Forest Research, March 2011—present.

**Certification**

- Since 2010, Certified Forester, Society of American Foresters, CN#4052
- 2013, Emergency Medical Technician, the State of West Virginia
- 2015, MSHA Part 46 Certified

**Elected Leadership Positions**

- 2016-present: Leading Coordinator, Global Forest Biodiversity Initiative
- 2013-2015: Chair, A1/A3 Forest Inventory and Biometrics National Working Group, Society of American Foresters
- 2009-2011: Co-Chair, Alaska Northern Forest Cooperative
- 2008-2011: Faculty Senate, University of Alaska Fairbanks

**Hobbies and non-academic achievements:**

- Proud father of three beautiful and kindhearted children
- Translating the book *Pray, Hope, and Don't Worry-True Stories of Padre Pio* into the Chinese language, with >318,000 reads within two years
- Rock climbing— Certified top roping belayer

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*Curriculum Vitae*

**Teaching Experience (sole-instructor)**

\* G for graduate level courses

West Virginia University (2011-present)

- FOR205 Dendrology (lecture + 5 field lab sessions)— every fall semester
- FMAN212 Forest ecology (lecture + 2 field lab sessions) — every fall semester
- FMAN695 Ecosystem management for biodiversity (G, lecture) — 2014, 2015
- FMAN693A Risk analysis and modeling uncertainty (G, lecture) — 2012, 2013
- FMAN611 Advanced forest ecology (G, lecture) — every other spring semester

University of Alaska Fairbanks (2007-2011)

- NRM450 Decision methods in forest management (lecture + 1 computer lab session) — every fall semester
- NRM693 Spatial Modeling of Forest Resources (G, lecture) — 2009, 2010
- NRM611 Research Methods in Natural Resource Management (G, lecture) — every spring semester

**Awards**

2012 International Scholars Recognition Award, West Virginia University  
2009 Technology Advisory Board Award, University of Alaska Fairbanks  
2008 International Arctic Science Committee (IASC) Early Career Scientist Support Award  
2003 Xi Sigma Pi, Honorary Forestry Society, University of Wisconsin-Madison  
2002 Gamma Sigma Delta, Honor Society of Agriculture, University of Wisconsin-Madison

**Manuscript Review**

*Canadian Journal of Forest Research, Ecological Applications, Ecological Modelling, European Journal of Forest Research, Forests, Global Biogeochemical Cycles, Global Change Biology, Forest Ecology and Management, Forest Policy and Economics, PLoS ONE, Professional Geographers, Silva Fennica*

**Grant Review**

National Science Foundation, USA (Panelist)  
U.S. Department of Agriculture, CSREES (Ad-hoc)  
U.S. Civilian Research & Development Foundation (Ad-hoc)  
U.S. Department of Defense, SERDP (Ad-hoc)

**Professional Affiliations**

- Society of American Foresters (SAF)
- Institute for Operations Research and the Management Sciences (INFORMS)
- Ecological Society of America (ESA)
- The American Association for the Advancement of Science (AAAS)

## PUBLICATIONS

(Total=46, including 28 peer-reviewed journal articles, 10 books and reports, 8 conference proceedings and other publications)

