

BRIAN EDWARD ROTH, Ph.D.

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RESEARCH INTERESTS

Silviculture, forest production ecology, genotype x environment interactions, resource use efficiency, competitive mechanisms, nutrition, stand dynamics, remote sensing and precision silviculture.

EDUCATION

Ph.D. (Production Ecology), 2010. University of Florida, Gainesville, FL

Dissertation Topic: *Genotype x environment interactions in selected loblolly (Pinus taeda L.) and slash pine (P. elliottii Engelm. var. elliottii) plantations in the southeastern United States.*

M.Sc. (Forest Regeneration), 1994. Oregon State University, Corvallis, OR

Thesis Topic: *Interaction of seed source, competition and fertility on planted Douglas-fir (Pseudotsuga menziesii [Mirb.] Franco).*

B.Sc. (Forest Management), 1991. University of Alberta, Edmonton, AB

EMPLOYMENT

2011–present Graduate Faculty and Associate Director, Cooperative Forestry Research Unit, University of Maine, Orono, ME

- Develop and maintain collaboration, coordination, cooperation & resource sharing
- Foster relationships among scientists and a diverse collection of member organizations (36)
- Manage in excess of \$500,000/yr fiscal operations, budgets, external funding, and contracts
- Coordinate the development and production of all internal and external communications
- Develop project proposals and implement approved research projects
- Maintain long-term research resources such as research sites, facilities and partnerships
- Oversee ongoing development and maintenance of CFRU information infrastructure
- Supervise graduate and undergraduate study programs

2007–2011 Consultant and Owner, Roth Forestry Research, Gainesville, FL

- Assisted forest landowners and University researchers with their research programs
- Performed audits of genetic field trial measurements for quality control
- Collected, maintained, analyzed and reported on data from field experiments
- Provided growth & yield summaries to clients for decision making
- Supported field trial installation, maintenance and documentation.

- 2000-2007 Program Manager, Forest Biology Research Cooperative, University of Florida, Gainesville, FL
- Coordination of interdisciplinary research among multiple institutions
 - Integration of nutrition, physiology, soils, genetics, and pests into research program
 - Research planning and execution of projects as visualized by industrial cooperators
 - Fostering of cooperative research between scholastic and industrial researchers
 - Coordination of activities on large field trials from East Texas to Virginia
 - Management of research budget in excess of \$250 000 per annum
 - Maintenance and upkeep of large, multidisciplinary research database
 - Detailed analysis of data using appropriate statistical tools and procedures
 - Development of process based models to supplement empirical models
 - Preparation of reports and dissemination of information via print, internet, and e-mail
- 1995-2000 Research Forester, Weyerhaeuser, Federal Way/Longview, WA
- Member of Western Timberlands Silviculture/Wood Quality Research Team
 - Supported strategic goals through proven team based research processes
 - Assisted with development of 1995 Douglas-fir Growth model
 - Advanced the development and implementation of key operational guidelines
 - Analyzed and reported on realized gains and genotype by environment trials
 - Summarized results from long-term thinning, pruning, and wood quality studies
 - Maintained quality control and regular input of data into strategic database
 - Transferred new technology to operational foresters in WA and OR
 - Industry liaison with University cooperative research programs
- 1994-1995 Field Forester, MacMillan Bloedel Ltd, Port Alberni, BC
- Conducted surveys and developed operational plans for regeneration and silviculture activities
 - Directed the forestry activities of union and contract labor crews
 - Maintained liaison with the BC Ministry of Forests and other agencies
 - Adhered to strict Best Management Practices and Provincial Forest Management Regulations

