Forest Research Laboratory

Current Research 2005
Oregon Forest Research Laboratory
Hal Salwasser, Director
Stephen D. Hobbs, Associate Director
Roger D. Admiral, Associate Director
Peavy Hall A154
Oregon State University
Corvallis, OR 97331-5704
(541) 737-2222
(www.forestry.oregonstate.edu)

Oregon State University’s Forest Research Laboratory is the forestry research arm of the State of Oregon. It was established by the Oregon legislature in 1941. The mission of the Oregon Forest Research Laboratory is to conduct well-coordinated, problem-solving research that enables management and use of Oregon’s forests for multiple values and products that meet society’s needs, with special attention to social and economic benefits.

The Laboratory’s research provides information to improve the forest-related decisions of those who use, own, operate, or are otherwise affected by management of the forests of the Northwest and the products and services these forests provide. The Laboratory’s research results are used by many—private landowners, state and federal land-managing agencies, wood processing firms and workers, legislators, environmental agencies and interests, and others. Thus, Laboratory research affects virtually all Oregonians because of the importance of forests to them and to their state’s economic health.

This directory is designed to help users of the Laboratory’s research identify the scientists and their current research projects. It is organized by the Laboratory’s five research program areas: Forest Regeneration; Forest Ecology, Culture, and Productivity; Protecting Forests and Watersheds; Evaluating Forest Uses and Practices; and Wood Processing and Products Performance. Several
special or integrated research programs and facilities are also described at the end of the research listings. Following each scientist’s name is a departmental code, and, in some cases, one or more program acronyms, to help you contact the scientist for information about his or her work or opportunities for cooperation.

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<thead>
<tr>
<th>Code</th>
<th>Department</th>
<th>Telephone</th>
<th>(E-mail)</th>
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</thead>
<tbody>
<tr>
<td>FE</td>
<td>Forest Engineering</td>
<td>(541) 737-4952</td>
<td><a href="mailto:fedept@cof.orst.edu">fedept@cof.orst.edu</a></td>
</tr>
<tr>
<td>FR</td>
<td>Forest Resources</td>
<td>(541) 737-4951</td>
<td><a href="mailto:forest.resources@oregonstate.edu">forest.resources@oregonstate.edu</a></td>
</tr>
<tr>
<td>FS</td>
<td>Forest Science</td>
<td>(541) 737-2244</td>
<td><a href="mailto:fsdept@oregonstate.edu">fsdept@oregonstate.edu</a></td>
</tr>
<tr>
<td>WSE</td>
<td>Wood Science and Engineering</td>
<td>(541) 737-4257</td>
<td><a href="mailto:woodscience@oregonstate.edu">woodscience@oregonstate.edu</a></td>
</tr>
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**College Forests**

The College of Forestry has access to two major forest properties dedicated to research and education. The College Forests comprise the McDonald-Dunn, Spaulding, Marchel, and Blodgett forest properties, totaling about 14,000 acres. Gifts to the College of Forestry, they are managed by the College for enhancement of education and research. The 16,000-acre H.J. Andrews Experimental Forest on the Willamette National Forest is administered by the USDA Forest Service, and research is jointly managed by OSU and the Pacific Northwest Research Station under a National Science Foundation-sponsored long-term agreement.
Forest Regeneration

Tom Adams (FS) SNCC
Tree improvement; genetics of adaptation; seed orchard management; population genetics; mating patterns and gene flow in conifers

Heidi Albers (FR)
Policy implications of modeling spatial aspects of forest recovery; economic analysis of policies to promote forest regeneration when under threat of invasive species

Amy Brunner (FS) TBGRC
Poplar and Douglas-fir functional genomics; molecular genetics of tree development and environmental responses, particularly maturation and flowering

Bill Emmingham (FS) LTER
Silviculture; regeneration and vegetation management for a variety of silvicultural systems and approaches, including natural regeneration and underplanting in multistoried forests

Stephen Fitzgerald (FR)
Forest structure and fire behavior; alternative silvicultural methods; reforestation and vegetation management following wildfire and salvage logging; density management in dry forest ecosystems; management of old-growth ponderosa pine forests

Temesgen Hailemariam (FR)
Regeneration imputation models, estimation of regeneration and spatial distributions from aerial information

Everett Hansen (FS)
Integrated forest protection; diseases of seedlings and mature stands; roles of pathogens in forest ecosystems; forest mycology

