Jingjing Liang
Curriculum Vitae

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Education

Ph.D. (Forestry)	University of Wisconsin-Madison, United States	2001-2005
	Focus Areas: Forest ecology, biodiversity	
B.S. (Environ. Sci.)	Peking University, China	1997-2001
	Focus Area: Ecology	

Professional Experience

2022 – present	Associate Professor of Quantitative Forest Ecology (Tenured), Department of Forestry and Natural Resources, Purdue University
2018 – 2022	Assistant Professor of Quantitative Forest Ecology (Tenure track), Department of Forestry and Natural Resources, Purdue University
2017– present:	Professeur associé, Université du Québec à Montréal, Canada
2017– present:	Associate member, Centre d'étude de la forêt (CEF), Canada
2017– 2018:	Associate Professor of Forest Ecology (Tenured), School of Natural Resources, West Virginia University
2011–2017:	Assistant Professor of Forest Ecology (Tenure track), School of Natural Resources, West Virginia University
2007–2011:	Assistant Professor of Forest Biometrics and Management (Tenure track) School of Natural Resources and Agricultural Sciences, University of Alaska Fairbanks

Editorship

2019-present	Senior Editor,	*Scientific Data*
2018-2020	Senior Handling Editor,	*Forest Ecosystems*
2017-2019	Associate Editor,	*Scientific Data*
2011-2018	Associate Editor,	*Canadian Journal of Forest*

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

Certification

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

Recent Synergistic Activities

2022	Liang was featured in live interviews by public radio stations from Australia and South Korea, about his recent research works.
2021	As the PI, Liang has been awarded $150,000, by the World Resources Institute, to identify and map planted forests in East Asia. One additional grant is pending from the United Nations Food and Agriculture Organization (FAO).
2020-present	As the Co-PI, Liang has been awarded ~$2.5 million of external research grants, by NASA and USDA, on social-ecological systems monitoring, assessment, and evaluation.
2019-present	Liang's research collaboration with the United National Food and Agriculture Organization (FAO) on the importance of global forestry data in an era of crises has twice been featured by FAO press coverage.
2020	Lead Organizer, Workshop 17746: "Harnessing Global Forest Inventory Data in Addressing Fundamental Ecological Questions," 2020 Ecological Society of America (ESA) Annual Meeting in Salt Lake City, UT.
2018-present	Co-chair, Forest Advanced Computing and Artificial Intelligence (FACAI) Lab, Department of Forestry and Natural Resources, Purdue University.
2017	Founder, Secured *ca.* $200,000 grants to establish two Global Forest Biodiversity Initiative Hubs, in Lleida Spain and Beijing China. Three more hubs will be developed in other countries to complete the global network of five centers
2016	Developed Global Forest Biodiversity Initiative database (GFBI v.2.0), the most comprehensive global forest inventory database
2016-present	Founder and Lead Coordinator— Global Forest Biodiversity Initiative (GFBI, http://www.gfbinitiative.org/, with ~200 members from 96 countries)
2016-present	Collaborator, The global land use open data, Food and Agriculture Organization of the United Nations
2012-2014	Founder, Secure Our Future with Education and Training (SOFET), a correctional education program and research dissemination platform.

Recent Keynote and Invited Presentations

2021 (invited)	Liang was invited among the three world's top forestry researchers to present in the ENB Weekly Wednesday Webinar Series hosted by the World Banks, "The importance of sharing global forest data in a world of crises," the World Banks, Washington DC.
2020 (lead speaker)	International Virtual Conference on Biodiversity and Ecosystem Services in a Climate Change Perspective (IVC-BES), "Exploring New Landscapes in Global Forest Systems," Centre for Climate Change, Environmental Management & Policy Research Institute (EMPRI), Bangalore, India.
2020 (invited)	World Biodiversity Forum, "Mapping Global Forest Biodiversity, Productivity, and Their interaction," international research network bioDISCOVERY, and the University of Zurich Research Priority Programme Global Change and Biodiversity, Davos, Switzerland. (February 21, 2020).
2019 (invited)	Africa Security Forum 2019 "Climate Change Impact on Security in Africa." Atlantis Centre de Recherche et d'Études Géostratégiques, Morocco
2019 (keynote)	Big data sharing for the GIS community. SilviLaser 2019 Conference, Iguazu Falls, Brazil
2018 (invited)	Mapping global forest biodiversity. *Wageningen University and Research Centre,* Netherlands & Aarhus University, Denmark
2017 (keynote)	Big data in forest research. *Inaugural Global Forest Biodiversity Initiative Conference & GFBI-FECS Joint Symposium 2017*, China
2017 (keynote)	Exploring global biodiversity-forest productivity relationship using GFBI data. 2017 *Annual Conference of International Society of Forest Resource Economics (ISFRE)*. New Orleans, USA
2017 (invited)	GFBI data and structure. *Max Planck Institute for Biogeochemistry.* Germany
2017 (invited)	Biodiversity-ecosystem functioning relationship and global forest ecosystems. *Universitat de Lleida*, Spain
2017 (invited)	Stand Initiation Diversity Experiment and Biodiversity-ecosystem functioning relationship. *University of Freiburg*, Germany