REFEREED PUBLICATIONS

- Greenwood, M.S, **Roth, B.E.**, D. Maass and L.C. Irland. 2015. Near rotation-length performance of selected hybrid larch in Central Maine. *In Press: Silvae Genetica*.
- Hiesl, P., Benjamin, J.G, and **B.E. Roth**. 2015. Evaluating harvest costs and profit of commercial thinnings in softwood stands in west-central Maine: A case study. *The Forestry Chronicle*. 91:150-160.
- Lee, H., Slatton, K.C., **Roth, B.E.**, and W.P. Cropper. 2010. Adaptive clustering of airborne LiDAR data to segment individual tree crowns in managed pine forests. *International Journal of Remote Sensing*. 31 (1): 117-139.
- Lee, H., Slatton, K.C., **Roth, B.E.**, and W.P. Cropper. 2009. Prediction of forest canopy sunlight interception using three-dimensional airborne LiDAR data. *International Journal of Remote Sensing*. 30(1): 189-207.
- Roth, B.E.**, Slatton, K.C., and M.J. Cohen. 2007. On the potential for high-resolution lidar to improve rainfall interception estimates in forest ecosystems. *Frontiers in Ecology and the Environment*. 5(8): 421-428.
- Roth B.E.**, Li. X., Huber D.A, and G.F. Peter. 2007. Effects of management intensity, genetics and planting density on wood stiffness in a plantation of juvenile loblolly pine in the southeastern USA. *Forest Ecology and Management*. 246:155-162.

- Roth B.E.**, Jokela E.J., Martin T.A., Huber D.A., and T.L. White. 2007. Genotype x environment interactions in selected loblolly and slash pine plantations in the southeastern United-States. *Forest Ecology and Management*. 238:175–188.
- Roth B.E.** and M. Newton. 1996. Survival and growth of Douglas-fir relating to weeding, fertilization, and seed source. *Western Journal of Applied Forestry*. 11(2):62-69.
- Roth B.E.**, and M. Newton. 1996. Role of lammas growth in recovery of Douglas-fir seedlings from deer browsing, as influenced by weed control, fertilization, and seed source. *Canadian Journal of Forest Research*. 26:936-944.

PERIODICALS

- Roth B.E.** 2014. Air campaign to discover mature chestnut trees in Maine takes off. *The Journal of the American Chestnut Foundation* 28(5):12-13.
- Roth B.E.** 2011. Sustainable Forestry in the North Woods. *North Maine Woods Magazine*. Ashland, ME 04732.
- Roth B.E.**, Martin T.A., Jokela E.J. and T.L. White. 2002. Finding the keys to unlock the productivity of Southern forests. *Florida Forests* 6:18-20.

BOOK CHAPTERS

- Butnor J., K. Johnsen, **B.Roth**, L. Samuelson, and D.McInnis. 2008. A case history of sampling for tree roots with Ground Penetrating Radar. *In: Handbook of Agricultural Geophysics*. Allred, B., Daniels, J.J., and M. R. Ehsani. Eds. 416 pp. CRC Press. ISBN: 9780849337284.

REPORTS

- Roth, B.E.** (Ed.) 2014. Cooperative Forestry Research Unit: 2013 Annual Report. University of Maine. Orono, ME. 80 p.
- Roth, B.E.** 2013. Commercial Forests Program Report (CFRU). pp. 65-78. *In: Meyer, S.R.* (Ed.) 2013. Center for Research on Sustainable Forests: 2013 Annual Report. University of Maine. Orono, ME. 145 p.
- Roth, B.E.** (Ed.) 2013. Cooperative Forestry Research Unit: 2012 Annual Report. University of Maine. Orono, ME. 95 p.
- Roth, B.E.** 2012. Commercial Forests Program Report (CFRU). pp. 30-39. *In: Meyer, S.R.* (Ed.) 2012. Center for Research on Sustainable Forests Annual Report – 2011. University of Maine. Orono, ME. 107 p.
- Roth, B.E.** (Ed.) 2012. Cooperative Forestry Research Unit: 2011 Annual Report. University of Maine. Orono, ME. 111 p.
- Roth, B.E.**, Li, X., Huber, D.A., and G.F. Huber. 2007. Effects of management intensity, genetics and planting density on wood stiffness in a plantation of juvenile loblolly pine in the southeastern USA. Technical Report #54. Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 10 p.
- Roth, B.E.** (Ed.) 2006. Forest Biology Research Cooperative: 10th Annual Report. University of Florida. Gainesville, FL. 70 p.
- Roth, B.E.** (Ed.) 2006. Operating Procedures for the Third Five-Year Phase: July 2006 – July 2011. Forest Biology Research Cooperative Report #37. 13 p.

