

## Woodam Chung

Faye and Lucille Stewart Professor of Forest Operations  
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### EDUCATION

PhD, Forest Engineering, Oregon State University, Oregon 2003  
MS, Forestry, Seoul National University, South Korea 1995  
BS, Forestry, Seoul National University, South Korea 1993 (graduated *cum laude*)

### FIELD OF INTEREST

Forest operations, timber harvest scheduling, transportation planning, woody biomass utilization, and decision support system development for natural resource management and planning

### PROFESSIONAL APPOINTMENTS

2018 – present: Professor and Stewart Endowed Professor, Oregon State University, Oregon  
2014 – 2018: Associate Professor and Stewart Endowed Professor, Oregon State University, Oregon  
2015 – 2017: Adjunct Professor at Seoul National University, Seoul, South Korea  
2009 – 2014: Associate Professor, University of Montana, Montana  
2003 – 2009: Assistant Professor, University of Montana, Montana  
1998 – 2002: Graduate Research Assistant, Oregon State University, Oregon  
1993 – 1995: Graduate Research Assistant, Seoul National University, Seoul, Korea

### TEACHING EXPERIENCE

- Oregon State University (2014 – present): forest operations analysis, senior forestry capstone, supply chain optimization
- University of Montana (2002 – 2014): forest planning, forest roads and resource transportation, heuristic optimizations for forest management planning, Introduction to GIS, GIS applications in natural resources

### OTHER EXPERIENCE

Overseas volunteer for Korea International Cooperation Agency (KOICA), Northern Sulawesi Agriculture Training Center, Manado, Indonesia 1995-1997

### AWARDS AND HONORS

- College of Forestry Dean's Award for Distinction to the College, Oregon State University, 2022
- College of Forestry Dean's Award for Fostering Undergraduate Student Success, Oregon State University, 2020
- OnPoint Faculty of the Game Award, Oregon State University, 2016
- Certificate of Appreciation, 6<sup>th</sup> International Wildland Fire Conference Scientific Committee, Pyeongchang, Korea, 2015
- Certificate of Appreciation, IUFRO Task Force on Forest Science Education, Warsaw, Poland, 2012
- Certificate of Appreciation, Korean Association of Montana, 2010

- Druid's Outstanding Professor Award, College of Forestry and Conservation, University of Montana, 2009
- Faculty Appreciation Award, the Division of Students Affairs, University of Montana, 2007
- Faculty Merit, University of Montana, 2007, 2011
- Winner, the 2001 Council on Forest Engineering (COFE) Student Paper Award

#### PROFESSIONAL SOCIETIES AND SERVICE

- International Union of Forest Research Organizations (IUFRO) Management Committee Member (2019 – present)
- IUFRO Division 3 Coordinator (2014 – present)
- IUFRO Board Member (2014 – present)
- Council on Forest Engineering (COFE) Chair (2019 – 2022)
- International Symposium on Forestry Mechanization (FORMEC) Co-Chair (2019 – 2022)
- Croatian Journal of Forest Engineering International Editorial Board member (2008 – present)
- Forest Science and Technology Journal Associate Editor (2012 – present)
- Journal of Tropical Forest Management Editorial Board member (2013 – present)
- European Journal of Forest Engineering Editorial Board member (2015 – present)
- Forests Editorial Board member (2019 – 2022)
- International Journal of Forest Engineering Editorial Board member (2019 – 2022)
- Council on Forest Engineering member (2001 – present)
- Society of American Foresters member (2005 – present)
- Institute For Operations Research and the Management Sciences (INFORMS, 2008 – present)
- Forestry: An International Journal of Forest Research Editorial Board member (2016 – 2019)
- INFORMS ENRE Best Publication Award Committee member (2014 – 2018)
- IUFRO Division 3 Deputy Coordinator (2010 – 2014)
- IUFRO Research Group 3.04 Coordinator (2010 – 2014)
- Council on Forest Engineering (COFE) Award Committee member (2007 – 2014)
- IUFRO Research Group 3.06 Deputy Coordinator (2005 – 2010)
- Council on Forest Engineering (Co-chairperson, 2006)
- American Society of Agricultural and Biological Engineers (ASABE, 2007 – 2010)
- Society of American Foresters (Management Science and Operations Research Working Group (E4) communication chair (web), 2002 – 2008)

#### FUNDED RESEARCH PROJECTS (Since 2003)

- Evaluation of soil impacts from tethered logging. *USDA Forest Service Wallowa-Whitman National Forest* (2023-2025) - **\$239,503** (PI)
- Developing decision support tools to analyze the feasibility of cable and tethered logging operations. *National Institute of Forest Science, Korea* (2023-2025) - **\$118,977** (PI)
- Smart Forestry: Paving the Way from Forest Restoration to Mass Timber, *US Economic Development Administration & Business Oregon* (2022-2027) - **\$5,500,000** (PI)
- Optimizing the deployment of mobile equipment for slash management and biochar production, *Forest Service Rocky Mountain Research Station* (2022-2024) - **\$117,200** (PI)
- Assessing the dual benefit of forest health treatments in fire-frequent landscapes in eastern Washington, *Washington State Department of Nature Resources* (2022) - **\$53,435** (PI)
- Assessing Implementation Costs of Forest Management Treatments in the Olympic Experimental State Forest (OESF), *Washington State Department of Nature Resources* (2022) - **\$19,400** (PI)

- A decision support tool for cable logging operability and payload analysis, *National Institute of Forest Science, Korea* (2022) - **\$41,666** (PI)
- Evaluating soil resilience on steep slopes after tethered logging, *USDA Forest Service Technology and Development Program* (2021-2023) - **\$38,000** (PI)
- Improvement and application of the ForSys scenario investment planning model, *USDA Forest Service Rocky Mountain Research Station* (2021-2023) - **\$280,338** (PI)
- Scenario planning development and case studies in the western US, *USDA Forest Service Rocky Mountain Research Station* (2020-2023) - **\$396,192** (PI)
- Promoting Safe and Environmentally Responsible Tethered Logging, *The Sustainable Forestry Initiative (SFI) Community Grants* (2020-2021) - **\$38,351** (Co-PI; OSU allocation: **\$11,000**)
- Systematic evaluation of exoskeletons in reducing musculoskeletal disorders in manual timber felling – A pilot study, *Pacific Northwest Agricultural Safety and Health Center*, (2019-2020) - **\$5,500** (Co-PI)
- Real-time Optimization of Resource Allocation in Forest Fire Control, *National Institute of Forest Science, Korea* (2018-2022) - **\$141,760** (PI)
- Operational feasibility analysis for cable-assisted logging systems: Equipment stability and soil disturbance, *USDA Forest Service Technology and Development Program* (2016-2021) - **\$331,490** (PI)
- A machine vision system for forest harvesting equipment: Individual tree detection, measurement, and localization using stereoscopy and digital image processing, *USDA Forest Service Technology and Development Program* (2016-2019) - **\$144,717** (PI)
- Forest Operations and Logistics Research, *USDA Forest Service Rocky Mountain Research Station* (2016-2017) - **\$26,033** (PI)
- STANDFIRE Platform Development and Documentation, *USDA Forest Service Fire Sciences Lab* (2016) - **\$23,000** (PI)
- Eye-tracking system for human behavioral responses, *Oregon State University* (2016) - **\$16,475** (Co-PI with 2 others)
- Protecting the Logging Workforce: Development of Innovative Logging Techniques for a Safer Working Environment, *National Institute for Occupational Safety and Health* (2015-2019) - **\$824,631** (Co-PI with 4 others)
- Developing a User Interface for the Existing Fire and Vegetation Growth Models, a User's Guide, and Training Workshops, *Montana Department of Natural Resources and Conservation* (2015-2016) - **\$45,000** (PI)
- Reduced Forest Soil Damage by Advanced Machine Routing and Motion Planning, *Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning* (2015-2018) – SEK4,457,000 (≈ **\$500,000**) (Co-PI; OSU provides in-kind contributions)
- Sustainable biofuel feedstocks from beetle-killed wood: Bioenergy Alliance Network of the Rockies, *USDA AFRI Sustainable Bioenergy Competitive Grants Program* (2013-2019) - **\$10,000,000** (Co-PI with 14 other Co-PIs; OSU allocation: **\$565,493**)
- Developing Optimization Algorithms for Timber Harvest Scheduling and Transportation Planning, *Korea Forest Research Institute* (2013) - **\$46,000** (PI)
- Incorporating project-level analysis and enhanced decision support into the OptFuels fuel treatment planning system for the Lake Tahoe Basin, *SNPLMA Tahoe Science Program* (2012-2014) - **\$121,890** (Co-PI; UM allocation: **\$31,484**)
- Estimating Expected Loss Value of Landscapes in Korea Due to Forest Fires, *Korea Forest Research Institute* (2012-2013) - **\$88,000** (PI)

- Integration of Biofuels and Bioproducts Production into Forest Products Supply Chains using Modular Biomass Gasification and Carbon Activation, *USDA/DOE Biomass Research and Development Initiative (2011-2015)* - **\$5,300,000** (Co-PI; UM allocation: **\$1,000,000**)
- Integrating modular pyrolysis processing into forest operations to improve the sustainability and efficiency of treatment residue utilization, *USDA Forest Service (2011-2013)* - **\$197,223** (Co-PI)
- Biochar from Biomass: A Process for Utilizing Forest Treatment & Mill Residues, *USDA Forest Service RMRS (2010-2013)* - **\$300,000** (Co-PI)
- Uncompahgre Plateau Restoration: Assessing the Economic Feasibility, Energy Balance and Net Greenhouse Gas Emissions of Producing Bioenergy from Forest and Range Treatment Residues, *USDA Forest Service RMRS (2010-2013)* - **\$256,503** (Co-PI)
- Cost and Productivity Analysis of In-Woods Fast Pyrolysis, *USDA Forest Service RMRS (2009-2010)* - **\$200,000** (PI)
- Integrated Decision Support for Cost Effective Fuel Treatments Under Multiple Resource Goals, *SNPLMA Tahoe Science Program (2009-2012)* - **\$300,500** (PI)
- Sustainable forest bioenergy production using in-woods fast-pyrolysis conversion including bio-oil production and bio-char incorporation, *USDA Forest Service Research and Development (2008-2012)* - **\$271,796** (Co-PI)
- Forest biomass utilization: Economics, availability, energy returns and emissions, *USDA Forest Service RMRS (2009-2011)* - **\$124,149** (PI)
- Improving the existing decision support model (WTP 1.0) for invasive weeds management, *USDA Nez Perce National Forest (2009-2011)* - **\$10,000** (PI)
- Decision-support Tool Utilizing Improved Dispersal Modeling to Develop Socio-economically Efficient Invasive Species Management Programs, *USDA National Research Initiative (NRI) Competitive Grants Program (2008-2012)* - **\$500,000** (Co-PI)
- Assessing Costs and Benefits of Alternative Methods for Handling and Transporting Forest Residues for Bioenergy, *USDA Forest Service RMRS Agenda2020 Project (2008-2012)* - **\$284,148** (PI)
- A Review of Available Economic and Financial Biomass Information and Tools for Federal Land Managers in the West, *USDA/DOI Joint Fire Science Program (2007-2009)* - **\$186,326** (Co-PI)
- Upgrading SNAP (Scheduling and Network Analysis Program), *USDA Forest Service PNW Station (2007-2010)* - **\$75,000** (PI)
- Improving Road Erosion Modeling for the Lake Tahoe Basin and Evaluating BMP Strategies for Fine Sediment Reduction at Watershed Scales, *SNPLMA Tahoe Science Program (2007-2009)* - **\$201,705** (Co-PI)
- Landscape-level Decision Support for Invasive Species Management, *USDA Economic Research Service (2006-2009)* - **\$209,000** (PI)
- Analysis of sort yards to increase value recovery and utilization of small-diameter trees and forest biomass for landscape scale forest health treatments, *USDA Forest Service Research and Development (2007-2009)* - **\$125,298** (Co-PI)
- Optimizing spatial and temporal treatments to maintain effective fire and non-fire fuels treatments at landscape scales, *USDA/DOI Joint Fire Science Program (2006-2009)* - **\$300,000** (Co-PI)
- Integrating WEPP Output into MAGIS, *USDA Forest Service RMRS (2007-2008)* - **\$20,348** (PI)
- Applying MAGIS to Fuel Treatment Restoration Analyses, *USDA Forest Service RMRS (2007-2008)* - **\$12,300** (PI)
- MAGIS Documentation and GIS Support, *USDA Forest Service RMRS (2007-2008)* - **\$27,900** (PI)