Recent Media Coverage and Interviews

(2022)

- [Thousands of tree species still yet to be discovered – ABC (live interview)](#)
- [Earth has more tree species than we thought - BBC](#)
- [Thousands of Tree Species Remain Unknown to Science - Scientific American](#)
- [Global count estimates Earth has 73,000 tree species – 14% more than reported | Trees and forests | The Guardian](#)

- [There Are Thousands Of Tree Species Yet To Be Discovered, Study Finds (forbes.com)](#)
- [Planet Earth Contains Over 9,000 Tree Species Yet to Be Discovered, Scientists Say (msn.com)](#)
- [Over 9,000 Tree Species Still Waiting To Be Discovered, First Of Its Kind Survey Reveals | IFLScience](#)
- [Climate change: There are 9,200 tree species yet to be discovered, study finds - CNN](#)
- [Scientists count the world's tree species (spoiler: it's a bunch) | Reuters](#)
- [Scientists Estimate 9,000 Tree Species Are Still Unknown to Them (businessinsider.com)](#)
- [Scientists estimate 9,000 tree species are still unknown to them | Business Insider India](#)
- [Planet Earth Contains Over 9,000 Tree Species Yet to Be Discovered, Scientists Say (sciencealert.com)](#)
- [Over 9,000 rare tree species yet to be discovered, major study finds (yahoo.com)](#)
- [After counting Earth's trees, scientists say thousands more species to be discovered (brisbanetimes.com.au)](#)
- [Study estimates 73,000 tree species on Earth, including 9,200 undiscovered | Clydebank Post](#)
- [Roughly 14% more tree species exist on Earth than previously estimated | Courthouse News Service](#)
- https://www.newscientist.com/article/2306553-there-may-be-9200-more-tree-species-in-the-world-than-we-thought/

Professional Affiliations

Society of American Foresters (SAF)
Institute for Operations Research and the Management Sciences (INFORMS)
Ecological Society of America (ESA)
International Society Of Forest Resource Economics (ISFRE)
The American Association for the Advancement of Science (AAAS)

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

Publications

Overall, Liang's research activities have generated 59 peer-reviewed publications, 10 books, book chapters, and reports, and 10 conference proceedings and other publications.

The following list summarizes Liang's publications careerwide. Types of contribution to each publication are denoted by: **A**dvising a student or post-doctotal associate to conduct the research; **B**ringing about data compilation and data analyses; **C**onceiving the research question; **D**esigning the research; **E**ntirely and indepedently completing the publication. Liang contributed to the writing of all the following publications. †: graduate students or post-doctoral research fellows whom Liang has supervised in the development of an article. *: Corresponding author. Scimago journal ranking (SJR) for the year of publication and discipline are also provided, e.g. Q1 multidisciplinary. IF: impact factor for year 2018-2020.

PEER-REVIEWED JOURNAL ARTICLES (N = 59)

