Peter W. Tittmann, Ph.D.

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Academic Appointments

Academic Coordinator, Center for Forestry, University of California, Berkeley (2012 – present)

Academic Coordinator, Energy Biosciences Institute, University of California, Berkeley (2013-2015)

Postdoctoral Scholar, Energy Institute, University of California, Davis (2011 – 2015)

Education

B.A. Environmental Studies, University of California, Santa Cruz, 1999

Advanced study: University of California Education Abroad Program in Tropical Agroecology. Costa Rica, Spring 1998

Ph.D. Geography, University of California, Davis, June 9, 2011

Dissertation Aerial laser scanning: Applications for forest biomass management

Major Professor: Deborah Elliott-Fisk.

Committee: Bruce Hartsough, Susan Ustin, and Bryan Jenkins.

Extended Study: Business Development Certificate, Graduate School of Management, University of California, Davis

Honors, Awards, & Fellowships

Graduate Research Fellowship, University of California Space Institute, (2008)

Business Integration Grant, Zell-Lurie Center for Entrepreneurship, University of Michigan, Ann Arbor, (2008)

G. Chris Anderson Award, Cleantech Venture Challenge, Leeds School of Business, University of Colorado, (2008)

Laura Perott-Mahan Graduate Fellowship, University of California, Davis (2007)

Grant Support

California Energy Commission, Electric Program Investment Charge – "Cleaner Air, Cleaner Energy: Converting Forest Fire Management Waste to On Demand Renewable Energy" – $1.99M

Collaborator USDA-NIFA Advanced Hardwoods Biofuels Northwest, CAP – $40M 2011

California Energy Commission – Sustanability of forest based biofuels – $250,000 2011

Dissertation fellowship, UC Davis Sustainable Transportation Research Center, (2009)

Chevron Corp. Renewable Energy Research Grant, (2008)

Teaching and Research Fields

Geography, Quantitative Geography, Geographic Information Sciences, Remote Sensing, Forest Engineering, Life-cycle analysis.

Publications

2016	Li, Y., **Tittmann, P.**, Parker, N., and Jenkins, B. (2016). Economic impact of combined torrefaction and pelletization processes on forestry biomass supply. *GCB Bioenergy*
2015	**Tittmann, P.** (2015). The wood in the forest: Why california needs to reexamine the role of biomass in climate policy. *California Agriculture*, 69(3):133–137
	Hart, Q., **Tittmann, P.**, Bandaru, V., and Jenkins, B. (2015). Modeling poplar growth as a short rotation woody crop for biofuels in the pacific northwest. *Biomass and Bioenergy*
	Bandaru, V., Parker, N., Hart, Q., Jenner, M., Yeo, B., Crawford, J., Li, Y., **Tittmann, P.**, Rogers, L., Kaffka, S., and Jenkins, B. (2015). Economic sustainability modeling provides decision support for assessing hybrid poplar-based biofuel development in california. *California Agriculture*, 69(3):171–176
2013	**Tittmann, P.** and Yeh, S. (2013). A framework for assessing the lifecycle greenhouse gas benefits of forest bioenergy and biofuel in an era of forest carbon management. *Journal of Sustainable Forestry*, 32(1-2):108–129
2012	Mayhead, G. and **Tittmann, P.** (2012). Uncertain future for california's biomass power plants. *California Agriculture*, 66(1):6
2010	**Tittmann, P.**, Parker, N., Hart, Q., and Jenkins, B. (2010a). A spatially explicit techno-economic model of bioenergy and biofuels production in california. *Journal of Transport Geography*, 18(6):715–728
2009	Jenkins, B. M., Williams, R., Parker, N., **Tittmann, P.**, Hart, Q., Gildart, M., Kaffka, S., Hartsough, B., and Dempster, P. (2009). Sustainable use of california biomass resources can help meet state and national bioenergy targets. *California Agriculture*, 63(4):168–177
2008	Parker, N., **Tittmann, P.**, Hart, Q., Nelson, R., Skog, K., Schmidt, A., Gray, E., Jenkins, B., Nelson, R., Schmidt, A., Gordon, G., and Gray, E. (2008b). Development of an optimized biofuel supply curve for the western united states. *Biomass and Bioenergy*, 34(11):1597–1607

Dissertation

2011 **Tittmann, P.** (2011). *Aerial laser scanning: Applications for forest biomass management*. PhD thesis, University of California, Davis

Book Chapters

2011 Yeh, S., Delucchi, M. A., Kendall, A., Witcover, J., **Tittmann, P.**, and Winford, E. (2011). Key measurement uncertainties for biofuel policy. In Ogden, J. and Anderson, L., editors, *Sustainable Transportation Energy Pathways: A Research Summary for Decision Makers*, chapter 12, pages 263–77. Institute for Transportation Studies, Davis, 1 edition