Dave Hibbs (FS) HSC, CFER
Director, Hardwood Silviculture Cooperative (HSC); science team, Cooperative Forest Ecosystem Research (CFER); hardwood and general silviculture: species choice, seed
source, species mixes, density and competition management, growth

Steve Hobbs (FS)
Reforestation practices; seedling ecophysiology and plant competition; reforestation of difficult sites

Glenn Howe (FS)  PNWTRC
Program leader, PNWTIRC; quantitative, physiological, ecological and molecular genetics of forest trees; gene conservation; tree improvement; seed orchard management

Keith Jayawickrama (FS)  NWTIC
Program leader, Northwest Tree Improvement Cooperative; genetic improvement of productivity, wood quality, and product value; breeding and testing strategy; production of genetically improved planting stock

Randy Johnson* (FS)
Tree breeding strategy development; genetics on disease resistance and wood quality; seed movement guidelines

Doug Maguire (FS)  INLAS
Effects of Swiss needle cast on growth and crown dynamics; regeneration under variable-retention harvesting; mixed species silviculture; uneven-age silvicultural systems; intensive plantation silviculture; hybrid models for Douglas-fir growth and wood quality

Mike Newton (FS)
Vegetation management; competition dynamics; interactions among conifers, associated vegetation, and wildlife damage; ecosystem rehabilitation; high-latitude reforestation; riparian rehabilitation

Klaus Puettmann (FS)
Regeneration dynamics, vegetation management, mixed species management, restoration ecology

Steve Radosevich (FS)  SF
Program leader, Sustainable Forestry (SF); integration of biological and social sciences for natural resource management; plant community
dynamics of forest ecosystems; Douglas-fir/red alder associations; interspecies competition; huckleberry restoration

Robin Rose (FS) NTC, VMRC
Director, Nursery Technology Cooperative (NTC) and Vegetation Management Research Cooperative (VMRC); nursery management and reforestation of conifers and hardwoods, whole-plant physiology; seedling nutrition; agroforestry; international reforestation

Stephen Schoenholtz (FE) CFWUR
Afforestation and reforestation of disturbed sites; restoration ecology and management

Brad St.Clair* (FS)
Genetics of adaptation; gene conservation; tree improvement; quantitative and population genetics; integration of genetics and silviculture

Steve Strauss (FS) TBGRC
Program leader, tree biotechnology; genomics and biosafety technology for transgenic poplars; Douglas-fir molecular breeding; public communication on biotechnology-derived trees and crops

Steve Tesch (FE)
Reforestation; site preparation; management of competing vegetation

Bob Zybach (FS)
Five Rivers land management study; Douglas-fir; white oak; afforestation; reforestation; forest history; catastrophic events; climate change; wildfire; prescribed fire

Forest Ecology, Culture, and Productivity

Michael Adams† (FS)
Amphibian ecology and conservation; headwater stream and pond conservation

Shanti Berryman (FS)
Density Management study; response of
overstory and understory vegetation to alternative thinning

**Badege Bishaw (FS)**  
Agroforestry, social forestry, and international forestry, especially in Ethiopia and South Africa

**Barbara Bond (FS)**  
Age-related changes in growth and physiology of trees and forest stands; ecohydrological processes in small watersheds; using cold-air drainage systems within small watersheds to investigate physiological processes within watersheds; impacts of exotic forest plantations on water resources in Patagonia

**Mike Bondi (FS)**  
Christmas tree fertilization, long-term productivity, and genetics; uneven-age and even-age management of Douglas-fir; natural and artificial regeneration systems

**Jim Boyle (FR)**  
LTER, LTEP  
Long-term forest productivity; sustainable forestry

**Bruce Caldwell (FS)**  
LTER  
Soil enzyme activities, soil organic matter, decomposition, fungal physiology (especially mycorrhizal fungi)

**Efren Cazares (FS)**  
Ecology of mycorrhizal fungi; ectomycorrhizal diversity; mycorrhizal ecology of plant establishment; taxonomy of mycorrhizal fungi; rhizosphere biology

**Warren Cohen* (FS)**  
LARSE  
Remote sensing applications in ecology; landscape ecology; regional characterizations of forest disturbance and regeneration

**Jana Compton† (FS)**  
Biogeochemistry; interactions of carbon, nitrogen, and phosphorus at the microbe- to watershed- scale; management and species on ecosystem nutrient dynamics