### Featured Publications

- ❖ **Liang, J.**, T. W. Crowther, N. Picard, S. Wisser, M. Zhou, G. Alberti, E.-D. Schulze, A. D. McGuire, F. Bozzato, H. Pretzsch, S. de-Miguel, A. Paquette, B. Hérault, M. Scherer-Lorenzen, C. B. Barrett, H. B. Glick, G. M. Hengeveld, G.-J. Nabuurs, S. Pfautsch, H. Viana, A. C. Vibrans, C. Ammer, P. Schall, D. Verbyla, N. Tchebakova, M. Fischer, J. V. Watson, H. Y. H. Chen, X. Lei, M.-J. Schelhaas, H. Lu, D. Gianelle, E. I. Parfenova, C. Salas, E. Lee, B. Lee, H. S. Kim, H. Bruelheide, D. A. Coomes, D. Piotta, T. Sunderland, B. Schmid, S. Gourlet-Fleury, B. Sonké, R. Tavani, J. Zhu, S. Brandl, J. Vayreda, F. Kitahara, E. B. Searle, V. J. Neldner, M. R. Ngugi, C. Baraloto, L. Frizzera, R. Bałazy, J. Oleksyn, T. Zawila-Niedzwiecki, O. Bouriaud, F. Bussotti, L. Finér, B. Jaroszewicz, T. Jucker, F. Valladares, A. M. Jagodzinski, P. L. Peri, C. Gonmadje, W. Marthy, T. O'Brien, E. H. Martin, A. R. Marshall, F. Rovero, R. Bitariho, P. A. Niklaus, P. Alvarez-Loayza, N. Chamuya, R. Valencia, F. Mortier, V. Wortel, N. L. Engone-Obiang, L. V. Ferreira, D. E. Odeke, R. M. Vasquez, S. L. Lewis, and P. B. Reich. 2016. Positive biodiversity-productivity relationship predominant in global forests. *Science* 354. DOI: 10.1126/science.aaf8957
- ❖ **Liang, J.**, Watson, James V., Mo, Zhou, Lei, Xiangdong (2016) Effects of productivity on biodiversity in forest ecosystems across the United States and China. *Conservation Biology* 30:308-317.
- ❖ **Liang, J.**, Zhou, Mo, Tobin, Patrick C., Reich, Peter, McGuire, A. David. (2015) Biodiversity Influences Plant Productivity Through Niche-Efficiency. *PNAS* 112(18):5738-5743.
- ❖ **Liang, J.** (2012) Mapping large-scale forest dynamics: a geospatial approach. *Landscape Ecology* 27(8): 1091-1108.

### Peer-Reviewed Journal Articles

1. **Liang J.**, Crowther TW, Picard N, Wisser S, Zhou M, Alberti G, Schulze E-D, McGuire AD, Bozzato F, Pretzsch H, de-Miguel S, Paquette A, etc. (2016) Positive Biodiversity–Productivity Relationship Predominant in Global Forests. *Science* 354. DOI: 10.1126/science.aaf8957
2. **Liang, J.**, Watson, James V., Mo, Zhou, Lei, Xiangdong (2016) Effects of productivity on biodiversity in forest ecosystems across the United States and China. *Conservation Biology* 30:308-317 (DOI: 10.1111/cobi.12636).
3. Ma, W., **Liang, J.**, JR Cumming, E. Lee, A. B. Welsh, J. V. Watson, and M. Zhou. (2016) Fundamental shifts of central hardwood forests under climate change. *Ecological Modelling* 332:28-41.
4. A. Hovi, **J. Liang**, L. Korhonen, H. Kobayashi, M. Rautiainen, (2016) Quantifying the missing link between forest albedo and productivity in the boreal zone. *Biogeosciences* 13,1-16.