1. (B, C, D) **Liang, J.***, J. G. P. Gamarra, N. Picard, M. Zhou, B. Pijanowski, D. F. Jacobs, P. B. Reich, T. W. Crowther, G.-J. Nabuurs, S. de-Miguel, J. Fang, C. W. Woodall, J.-C. Svenning, T. Jucker, J.-F. Bastin, S. K. Wiser, F. Slik, B. Hérault, G. Alberti, G. Keppel, G. M. Hengeveld, P. L. Ibisch, C. A. Silva, H. ter Steege, P. L. Peri, D. A. Coomes, E. B. Searle, K. von Gadow, B. Jaroszewicz, A. O. Abbasi, M. Abegg, Y. C. A. Yao, J. Aguirre-Gutiérrez, A. M. A. Zambrano, J. Altman, E. Alvarez-Dávila, J. G. Álvarez-González, L. F. Alves, B. H. K. Amani, C. A. Amani, C. Ammer, B. A. Ilondea, C. Antón-Fernández, V. Avitabile, G. A. Aymard, A. F. Azihou, J. A. Baard, T. R. Baker, R. Balazy, M. L. Bastian, R. Batumike, M. Bauters, H. Beeckman, N. M. H. Benu, R. Bitariho, P. Boeckx, J. Bogaert, F. Bongers, O. Bouriaud, P. H. S. Brancalion, S. Brandl, F. Q. Brearley, J. Briseno-Reyes, E. N. Broadbent, H. Bruelheide, E. Bulte, A. C. Catlin, R. Cazzolla Gatti, R. G. César, H. Y. H. Chen, C. Chisholm, E. Cienciala, G. D. Colletta, J. J. Corral-Rivas, A. Cuchietti, A. Cuni-Sanchez, J. A. Dar, S. Dayanandan, T. de Haulleville, M. Decuyper, S. Delabye, G. Derroire, B. DeVries, J. Diisi, T. V. Do, J. Dolezal, A. Dourdain, G. P. Durrheim, N. L. E. Obiang, C. E. N. Ewango, T. J. Eyre, T. M. Fayle, L. F. N. Feunang, L. Finér, M. Fischer, J. Fridman, L. Frizzera, A. L. de Gasper, D. Gianelle, H. B. Glick, M. S. Gonzalez-Elizondo, L. Gorenstein, R. Habonayo, O. J. Hardy, D. J. Harris, A. Hector, A. Hemp, M. Herold, A. Hillers, W. Hubau, T. Ibanez, N. Imai, G. Imani, A. M. Jagodzinski, S. Janecek, V. K. Johannsen, C. A. Joly, B. Jumbam, B. L. P. R. Kabelong, G. A. Kahsay, V. Karminov, K. Kartawinata, J. N. Kassi, E. Kearsley, D. K. Kennard, S. Kepfer-Rojas, M. L. Khan, J. N. Kigomo, H. S. Kim, C. Klauberg, Y. Klomberg, H. Korjus, S. Kothandaraman, F. Kraxner, A. Kumar, R. Kuswandi, M. Lang, M. J. Lawes, R. V. Leite, G. Lentner, S. L. Lewis, M. B. Libalah, J. Lisingo, P. M. López-Serrano, H. Lu, N. V. Lukina, A. M. Lykke, V. Maicher, B. S. Maitner, E. Marcon, A. R. Marshall, E. H. Martin, O. Martynenko, F. M. Mbayu, M. T. E. Mbuvi, J. A. Meave, C. Merow, S. Miscicki, V. S. Moreno, A. Morera, S. A. Mukul, J. C. Müller, A. Murdjoko, M. G. Nava-Miranda, L. E. Ndive, V. J. Neldner, R. V. Nevenic, L. N. Nforbelie, M. L. Ngoh, A. E. N'Guessan, M. R. Ngugi, A. S. K. Ngute, E. N. N. Njila, M. C. Nyako, T. O. Ochuodho, J. Oleksyn, A. Paquette, E. I. Parfenova, M. Park, M. Parren, N. Parthasarathy, S. Pfautsch, O. L. Phillips, M. T. F. Piedade, D. Piotto, M. Pollastrini, L. Poorter, J. R. Poulsen, A. D. Poulsen, H. Pretzsch, M. Rodeghiero, S. G. Rolim, F. Rovero, E. Rutishauser, K. Sagheb-Talebi, P. Saikia, M. N. Sainge, C. Salas-Eljatib, A. Salis, P. Schall, D. Schepaschenko, M. Scherer-Lorenzen, B. Schmid, J. Schöngart, V. Šebeň, G. Sellan, F. Selvi, J. M. Serra-Diaz, D. Sheil, A. Z. Shvidenko, P. Sist, A. F. Souza, K. J. Štereńczak, M. J. P. Sullivan, S. Sundarapandian, M. Svoboda, M. D. Swaine, N. Targhetta, N. Tchebakova, L. A. Trethowan, R. Tropek, J. T. Mukendi, P. M. Umunay, V. A. Usoltsev, G. Vaglio

Laurin, R. Valentini, F. Valladares, F. van der Plas, D. J. Vega-Nieva, H. Verbeeck, H. Viana, A. C. Vibrans, S. A. Vieira, J. Vleminckx, C. E. Waite, H.-F. Wang, E. K. Wasingya, C. Wekesa, B. Westerlund, F. Wittmann, V. Wortel, T. Zawiła-Niedźwiecki, C. Zhang, X. Zhao, J. Zhu, X. Zhu, Z.-X. Zhu, I. C. Zo-Bi, and C. Hui. 2022. Co-limitation towards lower latitudes shapes global forest diversity gradients. *Nature ecology & evolution*: s41559-022-01831-x.