- Roth, B.E.**, Jokela, E.J., Martin, T.A., Huber, D.A., and White, T.L. 2006. Genotype x environment interactions for loblolly and slash pine plantations in the southeastern United-States. Technical Report #44, Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 20 p.
- Lee H., Slatton K.C., Cropper W.P., and **B.E. Roth**. 2006. Estimating sunlight penetration of forest canopies from three-dimensional airborne LiDAR data using field-of-view functions. Technical Report #42, Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 17p.
- Roth, B.E.** (Ed.) 2005. Forest Biology Research Cooperative: 9th Annual Report. University of Florida. Gainesville, FL. 150 p.
- Butnor, J., **Roth, B.**, and K. Johnsen. 2005. Feasibility of using ground-penetrating radar to quantify root mass in Florida's intensively managed pine plantations. Technical Report # 38. Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 13 p.
- Roth, B.E.** (Ed.) 2004. Forest Biology Research Cooperative: 8th Annual Report. University of Florida. Gainesville, FL. 105 p.
- Roth, B.E.** (Ed.) 2003. Clonal biology and performance of elite genotypes of loblolly pine in the Western Gulf. Project Workplan. Report # 22. Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 24 p.
- Roth, B.E.** (Ed.) 2003. Forest Biology Research Cooperative: 7th Annual Report. University of Florida. Gainesville, FL. 66 p.
- Roth, B.E.** (Ed.) 2002. Clonal biology and performance of elite genotypes of slash pine. Project Workplan. Report # 18. Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 22 p.
- Roth, B.E.** (Ed.) 2002. Forest Biology Research Cooperative: 6th Annual Report. University of Florida. Gainesville, FL. 108 p.
- Roth, B.E.** (Ed.) 2001. Operating Procedures for the Second Five-Year Phase: July 2001 – July 2006. Forest Biology Research Cooperative Report #17. 12 p.
- Roth, B.E.** (Ed.) 2001. Forest Biology Research Cooperative: 5th Annual Report. University of Florida. Gainesville, FL. 46 p.
- Roth, B.E.** (Ed.) 2001. Cultural interactions of elite southern pine genotypes. Project workplan. Report # 15. Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 16 p.
- Schmidt, R.A. and **B.E. Roth**. 2000. Geographic variation in fusiform rust incidence on progeny of resistant and susceptible slash pine families in the Coastal Plain: Rust virulence study - Fourth planting established in 1994. Technical Report #12, Forest Biology Research Cooperative, University of Florida. Gainesville, FL. 24p.

CORPORATE REPORTS

- Roth, B.E.**, Dobkowski, A., Heninger, R., Carrier, B. and T. Terry. 2003. Resource depletion and the competitive effects of bull thistle (*Cirsium vulgare* [savi] tenore) on douglas-fir (*Pseudotsuga menziesii* var. *Menziesii* [Mirb.] Franco) seedlings under controlled conditions in a clearcut in western Washington. Weyerhaeuser Technical Report. 18 p.
- Roth B.E.** 1999. Investigation of allelopathic effects of Bull Thistle, Canada thistle and bracken fern on early Douglas-fir growth. Weyerhaeuser Establishment Report. 7 p.
- Roth B.E.** 1998. Douglas-fir growth trends following vegetation control. Weyerhaeuser Technical Note. No. 052-2210\-. 7 p.
- Roth B.E.**, Scott W., Meade R., and R. Leon. 1998. The influence of weed control and deer browse on the 'Density Effect': four-year results from Marcuson Creek. Weyerhaeuser Technical Report. No. 052-2210\-. 16 p.