Conference Proceedings

2016 Satomi, R., **Tittmann, P.**, and Potts, M. (2016). Mechanized forest fuel treatments: Analyzing machine efficiency at the landscape scale. In *Proceedings of the 39th Council on Forest Engineering Annual Meeting*, Vancouver. Council on Forest Engineering

Shelly, J. and **Tittmann, P.** (2016). Wood properties of sequoia sempervirens grown in new zealand and californiano title. In Standiford, R. and Valachovic, Y., editors, *2016 Coast Redwood Science Symposium*, Eureka. University of California, Agriculture and Natural Resources

2014 Simons, L., He, S., **Tittmann, P.**, and Amenta, N. (2014). Point-based rendering of forest lidar. In Kolditz, O., Rink, K., and Scheuermann, G., editors, *Proceedings of EnvirVis 2014*, pages 19–23, Swansea, UK. Eurographics Association

2013 Shah, Z., He, S., **Tittmann, P.**, and Amenta, N. (2013). Analysis of airborne laser scanning data with regional shape descriptors. In *13th International Conference on LiDAR Applications for Assessing Forest Ecosystems*, Beijing

Tittmann, P., Hart, Q., Murphy, C., and Jenkins, B. (2013). Heuristic approach to biorefinery location analysis in the us pacific northwest. In *Association of American Geographers Annual Meeting*, Los Angeles, CA

2011 **Tittmann, P.**, Shafii, S., Hartsough, B., and Hamman, B. (2011). Tree detection, delineation, and measurement from lidar point clouds using ransac. In et al. Hirata, Y., editor, *Proceedings of Eleventh International Conference on LiDAR Applications for Assessing Forest Ecosystems* (*SilviLaser 2011*), Hobart

2010 Hartsough, B., Dempster, P., Gallo, N., Jenkins, B., and **Tittmann, P.** (2010). Potential improvements to equipment and processes for harvesting forest biomass for energy. In *Proceedings of the 33d Council on Forest Engineering Annual Meeting*, Auburn. Council on Forest Engineering

Tittmann, P., Yeh, S., and Hartsough, B. (2010b). Spatially explicit life-cycle analysis of forest based bioenergy in california. In Hapeman, C., editor, *239th National Meeting and Exposition, Advances in Biofuels and Bioproducts: Life Cycle Analysis and Sustainability Symposium*, San Francisco

2009 Searcy, E., Muth, D., Wilkerson, E., Sokansanj, S., Jenkins, B., **Tittmann, P.**, Parker, N., Hart, Q., and Nelson, R. (2009). Sustainable biomass supply systems. In *American Institute of Chemical Engineers Spring National Meeting*, Tampa. American Institute of Chemical Engineers

2008 Skog, K. E., Rummer, R., Jenkins, B., Parker, N., **Tittmann, P.**, Hart, Q., Nelson, R., Gray, E., Schmidt, A., Patton-Mallory, M., and Others (2008). A strategic assessment of biofuels development in the western states. In McWilliams, W., Moisen, G., and Czaplewski, R., editors, *Forest Inventory and Analysis Symposium*, page 13, Park City, UT. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station

Tittmann, P., Parker, N., Hart, Q., Lay, M., and Jenkins, B. (2008b). Spatially explicit optimization of biofuels production in the western united states: a hybrid mixed integer linear programming and geographic information systems (gis) approach. In *Association of American Geographers Annual Meeting*, Boston. Association of American Geographers

Patton-Mallory, M., Nelson, R., Skog, K., Jenkins, B., Parker, N., **Tittmann, P.**, Hart, Q., Gray, E., Schmidt, A., and Gordon, G. (2008). Strategic assessment of biofuels potential for the western u.s. In Zalesny, Ronald S., Jr.; Mitchell, Rob; Richardson, J., editor, *Biofuels, bioenergy, and bioproducts from sustainable agricultural and forest crops: proceedings of the short rotation crops international conference*, Newtown Square, PA. U.S. Department of Agriculture, Forest Service, Northern Research Station

Technical Reports

2015 **Tittmann, P.**, Saatchi, S., and Sharma, B. (2015). Vcs: Tool for measuring aboveground live forest biomass using remote sensing. Technical report, Terra Global Capital, San Francisco

2010 Parker, N., Hart, Q., **Tittmann, P.**, Murphy, C., Lay, M., K.Skog, Nelson, R., Schmidt, A., Gray, E., and Jenkins, B. (2010). National biorefinery siting model: Spatial analysis and supply curve development. Technical report, US Department of Energy, Davis

2008 Dempster, P., Gallo, N., Hartsough, B., Jenkins, B., and **Tittmann, P.** (2008). Biomass harvesting equipment and conversion technology review. Technical report, California Biomass Collaborative, Davis