- Species Identification of Individual Trees in Mixed Conifer Forests Using Laser Altimetry, *McIntire-Stennis Funding Program (2007-2009)* - **\$49,771** (Co-PI)
- Economics of Alternative Harvest Practices and Road Systems, *USDA Forest Service (2004-2008)* - **\$76,656** (PI)
- Developing a Heuristic Solver for MAGIS, *USDA Forest Service RMRS (2003)* - **\$30,000** (PI)
- Developing a computer program for determining the feasibility of cable logging operations, *University of Montana (2003)* - **\$4,000** (PI)

## LANGUAGES

English, Korean, Indonesian (limited)

## PUBLICATIONS

### Publications in Refereed Journals:

Wells, L.A. and W. Chung. 2023. A deformable shape model for automatic and real-time dendrometry. *Forests* 2023, 14, 2299. <https://doi.org/10.3390/f14122299>.

Kim, J.H. and **W. Chung**. 2023. Forestry professionals' perspectives on exoskeletons (wearable assistive technology) to improve worker safety and health. *International Journal of Forest Engineering*, <https://doi.org/10.1080/14942119.2023.2256104>.

Wells, L.A. and **W. Chung**. 2023. Vision-Aided Localization and Mapping in Forested Environments Using Stereo Images. *Sensors* 2023, 23, 7043. <https://doi.org/10.3390/s23167043>

Pokharel, M., F. Belart, **W. Chung**, B. Morrissette. 2023. Assessment of Timber Faller Working Conditions in Mixed Hand and Tethered-machine Cut Harvest Units on Steep Slopes- A Case Study in Western Oregon, *International Journal of Forest Engineering*. <https://doi.org/10.1080/14942119.2023.2170149>

Wells, L.A. and **W. Chung**. 2023. Real-Time Computer Vision for Tree Stem Detection and Tracking. *Forests* 2023, 14(2), 267. <https://doi.org/10.3390/f14020267>

Belavenutti, P., A. Ager, M. Day, **W. Chung**. 2022. Multi-Objective Scheduling of Fuel Treatments to Implement a Linear Fuel Break Network. *Fire* 2023, 6, 1. <https://doi.org/10.3390/fire6010001>.

Aparício, B.A., F. Alcasena, A. Ager, **W. Chung**, J.M.C. Pereira, A.C.L. Sá. 2022. Evaluating priority locations and potential benefits for building a nation-wide fuel break network in Portugal. *Journal of Environmental Management* 320, 115920. <https://doi.org/10.1016/j.jenvman.2022.115920>.

Belavenutti, P., A. Ager, M. Day, **W. Chung**. 2022. Designing forest restoration projects to optimize the application of broadcast burning. *Ecological Economics* 201, 107558. <https://doi.org/10.1016/j.ecolecon.2022.107558>.

**Chung, W.**, B. Morrissette, P. Green, B. Garrelts, B. Leshchinsky, F. Belart, J. Sessions, J. Wimer, J. Garland. 2022. Effects of pre-bunching trees with a tethered feller-buncher on cable logging productivity and costs: A case study in Southern Oregon. *Forest Science* 68(3): 325-333.

Swezy C., J. Bailey and **W. Chung**. 2021. Linking Federal Forest Restoration with Wood Utilization: Modeling Biomass Prices and Analyzing Forest Restoration Costs in the Northern Sierra Nevada. *Energies* 2021, 14, 2696.

Belavenutti, P., **W. Chung**, A. Ager. 2021. The Economic Reality of the Forest and Fuel Management Deficit on a Fire Prone Western US National Forest. *Journal of Environmental Management* 293 (2021) 112825.

Holzfeind, T., R. Visser, **W. Chung**, F. Holzleitner, G. Erber. 2020. Development and benefits of winch-assist harvesting. *Current Forestry Reports* 6(3): 201-209.

Bellavenutte, P., **W. Chung** and L. Diaz-Balteiro. 2020. Partitioning and Solving Large-scale Tactical Harvest Scheduling Problems for Industrial Plantation Forests. *Canadian Journal of Forest Research* 50(8): 811-818.

Wells, L. and **W. Chung**. 2020. Evaluation of Ground Plane Detection for Estimating Breast Height in Stereo Images. *Forest Science* 66(5): 612-622.

She, J., **W. Chung** and H. Vergara. 2020. Multi-objective Record-to-Record Travel metaheuristic method for solving forest supply chain management problems with economic and environmental objectives. *Natural Resource Modeling* 34(1), e12256.  
<https://doi.org/10.1111/nrm.12256>.

Green, P., **W. Chung**, B. Leshchinsky, F. Belart, J. Sessions, S. Fitzgerald, J. Wimer, T. Cushing, and J. Garland. 2020. Insight into the Productivity, Cost and Soil Impacts of Cable-assisted Harvester-forwarder Thinning in Western Oregon. *Forest Science* 66(1): 82-96.

Rhee, H., J. Fridley, **W. Chung**, and D. Page-Dumroese. 2019. An Approach for Modeling and Quantifying Traffic-Induced Changes and Processes in Forest Road Aggregate Particle-Size Distributions. *Forests* 2019, 10, 769.

She, J., **W. Chung** and H. Han. 2019. Economic and Environmental Optimization of the Forest Supply Chain for Timber and Bioenergy Production from Beetle-Killed Forests in Northern Colorado. *Forests* 2019, 10, 689.

Garland, J., F. Belart, R. Crawford, **W. Chung**, T. Cushing, S. Fitzgerald, P. Green, L. Kincl, B. Leshchinsky, B. Morrissette, J. Sessions and J. Wimer. 2019. Safety in steep slope logging operations. *Journal of Agromedicine* 24(2):138-145.

Belart, F., B. Leshchinsky, J. Sessions, **W. Chung**, P. Green, J. Wimer, and B. Morrissette. 2019. Sliding stability of cable-assisted tracked equipment on steep slopes. *Forest Science* 65 (3): 304-311.

- She, J., **W. Chung**, and D. Kim. 2018. Discrete-Event Simulation of Ground-Based Timber Harvesting Operations. *Forests* 2018, 9, 683.
- Han, H., **W. Chung**, J. She, N. Anderson, and L. Wells. 2018. Productivity and Costs of Two Beetle-kill Salvage Harvesting Methods in Northern Colorado. *Forests* 2018, 9, 572.
- Marchi, E., **W. Chung**, R. Visser, D. Abbas, T. Nordfjell, P.S. Mederski, A. McEwan, M. Brink, and A. Laschi. 2018. Sustainable Forest Operations (SFO): A new paradigm in a changing world and climate. *Science of the Total Environment* 634: 1385-1397.
- Hogland, H., N. Anderson, and **W. Chung**. 2018. New Geospatial Approaches for Efficiently Mapping Forest Biomass Logistics at High Resolution over Large Areas. *ISPRS Int. J. Geo-Inf.* 7(4): 156.
- Han, H., **W. Chung**, L. Wells, and N. Anderson. 2018. Optimizing Biomass Feedstock Logistics for Forest Residue Processing and Transportation on a Tree-shaped Road Network. *Forests* 2018, 9, 121.
- Woo, H., **W. Chung**, J.M. Graham, and B. Lee. 2017. Forest Fire Risk Assessment Using Point Process Modeling of Fire Occurrence and Monte Carlo Fire Simulation. *International Journal of Wildland Fire* 26(9): 789-805.
- Kim, Y., **W. Chung**, H. Han, and N. Anderson. 2017. The Effect of Downed Trees on Harvesting Productivity and Costs in Beetle-killed Stands. *Forest Science* 63 (6): 596-605.
- Chung, W.**, P. Evangelista, N. Anderson, T. Vorster, H. Han, K. Poudel, and B. Sturtevant. 2017. Estimating Aboveground Tree Biomass for Beetle-Killed Lodgepole Pine in the Rocky Mountains of Northern Colorado. *Forest Science* 63(4): 413-419.
- Sessions, J., B. Leshchinsky, **W. Chung**, K. Boston, and J. Wimer. 2017. Theoretical Stability and Traction of Steep Slope Tethered Feller-Bunchers. *Forest Science* 63(2): 192-200.
- Kamarudin, N., M.H. Ismail, H. Sungib, and **W. Chung**. 2016. Log hauling productivity in timber harvesting operation in Peninsular Malaysia Forest. *Journal of Tropical Forest Science* 28(3): 207-216.
- Wells, L., **W. Chung**, N. Anderson, and J. Hogland. 2016. Spatial and temporal quantification of forest residue volumes and delivered costs. *Canadian Journal of Forest Research* 46: 832-843.
- Han, H., **W. Chung**, and J. Chung. 2016. Carbon Balance of Forest Stands, Wood Products and Utilization in South Korea. *Journal of Forest Research* 21: 199-210.
- Han, H., **W. Chung**, J. Song, A. Seol, and J. Chung. 2016. A terrain-based method for selecting potential mountain ridge protection areas in South Korea. *Landscape Research*. DOI: 10.1080/01426397.2016.1173657.

Kim, D-W, **W. Chung**, and B. Lee. 2016. Exploring tree crown spacing and slope interaction effects on fire behavior with a physics-based fire model. *Forest Science and Technology* 12 (4): 167-175.

Contreras, M.A., D.L. Parrott, and **W. Chung**. 2016. Designing Skid-Trail Networks to Reduce Skidding Cost and Soil Disturbance for Ground-Based Timber Harvesting Operations. *Forest Science* 62(1): 48-58.

**Chung, W.** 2015. Optimizing Fuel Treatments to Reduce Wildland Fire Risk. *Current Forestry Report* 1: 44-51.

Kim, D., N. Anderson, and **W. Chung**. 2015. Financial performance of a mobile pyrolysis system used to produce biochar from sawmill residues. *Forest Products Journal* 65(5/6): 189-197.