2. (A, C, D) Cazzolla Gatti, R., P. B. Reich*, J. G. P. Gamarra, T. Crowther, C. Hui, A. Morera, J.-F. Bastin, S. de-Miguel, G.-J. Nabuurs, J.-C. Svenning, J. M. Serra-Diaz, C. Merow, B. Enquist, M. Kamenetsky, J. Lee, J. Zhu, J. Fang, D. F. Jacobs, B. Pijanowski, A. Banerjee, R. A. Giaquinto, G. Alberti, A. M. Almeyda Zambrano, E. Alvarez-Davila, A. Araujo-Murakami, V. Avitabile, G. A. Aymard, R. Balazy, C. Baraloto, J. G. Barroso, M. L. Bastian, P. Birnbaum, R. Bitariho, J. Bogaert, F. Bongers, O. Bouriaud, P. H. S. Brancalion, F. Q. Brearley, E. N. Broadbent, F. Bussotti, W. Castro da Silva, R. G. César, G. Česljar, V. Chama Moscoso, H. Y. H. Chen, E. Cienciala, C. J. Clark, D. A. Coomes, S. Dayanandan, M. Decuyper, L. E. Dee, J. Del Aguila Pasquel, G. Derroire, M. N. K. Djuikouo, T. Van Do, J. Dolezal, I. Đ. Đorđević, J. Engel, T. M. Fayle, T. R. Feldpausch, J. K. Fridman, D. J. Harris, A. Hemp, G. Hengeveld, B. Herault, M. Herold, T. Ibanez, A. M. Jagodzinski, B. Jaroszewicz, K. J. Jeffery, V. K. Johannsen, T. Jucker, A. Kangur, V. N. Karminov, K. Kartawinata, D. K. Kennard, S. Kepfer-Rojas, G. Keppel, M. L. Khan, P. K. Khare, T. J. Kileen, H. S. Kim, H. Korjus, A. Kumar, A. Kumar, D. Laarmann, N. Labrière, M. Lang, S. L. Lewis, N. Lukina, B. S. Maitner, Y. Malhi, A. R. Marshall, O. V. Martynenko, A. L. Monteagudo Mendoza, P. V. Ontikov, E. Ortiz-Malavasi, N. C. Pallqui Camacho, A. Paquette, M. Park, N. Parthasarathy, P. L. Peri, P. Petronelli, S. Pfautsch, O. L. Phillips, N. Picard, D. Piotto, L. Poorter, J. R. Poulsen, H. Pretzsch, H. Ramírez-Angulo, Z. Restrepo Correa, M. Rodeghiero, R. D. P. Rojas Gonzáles, S. G. Rolim, F. Rovero, E. Rutishauser, P. Saikia, C. Salas-Eljatib, D. Schepaschenko, M. Scherer-Lorenzen, V. Šebeň, M. Silveira, F. Slik, B. Sonké, A. F. Souza, K. J. Stereńczak, M. Svoboda, H. Taedoumg, N. Tchebakova, J. Terborgh, E. Tikhonova, A. Torres-Lezama, F. van der Plas, R. Vásquez, H. Viana, A. C. Vibrans, E. Vilanova, V. A. Vos, H.-F. Wang, B. Westerlund, L. J. T. White, S. K. Wiser, T. Zawiła-Niedźwiecki, L. Zemagho, Z.-X. Zhu, I. C. Zo-Bi, and **J. Liang***. 2022. The number of tree species on Earth. *Proceedings of the National Academy of Sciences* **119**:e2115329119. (IF: 9.41, Q1 multidisciplinary, Contribution Type: A, C, D)

3. Santoro, M., O. Cartus, U. Wegmüller, S. Besnard, N. Carvalhais, A. Araza, M. Herold, J. **Liang, J**. Cavlovic, and M. E. Engdahl. 2022. Global estimation of above-ground biomass from spaceborne C-band scatterometer observations aided by LiDAR metrics of vegetation structure. *Remote Sensing of Environment* 279:113114. (IF: 10.16, Q1 remote sensing, Contribution Type: B)

4. Araza, A., S. de Bruin, M. Herold, S. Quegan, N. Labriere, P. Rodriguez-Veiga, V. Avitabile, M. Santoro, E. T. A. Mitchard, C. M. Ryan, O. L. Phillips, S. Willcock, H. Verbeeck, J. Carreiras, L. Hein, M.-J. Schelhaas, A. M. Pacheco-Pascagaza, P. da Conceição Bispo, G. V. Laurin, G. Vieilledent, F. Slik, A. Wijaya, S. L. Lewis, A. Morel, **J. Liang**, H. Sukhdeo, D. Schepaschenko, J. Cavlovic, H. Gilani, and R. Lucas. 2022. A comprehensive framework for assessing the accuracy and uncertainty of global above-ground biomass maps. *Remote Sensing of Environment* 272:112917. (IF: 10.16, Q1 remote sensing, Contribution Type: B)

5. Leite, R. V., C. A. Silva, E. N. Broadbent, C. H. d. Amaral, V. Liesenberg, D. R. A. d. Almeida, M. Mohan, S. Godinho, A. Cardil, C. Hamamura, B. L. d. Faria, P. H. S.