**Elizabeth Coulter (FE)**  
Decision analysis; management of western juniper woodlands
Kermit Cromack, Jr. (FS) LTER
Forest ecosystem studies; nutrient cycling in forests; role of mycorrhizae; influence of ecosystem disturbance on soil carbon and nitrogen resources

Bill Emmingham (FS) LTER
Silviculture; development of silviculture alternatives for Pacific Northwest forest ecosystems, including long rotation and uneven-aged management, thinning strategies, pruning and density management for high-quality wood; forest community classification; riparian forest silviculture and filter forests along open streams

Rick Fletcher (FR)
Christmas tree genetics, fertilization, and disease management; agroforestry

Lisa Ganio (FR)
Development of hierarchical Bayesian models in multiscaled ecological systems

Barbara Gartner (WSE) CFWUR
Ecophysiology of woody plants; functional morphology; stem physiology

Gordon Grant* (FE, FS)
Structure and behavior of mountain streams, including effects on rivers and watersheds of forest land use, dams, floods, and other disturbances

Andrew Gray* (FS) LTER
Forest succession and structural development; ecosystem response to disturbance; natural regeneration of conifers; understory vascular plant communities

Bob Griffiths (FS) LTER
Effects of disturbances, microclimate, and vegetation on nutrient and carbon cycling and trace gas flux in forest soils; biology and chemistry of mycorrhizal mat communities

Temesgen Hailemariam (FR)
Imputation and generation of tree lists, stand structures, and spatial distributions; estimation
of tree crown attributes and terrestrial carbon sequestration; methods to relate forest productivity and diversity to aerial information

Mark Harmon  (FS)  LARSE, LTER
Log and snag decay processes in forests; nutrient cycling; effects of forestry on carbon stores; ecosystem modeling

John Hayes  (FS)  CFER
Wildlife habitat ecology; conservation biology; influence of forest landscape pattern on vertebrates

Dave Hibbs  (FS)  HSC, CFER
Community ecology; hardwood ecology and silviculture; riparian-area ecology; disturbance ecology, including fire; diversity, ecology, and management of mixed-species communities; temperate and tropical forests

Manuela Huso  (FS)
Statistical models used in studies of wildlife habitat ecology; conservation biology; influence of forest landscape pattern on vertebrates; riparian-area ecology; diversity, ecology, and management of mixed-species communities; decomposition of coarse woody debris; ecosystem modeling; snag phytochemistry; scale effects

James Irvine  (FS)
Ecophysiological controls of net carbon exchange of forests; forest-age-related patterns of canopy gas exchange and ecosystem respiration

Loren Kellogg  (FE)  CFWUR
Harvesting young stands; mechanized harvesting; alternative silvicultural systems

Brian Kramer  (FE)  CFWUR
Forest road construction; computer-aided design; road rehabilitation

Olga Krankina  (FS)  LARSE
Forests and forestry in Russia; remote sensing of forest cover; forest disturbance and regeneration; decomposition of coarse woody debris; effects of forestry on carbon stores; ecosystem modeling
Chal Landgren (FR)
Christmas tree genetics and disease management

Bev Law (FS)
Influence of climate, management, and age on ecosystem processes contributing to carbon, water, and energy exchange with the atmosphere; autotrophic and heterotrophic respiration from soils, and response to environment; remote sensing of vegetation structure; scaling methods for regional analysis of net ecosystem productivity

Ching-yan Li (FS)
Belowground microbial processes in nutrient cycling and soil weathering

Leon Liegel (FS)
Global sustainable resource management; integrating biological, sociocultural, and managerial sciences; nontimber ecosystem products; forest inventory and monitoring; fast-growing native and exotic tropical forest species; creating effective poster displays

Hank Loescher (FS)
Examining the abiotic controls on net ecosystem exchange (NEE) of carbon and energy with the atmosphere; quality control and assurance of network-scale NEE measurements; carbonaceous aerosol deposition

Daniel Luoma (FS) LTER
Ecology and taxonomy of mycorrhizal fungi; biodiversity of ectomycorrhizae and ectomycorrhizal fungi in natural and managed forests; plant community ecology

Doug Maguire (FS) INLAS
Responses of ground vegetation to stand structure and silvicultural treatments; DEMO (Demonstration of Ecosystem Management Objectives)

Frederick Meinzer* (FS)
Tree physiology; forest canopy processes; plant ecophysiology; tropical forest and savanna ecophysiology
Randy Molina* (FS)
Mycology, mycorrhizal fungi ecology; forest soil biology