Efta, J.A. and **W. Chung**. 2014. Planning best management practices to reduce sediment delivery from forest roads using WEPP:Road erosion modeling and simulated annealing optimization. *Croatian Journal of Forest Engineering* 35 (2): 167-178.

Aracena, P., **W. Chung**, and J.G. Jones. 2014. Landscape-level simulation of weed treatments to evaluate treatment plan options. *Invasive Plant Science and Management* 7(2): 278-290.

**Chung, W.**, G. Jones, K. Krueger, J. Bramel, and M. Contreras. 2013. Optimizing fuel treatments over time and space. *International Journal of Wildland Fire* 22(8): 1118-1133.

Jourgholami M, E., Abdi, **W. Chung**. 2013. Decision making in forest road planning considering both skidding and road costs: a case study in the Hyrcanian Forest in Iran. *iForest: Biogeosciences and Forestry* 6: 59-64. doi:10.3832/ifor0640-005

Contreras, M. and **W. Chung**. 2013. Developing a computerized approach for optimizing individual tree removal to efficiently reduce crown fire potential. *Forest Ecology and Management* 289: 219-233.

Anderson, N., J. Greg Jones, D. Page-Dumroese, D. McCollum, S. Baker, D. Loeffler, and **W. Chung**. 2013. A comparison of producer gas, biochar, and activated carbon from two distributed scale thermochemical conversion systems used to process forest biomass. *Energies* 6: 164-183. doi:10.3390/en6010164

Jones, G., D. Loeffler, E. Butler, S. Hummel, and **W. Chung**. 2013. The financial feasibility of delivering forest treatment residues to bioenergy facilities over a range of diesel fuel and delivered biomass prices. *Biomass and Bioenergy* 48: 171-180.

**Chung, W.**, T. Venn, D. Loeffler, G. Jones, H. Han, and D. Calkin. 2012. Assessing the Potential for Log Sort Yards to Improve Financial Viability of Forest Restoration Treatments. *Forest Science* 58(6): 641-651.



Anderson, N., **W. Chung**, D. Loeffler, and G. Jones. 2012. A productivity and cost comparison of two systems for producing biomass fuel from roadside forest treatment residues. *Forest Products Journal* 62(3): 222-233.

Contreras, M., P. Aracena, **W. Chung**. 2012. Improving accuracy in earthwork volume estimation for proposed forest roads using a high-resolution digital elevation model. *Croatian Journal of Forest Engineering* 33(1):125-142.

Contreras, M., R. Parsons, **W. Chung**. 2012. Modeling tree-level fuel connectivity to evaluate the effectiveness of thinning treatments for reducing crown fire potential. *Forest Ecology and Management* 264: 134-149. doi:10.1016/j.foreco.2011.10.001

Song, J., K. Jang, H. Han, A. Seol, **W. Chung**, J. Chung. 2012. A case study of spatial allocation of cut blocks using a timber harvest simulator HARVEST. *Journal of Korean Forest Society* 101(1): 96-103.

**Chung, W.**, D.P. Dykstra, F. Bower, S.A. O'Brien, R.M. Abt, and J. Sessions. 2012. User's Guide to SNAP for ArcGIS®: ArcGIS Interface for Scheduling and Network Analysis Program. *USDA Forest Service PNW-GTR-847*. 34p.

Contreras, M., D. Affleck, **W. Chung**. 2011. Evaluating tree competition indices as predictors of basal area increment in western Montana forests. *Forest Ecology and Management* 262: 1939-1949. doi:10.1016/j.foreco.2011.08.031

Bruce, J. C., H. Han, A.E. Akay, and **W. Chung**. 2011. ACCEL: Spreadsheet-based Cost Estimation for Forest Road Construction. *Western Journal of Applied Forestry* 26(4): 189-197.

Contreras, M. and **W. Chung**. 2011. A modeling approach to estimating skidding costs of individual trees for thinning operations. *Western Journal of Applied Forestry* 26(3): 133-146.

Han, H., K. Jang, J. Song, A. Seol, **W. Chung**, and J. Chung. 2011. The effects of site factors on herb species diversity in Kwangneung forest stands. *Forest Science and Technology* 7(1): 1-7.

Jones, G., D. Loeffler, D. Calkin, and **W. Chung**. 2010. Forest treatment residues for thermal energy compared with disposal by onsite burning: Emissions and energy return. *Biomass and Bioenergy* 34(5): 737-746. doi:10.1016/j.biombioe.2010.01.016

Contreras, M., **W. Chung**, and G. Jones. 2008. Applying ant colony optimization (ACO) metaheuristic to solve forest transportation planning problems with side constraints. *Canadian Journal of Forest Research* 38: 2896-2910.

**Chung, W.**, J. Stükelberger, K. Aruga, and T. Cundy. 2008. Forest Road Network Design Using a Trade-off Analysis between Skidding and Road Construction Costs. *Canadian Journal of Forest Research* 38(3): 439-448.

- Rackely, J. and **W. Chung**. 2008. Incorporating forest road erosion into forest resource transportation planning; a case study in the Mica Creek Watershed in Northern Idaho, U.S.A. *Transactions of ASABE* 51(1): 115-127.
- Dodson, E., **W. Chung**, K. Mills, R. Nall, J. Sessions, and G. Zartman. 2007. Transportation planning to determine low volume road standards, long term needs, and environmental risks and tradeoffs. *Journal of the Transportation Research Board* 1989: 11–19.
- Stückelberger, J., H. Heinimann, and **W. Chung**. 2007. Improved road network design models with the consideration of various link patterns and road design elements. *Canadian Journal of Forest Research* 37(11): 2281-2298.
- Contreras, M. and **W. Chung**. 2007. A computer approach to finding an optimal log landing location and analyzing influencing factors for ground-based timber harvesting. *Canadian Journal of Forest Research* 37: 276-292 (doi:10.1139/X06-219).
- Aruga, K., **W. Chung**, A. Akay, J. Sessions, and E. Miyata. 2007. Incorporating soil surface erosion prediction into forest road alignment optimization. *International Journal of Forest Engineering* 18 (1): 24-32.
- Aruga, K, J. Sessions, A. Akay, and **W. Chung**. 2005. Simultaneous optimization of horizontal and vertical alignments of forest roads using Tabu Search. *International Journal of Forest Engineering* 16 (2): 137-151.
- Chung, W.**, J. Sessions, and H.R. Heinimann. 2004. An application of a heuristic network algorithm to cable logging layout design. *International Journal of Forest Engineering* 15(1): 11-24.
- Bettinger, P. and **W. Chung**. 2004. The key literature of, and trends in, forest-level management planning in North America, 1950-2001. *The International Forestry Review* 6(1): 40-50.
- Chung, W.** and J. Sessions. 2004. Uphill and downhill gradeability of log trucks with short log trailers. *Western Journal of Applied Forestry* 19(2): 88-94.
- Bettinger, P., D. Graetz, K. Boston, J. Sessions, and **W. Chung**. 2002. Eight heuristic planning techniques applied to three increasingly difficult wildlife planning problems. *Silva Fennica* 36(2): 561-584.
- Chung, J. and **W. Chung**. 1995. Developing a computer model for forest road design. *Journal of Korean Forestry Society* 84(3): 333-342 (in Korean).
- Chung, J. and **W. Chung**. 1995. A study on ground vehicle mechanics for steep slope forest operations: rubber-tired log skidding tractor operations. *Journal of Korean Forestry Society* 84(2): 218-225 (in Korean).
- Chung, J. and **W. Chung**. 1994. A study on analyzing the live skyline cable logging mechanics. *Journal of Korean Forestry Society* 83(3): 357-364 (in Korean).

### **Books and Book Chapters (Peer-reviewed):**

**Chung, W.**, C. Kanzian, and P. McNeary (Eds). 2022. Proceedings of the Joint 44<sup>th</sup> Annual Meeting of Council on Forest Engineering (COFE), the 54<sup>th</sup> International Symposium on Forest Mechanization (FORMEC), and 2022 IUFRO All-Division 3 Meeting. October 4-7, Corvallis, OR. Published by Department of Forest Engineering, Resources and Management, Oregon State University, 320 p. ISBN: 979-8-9855282-1-3.

**Chung, W.**, J. Sessions, K. Lyons, and K. Wigginton (Eds). 2021. Proceedings of the Joint 43<sup>rd</sup> Annual Meeting of Council on Forest Engineering and the 53<sup>rd</sup> International Symposium on Forest Mechanization. September 27-30, Corvallis, OR. Published by Department of Forest Engineering, Resources and Management, Oregon State University, 320 p. ISBN: 979-8-9855282-0-6.

**Chung, W.**, K. Lyons and L. Wells. 2019. Chapter 18. Innovations in Forest Harvesting Technology. *In Achieving Sustainable Forestry Volume 1: Boreal and Temperate Forests*, John Stanturf (Ed.), Cambridge, Burleigh Dodds Science Publishing.

**Chung, W.** and M. Contreras. 2011. Forest Transportation Planning Under Multiple Goals Using Ant Colony Optimization. *In Ant Colony Optimization: Methods and Applications*, Avi Ostfeld (Ed.), pp. 221-236. Rijeka, Croatia: InTech. ISBN: 978-953-307-157-2.

**Chung, W.** and H-S Han (Eds.). 2006. Proceedings of the 29<sup>th</sup> Council on Forest Engineering Conference. July 30-August 2. Couer d'Alene, ID. Council on Forest Engineering. Corvallis, OR. 570 p.

Sessions, J., A. Akay, G. Murphy, **W. Chung**, and K. Aruga. 2006. Road and Harvesting Planning and Operations *in Computer Applications in Sustainable Forest Management: Including Perspectives on Collaboration and Integration*. Series: Managing Forest Ecosystems, Vol 11. G. Shao and K. Reynolds (Eds.). Springer. ISBN: 1-4020-4305-8. 300 p.

Sessions, J. and **W. Chung** (Eds.). 1999. Proceedings of the International Mountain Logging and 10th Pacific Northwest Skyline Symposium. March 28-April 1. Corvallis, OR. Published by Department of Forest Engineering, Oregon State University, 372 p.

### **Publications in Conference Proceedings:**

Aparício, B. A., Alcasena, F., Ager, A., **Chung, W.**, Pereira, J., & Sá, A. C. 2022. Assessing the Benefits of a National Fuel Break Network to Reduce Wildfire Exposure in Portugal. *Environmental Sciences Proceedings*, 17(1), 67.

Anderson, N., R. Zamora-Cristales, R. Villalobos, **W. Chung**. 2022. Sustainable Forest Operations for Landscape-scale Reforestation and Restoration. *In Proceedings of XV World Forestry Congress*, Seoul, Republic of Korea, May 2-6, 2022.

Finster, A., **W. Chung**, B. Morrissette. 2021. Idaho Steep Slope Harvesting: Tracks, Tires, and Teaching. In Proceedings of COFE-FORMEC 2021 – Forest Engineering Family: Growing Forward Together, Corvallis, OR, U.S.A., September 27-30, 2021.