Brancalion, A. Hirsch, G. E. Marcatti, A. P. Dalla Corte, A. M. A. Zambrano, M. B. T. d. Costa, E. A. T. Matricardi, A. L. d. Silva, L. R. R. Y. Goya, R. Valbuena, B. A. F. d. Mendonça, C. H. L. Silva Junior, L. E. O. C. Aragão, M. García, **J. Liang**, T. Merrick, A. T. Hudak, J. Xiao, S. Hancock, L. Duncason, M. P. Ferreira, D. Valle, S. Saatchi, and C. Klauberg. 2022. Large scale multi-layer fuel load characterization in tropical savanna using GEDI spaceborne lidar data. *Remote Sensing of Environment* 268:112764. (IF: 10.16, Q1 remote sensing, Contribution Type: B)

6. Santoro, M., O. Cartus, N. Carvalhais, D. M. A. Rozendaal, V. Avitabile, A. Araza, S. de Bruin, M. Herold, S. Quegan, P. Rodríguez-Veiga, H. Balzter, J. Carreiras, D. Schepaschenko, M. Korets, M. Shimada, T. Itoh, Á. Moreno Martínez, J. Cavlovic, R. Cazzolla Gatti, P. da Conceição Bispo, N. Dewnath, N. Labrière, **J. Liang**, J. Lindsell, E. T. A. Mitchard, A. Morel, A. M. Pacheco Pascagaza, C. M. Ryan, F. Slik, G. Vaglio Laurin, H. Verbeeck, A. Wijaya, and S. Willcock. 2021. The global forest above-ground biomass pool for 2010 estimated from high-resolution satellite observations. *Earth Syst. Sci. Data* 13:3927-3950. (IF: 11.33, Q1 Earth and Planetary Sciences, Contribution Type: B)

7. da Costa, M. B. T., C. A. Silva, E. N. Broadbent, R. V. Leite, M. Mohan, V. Liesenberg, J. Stoddart, C. H. do Amaral, D. R. A. de Almeida, A. L. da Silva, L. R. Ré Y. Goya, V. A. Cordeiro, F. Rex, A. Hirsch, G. E. Marcatti, A. Cardil, B. A. F. de Mendonça, C. Hamamura, A. P. D. Corte, E. A. T. Matricardi, A. T. Hudak, A. M. A. Zambrano, R. Valbuena, B. L. de Faria, C. H. L. Silva Junior, L. Aragao, M. E. Ferreira, **J. Liang**, S. d. P. C. Carvalho, and C. Klauberg. 2021. Beyond trees: Mapping total aboveground biomass density in the Brazilian savanna using high-density UAV-lidar data. *Forest Ecology and Management* 491:119155. (IF: 3.13, Q1 Forestry, Contribution Type: B)

8. Luo, W., Zhang, C.*, Zhao, X., **Liang, J.*** 2021. Understanding patterns and potential drivers of forest diversity in northeastern China using machine-learning algorithms. *Journal of Vegetation Science* 32(2): e13022 (IF: 2.70, Q1 Ecology, Contribution Type: A, B, C, D)

9. Morera, A., Bonet, J. A., **Liang, J.**, & de-Miguel, S. 2021. Performance of Statistical and Machine Learning-Based Methods for Predicting Biogeographical Patterns of Fungal Productivity in Forest Ecosystems. *Forest Ecosystems* 8 (1), 1-14. (IF: 1.93, Q1 Forestry, Contribution Type: B)

10. Hao, M., von Gadow, K., Alavi, S.J., Álvarez-González, J.G., Baluarte-Vásquez, J.R., Corral-Rivas, J., Hui, G., Korol, M., Kumar, R. & **Liang, J.** 2021. A classification of woody communities based on biological dissimilarity. Applied Vegetation Science 24: e12565. A classification of woody communities based on biological dissimilarity. *Applied Vegetation Science* 24:e12565. (IF: 2.57, Q1 Ecology, Contribution Type: B)

11. Wang, Y., Ma, W., Farlee, L., Jackson, L., Shao, G., Ochuodho, T., **Liang, J.**, and Zhou, M. 2021. A spatiotemporal analysis on the economic benefits of hardwood management in Indiana. *Forest Science* 67 (3): 297-311. (IF: 1.69, Q2 Ecology, Contribution Type: B)

12. **Liang, J.***, and J. G. P. Gamarra. 2020. The importance of sharing global forest data in a world of crises. *Scientific Data* **7**:424. (IF: 5.54, Q1 Computer Science, Contribution Type: B, C, D)