Andrew Moores (FS)
Intensive forestry practices and plantation productivity in the coastal Douglas-fir region

Dave Myrold (FS)
Nitrogen cycling in forest soils; Frankia and actinorhizal symbiosis; soil microbial communities

Ron Neilson* (FS)
Climate change; biogeography; ecosystem modeling; ecotones

Mike Newton (FS)
Vegetation management technology; habitat management; long-term productivity; western hemlock, red alder, and shrub competition; young-stand growth; development of mature stands; bedrock as a tree-growing resource

Kari Bisbee O’Connell (FS) LTER
Long-term patterns of carbon accumulation; forest succession and structural development; tree regeneration after wildfire; development of old-growth stands

Janet Ohmann* (FS)
Forest landscape ecology; forest community ecology; regional biodiversity characterization and mapping; forest ecosystem management

Steven Perakis† (FS) CFER, LTER
Biogeochemistry and ecosystem analysis; forest nutrient cycling and nutrition; plant-soil interactions; watershed studies; stable isotopes

Klaus Puettmann (FS)
Stand dynamics, thinning and density management, impact of forest management on productivity and biodiversity, mixed species management

Steve Radosevich (FS) SF
Early-successional plant community dynamics; Douglas-fir/red alder associations; huckleberry restoration; invasive plant species; sustainable forestry
Bill Ripple (FR) LP, ERSAL
Remote sensing of forest resources; geographic information systems; landscape ecology; aerial photo interpretation; wildlife ecology; fire ecology; retrospective studies of forest landscapes; aspen ecology; ecological effects of wolf restoration

Stephen Schoenholtz (FE) CFWUR
Forest soils and hydrology; biogeochemistry; wetland ecology

Jane Smith* (FS) LTER
Biological and functional diversity of forest fungi; impacts of fire and ecosystem disturbance on soil microbial communities; microbial interactions with native and nonnative invasive plant species.

Phil Sollins (FS) LTER
Biogeochemistry; soil formation processes; plant-soil relations; tropical ecosystems

Allen Solomon‡ (FS)
Global change and forest ecology, especially long-term dynamics of forest composition and structure; forest gap models; global vegetation modeling; global change and the terrestrial carbon cycle; terrestrial paleoecology (tree rings and fossil pollen analysis)

Tom Spies* (FS) CLAMS
Landscape ecology; ecosystem analysis; plant community ecology

Ed Starkey† (FR)
Elk habitat studies; vegetation management in arid parks; conservation biology; global environmental change

Elizabeth Sulzman (FS) LTER
Biogeochemistry; carbon cycling; use of 18O and 13C to trace ecosystem fluxes of carbon and water; autotrophic and heterotrophic respiration from soils

Fred Swanson* (FS)
Landscape ecology; ecosystem management; geomorphology; forest hydrology
John Tappeiner (FR)  CFER
Ecology and management of shrubs and hardwoods; stand growth; silvicultural systems; thinning and management of young stands for wood and biodiversity; development and growth of old-growth stands

Steve Tesch (FE)  CFWUR
Forest engineering-silviculture interactions; ecology and management of interior mixed-conifer forests

Jim Trappe (FS)
Taxonomy and ecology of mycorrhizal fungi, especially truffles

David Turner (FS)
Spatially distributed modeling of forest biogeochemistry; application of remote sensing for characterizing canopy leaf area; development of carbon budgets at the stand, landscape, regional, and national scales

Dick Waring (FS)
Assessing potential and actual forest production across broad landscapes using remote sensing, GIS, and simplified process model; biodiversity

Nancy Weber (FS)
Taxonomy, distribution, diversity, and economic importance of macrofungi, in particular the morels, related cup-fungi, and truffles, and informatics relating to these areas

Steve Wondzell* (FS)
Forest-stream interactions; hyporheic zone; nutrient cycling; fluvial geomorphology

Bob Zybach (FS)
Pacific Northwest; Indian burning patterns; native plants and animals; wildlife habitat; land ownership; forest management; public outreach; Internet communications; fire history
Protecting Forests and Watersheds

Tom Adams (FS) SNCC
Program director, Swiss Needle Cast Cooperative (SNCC)

Paul Adams (FE) CFWUR
Effects of timber harvesting and forest roads on erosion, site productivity, and water quality and quantity; forest watershed management methods, planning, and policies