- Roth B.E.** 1998. Long-Term Silvicultural Research Sites Workshop: Promoting the concept - protecting the investment. Weyerhaeuser Trip Report. No. 059-0110\-.
- Roth B.E.**, Carrier B., and A. Landerholm. 1998. Results from a scoping study to determine the relative merits of slowrelease fertilizer and water-absorbing polymers at the time of planting Douglas-fir on a harsh site in Oregon. Weyerhaeuser Technical Report. No. 052-2210\01. 11 p.
- Roth B.E.** 1998. Methods for assessing long-term growth response to early silvicultural treatments. Weyerhaeuser Technical Note. No. 059-0110\-. 3 p.
- Roth B.E.**, Meade R., Leon R., and W. Scott. 1997. Five-year results from the Western Washington and Oregon yield trials. Weyerhaeuser Technical Report. No. 053-1210\-. 28 p.
- Roth B.E.**, Meade R., Leon R., and W. Scott. 1997. Preliminary results from the Western Washington 1989 family block trials. Weyerhaeuser Research Report. No. 053-1210\-. 21 p.
- Roth B.E.**, Meade R., Ritchie, G., and W. Scott. 1997. Four-year results from a comparison of genetically improved Douglas-fir rooted cuttings and unimproved 2+0 stock planted in a 1:2 mixture in Western Washington. Weyerhaeuser Technical Report. No. 050-3423\38. 10 p.
- Roth B.E.**, Meade R., Scott W., and R. Leon. 1997. Field performance of top ranked first-generation Douglas-fir families operationally planted at various densities: Whispering grounds six-year results. Weyerhaeuser Silviculture Technical Report. 26 p.

INVITED SEMINARS AND PRESENTATIONS

- Roth, B.E.** 2015. Long-term Effects of Herbicide, Pre-commercial Thinning and Commercial Thinning: Austin Pond Study and the Commercial Thinning Research Network. New England Regional Council on Forest Engineering Workshop. Wells Conference Center, University of Maine. Orono, ME 04469. March 10th.
- Roth, B.E.** 2015. The Greatest Ecological Disaster in the History of the United States: The Fall of the American Chestnut. Invited Talk at the Highlands Chapter of the Maine Organic Farmers and Gardeners Association. East Sangerville Grange, ME. February 21st.
- Roth, B.E.** 2015. Restoring the American Chestnut Tree to our Eastern Woodlands to Benefit our Environment, our Wildlife, and our Society. Joint Seminar: Centre for Forest Research; Research Group in Animal Behavior and Ecology; Inter-University Research Group in Limnology and Aquatic Environment. University of Quebec at Montreal. Montreal, QC. February 11th.
- Roth, B.E.**, Hiesl, P. and J.G. Benjamin. 2014. Austin pond study: Third-wave treatment, harvest costs and productivity final report. Cooperative Forestry Research Unit Winter Advisory Committee meeting. University of Maine, Orono, ME. Oct 29th.
- Roth, B.E.** 2014. What to do with early stand treatments: Commercial thinning, crop tree release and herbicide applications. Maine Society of American Foresters Annual Meeting. University of Maine, Orono, ME. Oct. 14th.
- Roth, B.E.** 2014. Restoring the Native American Chestnut Tree to our Eastern Woodlands. School of Forest Resources. Presented at the Senator George J. Mitchell Center for Sustainability Solutions. University of Maine, Orono, ME. Sept. 19th.
- Roth, B.E.** 2014. Results from a planting stock comparison and browsing study on American Chestnut in Maine. New England regional meeting of The American Chestnut Foundation. Urban Forestry Center, Portsmouth, NH. Sept. 13th.
- Roth, B.E.** and R.G. Wagner. 2014. Applied Research to Solve Real World Problems: The Cooperative Forestry Research Unit. Presentation to Wagner Forest Management regional foresters meeting. Comstock Logging Camps, Rockwood, ME. May 13th.

