

Dr. Jingxin Wang, Benedum Distinguished Scholar
Davis Michael Professor of Forestry and Natural Resources
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EDUCATION

Jilin Forestry College, Jilin, CHINA	B.S.	1983	Forest/Mechanical Engineering
Northeast Forestry University, Harbin, CHINA	M.S.	1986	Forest/Mechanical Engineering
Northeast Forestry University, Harbin, CHINA	Ph.D.	1990	Forest/Mechanical Engineering
West Virginia University, Morgantown, WV	M.S.	2005	Computer Science
The University of Georgia, Athens, GA	Ph.D.	1997	Forest Resource Management

PROFESSIONAL EMPLOYMENT

2021 – Present. Director of Center for Sustainable Biomaterials & Bioenergy, West Virginia University, Morgantown, WV.

2013 – Present. Associate Director for Research. Division of Forestry and Natural Resources, West Virginia University, Morgantown, West Virginia, USA.

2011 – Present. Professor of Wood Science and Technology, Division of Forestry and Natural Resources, West Virginia University, Morgantown, WV.

2006 – 2021. Director of Renewable Materials and Bioenergy Research Center, Division of Forestry and Natural Resources, West Virginia University, Morgantown, WV.

2006 – 2013. Program Coordinator of Wood Science and Technology Program, Division of Forestry and Natural Resources, West Virginia University, Morgantown, West Virginia, USA.

2006- 2011. Associate Professor of Wood Science and Technology, Division of Forestry and Natural Resources, West Virginia University, Morgantown, WV.

2000 – 2006. Assistant Professor. Division of Forestry, West Virginia University, Morgantown, WV.

1998 – 2000. Systems Programmer/Analyst. Computer Sciences Corporation, Financial Services Group, Atlanta, Georgia.

1994 – 1998. Research Assistant/Coordinator. Warnell School of Forest Resources, The University of Georgia, Athens, Georgia.

1993 – 1994. Visiting Associate Professor. Department of Forest Resource Management, University of Helsinki, Helsinki, Finland.

1986 – 1993. Assistant and Associate Professor. Department of Forest Engineering, Northeast Forestry University, Harbin, China.

SYNERGISTIC ACTIVITIES

- Led and coordinated transdisciplinary research teams across three colleges at WVU, with collaborators from other universities, government agencies and industry partners in the region.
- Served as chair/co-chair/member in six national/international professional societies, including, SAF, FPS, ASABE, SWST, IUFRO.
- Served as an editorial board member/associate editor for four international journals such as Forest Science, Forest Ecosystems, and International J. of Forest Engineering.
- Served as PI/Co-PI for several ongoing USDA or USDOE funded projects on biomaterials and bioenergy.

HONORS AND AWARDS

- 2021, 2014, 2011, and 2005. Outstanding Researcher. The Davis College of Agriculture, Natural Resources and Design, West Virginia University, Morgantown, West Virginia.
- 2018. Outstanding Natural Resource Educator. West Virginia University School of Natural

- Resources Alumni Association. Morgantown, WV.
- 2016 The Benedum Distinguished Scholar Award. West Virginia University. Morgantown, WV.
- 2008 Bioenergy Awareness Days “Grand Challenge” Winner, the United States Department of Agriculture, Washington, DC.
- 2007 The Mid-Career Award. The Davis College of Agriculture, Forestry, and Consumer Sciences, West Virginia University, Morgantown, West Virginia.
- 2006 The Hoyt Faculty Excellence Award. The Hoyt Foundation, West Virginia University, Morgantown, West Virginia.