Heidi Albers (FR)
Modeling and analyzing spatial aspects of land trust and government land conservation decisions; economics of protected area management in developing countries; analyzing policies to reduce wildfire risk

Bob Beschta (FE) CFWUR
Riparian functions; water quality; channel morphology; subsurface and hyporheic flow in riparian areas; large woody debris; hillslope hydrology; road drainage systems

Jana Compton‡ (FS)
Terrestrial-aquatic interactions; land use and vegetation influences on stream chemistry

Kermit Cromack, Jr. (FS)
Long-term impacts of forest management on soil; influence of ecosystem stress on susceptibility to forest pathogens and pests; effects of fire on forest ecosystems; evaluation of forest soil resources and stream chemistry in forest watershed ecosystems

Elizabeth Coulter (FS)
Systems for western juniper removal; environmental impacts of forest operations; management of forest roads

Lisa Ganio (FS)
Development of spatial statistics methods for use in stream network systems; analysis methods for multiscaled data from stream and riparian systems

John Garland (FE) CFWUR
Using loggers and logging equipment to fight fires
Bob Griffiths (FS)
Terrestrial-aquatic interactions; watershed management influences on stream sediment organic matter

Temesgen Hailemariam (FR)
Forest biometrics and measurement; change inventory; evaluating windthrow risks and impacts of silvicultural systems; hybrid forest growth-and-yield-modeling; inventory and monitoring forest resources

Everett Hansen (FS)
Integrated forest protection; diseases of seedlings and mature stands; roles of pathogens in forest ecosystems; biology and management of laminated root rot, cedar root disease, and sudden oak death; forest mycology

Sherri Johnson* (FS) LTER
Forest stream interactions; biogeochemistry; effects of disturbances on aquatic ecosystems

Gary Larson† (FR) LTER
Limnology and the ecology of freshwater fishes

Kate Lajtha (FS)
Biogeochemistry of small watersheds; soil organic matter dynamics; nitrogen cycling in terrestrial and estuarine ecosystems

Jeffrey J. McDonnell (FE)
Watershed science; hillslope hydrology; isotope tracing; runoff processes; hydrological modeling

Mike Newton (FS)
Evaluating impacts of plant pests; ecological roles of conifers and nonconiferous species; impacts of vegetation management on water quality; herbicide environmental chemistry; animal damage impacts and management; buffer design and function

Steven Perakis† (FS) LTER
Biogeochemistry and ecosystem analysis; plant-soil interactions; forest nutrient cycling and nutrition; watershed studies; stable isotopes
Marvin Pyles (FE)  CFWUR  
Slope failure mechanisms; road drainage; stream hydraulics and hydrology

Bill Ripple (FR)  LP, ERSAL  
Remote sensing of forest resources; geographic information systems; landscape ecology; aerial photo interpretation; wildlife ecology; fire ecology; retrospective studies of forest landscapes; aspen ecology; ecological effects of wolf restoration

Darrell Ross (FS)  
Forest entomology; bark beetle ecology and management; bark beetle pheromones; host-tree defense mechanisms; natural enemies; ecology and management of regeneration insects; Sitka spruce weevil; hazard/risk rating; silvicultural control; integrated forest pest management

Ron Reuter (FR)  
Restoration ecology; impacts of juniper woodlands management on watershed processes; forest and range soils; landscape ecology

Stephen Schoenholtz (FE)  CFWUR  
Water quality and forest land use; ecology and management of forested wetlands and riparian areas; stream habitat

Viviane Simon-Brown (FR)  
Intelligent consumption; environmentally responsible consumer decision making; fair, open, honest public process; sustaining collaborations

Arne Skaugset (FE)  CFWUR, WRC  
Director, Watersheds Research Cooperative; forest hydrology; watershed management; slope stability; forest roads; cumulative watershed effects

Phil Sollins (FS)  LTER  
Temperate and tropical ecosystems; soils; nutrient cycling; modeling; landscape analysis

Kellie Vache (FE)  
Hydrological modeling; watershed processes; hillslope hydrology; pesticide fate and transport
Jack Walstad (FR)
Wildland fire; integrated forest protection
(lessened involvement, because of administrative duties)

Dick Waring (FS)
Development and application of stress indices to forested landscapes

Michael Wing (FE)
Stream habitat; large woody debris; visibility analysis, hillslope hydrology, geographic information systems (GIS); remote sensing