- Roth, B.E.** 2014. Restoring the king of the forest: The return of the American Chestnut to our Eastern woodlands. Merryspring Nature Center, Camden, ME. March 8th.
- Roth, B.E.** 2013. 35-year results from the Austin Pond Study: Herbicide, PCT and Commercial Thinning. Plum Creek Timber regional staff meeting. Skowhegan, ME. Oct. 22nd.
- Roth, B.E.** 2013. An overview of the Cooperative Forestry Research Unit. Swedish University of Agricultural Sciences. Alnarp, Sweden. May 20th.
- Roth, B.E.** 2013. Forestry in Maine and the Cooperative Forestry Research Unit. University of Applied Forest Sciences, Rottenburg, Germany. May 17th.
- Wagner, R.G. and **B.E. Roth**. 2012. Overview of University of Maine's Cooperative Forestry Research Unit. Plum Creek Timberlands regional staff meeting. Greenville, ME. May 8th.
- Roth, B.E.** 2012. Commercial forestry practices in the Pacific Northwest and the Southeast United States. Departmental Seminar. School of Forest Resources, University of Maine, Orono, ME. Feb. 10th.
- Roth, B.E.,** Wagner, R.G., Seymour, R.S., Weiskittel, A.R. and S.R. Meyer. 2011. Commercial Thinning Research Network (CTRN) and Austin Pond project updates. Cooperative Forestry Research Unit Fall Advisory Committee meeting. University of Maine, Orono, ME. Oct 26th.
- Roth, B.E.** 2007. Forest plantations in the Southeast USA: A review of some current research on the ultimate perennial crop. Crop Systems Modeling Lab Seminar, Department of Agricultural and Biological Engineering, University of Florida. Gainesville, FL. Dec. 6th.
- Huber, D.A., **B.E. Roth**, X. Li, and G.F. Peter. 2007. Influence of genotype, spacing and silviculture on corewood stiffness in juvenile loblolly pine. Western Gulf Forest Tree Improvement Program contact representative's meeting. Beaver's Bend State Park, Broken Bow, OK. May 8–9th.
- Roth, B.E.,** E.J. Jokela, T.A. Martin, D.A. Huber, and T.L. White. 2007. Genotype by Environment Interactions in the Yield of Loblolly and Slash Pine Plantations in the SE USA. 7th Annual Graduate Research Symposium. The College of Agricultural and Life Sciences, Institute of Food and Agricultural Sciences, University of Florida. Gainesville, FL. Mar. 21st.
- Roth, B.E.,** E.J. Jokela, T.A. Martin, D.A. Huber, T.L. White, X. Li, and G.F. Peter. 2007. Genotype x environment interactions for yield and wood quality in loblolly and slash pine. 14th Biennial Southern Silvicultural Research Conference. Athens, GA. Feb. 26th – Mar. 1st.
- Roth, B.E.** 2007. Landscape tree establishment and culture in Urban China: some examples. School of Forest Resources and Conservation, University of Florida Seminar. Gainesville, FL. Jan. 25th.
- Roth, B.E.** 2006. Interactions between genotype and the environment in loblolly (*Pinus taeda*) and Slash pine (*P. elliotii*) plantations in the southeast United States. Invited speaker: College of Biological Sciences and Biotechnology, Beijing Forestry University. Beijing, People's Republic of China. December 21st, 2006.
- Roth, B.E.** 2006. Considerations for enhancing the growth and wood quality of intensively managed loblolly (*Pinus taeda*) and Slash pine (*P. elliotii*) plantations in the southeast United States. Invited speaker: School of Forestry and Biotechnology, Zhejiang Forestry University. Lin'an, Zhejiang Province, People's Republic of China. December 10th.
- Staudhammer, C.L., **Roth, B.E.,** and L.F. Osario. 2006. Growth and yield differences in pure-versus mixed-family stands: Six-year results from slash and loblolly pine trials. IUFRO 4.04.02. Forest plantations meeting: Sustainable forest management with fast growing plantations. Charleston, SC. Oct 10-13th.
- Lee, H., Slatton, K.C., Cropper, W.P., and **B.E. Roth**. 2006. Estimation of forest structural parameters enabled by segmenting individual trees from airborne lidar point data. IEEE International Geoscience and Remote Sensing Symposium. Denver, Co. Jul. 31st – Aug. 4th.