**Chung, W.**, B. Morrissette, P. Green, B. Leshchinsky, K. Bladon, J. Hatten, and J. Sessions. 2019. Productivity and Environmental Impacts of Cable-assisted Logging – A case study in southern Oregon, USA. Abstract published in Proceedings of FORMEC/COFE 2019, October 6-9, 2019, Sopron, Hungary.

**Chung, W.** and L. Wells. 2019. Computer vision technology for improving forest operations sustainability. Abstract published in the Book of Abstracts of the XXV IUFRO World Congress, September 29 – October 5, 2019, Curitiba, Brazil.

Morrissette, B., **W. Chung**, K. Bladon, B. Leshchinsky, J. Hatten, and J. Sessions. 2019. Comparison of erosion potential between manual and cable-assisted mechanized felling on steep slopes – A case study in southern Oregon, USA. Abstract published in the Book of Abstracts of the XXV IUFRO World Congress, September 29 – October 5, 2019, Curitiba, Brazil.

Belavenutti, P., **W. Chung**, and L. Diaz-Balteiro. 2019. Tactical harvest planning of fast-growing forest plantations using heuristic optimization techniques. Abstract published in the Book of Abstracts of the XXV IUFRO World Congress, September 29 – October 5, 2019, Curitiba, Brazil.

Wells, L. and **W. Chung**. 2018. Real-time photogrammetric tree detection and measurement. Abstract published in Proceedings of the 41<sup>st</sup> Council on Forest Engineering (COFE) Annual Meeting, July 15-18, 2018, Williamsburg, VA.

Green, P., **W. Chung**, B. Morrissette, F. Belart, K. Bladon, J. Hatten, B. Leshchinsky, and J. Sessions. 2018. Environmental and economic comparison of cable-assisted harvesting systems in the Pacific Northwest. Abstract published in Proceedings of the 41<sup>st</sup> Council on Forest Engineering (COFE) Annual Meeting, July 15-18, 2018, Williamsburg, VA.

She, J., and **W. Chung**. 2018. A multi-objective metaheuristic approach to beetle-killed biomass supply chain management in the northern Colorado Rocky Mountains. Abstract published in Proceedings of the 41<sup>st</sup> Council on Forest Engineering (COFE) Annual Meeting, July 15-18, 2018, Williamsburg, VA.

Belart, F., Leshchinsky, B., Sessions, J., **Chung, W.**, Preston, G., Jeff, W., Brett, M., Garland, J. 2018. Tether assist equipment stability and soil-machine interaction in steep slope logging. Abstract published in Proceedings of the 41<sup>st</sup> Council on Forest Engineering (COFE) Annual Meeting, July 15-18, 2018, Williamsburg, VA.

She, J., H. Han, and **W. Chung**. 2017. Multi-objective optimization of timber and bioenergy supply chain from beetle-killed biomass in Colorado. Abstract published in Proceedings of FORMEC 2017, September 25-29, 2017, Brasov, Romania.

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**Chung, W.** and N. Anderson. 2017. Beetle-killed biomass for bioenergy: An integrated modeling approach for feedstock supply and logistics. Abstract published in the Book of Abstracts of the IUFRO 125<sup>th</sup> Anniversary Congress, September 18-22, 2017, Freiburg, Germany

Anderson, N., J. Hogland, and **W. Chung**. 2017. New methods to estimate, analyze and map forest characteristics, wood quality and resources over large landscapes at high resolution. Abstract published in the Book of Abstracts of the IUFRO 125<sup>th</sup> Anniversary Congress, September 18-22, 2017, Freiburg, Germany

Marchi, E. and **W. Chung**. 2017. The "Sustainable Forest Operations" Concept: Past, Present, and Future. Abstract published in the Book of Abstracts of the IUFRO 125<sup>th</sup> Anniversary Congress, September 18-22, 2017, Freiburg, Germany

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**Chung, W.** 2017. Operational forest planning under data and information poor conditions - A case study of beetle killed biomass feedstock planning in Northern Colorado. Abstract published in Proceedings of the 2017 Symposium for Systems Analysis in Forest Resources (SSAFR), August 27-30, 2017, Suquamish, WA.

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Han, H., **W. Chung**, N. Anderson. 2016. Comparing productivity and costs of two beetle-killed stand harvesting methods in northern Colorado. In Proceedings of the DEMO/COFE International Conference: Canada's Forest Sector-Adapting to a New Reality, Technology and Innovations as a Catalyst for Success. September 19-21, 2016, Vancouver, BC, Canada.

Kim, Y., **W. Chung**, N. Anderson. 2016. Modeling Equipment Cycle Times for Beetle-killed Stand Harvesting. In Proceedings of the DEMO/COFE International Conference: Canada's Forest Sector-Adapting to a New Reality, Technology and Innovations as a Catalyst for Success. September 19-21, 2016, Vancouver, BC, Canada.

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**Chung, W.**, H. Han, and N. Anderson. 2016. Turning Uncertainty into Opportunity: Integrated Supply Chain Models for Beetle-killed Biomass. Abstract published in Proceedings of the 8th International Conference of IUFRO Working Parties 5.01.04 and 3.04.00: Modelling Wood Quality, Supply and Value Chain Networks (WoodQC 2016), June 12-17, 2016, Quebec, Canada.

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Sessions, J. and **W. Chung**. 1999. Optimizing Helicopter Landing Locations. In Proceedings of the International Mountain Logging and 10th Pacific Northwest Skyline Symposium, March 28-April 1, 1999, Dept. of Forest Engineering, Oregon State Univ., Corvallis. pp 337-340.

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## **PROFESSIONAL PRESENTATIONS (SINCE 2003)**

### **Oral Presentations:**

**Chung, W.** 2023. Smart Forestry – Advanced Technologies for Future Forestry and Workforce. **Invited oral presentation** at the International Symposium on Forest Engineering Technology for the Establishment of Future Forest Management, Sokcho, South Korea, October 11-12, 2023.

**Chung, W.** 2023. SNAP for ArcGIS. Oral presentation at Green Diamond Resource Company, Korbelt, CA, August 8, 2023.

**Chung, W.** 2023. Smart Forestry - Paving the Way from Forest Restoration to Mass Timber. Oral presentation at the Oregon Board of Forestry Public Meeting, Corvallis, OR, March 8, 2023.

**Chung, W.** 2022. Sustainable Forest Operations – Challenges and Opportunities. **Invited seminar** at School of Forestry, Northern Arizona University, November 2, 2022

**Chung, W.** 2022. Evaluating Operational Costs of Type 3 Experimental Treatments. Oral presentation at 2022 Virtual Olympic Experimental State Forest Science Conference: Linking Science to Natural Resource Management, May 4, 2022 (Online)

**Chung, W.,** B. Leshchinsky, P. Green and B. Morrissette. 2021. Tethered Steep Slope Harvesting in Oregon. **Invited oral presentation** at SBEADMR AMG Monitoring Committee Meeting. December 2, 2021 (Online)

**Chung, W.** 2021. Sustainable Forest Operations: Challenges and Opportunities. **Invited seminar** at the European Union H2020 Marie Curie ETN Skill-For.Action Project Kickoff Conference. December 1, 2021 (Online)

**Chung, W.** 2021. Welcome and opening address at IUFRO International Webinar on Forest Operations and Climate Change: The RIL-C Approach. July 21, 2021 (Online)

**Chung, W.** 2021. Oregon State University Proposal for Elliott State Research Forest. Oral presentation at National Institute of Forest Science Webinar (South Korea). July 16, 2021 (Online)

**Chung, W.,** B. Morrissette, A. Finster, B. Leshchinsky, and P. Green. 2021. Tethered Logging – A New Wave of Technology in Steep Slope Harvesting. **Invited webinar** by The Sustainable Forestry Initiative (SFI). June 17, 2021 (Online)

**Chung, W.,** B. Morrissette, A. Finster, B. Leshchinsky, and P. Green. 2021. Soil Responses to Tethered Logging Equipment on Steep Slopes: Three Case Studies in the Western U.S. **Invited oral presentation** at 2021 Olympic Experimental State Forest Science Conference: Linking Science to Natural Resource Management. April 22, 2021 (Online)

**Chung, W.,** A. Finster, B. Morrissette, B. Leshchinsky. 2021. Idaho Steep Slope Logging Study. Oral presentation at the USDA Forest Service Webinar. March 26, 2021 (Online)

**Chung, W.** 2021. Sustainable Forest Operations and Innovative Harvesting Technology. **Invited seminar** at the Korea Forest Service, Daejeon, South Korea. March 5, 2021.

**Chung, W.** 2021. Forest Technology for People. **Invited seminar** at the National Institute of Forest Science (NIFoS), Seoul, South Korea. February 16, 2021.

**Chung, W.** 2020. Welcome and opening address at IUFRO International Webinar on Forest Operational Challenges to Landscape Restoration in Latin America. October 28, 2020 (Online)

**Chung, W.**, B. Leshchinsky, B. Morrissette\*, P. Green, K. Bladon, J. Hatten, F. Belart, J. Sessions, and J. Wimer. 2019. Soil Impacts of Tethered Logging Systems: Theory, Field Experiments and GIS Tool for Assessment. Presented at the USDA Forest Service Northern Region Soil, Water, and Fish Annual Meeting, December 3-5, 2019, Missoula, MT.

**Chung, W.**, B. Morrissette\*, P. Green, B. Leshchinsky, K. Bladon, J. Hatten, F. Belart, J. Sessions, and J. Wimer. 2019. Tethered Logging Systems: Cost, Productivity and Environmental Impacts. Presented at the USDA Forest Service Northern Region Timber Management Team Annual Meeting, December 4, 2019, Missoula, MT.

**Chung, W.** and L. Wells. 2019. Computer Vision Technology for Sustainable Forest Operations. **Invited presentation** for CEF/CEABN Ecology, Forests and Conservation Seminar Series, University of Lisbon, November 27, 2019, Lisbon, Portugal.

**Chung, W.** 2019. Tactical and Operational Planning of Fuel Reduction Thinning. **Invited presentation** at the International Symposium on Forest Operations Technology for Forest Sector Circular Economy, October 15-17, 2019, Seoul, Korea.

**Chung, W.** 2019. Future of Forest Engineering and its Sustainability. **Invited keynote presentation** at the 2019 FORMEC/COFE Joint Meeting, October 6-9, 2019, Sopron, Hungary.

**Chung, W.**, B. Morrissette, P. Green, B. Leshchinsky, K. Bladon, J. Hatten, and J. Sessions. 2019. Productivity and Environmental Impacts of Tethered logging – A Case Study in Southern Oregon, USA. Presented at the 2019 FORMEC/COFE Joint Meeting, October 6-9, 2019, Sopron, Hungary.

**Chung, W.** and L. Wells. 2019. Computer Vision Technology for Sustainable Forest Operations. Presented at the XXV IUFRO World Congress, September 29 – October 5, 2019, Curitiba, Brazil.

**Chung, W.**, B. Leshchinsky, R. Lankston. 2019. Soil Impacts of Tethered Logging Systems and GIS Tool for Equipment-Soil Operations Planning and Analysis Tool (AESOP). Presented at the USFS National Technology and Development Program Seminar, August 9, 2019, Missoula, MT.