Steven Wondzell* (FS)
Forest-stream interactions resulting from stream-groundwater exchange flows; influence of stream-groundwater exchange flows on stream nitrogen cycling; influence of geomorphic disturbance on stream-channel morphology; influence of management on forest-stream interactions

Evaluating Forest Uses and Practices

Darius Adams (FR)
Forest economics; modeling and analysis of forest products markets; economics of sequestering carbon in forests; econometrics; forest policy

Paul Adams (FE) CFWUR
Soil compaction and disturbance from forest operations, including mechanized systems; forest practices policies on private and public lands, and related soil and water effects

Heidi Albers (FR)
Land and biodiversity conservation economics; ecological-economic models for policy analysis; modeling and analyzing spatial aspects of land trust and government land conservation decisions; decision analysis to promote forest health in the face of risk; economic analysis of forest management policies to address wildfire risk
Ralph Alig (FR)  
Land-use economics; landowner behavior; land cover changes

John Bliss (FR)  
Private forest policy; forest-based rural development; natural resources sociology

Mike Bondi (FS)  
Using low-power radio technology to communicate forestry messages

Elizabeth Coulter (FE)  
Environmental impacts of forest operations; management of forest roads

Norm Elwood (FR)  
U.S.-Japanese forestry business and trade; nonindustrial private forestry; forestry business management; timber income tax; estate tax

Rick Fletcher (FR)  
Forest certification; sustainable forestry

Lisa Ganio (FS)  
Influence of study design and statistical scaling issues in large-scale, long-term silviculture studies

John Garland (FE)  
CFWUR  
Forestry workforce; logging safety; motivation and incentives; forest engineering; use of synthetic rope in cable logging and forest operations

Barbara Gartner (WSE)  
Effects of silviculture and environment on wood quality; understanding the physiological effects of such changes; effects of growth rate on wood properties

David Hann (FR)  
Modeling dynamics of tree and stand development; creation of management information systems

Manuela Huso (FS)  
Statistical models used in studies of the influence of silvicultural practices on growth and yield, biodiversity, wildlife habitat, and stream temperature
Royal Jackson (FR)  
Forest history; cultural resource management; ecotourism

Norm Johnson (FR)  CLAMS  
Forest planning; harvest scheduling; timber supply; forest policy on public lands

Rebecca Johnson (FR)  CLAMS  
Economic impacts of recreation and tourism; nonmarket resource valuation

Kreg Lindberg (FR)  
Visitor price-responsiveness and economic impact of nature/eco-tourism; inter-visitor conflict in natural areas; economic and social impacts of tourism

Claire Montgomery (FR)  
Natural resource and forest economics; economics of biodiversity; housing markets; forest policy

Glen Murphy (FE)  
Production analysis; log scanning; value recovery; harvest scheduling and management; facilities planning; supply chain management

Mike Newton (FS)  
Yields of forests managed in various even- and uneven-aged strategies; influence of silvicultural systems on stream productivity; evaluation of long-term outcomes for silvicultural systems; comparative analyses of reforestation systems

Klaus Puettmann (FS)  
Influence of silvicultural practices on growth and yield, biodiversity and wildlife habitat

Marvin Pyles (FE)  CFWUR  
Cable system mechanics

A. Scott Reed (FR)  SF  
Policy alternatives for nonindustrial private forests; application of new technologies; program evaluation; sustainable-forestry concepts

Randall Rosenberger (FR)  
Nonmarket valuation; economic impacts of nature-based recreation and tourism
Stephen Schoenholtz (FE) CFWUR
Forest management effects on nutrient cycling, carbon dynamics, soil physical properties, and long-term productivity; criteria and indicators of sustainability; assessment of BMP effectiveness; use of forests for waste applications

John Sessions (FE) CFWUR
Wood transportation; optimal bucking practices; timber harvest scheduling; timber supply; scheduling of silvicultural practices; use of synthetic rope in cable logging

Bo Shelby (FR)
In-stream flows and recreation; river management; monitoring impacts on wilderness; evaluation of new forestry practices

Bruce Shindler (FR)
Human dimensions of ecosystem management; public agency-citizen interaction; wildland recreation management issues

John Tappeiner (FR) CFER
Ecology and management of shrubs and hardwoods; stand growth; silvicultural systems