- Roth, B.E.**, E.J. Jokela, T.A. Martin, D.A. Huber, and T.L. White. 2006. Family x environment interactions for loblolly and slash pine plantations in the Southeastern United States. IEG 40 - Incorporating genetic advances into forest productivity systems: Value for all landowners. Jacksonville, FL. June 26-29th.
- Roth, B.E.** 2006. Genotype x environment interactions in loblolly and slash pine in the southeastern USA. Western Gulf Forest Tree Improvement Program contact representative's meeting. Scrappin Valley Lodge, TX. May 17th – 18th.
- Butnor J.R., K.H. Johnsen, L. Kress, P.H. Anderson, C. Maier, J. Major, D. Barsi, and **B. Roth**. 2004. Detecting tree roots with GPR: case studies from forest experiments. North American Forest Biology Workshop. Houghton, MI. July 12th – 15th.
- Roth, B.E.**, Jokela, E.J. and D.A. Huber. 2003. Growth response of slash and loblolly pine to fertilizer and brush control treatments at mid-rotation. 12th Biennial Southern Silvicultural Research Conference. Biloxi, MS. Feb. 24-28th.
- Roth, B.E.**, White, T.L., Jokela, E.J. and T.A. Martin. 2003. Spacing by cultural interactions of elite southern pine genotypes – two year results from PPINES (Pine Productivity Interactions Experimental Sites). 12th Biennial Southern Silvicultural Research Conference. Biloxi, MS. Feb. 24-28th.
- Roth, B.E.** 2003. Productivity of Intensively Managed Young Southern Pine Plantations in the SE USA. School of Forest Resources and Conservation, University of Florida. Gainesville, FL. February 6th.
- Jokela, E.J. and **B.E. Roth**. 2001. Growth responses and interactions between weed control and fertilizer additions in Southern pine stands. Florida Weed Science Society 2001 Annual Meeting, Gainesville, FL. Feb. 27-28th.

RESEARCH GRANTS

AWARDED:

- 2015-2017 “Strategies for Rehabilitating Beech-dominated Stands: Classification, Projection, and Potential Financial Returns.” \$41,415 received from the Cooperative Forestry Research Unit. Bob Wagner, Aaron Weiskittel, Arun Bose, **Brian Roth**, University of Maine; Gaetan Pelletier, University of Moncton.
- 2015-2017 “Identifying Relationships Between Spruce Budworm Moth Abundance, Larval Density, and Mapped Forest Conditions for Risk Assessment During Outbreak Development.” \$35,200 received from the Cooperative Forestry Research Unit. Erin Simons-Legaard, Kasey Legaard and **Brian Roth**, University of Maine. Co-Principle Investigator.
- 2014-2015 “Revisiting Maine’s Tree Improvement Trials.” \$8,712 received from the Cooperative Forestry Research Unit. **Brian Roth**, Aaron Weiskittel, University of Maine; and Laura Leites, Pennsylvania State University; and Robert Weir, retired CellFor/Arborgen. Co-Principle Investigator.
- 2013-2018 “Impact of Soil Disturbance on Spruce-fir Productivity 32 Years Following Whole-tree Harvesting.” \$156,681 received from the Cooperative Forestry Research Unit. Jeffery Benjamin, Robert Seymour, **Brian Roth** and Ivan Fernandez, University of Maine; and Eric Labelle, University of Moncton. Co-Principle Investigator.

- 2013-2014 “Weymouth Point Paired Watershed Study: Monitoring the Effects of Whole-Tree Harvesting and Intermediate Silvicultural Treatments on Long-Term Spruce-Fir Productivity.” \$12,811 received from the Cooperative Forestry Research Unit. **Brian Roth**, Robert Wagner, Robert Seymour, and Aaron Weiskittel, University of Maine; and Andrew Nelson and Mohamad Bataineh, University of Arkansas, Monticello. Co-Principle Investigators.
- 2012-2016 “CFRU Commercial Thinning Research Network: Continued Measurements and New Opportunities.” \$176,220 received from the Cooperative Forestry Research Unit. **Brian Roth**, Robert Wagner, Robert Seymour, and Jeff Benjamin, University of Maine. Co-Principle Investigators.

TEACHING EXPERIENCE

- Guest Lecturer. Silviculture (SFR 408/509). University of Maine. (2015).
- Guest Lecturer. Conservation Biology (BI3323). Unity College, Unity, Maine. (2015).
- Guest Lecturer. Forest Regeneration (FTY 410). School of Forest Resources, University of Maine. (2011 – present).
- Guest Lecturer. Regional Silviculture Forest Productivity, Health and Sustainability (FOR 4165). School of Forest Resources and Conservation, University of Florida. (2001 – 2006).
- Teaching Assistant. Advanced Silviculture (FOR 3162C). School of Forest Resources and Conservation, University of Florida. (2005).
- Program Manager. Interdisciplinary Program in Natural Resources Management: Integrated Analysis of Forested Watersheds. USDA, Cooperative State Research, Education, and Extension Service; Higher Education Challenge Grant, in Prague, Czech Republic. (2003).