13. Luo, W.†, H. S. Kim, X. Zhao, D. Ryu, I. Jung, H. Cho, N. Harris, S. Ghosh, C. Zhang, and **Liang, J.***. 2020. New forest biomass carbon stock estimates in Northeast Asia based on multisource data. *Global Change Biology* 26(12): 7045-7066. doi: 10.1111/gcb.15376. (IF: 8.56, Q1 Ecology, Contribution Type: A, B, C, D)

14. Adrián, C., d.-M. Sergio, S. Carlos Alberto, B. R. Peter, E. C. David, H. S. B. Pedro, C. V. Alexander, G. P. G. Javier, Z. Mo, C. P. Bryan, H. Cang, W. C. Thomas, H. Bruno, P. Daniel, S.-E. Christian, B. Eben, M. A. Z. Angelica, P. Nicolas, E. O. C. A. Luiz, B. Jean-Francois, R. Devin, H. Johan van den, L. P. Pablo, and **Liang, J.***. 2020. Recent deforestation drove the spike in Amazonian fires. *Environmental Research Letters* **15:** 121003. (IF: 6.19, Q1 Environmental Science, Contribution Type: B, C, D)

15. Brancalion, P. H. S., E. N. Broadbent, S. de-Miguel, A. Cardil, M. R. Rosa, C. T. Almeida, D. R. A. Almeida, S. Chakravarty, M. Zhou, J. G. P. Gamarra, **Liang, J.**, R. Crouzeilles, B. Hérault, L. E. O. C. Aragão, C. A. Silva, and A. M. Almeyda-Zambrano. 2020. Emerging threats linking tropical deforestation and the COVID-19 pandemic. *Perspectives in Ecology and Conservation* 18(4): 243-246. doi: 10.1016/j.pecon.2020.09.006. (IF: 3.56, Q1 Ecology, Contribution Type: B, C)

16. Zohner, C. M., L. Mo, S. S. Renner, J.-C. Svenning, Y. Vitasse, B. M. Benito, A. Ordonez, F. Baumgarten, J.-F. Bastin, V. Sebald, P. B. Reich, **Liang, J.**, etc. 2020. Late-spring frost risk between 1959 and 2017 decreased in North America but increased in Europe and Asia. *Proceedings of the National Academy of Sciences* **117**:12192-12200. (IF: 9.41, Q1 multidisciplinary, Contribution Type: B)

17. Marshall, A. R., P. J. Platts, R. L. Chazdon, H. Seki, M. J. Campbell, O. L. Phillips, R. E. Gereau, R. Marchant, **Liang, J.**, and J. Herbohn. 2020. Conceptualising the global forest response to liana proliferation. *Frontiers in Forests and Global Change* **3**:35. (Contribution Type: B, IF and SJR ranking not yet available since this is a new journal)

18. W Ma[†], G. Lin, and **Liang, J.***. 2020. Estimating dynamics of central hardwood forests using random forests. *Ecological Modelling* 419-1:108947. (IF: 2.36, Q2 Ecological Modelling, Contribution Type: A, B, C, D)

19. Tang, X., X. Pei, N. Lei, X. Luo, L. Liu, L. Shi, G. Chen, and **Liang, J.**. 2020. Global patterns of soil autotrophic respiration and its relation to climate, soil and vegetation characteristics. *Geoderma* 369:114339. (IF: 4.85, Q1 Soil Science, Contribution Type: B)

20. (co-first author) Steidinger, BS, TW Crowther, **Liang, J.**, M. E. Van Nuland, G. D. A. Werner, P. B. Reich, G. J. Nabuurs, S. de-Miguel, M. Zhou, N. Picard, and GFBI consortium. 2019. Climatic controls of decomposition drive the global biogeography of forest-tree symbioses. *Nature* 569:404-408. (IF: 42.78, Q1 multidisciplinary, Contribution Type: B, D)
    FEATURED ON NATURE COVER ON MAY 19, 2019.