Jo Tynon (FR)
Understanding crime and violence on public lands; communicating with racially and culturally diverse recreationists through international symbols; understanding day use in Oregon and Washington national forests; investigating contemporary issues at the interface of urban development and nature-based recreation and tourism

Kimberly Wallin (FS)
Forest insect ecology

Michael Wing (FE)
Stream habitat; large woody debris; visibility analysis; hillslope hydrology; geographic information systems (GIS); remote sensing
Wood Processing and Products
Performance

Charles Brunner (WSE) CFWUR
Optical scanning; secondary processing

David Butler (WSE)
Operations research, statistics

Jim Funck (WSE) CFWUR
Scanning technology; process control; process modeling; primary and secondary manufacturing; computer-aided manufacturing, plywood

Barbara Gartner (WSE) CFWUR
Relationships between wood anatomy and wood quality

Rakesh Gupta (WSE) CFWUR
Timber engineering and mechanics; structural engineering; mechanical properties and behavior of wood and wood-based composites

Eric Hansen (WSE) CFWUR
Forest products marketing; environmental marketing; forest certification; innovation and new product development; business strategies

Joe Karchesy (WSE) CFWUR
Wood chemistry; natural products from the forest

Scott Leavengood (WSE)
Applied research in quality and process control methods in the secondary wood-products industry; commercialization of under-utilized species

Bob Leichti (WSE) CFWUR
Timber engineering; structural performance of wood and wood-based materials and systems

Kaichang Li (WSE)
Biodegradation of lignin; enzymatic pulp bleaching; wood composites

Tom McLain (WSE) CFWUR
Timber engineering; structural mechanical connections
Mike Milota (WSE) CFWUR
Moisture, heat, and stress relationships during wood drying and use; monitoring, control, and reduction of process emissions

Jeff Morrell (WSE) CFWUR
Preservative treatments; biological control; processes of decay; performance of wood-based materials

Lech Muszynski (WSE)
Mechanical performance of wood-based and hybrid wood-plastic and wood-FRP composites; optical deformation

Maureen Puettmann (WSE)
Life cycle assessment; environmental analysis of wood production; wood preservation; carbon storage in wood products

John Punches (WSE) CFWUR
Product potential of small-diameter timber; the Internet as a forest products marketing and communications tool

Jim Reeb (WSE) CFWUR
Value-added forest products manufacturing; process modeling and operations research

John Simonsen (WSE) CFWUR
Wood-polymer composites; wood preservation; environmental fate of wood preservatives; cellulose nanocrystal composites; ionic liquids in wood research

Jim Wilson (WSE) CFWUR
Life cycle assessment; environmental performance of wood products; performance of wood building materials; wood-based composites; nondestructive testing

Affiliations of courtesy faculty
*USDA Forest Service, Pacific Northwest Research Station
†USGS-BRD Forest and Rangeland Ecosystem Science Center
‡Environmental Protection Agency
Special and Integrated Research Programs

CFER: Cooperative Forest Ecosystem Research
An integrative research and information-exchange program to address issues of young-stand management, ecology and management of riparian areas, and biodiversity on BLM and other forest land of western Oregon. The program is joint among OSU, USGS-BRD, BLM, and Oregon Department of Forestry.
(www.fsl.orst.edu/cfer/)

CFWUR: Center for Wood Utilization Research
A research center focusing on developing new wood products, enhancing processing and harvesting systems, and other strategies to add value to the western forest resources

CLAMS: Coastal Landscape Analysis and Modeling Study
Develops tools to understand patterns and dynamics of ecosystems such as the Oregon Coast Range and to analyze the ecological, economic, and social consequences of forest policies of landowners in the region
(www.fsl.orst.edu/clams/)

ERSAL: Environmental Remote Sensing Applications Laboratory
Develops and applies remote sensing and Geographic Information Systems (GIS) technology for the study of forest lands and related natural resource problems. Research topics include landscape ecology, remote sensing of plant cover, forest landscape patterns, and wildlife habitat.
(www.cof.orst.edu/cof/fr/research/ersal.php)

FPRL: Forest Photogrammetry Research Laboratory
A research, development, and technology transfer facility focused on photogrammetry, digital mapping, and image processing. Its primary mission is to introduce and apply modern photogrammetric techniques to natural resource management. The facility offers an analytical plotter, image-processing equipment,
and a PC-based mapping system tied to digitizing tablets.
(www.cof.orst.edu/cof/fr/research/fprl.php)