STUDENTS ADVISED

- Cathie-Jo Langley. M.S. 2016 (expected). School of Forest Resources, University of Maine. *Influence of Commercial Thinning on Resistance to and Recovery from Defoliation in Spruce-Fir Forests*. Committee member.
- Andrew Richley. M.F. 2016 (expected). School of Forest Resources, University of Maine. *Long-term response to Commercial Thinning in the Spruce-Fir Forests of Eastern Maine*. Committee Member.
- Elias Ayrey. M.S. 2015. School of Forest Resources, University of Maine. *The use of airborne LiDAR for the detection of individual trees, species identification, forest inventory, and precision carbon estimation*. Committee member.
- Brandon Learnard, M.F. 2014. School of Forest Resources, University of Maine. *Modeling species occurrence and natural regeneration in Camden Hills State Park, Maine*. Chair.
- Dalton Herrick-Wagman. Independent Study. 2014. School of Forest Resources, University of Maine. *Phenology and growth of American Chestnuts in a backcross breeding orchard in Maine*. Co-Advisor.
- Adam Bland, M.S. 2012. School of Forest Resources, University of Maine. *Age and density patterns in leaf area index and growth efficiency of eastern white pine (Pinus Strobus L.) stands in Maine*. Committee member.

AWARDS

UF/IFAS Graduate Research Symposium - SFRC top student presentation (2007)
Institute of Food and Agricultural Sciences, University of Florida - Travel Grant (2006)
School of Forest Resources and Conservation, University of Florida - Travel Grant (2006)
UF/IFAS Faculty and Staff Superior Accomplishment Award nominee (2003)
Graduate Research Assistantship, Oregon State University, Corvallis, OR. (1991-1993)
Project: *Comparative Dissipation of Forest Herbicide Residues in Forest Soil and Vegetation as Influenced by Local Rainfall, Temperature, and Soil Organic Matter. Funded through the USDA National Agricultural Pesticide Impact Assessment Program (NAPLAP).*

PROFESSIONAL MEMBERSHIP AND LICENSURE

Society of American Foresters - Member (2003-present)
Canadian Institute of Forestry - Member (1991-1995)
Gamma Sigma Delta, Honor Society of Agriculture (2006 – present)
Xi Sigma Pi, Forestry Academic Honor Society (2005 – present)
The American Chestnut Foundation, Maine Chapter – Board Member (2013 – present)
Maine Certified Professional Logging Associate (2013 – present)
Province of British Columbia Pesticide Applicators Certificate (1996)
Washington State Dept. of Agriculture Private Applicator Pesticide License #57981 (1999)

AD HOC REVIEWER

Agricultural and Forest Meteorology
Forest Ecology and Management
Forest Science

WORKSHOPS AND FIELD TOURS ORGANIZED

“Preparing Maine’s Forest for the Next Spruce Budworm Outbreak”. 2015. Cooperative Forestry Research Unit fall field tour. October 28th. 88 participants.
“Working with LiDAR Data and High Resolution Imagery Workshop”. 2015. Cooperative Forestry Research Unit workshop. Barbara Wheatland Geospatial & Remote Sensing Lab, University of Maine, Orono, Maine. September 10th. 24 participants.
“Rehabilitation Silviculture”. 2015. Maine Chapter of the Society of American Foresters. Windsor, ME. June 19th. 85 participants.
“Austin Pond Study: Herbicides, PCT and Commercial Thinning”. 2015. Seven Islands Land Company regional foresters field tour. Bingham, ME May 27th. 48 participants.
“LiDAR for the Resource Professional”. 2015. Cooperative Forestry Research Unit workshop. University of Maine, Orono, ME. January 22nd. 66 participants.
“CFRU 2014 Spruce Budworm Workshop”. 2014. Cooperative Forestry Research Unit Foresters Workshop. Orono, ME October 30th. 150 participants.
“Austin Pond Study: Herbicides, PCT and Commercial Thinning”. 2014. Plum Creek Timber regional foresters field tour. Bingham, ME Aug. 7th. 64 participants.