21. (co-first author) W Luo[†], **Liang, J.**, R. Cazzolla Gatti[†], X. Zhao, and C. Zhang. 2019. Parameterization of biodiversity–productivity relationship and its scale dependency using georeferenced tree-level data. *Journal of Ecology* 107(3): 1106-1119. (IF: 5.76, Q1 ecology, Contribution Type: A, B, C, D)

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24. R Cazzolla Gatti[†], Callaghan, T., Velichevskaya, A., Dudko, A., Fabbio, L., Battipaglia, G. and **Liang, J.**, 2019. Accelerating upward treeline shift in the Altai Mountains under last-

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33. Barrett, C. B., M. Zhou, P. B. Reich, T. W. Crowther, and **Liang, J.***. 2016. Forest value: More than commercial—Response. *Science* 354:1541-1542. (IF: 41.85, Q1 multidisciplinary, Contribution Type: B, C, D, E)

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36. **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. (IF: 9.41, Q1 multidisciplinary, Contribution Type: B, C, D)

37. JV Watson[†], **Liang, J.**, Tobin, Patrick C., Lei, Xiangdong, Rench, 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*. (IF: 1.93, Q1 forestry, Contribution Type: A, B, C, D)

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39. 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. (IF: 2.74, Q1 agriculture and biological sciences, Contribution Type: B, D)

40. **Liang, J.*,** Zhou, M. 2014. Large-Scale Geospatial Mapping of Forest Carbon Dynamics. *Journal of Sustainable Forestry* 33：S104-S122. (IF: 1.44, Q2 forestry, Contribution Type: B, C, D)

41. RL Peterson[†], **Liang, J**.*, Barrett, T.M. 2014. Modeling Population Dynamics and Woody Biomass in Alaska Coastal Forest. *Forest Science* 60(2): 391-401(11). (IF: 1.69, Q1 forestry, Contribution Type: A, B, C, D)

42. **Liang, J.***, Picard, N. 2013. Matrix Model of Forest Dynamics: An Overview and Outlook. *Forest Science* 59(3): 359-378. (IF: 1.69, Q1 forestry, Contribution Type: B, C, D)

43. T. Malone[†], **Liang, J.**, Packee, E.C. 2013. Total and merchantable volume of white spruce in Alaska. *Western Journal of Applied Forestry* 28(2): 71-77. (IF: 0.72 in 2013, Q2 forestry, Contribution Type: A, B, C, D)

44. **Liang, J.*** 2012. Mapping large-scale forest dynamics: a geospatial approach. *Landscape Ecology* 27(8): 1091-1108. (IF: 4.51, Q1 ecology, Contribution Type: B, C, D, E) **SINGLE-AUTHORED PAPER.**

45. F.-M. Yuan, S.-H. Yi, A. D. McGuire, K.D. Johnson, **Liang, J.,** 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. (IF: 4.45, Q1 ecology, Contribution Type: B)

46. **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. (IF: 3.13, Q1 forestry, Contribution Type: B, C, D)

47. Young, B.†, **Liang, J.***, 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. (IF: 3.13, Q1 forestry, Contribution Type: A, B, C, D)

48. 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(G2), G02004, doi:10.1029/2010JG001588. (IF: 2.80, Q1 ecology, Contribution Type: B)

49. **Liang, J.***, M. Zhou. 2010. A Geospatial Model of Forest Dynamics with Controlled Trend Surface. *Ecological Modelling* 221: 2339-2352. (IF: 2.36, Q1 ecological modeling, Contribution Type: B, C, D)

50. **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. (IF: 3.13, Q1 ecology, Contribution Type: B, C, D, E)

51. T. Malone†, **Liang, J.*** 2009. A bark thickness model for white spruce in Alaska northern forests. *International Journal of Forestry Research* 2009: 876965. doi:10.1155/2009/876965. (IF: 1.04, Q2 forestry, Contribution Type: A, B, C, D)

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55. **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. (IF: 3.13, Q1 ecology, Contribution Type: B, C, D, E)

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58. **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. (IF: 1.51, Q1 forestry, Contribution Type: B, D, E)

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BOOKS AND REPORTS (N=8, ALL PEER-REVIEWED)

60. Hand, M. S., K. M. Gebert, **Liang, J.**, D. E. Calkin, M. P. Thompson, and M. Zhou. 2014. Economics of wildfire management: the development and application of suppression expenditure models. Springer, New York, NY. 67p.

61. 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

62. 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.

63. **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.

64. 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.

65. **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.

66. **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.

67. **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.

CONFERENCE PROCEEDINGS AND OTHER PUBLICATIONS (N=11)

68. **Liang, J.** (2022) We need to count every tree on the planet – here's why. NewScientist (3376) https://www.newscientist.com/article/mg25333760-100-we-need-to-count-every-tree-on-the-planet-heres-why/: March 5th 2022.

69. Pérez, J. G., R. D. Cóndor-Golec, R. Tavani, J. Fox, and **Liang, J**. 2020. Pandemic Lessons: Open Data for Forest and Climate Action. IISD SDG Knowledge Hub 20200812.

70. **Liang, J.,** de Miguel, S. 2018. Did you know? The Global Forest Biodiversity Initiative. Silva Mediterranea Issue 28 - January 2018. The Food and Agriculture Organization of the United Nations. 2pp.