**Chung, W.** 2019. Research Collaboration on New Timber Harvesting Technology. Presented at the meeting with Indonesian Forestry Executives, July 23, 2019. Corvallis, OR.

**Chung, W.**, F. Belart, P. Green, and B. Morrissette. 2019. Soil impacts of tethered logging in Oregon. Presented at BLM Aquatic Habitat Management Working Group Annual Spring Meeting, April 17, 2019, Rickreall, OR.

**Chung, W.**, B. Leshchinsky, B. Morrissette, P. Green, F. Belart, K. Bladon, J. Hatten, J. Sessions, K. Lyons, J. Garland, and J. Wimer. 2019. Soil impacts of tethered logging in Oregon. Presented at Confederated Tribes of Warm Springs Forest Management Interdisciplinary Team meeting, April 8, 2019, Corvallis, OR.

**Chung, W.** 2019. Sustainable Forest Operations. Guest lecturer for FOR 550 Sustainable Forest Management graduate course, February 20, 2019, Corvallis, OR.

**Chung, W.** and P. Green. 2019. Soil impacts of tethered logging in Oregon. Webinar for the Dixie National Forest soil scientists and timber sale administrators, February 12, 2019, Corvallis, OR.

**Chung, W.**, B. Garrelts, B. Morrissette, P. Green, B. Leshchinsky, F. Belart, K. Bladon, J. Hatten, J. Sessions, J. Garland. 2019. Tethered Logging in Southwest Oregon: A Research Perspective. Presented at Western Regional Council on Forest Engineering Conference, January 17, 2019, Eugene, OR.

**Chung, W.** and L. Wells. 2019. Computer Vision for Real-time Tree Detection and Measurement. Presented at Western Regional Council on Forest Engineering Conference, January 17, 2019, Eugene, OR.

**Chung, W.** Innovations in Timber Harvesting. **Invited Seminar** at Seoul National University, December 10, 2018, Seoul, South Korea

**Chung, W.**, B. Morrissette, P. Green, B. Leshchinsky, F. Belart, K. Bladon, J. Hatten, and J. Sessions. 2018. Cable-Assisted Steep Slope Harvesting – Research on Soil Impacts. Presented at the 2018 Council on Forest Engineering Annual Meeting, July 15-18, 2018, Williamsburg, VA

**Chung, W.** and L. Wells. 2018. Real-time Photogrammetric Tree Detection and Measurement. Presented at the 2018 Council on Forest Engineering Annual Meeting, July 15-18, 2018, Williamsburg, VA

**Chung, W.**, B. Leshchinsky, F. Belart, J. Garland, P. Green, B. Morrissette, J. Sessions, and J. Wimer. 2018. Ongoing Research on Cable-Assisted Steep Slope Harvesting Systems in North America. **Invited Seminar** at Korea National Institute of Forest Science, June 20, 2018, Seoul, South Korea

**Chung, W.**, P. Green, B. Leshchinsky, J. Sessions, J. Garland, J. Wimer, and S. Fitzgerald. 2018. Effects of Cable-Assistance on Reducing Soil Disturbance during Mechanized Timber Harvesting. Presented at the 6<sup>th</sup> International Forest Engineering Conference, April 16-19, 2018, Rotorua, New Zealand

**Chung, W.** 2017. Forest, People and Fire. **Invited Seminar** at Korea National Institute of Forest Science, November 2, 2017, Seoul, South Korea

**Chung, W.** and J. She. 2017. Multi-objective optimization of timber and bioenergy supply chain from beetle-killed biomass in Colorado. Presented at the 50<sup>th</sup> International Symposium on Forestry Mechanization, September 25-29, 2017, Brasov, Romania

**Chung, W.** 2017. Forest Operations Engineering and Management: Challenges and Opportunities. Presented at the IUFRO 125<sup>th</sup> Anniversary Congress, September 18-22, 2017, Freiburg, Germany

**Chung, W.** 2017. Beetle-killed biomass for bioenergy: An integrated modeling approach for feedstock supply and logistics. Presented at the IUFRO 125<sup>th</sup> Anniversary Congress, September 18-22, 2017, Freiburg, Germany

**Chung, W.** 2017. New methods to estimate, analyze and map forest characteristics, wood quality and resources over large landscapes at high resolution. Presented at the IUFRO 125<sup>th</sup> Anniversary Congress, September 18-22, 2017, Freiburg, Germany

**Chung, W.** 2017. Operational forest planning under data poor conditions - A case study of beetle killed biomass feedstock operations. **Invited keynote presentation** at the 2017 Symposium for Systems Analysis in Forest Resources (SSAFR), August 27-30, 2017, Suquamish, WA.

**Chung, W.** 2017. Productivity and Safety of Forest Operations. **Invited** opening remark at the Joint Regional Meeting of IUFRO RG3.03.00 and RG3.06.00. July 24-28, 2017, Matsuyama and Kochi, Japan.

**Chung, W.** and E. Marchi. 2017. Sustainable forest operations: A key tool to achieve sustainable forest management and restoration. **Invited keynote presentation** at the IUFRO Symposium on Sustainable Restoration of Mediterranean Forests. Palermo International Congress, April 19-21, 2017, Palermo, Italy.

**Chung, W.**, and N. Anderson. 2017. BANR/CSFS Research Update: Beetle-killed Biomass Feedstock Logistics. BANR/Colorado State Forest Service Research Meeting, Steamboat Springs, CO, April 10, 2017.

**Chung, W.** 2016. SNAP for ArcGIS 2.0 – Overview. **Invited** presentation at the 2016 USFS Tongass National Forest Ranger/Timber Management Staff Meeting, USDA Forest Service Region 10, December 8, 2016, Ketchikan, AK.

**Chung, W.**, H. Han and N. Anderson. 2016. Beetle-killed stand harvesting and biomass feedstock logistics. **Invited** Seminar, College of Agriculture and Life Sciences, Seoul National University, October 18, 2016, Seoul, South Korea.

**Chung, W.** 2016. Introduction to Timber Harvesting. **Invited** Special Lecture, College of Agriculture and Life Sciences, Seoul National University, October 18, 2016, Seoul, South Korea.

**Chung, W.** 2016. Biomass feedstock logistics. Presented at the 4<sup>th</sup> Annual Project Meeting of the USDA-NIFA Bioenergy Alliance Network of the Rockies (BANR). October 3-5, 2016, Laramie, WY.

**Chung, W.**, Yaejun Kim, Hee Han and Nate Anderson. 2016. Standing vs. Downed Trees: Costs and Productivity of Beetle-killed Stand Harvesting. Presented at the 2016 Annual Council on Forest Engineering Meeting, September 19 – 21, 2016, Vancouver, Canada.

**Chung, W.** 2016. IUFRO Division 3 – Current Challenges and Future Opportunities, **Keynote address** at the 1<sup>st</sup> IUFRO Division 3 Doctoral Student Conference, August 28 – September 2, 2016, Corvallis, OR.



**Chung, W.**, H. Han, and N. Anderson. 2016. Turning Uncertainty into Opportunity: Integrated Supply Chain Models for Beetle-killed Biomass. Presented at the 8th International Conference of IUFRO Working Parties 5.01.04 and 3.04.00: Modelling Wood Quality, Supply and Value Chain Networks (WoodQC 2016), June 12-17, 2016, Quebec, Canada.

**Chung, W.**, H. Han, and N. Anderson. 2016. Developing an Integrated Logistics Model for Beetle-killed Biomass. **Invited** presentation at the 2nd Northwest Wood-Based Biofuels + Co-Products Conference, May 3-4, 2016, Seattle, WA.

**Chung, W.** 2016. IUFRO – Forest Operations Engineering and Management (Division 3) – Current and Future Challenges, **Invited** presentation for the FORAC seminar, University of Laval, February 12, 2016, Quebec City, Canada.

**Chung, W.** 2015. Forest Engineering Challenges and Opportunities. **Invited** opening remark at the 48th International Symposium on Forestry Mechanization (FORMEC), October 4 – 8, 2015, Linz, Austria.

**Chung, W.** 2015. IUFRO Division 3 Forest Operations Engineering and Management: Challenges in the Future. **Invited keynote address** at the 2015 CROJFE Forest Engineering Conference, March 18-20, 2015, Zagreb, Croatia.

**Chung, W.** 2015. Woody Biomass Supply Chain. **Invited** Special Lecture Series, Faculty of Forestry, University of Zagreb, March 18, 2015, Zagreb, Croatia.

**Chung, W.** 2015. Decision Support Tools for Foresters. **Invited** Special Lecture Series, Faculty of Forestry, University of Zagreb, March 18, 2015, Zagreb, Croatia.

**Chung, W.** 2014. Council on Forest Engineering (COFE): Achievement and Challenges. **Invited** presentation at the XXIV IUFRO World Congress, October 5-11, 2014, Salt Lake City, Utah.

**Chung, W.** 2014. Forest Ecosystem Management Issues and Opportunities in the United States. **Invited keynote address** presented at the 5<sup>th</sup> Forest Engineering Conference, September 23-26, 2014, Gerardmer, France.

**Chung, W.**, N. Anderson, and R. Keefe. 2014. Task 2.1 – Feedstock logistics: Updates and Activities. Presented at the 2nd Annual Project Meeting of the USDA-NIFA Bioenergy Alliance Network of the Rockies (BANR), October 1-2, 2014, Moscow, ID.

**Chung, W.** and N. Anderson. 2013. UM and RMRS Woody Biomass Supply Chain Research. **Invited** presentation at Montana State DNRC Forest Products Retention Roundtable, October 11, 2013, Missoula, MT.

**Chung, W.** 2013. SNAP for ArcGIS: A Forest Planning and Educational Tool. **Invited** presentation at the 2013 Western Research Forest Managers Meeting, October 1, 2013, Lubrecht Experimental Forest, MT.

**Chung, W.** 2013. IUFRO Division 3: Promoting Global Collaboration for Global Challenges. **Invited keynote address** presented at the 2nd International Symposium on Tropical Forest Ecosystem Science and Management: Challenges and Solutions, September 11-13, 2013, Bintulu, Sarawak, Malaysia.

**Chung, W.** 2013. Improving the Efficiency of Woody Biomass Supply Chains in the Western United States. **Invited keynote address** presented at the 15<sup>th</sup> Symposium on Systems Analysis in Forest Resources, August 19-21, 2013, Quebec City, Quebec, Canada.

**Chung, W.,** F. Bower, O. O'Brien, and J. Sessions. 2013. SNAP for ArcGIS: a planning and educational tool for forest engineers. Presented at the 2013 Council on Forest Engineering Annual Meeting, July 7-10, 2013, Missoula, MT.

**Chung, W.,** Anderson, N., W. Perez, D. Page-Dumroese and Z. Gu. 2013. An assessment of fuel, soil and industrial sorbent applications of biochar produced from forest biomass using distributed scale thermochemical conversion. Presented at the 2013 Council on Forest Engineering Annual Meeting, July 7-10, 2013, Missoula, MT.