**HSC: Hardwood Silviculture Cooperative**
Research and technology transfer program on the ecology, reforestation, and stand management of Northwest hardwood species, especially red alder
(www.cof.orst.edu/coops/hsc)

**INLAS: Interior Northwest Landscape Analysis System**
Enhances existing and develops new analytical tools to project succession and disturbance dynamics across landscapes and changes in ecological and socioeconomic systems under varying forest policy or management options on all ownerships in eastern Oregon
(www.fs.fed.us/pnw/lagrande/inlas/index.htm)

**LARSE: Laboratory for Applications of Remote Sensing in Ecology**
Conducts basic remote sensing research, translates remotely sensed data into mapped ecological information, and fills the gap between remote sensing and ecological sciences
(www.fsl.orst.edu/larse/)

**LP: Leopold Project**
Continues the work Aldo Leopold started on topics that intersect forestry and wildlife science and ecosystems. Leopold is a prime example of the usefulness of working across disciplines to solve complex natural resource problems. The Leopold Project is our way to put formal emphasis on the multidisciplinary approach to the study, wise use, and conservation of natural resources.
(www.cof.orst.edu/leopold)

**LTEP: Long-Term Ecosystem Productivity Program**
A program with the goal of increasing understanding of processes that control the long-term productivity of the land in order to support sustainable ecosystem management
(www.fsl.orst.edu/ltep)
**LTER:** Long-term Ecological Research
A long-term program of research at the H.J. Andrews Experimental Forest, with major funding from the National Science Foundation, the Forest Service, and OSU. LTER is discovering fundamental ecological relationships in managed and natural forests and incorporating them into forest management strategies.

(www.fsl.orst.edu/lter)

**NTC:** Nursery Technology Cooperative
Research program on nursery management and seedling production and performance, emphasizing reforestation planting systems

(www.cof.orst.edu/coops/ntc)

**NWTIC:** Northwest Tree Improvement Cooperative
Oversees and coordinates cooperative tree breeding in coastal forests from California to British Columbia; provides data analysis and data management services for the same; provides expertise in tree breeding and genetic improvement to members

(www.fsl.orst.edu/nwtic)

**PNWTIRC:** Pacific Northwest Tree Improvement Research Cooperative
Genetics and tree improvement research program aimed at increasing the efficiency and effectiveness of operational tree improvement programs

(www.fsl.orst.edu/pnwtirc)

**SF:** Sustainable Forestry Partnership
A research and outreach partnership integrating social and biological aspects of forestry research into strategies for the long-term management of forests for multiple values. Current projects involve a nation-wide assessment of forest biodiversity, web-based virtual tours of sustainable forestry practices, a study of forest fragmentation, and a certificate program in sustaining human and natural systems. Partnership involves four OSU colleges and two other universities.

(http://www.cof.orst.edu/org/sfp)
SNCC: Swiss Needle Cast Cooperative
Investigates possible causes and remedies for attack of the fungus *Phaeocryptopus gaeumannii* in coastal Oregon Douglas-fir forests
(www.cof.orst.edu/coops/sncc)

TBGRC: Tree Biosafety and Genomics Research Cooperative
Studies tree genetics and breeding through gene-transfer-based biotechnology
(wwwdata.forestry.oregonstate.edu/tgb/)  

UPRC: Utility Pole Research Cooperative
Seeks to improve the performance of wood in utility systems through improved specification, better inspection techniques, and development of safer remedial treatments for in-service poles
(www.cof.orst.edu/coops/utilpole)

VMRC: Vegetation Management Research Cooperative
Research program on vegetation management, focusing on plant competition, vegetation control, and early growth of forest stands
(www.cof.orst.edu/coops/vmrc/home.htm)

WPG: Watershed Processes Group
An interdisciplinary research group studying linkages among physical and biological processes and human activities, with particular focus on the steep, forested landscapes of the Pacific Northwest (www.fsl.orst.edu/wpg)

WRC: Watersheds Research Cooperative
Facilitates research on the environmental effects of intensive forest management on water quality, fisheries, and aquatic habitat

*HSC, NTC, NWTIRC, PNWTIRC, SNCC, TBGRC, UPRC, VMRC, and WRC are research cooperatives funded by OSU and member organizations that jointly select and carry out research on high-priority research problems.*

*CFER is a cooperative among OSU, USGS-BRD, Bureau of Land Management, and Oregon Department of Forestry.*
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