SELECTED GRANTS RECEIVED

1. PI, Mid-Atlantic Sustainable Biomass for Value-Added Products Consortium (MASBio). (Funded by USDA NIFA, \$10,000,000)
2. PI, Advancing forest logging residue harvesting and collection logistics in the Eastern United States. (Funded by USDA NIFA, \$1,000,000)
3. PI, Enhancing the nanostructure of the lignocellulosic cell wall as a natural template for highly-ordered mesoporous carbons. (Funded by USDA NIFA, \$496,168)
4. PI, Strengthening a wood energy team to facilitate bio-business development. (Funded by USDA Forest Service, \$250,000)
5. PI, Economic and environmental impacts of woody biomass utilization for bioenergy in the central Appalachian region. (Funded by USDA NIFA, \$350,000)
6. PI, Feasibilities of a coal-biomass to liquid fuels plant. (Funded by US DOE, \$300,000)
7. Co-PI, Developing a Regional Education Program in Sustainable Land Reclamation Management in Central Appalachia. (Funded by USDA NIFA, \$497,266)
8. Co-PI, Unique nanotechnology converts carbon dioxide to valuable products. (Funded by US DOE, \$1,000,000)
9. Co-PI (WVU PI), Improved advanced biomass logistics utilizing woody and other feedstocks in the Northeast and Pacific Northwest. (Funded by US DOE, \$3,000,000)
10. Co-PI (WVU PI), The Northeast Woody/Warm-season Biomass Consortium. (Funded by USDA NIFA, \$10,000,000)

GRADUATE STUDENTS MENTORED OR TRAINED (Total Graduate Advisees as Chair = 25)

Graduated as Chair: Dr. Yaoxiang Li, Northeast Forestry U.; Dr. Mike Vanderberg, WVU; Tony Goff, USDA FSA; Dr. Jingang Liu, Caterpillar Inc.; Greg Hamons, WVU Extension; Mark Jones, AWP International; Charlie Long, WV DNR; William Sharp, WV DNR; Dr. Jinzhuo Wu, Northeast Forestry U.; Dr. Adebola Adebayo, PA; Dr. Benktesh Sharma, Terra Global Capital, CA; Sabina Dhungana, Kansas State U.; Mike Jacobson, Marucci Wood Mill, PA; Pradip Saud, Oklahoma State U.; Dr. Wenshu Lin, NEFU. David Summerfield, ISK, GA. Dr. Damon Hartley, DOE INL, ID; Dr. Weiguo Liu, China. Dr. Zhen Yu, Iowa State U, Amy Falcon, DOE NETL; Mr. John Vance, WVU; Dr. Changle Jiang, WVU; Dr. Yuxi Wang, WVU.

Graduated as Committee Member: Wes Bailes, Michael Fiery, Lichun Jiang, Matthew, Perkowski, Shawn Grushecky, Ivan Anastasov, Liberty Moya, Jagpinder Brar, S. Kumar, Wenjia Jin, Nan Nan, Kevin Harris, Chirag Mevawala.

Current Graduates as Chair: Xufeng Zhang, Ph.D. (scheduled for 2022); Wanhe Hu, Ph.D. (scheduled for 2023); Will Smith, M.S. (scheduled for 2023).

Post-Docs Mentored: George Cheng, Auburn Univ.; Clay Altizer, NC Forestry; Rory Jara, Renmatix; Jidong Ma, NEFU; Xinfeng Xie, Michigan Tech; Kui Wang, CAF; Junmin Xu, CAF, China; Nan Nan, WVU; Chunyu Zhang, BFU, China; Nan Nan, WVU.