Tittmann, P., Parker, N., and Ogden, J. (2008c). California biomass supply potential. Technical report, U.C. Davis Sustainable Transportation Energy Pathways, Davis

Parker, N., **Tittmann, P.**, Hart, Q., and Jenkins, B. (2008a). Strategic assessment of bioenergy development in the west: Spatial analysis and supply curve development. Technical report, Western Governors' Association, Denver

Tittmann, P., Parker, N., Hart, Q., Lay, M., and Jenkins, B. (2008a). Eonomic potential of california biomass resources for energy and biofuel. Technical report, California Energy Commission

Working Papers

2016 Shelly, J., **Tittmann, P.**, and Mohammadi, S. (2016). Woody biomass: What is it – what do we do with it?

Snell, R., Mayhead, G., **Tittmann, P.**, Mohammadi, S., and Shelly, J. R. (2016). Woody biomass fact sheet: Densified wood fuels

Mayhead, G., **Tittmann, P.**, Mohammadi, S., and Shelly, J. (2016a). Woody biomass fact sheet: Electicity from woody biomass

Mayhead, G., Snell, R., **Tittmann, P.**, Mohammadi, S., and Shelly, J. R. (2016b). Woody biomass fact sheet: Pyrolysis of woody biomass

> Mohammadi, S., **Tittmann, P.**, and Shelly, J. R. (2016). Woody biomass fact sheet: Thermochemical conversion of woody biomass to energy

Academic Experience

University of California, Davis

Research Assistant, School of Education Center for Community School Partnerships, 2007

Research Assistant, Biomass Harvesting Equipment/Conversion Technology Review, California Biomass Collaborative, Bruce Hartsough, 2006–2007

Research Assistant, Spatial-economic assessment of biomass potential in California, Institute for Transportation Studies, Joan Ogden, 2007–2008

Research Assistant, Western Governors' Association: Transportation Fuels for the Future Department of Biological and Agricultural Engineering, Bryan Jenkins,

Research Assistant, Spatial life cycle analysis of forest management strategies Sustainable Transportation Energy Pathways (STEPS), Sonia Yeh, 2008–2009

Post-doctoral researcher, Institute for Transportation Studies and Energy Institute at UC Davis. 2011-present

University of California, Berkeley

Visiting Scholar, Geospatial Innovation Facility, Maggi Kelly 2007–2008

Visiting Scholar, University of California Cooperative Extension , John Shelly 2008–2009

Visiting Scholar, Energy Biosciences Institute, Susan Jenkins 2012–2013

Professional Experience

New Forests, San Francisco, CA
Senior Analysis, Investments and Operations 2015–*present*

Arbos, Berkeley, CA
Managing Principal 2013–*present*

Develop methodological tool for above ground biomass measurement under Verified Carbon Standard for REDD+ projects using hybrid radar/LiDAR.

Conduct LiDAR inventory of managed conifer forest

Managed all aspects of geographic information product development and delivery.

Institute for Sustainable Forestry, Redway, CA
Forestry Project Manager 2004–2005

Led fire hazard reduction thinning crew, wrote an managed grants.

California Coastal Commission, San Francisco, CA

Coastal Program Analyst Oil Spill Program 2000–2002

Coastal Program Analysis Critical Coastal Areas Program 2003–2004

Developed a range of geospatial data products for oil spill prevention and surface water quality management.

Professional Activities

Board of Directors, University of California Students Association. 2006–2007

External Chair, Graduate Student Association, University of California, Davis. 2006–2007

Board of Directors, Humboldt County Firesafe Council. 2004–2005

Member, Society of American Foresters, 2006–Present

Member, Association of American Geographers, 2007–Present

Member, International Society for Photogrammetry and Remote Sensing, 2010–Present

Member,Society of American Foresters 2008–present

Languages

Spanish - *fluent*

Professional Training

Green Technology Entrepreneurship Academy (2008) *scholarship awardee* University of California Davis Graduate School of Management, Incline Village, California

ESRI™Instructor-led Training: Working with ArcGIS Network Analyst (2008) Portland, Oregon

ESRI™Instructor-led Training: Writing Advanced Geoprocessing Scripts Using Python (2008) Sacramento, California

Fuel Reduction on Steep Slopes, (2009) Forest Engineering Inc., Sacramento, California

Pacific Northwest Forest Harvesting Study Tour (2006), International Forest Engineering Institute, Coeur d'Alene, Idaho

Miscellaneous

Computer Skills: ArcGIS, ARCInfo, ArcGIS Server, Mapnik, SQL, PostgreSQL, PostGIS, GRASS, LaTeX, Linux, ENVI, Quantum GIS, Geographic Data Abstraction Library (GDAL), Extensible Markup Language (.xml)

Programming languages: SQL, R, Python, C++, GNUmake, JavaScript, bash

References

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