**Jingjing Liang**  
*Curriculum Vitae*

5. **Liang, J.**, Zhou, Mo, Tobin, Patrick C., Reich, Peter, McGuire, A. David. (2015) Biodiversity Influences Plant Productivity Through Niche-Efficiency. *PNAS* 112(18):5738-5743.
6. Watson, James V., **Liang, J.**, Tobin, Patrick C., Lei, Xiangdong, Rentch, James S., Artis, Catherine E. (2015) Large-scale Forest Inventories of the United States and China Reveals Positive Effects of Biodiversity on Productivity. *Forest Ecosystems* 2: 22.
7. Lee, E., He, Y., Zhou, M., **Liang, J.** (2015) Potential Causal Effects of Recent Vegetation Changes on Summer Rainfall in the Sahel. *Physical Geography*. DOI: 10.1080/02723646.2015.1120139
8. Picard, N., **Liang, J.** (2014) Matrix models for size-structured populations: unrealistic fast growth or simply diffusion? *PLoS ONE* 9(6): e98254. doi:10.1371/journal.pone.0098254
9. **Liang, J.**, Zhou, M. (2014) Large-Scale Geospatial Mapping of Forest Carbon Dynamics. *Journal of Sustainable Forestry* 33: S104-S122.
10. Peterson, R.L., **Liang, J.**, Barrett, T.M. (2014) Modeling Population Dynamics and Woody Biomass in Alaska Coastal Forest. *Forest Science* 60(2)391-401(11).
11. **Liang, J.**, Picard, N. (2013) Matrix Model of Forest Dynamics: An Overview and Outlook. *Forest Science* 59(3): 359-378.
12. T. Malone, **J. Liang**. (2013) Total and merchantable volume of white spruce in Alaska. *Western Journal of Applied Forestry* 28(2): 71-77.
13. **Liang, J.** (2012) Mapping large-scale forest dynamics: a geospatial approach. *Landscape Ecology* 27(8): 1091-1108.
14. F.-M. Yuan, S.-H. Yi, A. D. McGuire, K.D. Johnson, **J. Liang**, J.W. Harden, E.S. Kasischke, and W.A. Kurz. (2012) Assessment of Historical Boreal Forest C Dynamics in Yukon River Basin: Relative Roles of Warming and Fire Regime Change. *Ecological Applications* 22(8): 2091-2109.
15. **Liang, J.**, M. Zhou, L. Zhang, D. Verbyla, A. Springsteen. 2011. Mapping forest dynamics under climate change: A Matrix model. *Forest Ecology and Management* 262: 2250-2262
16. Brian, Y., **J. Liang**, F.S. Chapin III. 2011. Effects of species and tree size diversity on recruitment in the Alaskan boreal forest: A geospatial approach. *Forest Ecology and Management* 262(8): 1608-1617.
17. Ping, C.-L., G.J. Michaelson, L. Guo, M.T. Jorgenson, M. Kenevskiy, Y. Shur, F. Dou, **Liang, J.** 2011. Soil Carbon and Material Fluxes across the Eroding Alaska Beaufort Sea Coastline. *Journal of Geophysical Research* 116, G02004, doi:10.1029/2010JG001588
18. **Liang, J.**, M. Zhou. 2010. A Geospatial Model of Forest Dynamics with Controlled Trend Surface. *Ecological Modelling* 221: 2339-2352.
19. **Liang, J.** 2010. Dynamics and Management of Alaska Boreal Forest: An All-aged Multi-species Matrix Stand Growth Model. *Forest Ecology and Management* 260: 491-501.
20. Malone, T., **Liang, J.** 2009. A bark thickness model for white spruce in Alaska northern forests. *International Journal of Forestry Research* doi:10.1155/2009/876965.
21. **Liang, J.**, D.E. Calkin, K.M. Gebert, T.J. Venn, R.P. Silverstein. 2008. Factors influencing large wildland fire suppression expenditures. *Int. J. Wildland Fire* 17: 650-659.
22. Zhou, M., **Liang, J.**, Buongiorno, J. 2008. Adaptive versus fixed policies for economic or ecological objectives in forest management. *Forest Ecology and Management* 254:178-187.
23. Zhou, M., Buongiorno, J., **Liang, J.** 2008. Economic and Ecological Effects of Diameter Caps: A Markov decision model for Douglas-fir/western hemlock forests. *Forest Science* 54(4): 397-407.

**Jingjing Liang**  
*Curriculum Vitae*

24. **Liang, J.**, J. Buongiorno, R.A. Monserud, E.L. Kruger, M. Zhou. 2007. Effects of diversity of tree species and size on forest basal area growth, recruitment, and mortality. *Forest Ecology and Management* 243: 116-127.
25. **Liang, J.**, J. Buongiorno, R.A. Monserud. 2006. Bootstrap simulation and response surface optimization of management regimes for Douglas-fir/western hemlock stands. *Forest Science* 52(5):579-594.
26. **Liang, J.**, J. Buongiorno, and R.A. Monserud. 2005. Growth and Yield of All-aged Douglas-fir/western hemlock Stands: A Matrix Model with Stand Diversity Effects. *Canadian Journal of Forest Research* 35: 2369-2382.
27. **Liang, J.**, J. Buongiorno, R.A. Monserud, and J. Fried. 2005. Estimation and Application of a Growth and Yield Model for Uneven-aged Mixed Conifer Stands in California. *International Forestry Review* 7(2):101-112.
28. **Liang, J.**, 2001. Study on the desertification of Ecotone. *Acta Scientiarum Naturalium Universitatis Pekinensis* 37(4): 543-549.