SELECTED RELEVANT PUBLICATIONS (over the last four years)Refereed Journal Papers

1. Bao Z, Q. Li, N. Akhmedov, M. Xing, J. **Wang**, B. Morsie B, B. Li. 2022. Innovative cycling reaction mechanisms of CO₂ absorption in amino acid salt solvents. *Chem Eng J Adv* (in press).
2. Wang, Y., **J. Wang**, X. Zhang, D. Debangsu, and E. Sabolsky. 2022. Quantifying Environmental and Economic Impacts of Highly Porous Activated Carbon from Lignocellulosic Biomass for High-Performance Supercapacitors. *Energies* 2022, 15, 351. <https://doi.org/10.3390/en15010351>.
3. Wang, Y., **J. Wang**, X. Zhang, D. Debangsu, and E. Sabolsky. 2022. Quantifying Environmental and Economic Impacts of Highly Porous Activated Carbon from Lignocellulosic Biomass for High-Performance Supercapacitors. *Energies* 2022, 15, 351. <https://doi.org/10.3390/en15010351>.
4. Wickramasinghe, S., **J. Wang**, B. Morsi, and B. Li. 2021. Carbon Dioxide Conversion to Nanomaterials: Methods, Applications, and Challenges. *Energy & Fuels*. <https://pubs.acs.org/action/showCitFormats?doi=10.1021/acs.energyfuels.1c01533&ref=pdf>. Impact Factor 3.605
5. Huang, X., S. Liu, Y. You, **J. Wang**, Y. Wen, W. Shen, X. Tan, and G. Dahle. 2021. Different mechanisms underlying the divergent responses of soil respiration components to an introduction of N₂-fixer tree species into Eucalyptus plantations. *Agricultural and Forestry Meteorology*. <https://doi.org/10.1016/j.agrformet.2021.108536>. Impact Factor 5.794
6. Yang, Y. S. Liu, A. Schindlbacher, **J. Wang**, Z. Li. H. Wang, A. Ming, L Lu, and Z. Li. 2021. Topsoil organic carbon increases but its stability declines after five years of reduced throughfall. *Soil Biology and Biochemistry*. 156(2021) 108221. <https://doi.org/10.1016/j.soilbio.2021.108221>. Impact Factor 7.17
7. Wang, Y., **J. Wang**, X. Zhang, and S. Grushecky. 2020. Environmental and Economic Assessments and Uncertainties of Multiple Lignocellulosic Biomass Utilization for Bioenergy Products: Case Studies. *Energies* 2020, 13, 6277; doi:10.3390/en13236277. Impact Factor 3.004
8. Zhang, X., S. Liu, **J. Wang**, Y. Huang, Z. Freedman. S. Fu, K, Liu, J. Wang, X. Li, M. Yao, X. Liu, and J. Schuler. 2020. Local community assembly mechanisms shape soil bacterial β -diversity patterns along a latitudinal gradient. *Nature Communications*. (2020) 11:5428 | <https://doi.org/10.1038/s41467-020-19228-4> | www.nature.com/naturecommunications. Impact Factor 14.92
9. Yakaboylu, G., T. Yumak, C. Jiang, J. Zondlo, **J. Wang**, E. Sabolsky. 2020. Engineered hierarchical porous carbons for supercapacitor applications through chemical pretreatment and activation of biomass precursors. *Renewable Energy*. 163(2021)276-287. <https://doi.org/10.1016/j.renene.2020.08.092>. Impact Factor 8.001
10. Wang, Y., **J. Wang**, J. Schuler, D. Hartley, T. Volk, and M. Eisenbies. 2020. Optimization of harvest and logistics for multiple lignocellulosic biomass feedstocks in the Northeastern United States. *Energy*. <https://doi.org/10.1016/j.energy.2020.117260>. Impact Factor 5.537
11. Zhang, X., **J. Wang**, J. Vance, Y. Wang, J. Wu, and D. Hartley. 2020. Data analytics for enhancement of forest and biomass supply chain management. *Current Forestry Reports*. DOI 10.1007/s40725-020-00111-w. Impact Factor 3.951