71. **Liang, J.,** Watson, J.V. .2014. Is Forestry a Dying Profession? Here's What Our Students Say. *The Forestry Source* 19(3):6.

72. **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.

73. 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.

74. **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

75. **Liang, J.** 2011. Geospatial Mapping of Forest Dynamics. In: 2011 Society of American Foresters National Convention, Honolulu, HI. vol 109. *Journal of Forestry*, p. 501

76. **Liang, J.** 2010 Does tree diversity increase forest productivity? *SciTopics (Invited article)*. http://www.scitopics.com/Does_Tree_Diversity_Increase_Forest_Productivity.html

77. 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.

78. **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

Major Grants (Total grant approx. $4.5 million)

2021	Mapping Planted Forests in China using multi-source data and machine learning. World Resources Institute (PI, Total Funded: $150,000)
2020	Multi-sensor biodiversity framework developed from bioacoustic and spacebased sensor platforms. NASA (Co-PI, Total Funded: *ca* $800,000)
2020	A Retrospective Assessment of Conservation Cost Sharing's Success in Controlling Invasive Plants in Nonindustrial Private Forests. USDA NIFA (Co-PI, Total Funded: $500,000)
2020	Enhancing the Awareness, Knowledge, and Understanding of Sustainable Maple Syrup Production Practices Among Current and Potential Maple Syrup Producers, USDA. (Co-PI, Total Funded: *ca* $499,440)
2020	Economic Analysis of Growth & Yield and Thinning Decisions on Hardwood Plantations, Hardwood Tree Improvement & Regeneration Center (HTIRC), USDA Forest Service, Purdue University. (Co-PI, Total Funded: *ca* $496,468)
2019	Investigating ice storm risks in a changing climate, Purdue Climate Change Research Center (PCCRC). (Co-PI, Total Funded: *ca* $19,600)
2017	Major international conference/workshop grant. Beijing Forestry University (PI, Total Funded: *ca* $98,000)
2017	Climate change and water use: can increase diversity help protect forests? Natural Sciences and Engineering Research Council of Canada (Co-PI, PI: Alain Paquette, Total funded: $509,000)
2016	Integrating Biological Conservation into Sustainable Forestry Based on Nationwide Analysis of Productivity-Biodiversity Relationship. USDA NIFA (PI, Total Funded: $30,340).
2015	Biodiversity and Ecosystem Functioning in North American Reclaimed Lands. ESSROC-Italcementi Group (PI, Total Funded: $69,508).
2012	Stand Initiation Diversity Experiment. West Virginia University Research Corporation (PI, Total funded: $75,000)
2011	Mapping and Managing Central Appalachian Temperate Forest and Alaska Boreal Forest under Climate Change: Population Dynamics, Carbon, and Biodiversity. USDA MS-104 (PI, Total Funded: $277,610)
2010	Geospatial forest dynamics and management of Afognak Island, Alaska. Afognak Native Corporation Grant (PI, Total Funded: $29,600). Trained

indigenous Afognak natives to conduct inventory and management of their forested land.

2009	Measurement and Management of Alaska Boreal Forest Under Risks. USDA ALK-09-08 (PI, Total Funded: $723,056). Hired and trained undergraduate students including Alaska natives to conduct forest inventory.
2008	Spatial projection of forest growth and woody biomass yield in coastal Alaska. USDA PNW 08-JV-112619 (PI, Total Funded: $56,294).
2007	Forest Stand Characterization and Growth and Yield for the Alaskan Northern Forest. USDA ALK-03-12 (PI, Total Funded: $518,495).

Teaching Experience (sole-instructor, G for graduate level courses**)**

Purdue University (2018-present)
- FMAN35500 Quantitative Methods for Resource Managers (3 credits)— every spring
- FMAN59800 Big Data in Forest Research (3 credits)— every spring semester
- FMAN45500 Advanced Quantitative Methods for Resource Managers (3 credits)— every spring semester

West Virginia University (2011-2017)
- FOR205 Dendrology (lecture + 5 field lab sessions)— every fall semester
- FMAN212 Forest ecology (lecture + 2 field lab sessions) — every fall semester
- FMAN693 Big data analysis in forest ecology (G, lecture) — 2016, 2017
- 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)
- NRM693 Spatial Modeling of Forest Resources (G, lecture)
- NRM611 Research Methods in Natural Resource Management (G, lecture)

Graduate Student and post-doctoral Advisement

Liang is committed to serving as a positive role model and mentor for undergraduate students, graduate students, and post-doctoral research associates, in advising and assisting them in research and professional development. Overall, Liang has mentored 18 students and staff, including two post-doctoral research associates, 15 graduate students, and one undergraduate research student.