### **Books and Reports**

1. Hand, M.S., Gebert, K.M., **Liang, J.**, Calkin, D.E., Thompson, M.P., Zhou, M. 2014. Economics of Wildfire Management: The Development and Application of Suppression Expenditure Models. Springer, New York, NY. ISSN 2193-6595. 71p.
2. **Liang, J.**, Watson, J.V. Handbook of Trees. West Virginia University. 103 p.
3. Zhou, M., Buongiorno, J., **Liang, J.** 2012. Bootstrap simulation, Markov decision process models, and role of discounting in the valuation of ecological criteria in uneven-aged forest management. In: Pukkala T. and Gadow K. v. (eds), Continuous Cover Forestry, Second edn. Springer, New York, NY
4. T. Malone, E.C. Packee, and **Liang, J.** 2012. List of Plant Species Present on Forest Permanent Sample Plots in Interior and Southcentral Alaska. University of Alaska Fairbanks – Agricultural and Forestry Experiment Station MP-2012-01. 10p.
5. **Liang, J.**, and J. Buongiorno. 2009. Optimizing Wood Quality and Stand Diversity in Uneven-aged Forest Management. In: R.A. Monserud and D. Dykstra (Editor), *2007 IUFRO Conference on Forest Growth and Timber Quality*, Portland, OR. p169-176.
6. Malone, T., **Liang, J.**, Packee, E.C., 2009. Cooperative Alaska Forest Inventory, USDA Forest Service, Pacific Northwest Research Station, *PNW-GTR-785*. Portland, OR. 42p.
7. **Liang, J.**, J. Buongiorno, and R.A. Monserud. 2006. WestProPlus: A spreadsheet program for the management of all-aged Douglas-fir/western hemlock forests in the Pacific Northwest. USDA Forest Service *PNW-GTR-674*. 42p.
8. **Liang, J.** 2005. Managing forests for diversity, wood quality and income: simulation models for western US forests (PhD Dissertation). University of Wisconsin--Madison, Madison, WI.
9. **Liang, J.**, J. Buongiorno, A. Hubbell, and B. Schulte. 2004. NorthPro: A spreadsheet program for the management of uneven-aged northern hardwood stands. Department of Forest Ecology and Management, University of Wisconsin-Madison. 36p.
10. **Liang, J.**, J. Buongiorno, and R.A. Monserud. 2004. CalPro: A spreadsheet program for the management of California mixed-conifer stands. USDA Forest Service *PNW-GTR-619*. 32p.

**Jingjing Liang**  
*Curriculum Vitae*

**Conference Proceedings and Other Publications**

1. **Liang, J.**, Watson, J.V. (2014) Is Forestry a Dying Profession? Here's What Our Students Say. *The Forestry Source* 19(3):6.
2. **Liang, J.**, J. Buongiorno, R. A. Monserud (2012) Bootstrap simulation and response surface optimization in forest management. Proceedings of the 2012 Southern Forest Economics Workers (SOFEW) Annual Meeting.
3. Zhou, M., and **Liang, J.** 2012. Modeling Alaska Boreal Forests with a Controlled Trend Surface Approach. Gen. Tech. Rep. SRS-157. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 299 p.
4. **Liang, J.** 2011 Population Dynamics of Alaska Boreal Forest under Climate Change. In: 2011 Society of American Foresters National Convention, Honolulu, HI 2011. vol 109. *Journal of Forestry*, p. 493
5. **Liang, J.** Geospatial Mapping of Forest Dynamics. In: 2011 Society of American Foresters National Convention, Honolulu, HI 2011. vol 109. *Journal of Forestry*, p. 501
6. **Liang, J.** 2010 Does tree diversity increase forest productivity? *SciTopics* (Invited article). [http://www.scitopics.com/Does\\_Tree\\_Diversity\\_Increase\\_Forest\\_Productivity.html](http://www.scitopics.com/Does_Tree_Diversity_Increase_Forest_Productivity.html)
7. Zhou, M., and **Liang, J.** 2010. Modeling Alaska boreal forests with a controlled trend surface approach. 2010 Joint Meeting of the Forest Inventory and Analysis (FIA) Symposium and the Southern Mensurationists, McWilliams W & Roesch FA (eds): pp 25-39.
8. **Liang, J.** and M. Zhou. 2010 Dynamics and Management of Alaska Boreal Forest. *SciTopics* [http://www.scitopics.com/Dynamics\\_and\\_Management\\_of\\_Alaska\\_Boreal\\_Forest.html](http://www.scitopics.com/Dynamics_and_Management_of_Alaska_Boreal_Forest.html)