12. Jiang, C., G. Yayaboğlu, T. Yumak, J. Zondlo, E. Sabolsky, and **J. Wang**. 2020. Activated carbons prepared by indirect and direct CO₂ activation of lignocellulosic biomass for supercapacitor electrodes. *Renewable Energy*. 155(2020) 38-52.
<https://doi.org/10.1016/j.renene.2020.03.111> Impact Factor 5.439
13. Poudel, R., A. Collins, K. Gazal, and **J. Wang**. 2020. Benefit transfer estimation of willingness-to-pay for U.S. wetlands conversion. *Forest Policy and Economics*. 115 (2020).
<https://doi.org/10.1016/j.forpol.2020.102157>. Impact Factor 3.099
14. Hao, J., X. Wu, G. Gloria, **J. Wang**, and G. Dahle. 2020. Compression Properties and Its Prediction of Wood-Based Sandwich Panels with a Novel Taiji Honeycomb Core. *Forests* **2020**, 11, 886; doi:10.3390/f11080886. Impact Factor 2.116
15. Luan, J., S. Liu, S. Li, J. Whalen, Y. Wang, **J. Wang**, Y. Liu, W. Dong, and S. Chang. 2020. Functional diversity of decomposers modulates litter decomposition affected by plant invasion along a climate gradient. *J. of Ecology*. 2020;00:1-14. DOI: 10.1111/1365-2745.13548. Impact Factor 5.76
16. Hao, J., X. Wu, G. Gloria, W. Liu, and **J. Wang**. 2020. Structural analysis and strength-to-weight optimization of wood-based sandwich composite with honeycomb core under three-point flexural test. *European J. of Wood and Wood Products*.
<https://doi.org/10.1007/s00107-020-01574-1>.
17. Wang, Y., J. Luan, S. Liu, S. Chang, and **J. Wang**. 2019. Microbe-mediated attenuation of soil respiration in response to soil warming in a temperate oak forest. *Science of the Total Environment*. DOI: [10.1016/j.scitotenv.2019.134563](https://doi.org/10.1016/j.scitotenv.2019.134563).
18. Mi, B., **J. Wang**, H. Xiang, F. Liang, J. Yang, Z. Feng, T. Zhang, W. Hu, X. Liu, Z. Liu, B. Fei. 2019. Nitrogen self-doped activated carbons derived from bamboo shoots as a superior adsorbent for methylene blue. *Molecules*. 24(16): 3012. doi: [10.3390/molecules24163012](https://doi.org/10.3390/molecules24163012).
19. Yakaboğlu, G., T. Yumak, C. Jiang, J. Zondlo, **J. Wang**, E. Sabolsky. 2019. Preparation of highly porous carbon through slow oxidative torrefaction, pyrolysis and chemical activation of lignocellulosic biomass for high performance supercapacitors. *Energy & Fuels*. DOI: 10.1021/acs.energyfuels.9b01260.
20. Nan, N. and **J. Wang**. 2019. FIB-SEM Three-dimensional Tomography for Characterization of Carbon-based Materials. *Advances in Materials Science and Engineering*.
<https://doi.org/10.1155/2019/8680715>.
21. Wang, H. S. Liu, X. Zhang, A. Ming, and **J. Wang**. 2019. Introducing nitrogen-fixing tree species and mixing with *Pinus massoniana* alters and evenly distributes various chemical compositions of soil organic carbon in a planted forest in southern China. *Forest Ecology and Management*. <https://doi.org/10.1016/j.foreco.2019.117477>.
22. Ma, Y., **J. Wang**, W. Tan, J. Jiang, J. Xu, and K. Wang. 2019. Directional liquefaction of lignocellulosic biomass for value added monosaccharides and aromatic compounds. *Industrial Crops & Products*. 135(2019): 251-259.
<https://doi.org/10.1016/j.indcrop.2019.04.038>. Impact Factor 3.849
23. Wang, H., S. Liu, A. Schindlbacher, and **J. Wang**. 2019. Experimental warming reduced topsoil carbon content and increased soil bacterial diversity in a subtropical planted forest. *Soil Biology and Biochemistry*. 133(2019) 155-164.
<https://doi.org/10.1016/j.soilbio.2019.03.004>. Impact Factor 4.926
24. Yang, B., B. Lv, N. Wang, S. Liu, Y. Zhou, J. Schuler, Q. Hao, and **J. Wang**. 2018. Why *Vatica mangachapoi* shows stronger capability of natural regeneration in the coastal barren sandy soil-seed rain dynamic? *ASIA LIFE SCIENCES* 27(2): 263-275, 2018.
25. Hao, J., X. Wu, G. Gloria, **J. Wang**, G. Dahle, N. Nan. 2018. Deformation and Failure Behavior of Wooden Sandwich Composites with Taiji Honeycomb Core Under a Three-Point Bending Test. *Materials* 2018, 11, 2325; doi:10.3390/ma11112325.
26. Yu, Z., S. Liu, **J. Wang**, X. Wei, J. Schuler, P. Sun, R. Harper, N. Zegre. 2018. Natural forests exhibit higher carbon sequestration and lower water consumption than planted forests