**Chung, W.** 2013. SlopeRunner: a program to evaluate the effectiveness of landing and road locations for cable logging. **Invited** seminar presentation at Idaho Department of Land Priest Lake Supervisory Area Office. April 29, 2013, Coolin, ID.

**Chung, W.** 2013. Forest Management Planning using SNAP for ArcGIS. Presented at the 2013 Research Project Seminar, Korea Forest Service Hongchun National Forest Office, March 5, 2013, Hongchun, South Korea.

**Chung, W.** 2013. Introduction to SNAP for ArcGIS. **Invited** presentation at Korea Forest Research Institute, January 7, 2013, Seoul, South Korea.

**Chung, W.** 2012. Spatial Modeling of Potential Woody Biomass Flow. Presented at the first BRDI project meeting, October 10, 2012 Spokane, WA.

**Chung, W.** and N.M. Anderson. 2012. Spatial modeling of potential woody biomass flow. Presented at the 35th Annual Meeting of the Council on Forest Engineering: Engineering New Solutions for Energy Supply and Demand. September 9-12, 2012. New Bern, NC.

**Chung, W.** D. Kim, and N.M. Anderson. 2012. Productivity and cost analysis of a mobile pyrolysis system deployed to convert mill residues into biochar. Presented at the 35th Annual Meeting of the Council on Forest Engineering: Engineering New Solutions for Energy Supply and Demand. September 9-12, 2012. New Bern, NC.

**Chung, W.** 2012. LiDAR applications in forest operations planning. **Invited** seminar presentation, Korea Forest Research Institute, June 12, 2012, Seoul, South Korea.

**Chung, W.,** N. Anderson, and G. Jones. 2012. Recent Research Projects in the Western United States to Improve the Efficiency of Woody Biomass Supply Chains. **Invited** seminar presentation, Center for Energy and Environmental Studies, Boston University, April 20, 2012, Boston, MA.

**Chung, W.**, N. Anderson, G. Jones, and D. Kim. 2012. Recent Research Projects in the United States to Improve the Efficiency of Woody Biomass Supply Chains. **Invited keynote address** presented at the International Symposium on Supply Chain Management for the Forest Sector and its Contribution to Local Economy, Utsunomiya University, March 29, 2012, Utsunomiya, Japan

**Chung, W.** 2012. Introduction to SNAP for ArcGIS. **Invited** presentation at USDA Forest Service Region 1 Staff Meeting, March 9, 2012, Missoula, MT.

**Chung, W.** 2012. Introduction to SNAP for ArcGIS. **Invited** presentation at USDS Forest Service Region 1 Forest and Grasslands Engineering Leadership Meeting, March 20-21, 2012, Missoula, MT.

**Chung, W.**, N. Anderson, D-Y. Kim, and G. Jones. 2011. Recent Research Projects in the United States to Improve the Efficiency of Woody Biomass Supply Chains. **Invited keynote address** presented at the International Conference on “Forest Technologies for Mitigating Climate Change”, Seoul National University, October 4 – 6, 2011, Seoul, South Korea.

**Chung, W.** 2011. LiDAR applications in forest management and operations planning. **Invited** presentation at a special seminar at Kangwon National University, May 17, 2011, Chuncheon, South Korea.

**Chung, W.** and G. Jones. 2011. OptFuels: a decision support system to optimize spatial and temporal fuel treatments at a landscape level. **Invited** presentation at a special seminar at the University of Ryukyus, April 26, 2011, Okinawa, Japan.

**Chung, W.** and M. Contreras. 2011. An approach to optimize individual cut-tree selection to efficiently reduce crown fire potential within a stand. **Invited** presentation at a special seminar at the University of Ryukyus, April 26, 2011, Okinawa, Japan.

**Chung, W.**, P. Aracena, and G. Jones. 2011. WTP: a decision support system for invasive weed treatment planning. **Invited** presentation at a special seminar at the University of Ryukyus, April 26, 2011, Okinawa, Japan.

**Chung, W.** and G. Jones. 2011. OptFuels: A decision support system to optimize spatial and temporal fuel treatments at a landscape level. Paper presented at the 14<sup>th</sup> Symposium for Systems Analysis in Forest Resources. March 8 – 11, 2011, Maitencillo, Chile.

**Chung, W.**, N. Anderson, and J. Chung. 2011. Estimating the volume and transportation cost of forest residue available for utilization in a large forestland in Oregon. Paper presented at the 52<sup>nd</sup> Korean Forest Society Annual Meeting, February 16 – 17, 2011. Kyungju, South Korea.

**Chung, W.**, N. Anderson, and G. Jones. 2011. Up in smoke or in the black: quantifying the productivity and costs of forest biomass energy. **Invited** presentation at a special seminar at Korea Forest Research Institute, January 14, 2011, Seoul, South Korea.

**Chung, W.**, N. Anderson, and G. Jones. 2011. Up in smoke or in the black: quantifying the productivity and costs of forest biomass energy. Presented at a special seminar at Forest Practice Research Center, Korea Forest Research Institute, January 12, 2011, Pochun, South Korea.

**Chung, W.** 2011. LiDAR applications in forest management and operations planning. Presented at a special seminar at Forest Operations Research Center, Korea Forest Research Institute, January 12, 2011, Pochun, South Korea.

**Chung, W.** 2010. LiDAR applications in forest management and operations planning. **Invited** presentation at a special seminar at Kyungpook National University (Sanju Campus), November 25, 2010, Sangju, South Korea.

**Chung, W.** 2010. LiDAR applications in forest management and operations planning. **Invited** presentation at a special seminar at Chungnam National University, October 13, 2010, Daejeon, South Korea.

**Chung, W.** 2010. LiDAR applications in forest management and operations planning. **Invited** presentation at a special seminar at Kyunghee University, September 9, 2010, Seoul, South Korea.

**Chung, W.** 2010. LiDAR applications in forest management and operations planning. **Invited** presentation at a special seminar at Kyungpook National University, September 7, 2010, Taegu, South Korea.

**Chung, W.**, G. Jones, and K. Krueger. 2010. OptFuels: optimizing placement of fuel treatments over time at landscape scales. **Invited** presentation at a special seminar at Korea Forest Research Institute, September 1, 2010, Seoul, South Korea.

**Chung, W.** 2010. Introduction to ArcSNAP 1.0. **Invited** presentation at the US Forest Service R1 seminar, May 10, 2010. Missoula, MT.

**Chung, W.**, Jones, Greg, Sullivan, Janet, Krueger, Kurt and Aracena, Pablo. 2009. "OptFuels: Optimizing Placement of Fire and Non-fire Fuel Treatments over Time at Landscape Scales" Presented at the AFE 4th International Congress, 2009 Fire Ecology & Management, November 30 – December 4, 2009, Savannah, GA.

**Chung, W.** and G. Jones. 2009. Weed Treatment Planner (WTP) – A Spatial Decision Support System for Invasive Weed Management. Presented at the 2009 PREISM Workshop, USDA Economic Research Service, October 22-23, 2009, Washington DC.

**Chung, W.** and G. Jones. 2009. Overview of RMRS/UM Forest Biomass Research. Oral presentation at the US Forest Service Special Seminar, October 21, 2009. Washington DC.

**Chung, W.** 2009. Developing a Decision Support System to Optimize Spatial and Temporal Fuel Treatments at a Landscape Scale. Presented at the 2009 Council on Forest Engineering, June 15 – 18, Kings Beach, CA.

**Chung, W.** 2009. OptFuels: A decision support system to optimize spatial and temporal fuel treatments. Presented at the 13<sup>th</sup> Symposium on Systems Analysis in Forest Resources, May 26 – 29, 2009. Charleston, SC.

**Chung, W.** 2009. Weed Treatment Planner (WTP): A landscape-level decision support tool for weed management. Presented at the 13<sup>th</sup> Symposium on Systems Analysis in Forest Resources, May 26 – 29, 2009. Charleston, SC.

**Chung, W.** 2009. Weed Treatment Planner (WTP): A landscape-level decision support tool for weed management. Presented at Idaho Weed Conference, January 28-29, 2009, Nampa, ID.

**Chung, W.** 2008. Remote Sensing Applications in Forest Operations. **Invited** presentation at Forestal Arauco, December 18, 2008, Concepcion, Chile

**Chung, W.** 2008. Remote Sensing Applications in Forest Operations. **Invited** presentation at Forestal Celco, Constitucion, Chile, December 17, 2008

**Chung, W.** 2008. Remote Sensing Applications in Forest Operations. **Invited** presentation at CIREN (National Center of Natural Resources Conservation), December 16, 2008, Santiago, Chile

**Chung, W.** 2008. Remote Sensing Applications in Forest Operations. **Invited** lecture at the University of Talca, December 15, 2008, Talca, Chile

**Chung, W.** 2008. Forest Transportation Planning under Multiple Goals. **Invited** presentation at a graduate seminar at the University of Talca, December 13, 2008, Talca, Chile

**Chung, W.,** P. Aracena, M. Contreras. 2008. Optimization Techniques for Forest Transportation Planning under Multiple Goals. Abstract for the 2008 INFORMS (the Institute For Operations Research and the Management Sciences) annual meeting, October 12-15, 2008, Washington, DC

**Chung, W.,** J. Sessions, J. Stükelberger, and K. Aruga. 2008. Road Network Planning: State and Perspectives. **Invited** presentation for the IUFRO All-D3-Conference: Pathways to Environmentally Sound Technologies for Natural Resource Use, June 15-20, 2008, Sapporo, Japan

**Chung, W.,** C. Seielstad, and J. Sessions. 2008. SlopeRunner2.0: A Harvest Area Planning Tool for Cable Logging Using LIDAR-derived DEM and Stem Map. Paper presented at the IUFRO All-D3-Conference: Pathways to Environmentally Sound Technologies for Natural Resource Use, June 15-20, 2008, Sapporo, Japan

**Chung, W.** and M. A. Contreras. 2008. Techniques for Transportation Planning under Multiple Goals. Paper presented at IUFRO All-D3-Conference: Pathways to Environmentally Sound Technologies for Natural Resource Use, June 15-20, 2008, Sapporo, Japan

**Chung, W.,** J. Stükelberger, K. Aruga, and T. W. Cundy. 2008. Designing Forest Road Networks to Minimize Timber Harvesting and Road Construction Costs. Paper presented at IUFRO All-D3-

Conference: Pathways to Environmentally Sound Technologies for Natural Resource Use, June 15-20, 2008, Sapporo, Japan

**Chung, W.**, J. Sessions, and J. Holub. 2007. SlopeRunner 1.0: A program to evaluate the effectiveness of landing and road locations for cable logging. Paper presented at the 13th Pacific Northwest Skyline Symposium, April 1-6, Corvallis, OR.

**Chung, W.** 2006. Landscape-level Decision Support for Invasive Species Management. Oral presentation at the PREISM 2006 Organizational Meeting, USDA Economic Research Service, October 18-20, 2006, Washington DC.

**Chung, W.** 2006. Decision Support Systems for Forest Management Planning. **Invited** presentation at the Computational Science Workshop sponsored by UM's ORSP, Computer Science and Mathematics, November 18, 2006, Missoula, MT.