**Synergistic Activities**

- 2016-2020: Lead Coordinator— Global Forest Biodiversity Initiative (GFBI, <http://www.gfbinitiative.org/>)
- 2016-2018: Principal Investigator —Integrating Biological Conservation into Sustainable Forestry Based on Nationwide Analysis of Productivity-Biodiversity Relationship. USDA NIFA (Total Funded: \$30,340).
- 2015-present: Principal Investigator —Biodiversity and Ecosystem Functioning in North American Reclaimed Lands. ESSROC-Italcementi Group (Total Funded: \$70,000).
- 2013-present: Co-Investigator— Recent land cover change and its impacts on monsoon climate in the Sahel. Senate Grants for Research and Scholarship, West Virginia University (Total funded: \$24,500)
- 2012-present: Principal Investigator—Secure Our Future with Education and Training (SOFET), a correctional education program and research dissemination platform.
- 2012-present: Principal Investigator— Stand Initiation Diversity Experiment. West Virginia University Research Corporation (Total funded: \$75,000)
- 2011-2016: Principal Investigator— Mapping and Managing Central Appalachian Temperate Forest and Alaska Boreal Forest under Climate Change: Population Dynamics, Carbon, and Biodiversity. USDA MS-104 (Total Funded: \$277,610)
- 2010-2011: Principal Investigator—Geospatial forest dynamics and management of Afognak Island, Alaska. Afognak Native Corporation Grant (Total Funded: \$29,600). Trained indigenous Afognak natives to conduct inventory and management of their forested land.

**Jingjing Liang**  
*Curriculum Vitae*

- 2009-2011: Principal Investigator—Measurement and Management of Alaska Boreal Forest Under Risks. USDA ALK-09-08 (Total Funded: \$723,056). Hired and trained undergraduate students including Alaska natives to conduct forest inventory.
- 2007-2009: Principal Investigator—Forest Stand Characterization and Growth and Yield for the Alaskan Northern Forest. USDA ALK-03-12 (Total Funded: \$518,495).
- 2008-present: Principal Investigator—Spatial projection of forest growth and woody biomass yield in coastal Alaska. USDA PNW 08-JV-112619 (Total Funded: \$56,294).
- 2008-2011: Co-Investigator— Tok Community Wildfire Safety and Renewable Energy Project. State of Alaska (Total Funded: \$100,000).
- 2008: Developed Cooperative Alaska Forest Inventory, the first systematic forest inventory database of the Alaska boreal forest.

**Graduate Student Advisement**

| Student Name         | Duration     | Degree | Status      | Committee Chair |
|----------------------|--------------|--------|-------------|-----------------|
| James Watson         | 2014-present | Ph.D.  | In Progress | Y               |
| Zane Mikesell        | 2015-present | M.S.   | In Progress | Y               |
| Wu Ma                | 2012-present | Ph.D.  | In Progress | N               |
| Philip Crim          | 2013-present | Ph.D.  | In Progress | N               |
| James Watson         | 2012-2014    | M.S.   | Completed   | Y               |
| Aaron Carpenter      | 2012-2014    | M.S.   | Completed   | N               |
| Lindsay Wilson-Kokes | 2011-2013    | M.S.   | Completed   | N               |
| Randy Peterson       | 2009-2011    | M.S.   | Completed   | Y               |
| Thomas Malone        | 2007-2011    | M.S.   | Completed   | Y               |
| Brian Young          | 2008-2011    | Ph.D.  | Completed   | Y               |