- in China. *Global Change Biology*. 2018;00:1–10. <https://doi.org/10.1111/gcb.14484>. **Impact Factor 8.997**
27. Wang, H., S. Liu, X. Zhang, Q. Mao, X. Li, Y. You, **J. Wang**, M. Zheng, W. Zhang, X. Lu, J. Mo. 2018. Nitrogen addition reduces soil bacterial richness while phosphorus addition alters community composition in a N-rich tropical forest. *Soil Biology & Biochemistry*. 127 (2018) 22-30. <https://doi.org/10.1016/j.soilbio.2018.08.022>
 28. Luan, J., S. Liu, **J. Wang**, S. Chang, X. Liu, H. Lu, and Y. Wang. 2018. Tree species diversity promotes soil carbon stability by depressing the temperature sensitivity of soil respiration in temperate forests. *Science of the Total Environment*. 645 (2018) 623-629. <https://doi.org/10.1016/j.scitotenv.2018.07.036>
 29. Zhang, X., S. Liu, Y. Huang, S. Fu, **J. Wang**, A. Ming, X. Li, M Yao, and H. Li. 2018. Tree species mixture inhibits soil organic carbon mineralization accompanied by decreased r-selected bacteria. *Plant Soil*. <https://doi.org/10.1007/s11104-018-3755-x>
 30. Mi, B., X. Chen., C. Jiang, **J. Wang**. 2018. Nitrogen-doped porous carbon derived from bamboo shoot as solid base catalyst for knoevenagel condensation and transesterification reactions. *Catalysts* **2018**, 8, 232; doi:10.3390/catal8060232.
 31. Wang, H., S. Liu, and **J. Wang**. 2018. Mixed-species plantation with *Pinus massoniana* and *Castanopsis hystrix* accelerates C loss in recalcitrant coniferous litter but slows C loss in labile broadleaf litter in southern China. *Forest Ecology and Management*. <https://doi.org/10.1016/j.foreco.2018.04.024>
 32. Liang, X., S. Liu, H. Wang, and **J. Wang**. 2018. Variation of carbon and nitrogen stoichiometry along a chronosequence of natural temperate forest in northeastern China. *Journal of Plant Ecology*. 11(3): 339-350. doi: 10.1093/jpe/rtx008
 33. Wu, J., L. Kong, **J. Wang**, and X. Dong. 2018. Nutrient Cycling and Biomass Flows for a Low-quality Forest Stand Improvement System in the Lesser Khingan Range of China. *Journal of Sustainable Forestry*. 10.1080/10549811.2018.1440245.

Book and Book Chapter

1. DeVallance, D., Wang T., Xie X., **Wang J.** 2020. Advancements in Thermochemical Modification of Wood for Bioenergy and Biomaterial Applications. In: Mitra M., Nagchaudhuri A. (eds) *Practices and Perspectives in Sustainable Bioenergy*. Green Energy and Technology. Springer, New Delhi. DOI: https://doi.org/10.1007/978-81-322-3965-9_10.
2. **Wang, J.** 2018. *Introduction to Computing Applications in Forestry and Natural Resource Management*. CRC Press Taylor & Francis Group. Boca Raton, Florida, USA. 378 pp