**Chung, W.** CableAnalysis: a computer program to determine cable logging feasibility. **Invited** presentation at the 23rd Inland Empire Forest Engineering Conference. March 7-8, 2006. Moscow, ID.

**Chung, W.**, G. Jones, J. Sullivan, and J. Sessions. 2005. Developing a heuristic solver for MAGIS: a planning tool to integrate resource management and transportation planning on large forest lands. Paper presented at the 2005 Council on Forest Engineering, July 11-14, Fortuna, CA.

**Chung, W.** 2005. MAGIS Express: a planning tool for roads and harvesting. **Invited** presentation at the 22nd Inland Empire Forest Engineering Conference, March 8-9, Moscow, ID.

**Chung, W.** 2005. Decision support systems for forest operational planning. **Invited** presentation at the VIII Forest Production Workshop, November 10-11, 2005, Concepción, Chile

**Chung, W.** 2005. Decision support systems for forest operational planning. **Invited** presentation at the University of Talca, November 8, 2005, Talca, Chile.

**Chung, W.** 2005. Forest operations planning. **Invited** presentation at the Mininco Timber Company, November 7, 2005, Los Angeles, Chile

**Chung, W.** 2004. The Forest and Forestry in Korea. **Invited** Presentation at International Brown Bag Presentation Series, October 1, Office of International Programs, University of Montana, Missoula, MT.

**Chung, W.** 2004. Use of Network Algorithms in Forestry Applications. **Invited** presentation at the Colloquium Seminar, October 7, Dept. of Mathematical Sciences, University of Montana, Missoula, MT.

**Chung, W.** 2004. Use of Network Algorithms in Forestry Applications. **Invited** presentation at the Forest Products Department seminar, College of Natural Resources, University of Idaho, November 15, Moscow, ID.

**Chung, W.** 2004. Forest transportation planning under multiple goals. Presented at the 21st annual Inland Empire Forest Engineering Conference, March. 2-3, Moscow, ID.

**Chung, W.** 2004. New trends and techniques in forest-level management planning. **Invited** presentation at the Department of Forest Resources, Seoul National University, June 1, Seoul, Korea.

**Chung, W.** 2004. New trends and techniques in forest-level management planning. **Invited** presentation at Kookmin University, June 3, Seoul, Korea.

**Chung, W.** and J. Sessions. 2003. A Computerized Method for Determining Cable Logging Feasibility Using a DEM. Paper presented at the Council of Forest Engineering, September 7-10, Bar Harbor, Maine.

**Chung, W.** 2003. A Computer-aided Design Method for Cable Logging Layout. Presented at the 20th Annual Inland Empire Forest Engineering Conference, March. 4-5, Moscow, ID.

#### **Poster Presentations:**

Joshi, P. and **W. Chung.** 2023. Harvesting Costs of Two Machine Settings: A Cost Analysis Study. Poster presentation at the 2023 Olympic Experimental State Forest Science Conference: Linking Science to Natural Resource Management, May 3, 2023, Forks, WA, USA.

D. Jeon and **W. Chung.** 2019. Real-time Optimization of Forest Fire Suppression Resources Allocation. Poster presentation at the 2019 Western Forestry Graduate Research Symposium, April 26, 2019, Corvallis, OR, USA

Uffelman, S., **W. Chung,** K. Lyons, C. Fuentes. 2018. The Significance of Understory Vegetation on the Productivity of Cut-to-length Harvesting in the Coastal Range. Poster presentation at the 2018 Society of American Foresters National Convention, October 3-7, 2018, Portland, OR, USA.

She, J., **W. Chung,** D. Kim. 2016. Using a stochastic simulation approach to evaluate the productivity and cost of harvesting system alternatives. Poster presentation at the Annual Project Meeting of the USDA-NIFA Bioenergy Alliance Network of the Rockies (BANR). October 3-5, 2016, Laramie, WY, USA.

Han, H., **W. Chung,** J. She, Y. Kim, L. Wells, N. Anderson. 2016. Productivity and costs of two beetle-killed stand harvesting methods in northern Colorado. Poster presentation at the Annual Project Meeting of the USDA-NIFA Bioenergy Alliance Network of the Rockies (BANR). October 3-5, 2016, Laramie, WY, USA.

Han, H., **W. Chung,** L. Wells. 2016. Optimizing biomass feedstock logistics: slash forwarding vs. in-woods grinding? Poster presentation at the Annual Project Meeting of the USDA-NIFA Bioenergy Alliance Network of the Rockies (BANR). October 3-5, 2016, Laramie, WY, USA.

- She, J., **W. Chung**, and D. Kim. 2016. Using a stochastic simulation approach to evaluate the productivity and cost of harvesting system alternatives. Poster presented at the 1<sup>st</sup> IUFRO Division 3 Doctoral Student Conference, August 28 – September 2, 2016, Corvallis, OR.
- Wells, L., **W. Chung**, N. Anderson, and J. Hogland. 2016. Estimating Bioenergy Feedstock Supply and Delivered Costs. Poster presented at the 1<sup>st</sup> IUFRO Division 3 Doctoral Student Conference, August 28 – September 2, 2016, Corvallis, OR.
- Wells, L., **W. Chung**, N. Anderson, and J. Hogland. 2016. Estimating Bioenergy Feedstock Supply and Delivered Costs. Poster presented at the Final RMRS-BRDI Project Meeting, April 19-22, 2016, Missoula, MT.
- Han, H., **W. Chung**, and L. Wells. 2016. Optimizing Biomass Feedstock Logistics: Slash Forwarding vs. In-woods Grinding? Poster presented at the Final RMRS-BRDI Project Meeting, April 19-22, 2016, Missoula, MT.
- Hogland, J., N. Anderson, **W. Chung**, L. Wells, and H. Han. 2016. Spatially Explicit, Fine Grained, Rater-based Biomass Supply Chain Analysis. Poster presented at the Final RMRS-BRDI Project Meeting, April 19-22, 2016, Missoula, MT.
- Boston, K., J. Garland, B. Leshchinsky, **W. Chung**, J. Sessions, and J. Wimer. 2016. Innovative Logging Systems to Reduce Injuries in the Logging Workforce. Poster presented at the 2016 Western Region Council on Forest Engineering, January 14, 2016. Eugene, OR.
- Woo, H., **W. Chung**, B. Lee, and J.M. Graham. 2015. Forest Fire Risk Assessment using Point Process Modeling and Monte Carlo Simulation: A Case Study in Gyeongju, South Korea. Poster presented at the 2015 Montana Society of American Foresters Annual Meeting, April 9-11, 2015, Whitefish, MT.
- Anderson, N., **W. Chung**, R. Keefe, and J. Hogland. 2014. Task 2.1 – Feedstock logistics: Increasing productivity and reducing costs of logistics for sustainable biofuel feedstocks from beetle-killed wood. Poster presentation at the 2nd Annual BANR Project meeting, October 1-2, 2014, Moscow, ID.
- Wells, L.A., J.S. Hogland, N.M. Anderson, and **W. Chung**. 2013. Landscape Scale Estimation of Forest Treatment Residue for Bioenergy Production. Poster presented at the 3<sup>rd</sup> IUFRO Latin American Congress, June 12-15, 2013, San Jose, Costa Rica
- Anderson, N., **W. Chung**, W. Perez, D. Page-Dumroese, and Zhengrong Gu, 2013. An assessment of fuel, soil and industrial sorbent applications of biochar produced from woody biomass using distributed scale thermochemical conversion. Poster presented at the 3rd IUFRO Latin American Congress, June 12-15, 2013, San Jose, Costa Rica
- Chung, W.**, N. Anderson, and G. Jones. 2012. Improving the Cost-Efficiency of Woody Biomass Utilization for Energy. Poster presentation at the 1<sup>st</sup> IUFRO-FORNESSA Regional Congress & ITTO/AFF Forest Policy Day, June 25-29, 2012. Nairobi, Kenya.



Butler, E., W.J. Elliot, G. Jones, J. Bramel, K. Krueger, and **W. Chung**. 2012. Modeling sediment from wildland fire to assess tradeoffs between treated and untreated landscapes within the OptFuels System. Poster presentation at the 2012 Tahoe Science Conference, May 22-24, 2012. Incline Village, NV.

Han, H., J. Song, H. Chung, **W. Chung**, J. Chung, J. Sung. 2011. Extracting the Forest Areas Needed to Conserve the Ecosystem of the Major Mountain Ridges in Korea. Poster presentation at Korea Forest Research Institute International Workshop for Practice of Forest Ecosystem Management. July 25-27, 2011. Seoul, South Korea.

Lass, L., T. Prather, B. Shafii, S. Cook, S. Radosevich, **W. Chung**, T. Venn, C. Crabtree, and P. Green. 2011. Using a plant dispersal model on Yellow Starthistle for landscape level weed management planning. Poster presented at the 2011 Weed Science Society of America Annual Meeting, Feb. 7 – 10, 2011, Portland, OR.

Aracena, P., M. Contreras, and **W. Chung**. 2010. Optimizing multiple log landing locations for ground-based timber harvesting. Poster presented at the 23<sup>rd</sup> IUFRO World Congress, August 23 – 28, 2010. Seoul, South Korea.

Stückelberger, J., H. Heinemann, and **W. Chung**. 2010. Pareto-optimality between forest harvesting costs and negative ecological impacts. Poster presented at the 23<sup>rd</sup> IUFRO World Congress, August 23 – 28, 2010. Seoul, South Korea.

Jones, Greg, **W. Chung**, J. Sullivan, K. Krueger, and P. Aracena. 2010. OptFuels: Optimizing Placement of Fire and Non-fire Fuel Treatments over Time at Landscape Scales. Poster presented at the USDA FS RMRS All Scientists Meeting, March 23 – 25, 2010, Fort Collins, CO.

**Chung, W.**, G. Jones, J. Sullivan, K. Krueger, and P. Aracena. 2010. Spatial and Temporal Optimization of Fuel Treatments. Poster presented at the 5th Biennial Lake Tahoe Basin Science Conference, March 16 – 17, 2010, Incline Village, NV.

Prather, T., L. Lass, B. Shafii, S. Cook, S. Radosevich, **W. Chung**, T. Venn, C. Crabtree, and P. Green. 2010. Decision-support Tool Utilizing Improved Dispersal Modeling to Develop Socio-economically Efficient Invasive Species Management Programs. Poster presented at the 2010 Weed Science Society of America Annual Meeting, Feb. 7 – 11, 2010, Denver, CO.

Jones, G., **W. Chung**, J. Sullivan, K. Krueger, and P. Aracena. 2009. "OptFuels: Optimizing Placement of Fire and Non-fire Fuel Treatments over Time at Landscape Scales" Poster presented at the AFE 4th International Congress, 2009 Fire Ecology & Management, November 30 – December 4, 2009, Savannah, GA.

Page-Dumroese, D., Coleman, M., Jones, G., Dumroese, K., Venn, T., Anderson, N., **Chung, W.**, Sorenson, C., Loeffler, D., Kimsey, M., Shaw, T., McElligott, K., Archuleta, J., Englund, K. and Heiskanen, J. 2009. Portable in-woods fast pyrolysis: Using forest biomass to reduce fuels and improve soil quality. Poster presentation at the International workshop on Forests Under Pressure? Bioenergy – Forest Industry – The Public. International Energy Agency, Bioenergy Task 31. Wershofen, Germany, October 5–8, 2009.