- “Even and Uneven aged Forest Management”. 2014. Seven Islands Land Company Foresters Tour. Penobscot Research Forest, Bradley, ME. May 28th. 47 participants.
- “Overstory Removal and Advanced Regeneration: Challenges and Opportunities”. 2013. Fall Field Tour. Cooperative Forestry Research Unit. Niatous Lake, ME. Oct. 10th. 72 participants.
- “Moose Density and Forest Regeneration”. 2012. Joint Fall Field Tour with the Maine Chapter of the Wildlife Society and the Cooperative Forest Research Unit. Greenville, ME. Oct. 18th. 68 participants.
- “Long-Term Silviculture Research at the Penobscot Experimental Forest.” 2012. Center for Advanced Forest Systems Field Tour. Bangor, ME. June 28th. 76 participants.
- “Early Commercial Thinning Research Site Visit”. 2012. Joint Field Tour with the Forest Guild and the Cooperative Forestry Research Unit. Summit Township, ME. May 24th. 44 participants.
- “Capturing Value Through Thinning”. 2012. Spring Forester’s Workshop. Cooperative Forestry Research Unit. University of Maine, Orono, ME. May 16th. 138 participants.
- “Managing Maine’s Future Forest: The Sea of Wood”. 2011. Fall Field Tour. Cooperative Forestry Research Unit. Bingham, ME. Oct. 27th. 98 participants.
- “Intensive Forest Management of Loblolly and Slash Pine Plantations”. 2005. Joint Annual Meeting and Field Tour with the University of Florida, Forest Biology Research Cooperative and the North Carolina State University, Forest Nutrition Cooperative. Jacksonville, FL. June 8 – 9th. 86 participants.
- “Review of Clonal Forestry Operations and Research in the Western Gulf”. 2004. Joint Field Tour with the University of Florida, Forest Biology Research Cooperative and the Western Gulf Culture Density Study, Texas A&M University. Jasper, TX. May 19th. 53 participants.

SERVICE and LEADERSHIP

- Center for Research on Sustainable Forests. University of Maine, Orono, ME. Commercial Forests Program. *Leader* (2011 -)
- Sustainable Forests & Forest-Based Economy. Signature Area of Research and Education. Center for Research on Sustainable Forests. University of Maine, Orono, ME. *Team member*. (2014)
- Sustainability Solutions and Technologies. Emerging Area of Research and Education. Center for Research on Sustainable Forests. University of Maine, Orono, ME. *Team member*. (2014)
- State of Maine Spruce Budworm Joint Task Force. *Research needs team leader*. (2013 -)
- Swedish Student Exchange Program. School of Forest Resources. University of Maine, Orono, ME. *Founder and Coordinator* (2013 -)
- Graduate Student Government. University of Maine, Orono, ME. Graduate Research Exposition. *Judge* (2012 -)
- New England Society of American Foresters. Regional Meeting. *Executive Planning Committee* (2013)
- Maine Chapter of the Society of American Foresters. Annual Meeting. *Session Moderator* (2014)
- Maine Chapter of the Society of American Foresters. Executive Committee. *Member at Large* (2015-)
- The American Chestnut Foundation. Maine Chapter. *Member of the Board* (2013-present)
- The American Chestnut Foundation. Maine Chapter. Science and Data Committee. *Chair* (2013 -)
- GIS and Mapping Student Club. University of Maine, Orono, ME. *Co-advisor* (2013 -)
- Xi Sigma Pi. Pi Chapter. Gainesville, FL. *President and Forester* (2006 – 2007)
- Xi Sigma Pi. Pi Chapter. Gainesville, FL. *Secretary and Fiscal Agent* (2005 – 2006)

Cooperative Forestry Research Unit. School of Forest Resources, University of Maine, Orono, ME.

Safety Committee. *Coordinator* (2011 –)

Habitat for Humanity of Greater Bangor, Bangor, ME. *Volunteer* (2011 –)

Eastern Area Agency on Aging, Bangor, ME. *Volunteer* (2011 –)

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