**Chung, W.** G. Jones, J. Sullivan, K. Krueger, D. Loeffler, and P. Aracena. 2008. Fire-MAGIS: A Decision Support System to Optimize Spatial and Temporal Fuel Treatments at Landscape Scales. Poster presented at the IUFRO All-D3-Conference: Pathways to Environmentally Sound Technologies for Natural Resource Use, June 15-20, 2008, Sapporo, Japan

**Chung, W.**, J. Sessions, D. Dykstra. 2008. ArcSNAP: A Scheduling and Network Analysis Program for Tactical Harvest Planning. Poster presented at the IUFRO All-D3-Conference: Pathways to Environmentally Sound Technologies for Natural Resource Use, June 15-20, 2008, Sapporo, Japan

Bruce, J., H-S Han, A. Akay, and **W. Chung**. 2007. A computer application to estimate forest road construction cost. Poster presented at the 13th Pacific Northwest Skyline Symposium, April 1-6, Corvallis, OR.

Jones, G., **W. Chung**, J. Sullivan, K. Krueger, and P. Aracena. 2007. Optimizing spatial and temporal treatments to maintain effective fire and non-fire fuels treatments at landscape scales. Poster presented at the 13th Pacific Northwest Skyline Symposium, April 1-6, Corvallis, OR.

Jones, J. Greg., **W. Chung**, J. Sullivan, and K. Krueger. 2007. Optimizing Spatial and Temporal Treatments to Maintain Effective Fire and Non-fire Fuels Treatments at Landscape Scales. Poster presented at the 2nd Fire Behavior and Fuels Conference, March 26-30, 2007, Destin, FL.

**Chung, W.** 2005. Spatial Decision Support Systems for Forest Operations Planning. Poster presentation at the 2005 Council of Forest Engineering, Fortuna, CA. July 11-14, 2005

Rackely, J. and **W. Chung**. 2005. Integrated Resource Transportation Planning with the Water Erosion Prediction Project (WEPP) Model. Poster presentation at the 2005 Council of Forest Engineering, Fortuna, CA. July 11-14, 2005

Contreras. M. and **W. Chung**. 2005. An Application of Ant Colony Optimization Metaheuristic to Solve Forest Transportation Planning Problems with Side Constraints. Poster presentation at the 2005 Council of Forest Engineering, Fortuna, CA. July 11-14, 2005

Kavanagh, Kathleen, T. Link, J. D. Marshall, Jeff Braatne, H-S Han, T. Cundy, S. Daley-Laursen, and **W. Chung**. 2005. Collaborative Watershed Studies of Ecosystem Responses to Current Forest Harvest Practices in the Rocky Mountains, USA. Poster presentation at the 5th National Conference on Science, Policy and the Environment: Forecasting Environmental Changes. February 3-4, Washington, DC.

**Chung, W.** 2003. CPLAN: a Computer Program for Cable Logging Layout Design. Poster presentation at the Second International Precision Forestry Symposium, Seattle, WA, June 15-17, 2003.

**Chung, W.** 2003. NETWORK2000: a Program for Forest Transportation Planning. Poster presentation at the Inland Empire & Montana Society SAF Meeting, Missoula, MT, March 14-15, 2003.

**Chung, W.** 2003. CPLAN: a Computer-aided Design Method for Cable Logging System. Poster presentation at the Inland Empire & Montana Society SAF Meeting, Missoula, MT, March 14-15, 2003.

#### **Workshops Conducted:**

**Chung, W.** 2016. SNAP for ArcGIS 2.0 Workshop. US Forest Service Tongass National Forest, December 6 – 8, 2016, Ketchikan, AK.

**Chung, W.** 2016. The First IUFRO Division 3 Doctoral Student Conference, Oregon State University, August 29 – September 2, 2016, Corvallis, OR.

**Chung, W.** and F. Maus. 2013. Hosting the 2013 USDA Forest Service Sale Area Layout and Harvesting Institute (SALHI), USDA Forest Service, MT, May 13 – 24, 2013, Missoula, MT.

**Chung, W.** 2013. SNAP for ArcGIS Workshop. US Forest Service Tongass National Forest, April 1–5, 2013, Ketchikan, AK.

**Chung, W.** 2012. SNAP for ArcGIS Workshop. US Forest Service Tongass National Forest, December 4–6, 2012, Missoula, MT.

**Chung, W.** 2012. Decision Support Systems in Forest Management Planning. IUFRO Task Force on Education 2012 Summer School, August 5-15, 2012, Warsaw, Poland

**Chung, W.,** G. Jones, K. Krueger, E. Butler, and R. Lankston. 2012. Fuels Treatment Planning: A Workshop on the Applications of the Tahoe Basin-Specific OptFuels Modeling System. May 25, 2012, Stateline, NV.

**Chung, W.** and F. Maus. 2012. Hosting the 2012 USDA Forest Service Sale Area Layout and Harvesting Institute (SALHI), USDA Forest Service, MT, May 14 – 19, 2012, Missoula, MT.

**Chung, W.,** S. O'Brien, and F. Bower. 2010. SNAP for ArcGIS Workshop. US Forest Service Region 1, December 6 – 9, 2010, Missoula, MT.

**Chung, W.** 2010. Spatial forest planning using heuristic optimization techniques. Workshop at Seoul National University, August 2 – 6, 2010. Seoul, South Korea.

**Chung, W.** and F. Maus. 2010. Hosting the 2010 USDA Forest Service Sale Area Layout and Harvesting Institute (SALHI), USDA Forest Service, MT, May 17 – 28, 2010, Missoula, MT.

**Chung, W.,** S. O'Brien, and F. Bower. 2010. SNAP for ArcGIS Workshop. US Forest Service Region 10, April 12 – 16, 2010. Ketchikan, AK.

**Chung, W.** and F. Maus. 2009. Hosting the 2009 USDA Forest Service Sale Area Layout and Harvesting Institute (SALHI), USDA Forest Service, MT, May 11 – 22, 2009, Missoula, MT.

**Chung, W.** and P. Aracena. 2009. Weed Treatment Planner (WTP): A landscape-level decision support tool for weed management. University of Idaho Weed Workshop, April 23 – 24, 2009. McCall, ID.

**Chung, W.** and F. Maus. 2008. Hosting the 2008 USDA Forest Service Sale Area Layout and Harvesting Institute (SALHI), USDA Forest Service, MT, May 12 – 23, 2008, Missoula, MT.

## **SCHOLARLY REVIEWS**

National Science Foundation (NSF) – grant proposal reviewer  
Austrian Science Fund (FWF) – grant proposal reviewer  
National Fund for Scientific & Technological Development (FONDECYT), Chile – grant proposal reviewer  
USDA Economic Research Service (ERS) – grant proposal reviewer  
US Department of Energy (DOE) – grant proposal reviewer  
NSF EPSCoR – grant proposal reviewer  
Natural Sciences and Engineering Research Council of Canada (NSERC) – grant proposal reviewer  
USDA AFRI Critical Agricultural Research and Extension (CARE) – grant proposal reviewer  
USDA NIFA Small Business Innovation Research (SBIR) – grant proposal reviewer  
USDA-DOE Biomass Research and Development Initiative (BRDI) – grant proposal reviewer and review panel member  
Maine Agricultural and Forest Experiment Station – grant proposal reviewer  
Forest Science – manuscript reviewer  
Canadian Journal of Forest Research – manuscript reviewer  
Forest Ecology and Management – manuscript reviewer  
Journal of Environmental Management – manuscript reviewer  
International Journal of Forest Engineering – manuscript reviewer  
Western Journal of Applied Forestry – manuscript reviewer  
Southern Journal of Applied Forestry – manuscript reviewer  
Applied Engineering in Agriculture – manuscript reviewer  
European Forestry Research Journal – manuscript reviewer  
New Zealand Journal of Forestry Science – manuscript reviewer  
Southern African Forestry Journal – manuscript reviewer  
Journal of Terramechanics – manuscript reviewer  
Precision Forestry Symposium – manuscript reviewer  
USDA Forest Service Technical Reports – manuscript reviewer  
Journal of Agriculture & Applied Economics – manuscript reviewer  
Journal of Agriculture Science and Technology – manuscript reviewer  
Croatian Journal of Forest Engineering – manuscript reviewer  
Journal of Forestry – manuscript reviewer  
International Journal of Forestry Research – manuscript reviewer  
Sensors – manuscript reviewer  
Applied Mathematics and Computation – manuscript reviewer  
Natural Hazards – manuscript reviewer  
Biomass and Bioenergy – manuscript reviewer  
Annals of Operations Research – manuscript reviewer

Forest Science and Technology – manuscript reviewer  
Natural Resource Modeling – manuscript reviewer  
International Journal of Wildland Fire – manuscript reviewer  
Mathematical and Computational Forestry & Natural Resource Sciences – manuscript reviewer  
INFOR: Information Systems and Operational Research – manuscript reviewer  
Southern Forests – manuscript reviewer  
Forestry: An International Journal of Forest Research – manuscript reviewer  
Forests – manuscript reviewer  
Scandinavian Journal of Forest Research – manuscript reviewer  
Resources, Conservation and Recycling – manuscript reviewer  
FPInnovations Research Report – manuscript reviewer  
Computers and Electronics in Agriculture – manuscript reviewer  
Annals of Forest Research – manuscript reviewer  
European Journal of Forest Research – manuscript reviewer  
Remote Sensing – manuscript reviewer  
Fire ecology – manuscript reviewer  
International Transactions in Operations Research – manuscript reviewer

## SOFTWARE DEVELOPMENT

Chung, W. **SNAP for ArcGIS**. 2010. A Scheduling and Network Analysis Program for Tactical Harvest Planning

Chung, W. **OptFuels Heuristic Solver**. 2010. A heuristic optimizer for scheduling fuel treatments to reduce wild fire risks.

Aracena, P. and W. Chung. **Weed Treatment Planner (WTP)**. 2010. A decision support system for scheduling invasive weed treatments.

Chung, W. and J. Sessions. 2008. **SlopeRunner 2.0**. A program for cable logging payload analysis.

Chung, W. and J. Sessions. 2007. **SlopeRunner 1.0**. A program for cable logging payload analysis.

Chung, W., G. Jones, and J. Sullivan. 2004. **MAGIS Heuristic Solver 1.0**. A program to schedule land management and road activities on both a geographic and temporal basis.

Chung, W. and J. Sessions. 2003. **CableAnalysis 1.0**. A program to determine cable logging feasibility using GIS produced data.

Chung, W. and J. Sessions. 2002. **CPLAN 1.0**. A program to optimize cable harvesting layout and road locations using digital terrain model.

Chung, W. and J. Sessions. 2001. **NETWORK 2001**. A program to optimize fixed and variable cost transportation problems under multiple objectives.

Chung, W. and J. Sessions. 2000. **NETWORK 2000**. A program to optimize fixed and variable cost transportation problems.

Chung, W. and J. Chung. 1995. **SANKIL**. A program for forest road design on steep terrain.