The education of a forester: Diverse programs for diverse people

Legacy students: the College of Forestry runs in families.

Three new scholarship funds—one honoring a Dean Emeritus
This issue of Focus on Forestry tells about some of the ways our forestry education has changed in response to a changing world. The forestry profession as a whole has been doing some soul-searching over the past decade or so. The attitudes of society toward natural resources have shifted, and the professional expectations placed on foresters have changed. People who work in the world of forestry are now called upon to do more things, and different things, than in the past.

That's a challenge for those of us who teach in forestry and forest products programs. Here at the College of Forestry, we've kept alert to the changing demands of the workplace, and we've adjusted our educational programs to keep pace. The result has not been revolutionary change, but a gradual updating of our curricula to keep them relevant to our students' needs. You'll read about some of these changes in the pages that follow.

And while we're on the subject of education, I'm pleased to report the addition of three new scholarship funds for Forestry students. Two are memorial funds, given in memory of a Yamhill County tree farmer and a well-loved former professor here at the College. The third was raised by a group of generous Fernhoppers to honor Dean Emeritus George Brown, who is still very much alive. At this writing the George W. Brown Endowed Scholarship is a secret—we're going to surprise him with it on Fernhopper Day. By the time you read this, he'll know. Please turn to page 17 to see how you can make a contribution.

Finally, this will be my last word to you from this space. The College welcomes Dean Hal Salwasser as he comes on board in July. I will return to my former job as Associate Dean for research and international programs, and I look forward to serving with Hal as he takes the College into the years ahead—and exciting and productive years I'm sure they will be.
Focus on Forestry is published three times each year (Fall, Winter, Spring) by the Oregon State University College of Forestry. Our goal is to keep Forestry alumni and friends informed about the College of Forestry and its many activities and programs.

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The education of a forester

BROAD PROFESSIONAL AND SOCIAL TRENDS ARE SHAPING FORESTRY LEARNING AT OSU AND EVERYWHERE

The profession of forestry has been experiencing an identity crisis these last couple of decades. What is the education of a forester—more broadly, a natural-resource professional—than a much-debated topic at forestry schools across the United States.

Probably there was no time when "forestry" had an unambiguous definition, when it was clear to everybody what a forester was and did. It's important to remember, says Char Miller and James Lewis in an article in last September's Journal of Forestry, "how often the profession has been at odds with itself, and how odd are the questions that trouble it today."

That was a time when public attitudes toward forests were undergoing major changes. Today's changes have been equally broad and deep, and they have sparked natural resources in full flow.

For nearly a year, administrators and professors have been examining the College's programs, preparing for a visit this summer by an accreditation review team from the Society of American Foresters, the accrediting body for all U.S. forestry programs.

Programs at OSU's College of Forestry have undergone changes over the past decade—not radical changes, but evolutionary, designed to better prepare graduates for the needs of the workplace and the societal demands placed on natural-resource professionals.

"Every day there's more to know about all aspects of managing forests and other natural resources," says Pam Henderson, the College's director of student services, who keeps in close touch with forestry employers. "In our programs we strive to keep our students abreast of all of it."

TRENDS AND VALUES

What are some of the drivers of these changes? One important development is that forestry and natural-resource professionals are expected to take a big-picture view, to embrace a larger set of management objectives and concern themselves with a wider array of forest products and values.

Today's forest management, he says, requires people trained in engineering to design road system, stream crossings, and soil-protection measures to minimize the environmental impact of logging. "You can be fined if your road system delivers sediment to the stream. A bad winter storm is not excuse—you're supposed to design your ditches and culverts so as to avoid sedimentation of the stream."

For this and other reasons, on-the-ground management of forests and other natural resources has become vastly more complicated. Foresters have gone from writing prescriptions for forest stands to trying to manage whole landscapes. More important than ever is proficiency in such techniques as geographic information systems (GIS) and computer modeling of ecosystem processes.

"Information from the forest is collected and used in a very different way today," says Pam Henderson. Mastering the complexities of the new information technology "is a fast-developing set of competencies."

"Every day it seems there's more to know about all aspects of managing forests."

—Pam Henderson

John Bliss, professor in the Forest Resources department, holds the Starker Chair in private and family forestry, agrees. "We're
completely computer-dependent now," he says. "The traditional forestry skills, like surveying, or cruising—these are all computer-assisted. Nobody throws a chain any more."

"There's an adage that the half-life of any college education is five years. I think that process may be accelerated now."
—Mike Cloughesy

At the same time the work environment has become more technology-intensive, demand for less-tangible career qualities such as communication, leadership, and problem-solving is also increasing. In a recent survey by the Pinchot Institute for Conservation, forestry employers said that they wanted employees with strong interpersonal communication skills, vision, creativity, and the ability to collaborate—and a solid technical grounding, too.

Because effective land management draws on a wider set of disciplines—not only silviculture and harvesting technologies, but hydrology, fisheries and wildlife biology, geology, soil science, and the social sciences—teamwork is a key skill for natural-resource professionals nowadays. And they also need to understand "the role of forests in communities, businesses, and the environment," according to the summary of a March 1999 symposium on forestry education, also sponsored by the Pinchot Institute.

"The largest skill gaps, from the employers' perspective, lie in the ability to work in teams and the ability to address public concerns," according to V. Alaric Sample, the Pinchot Institute's president, and others in an article about the survey in last September's Journal of Forestry.

Says John Bliss, "The expectations of the public about forest management have risen across the board. They care not only about management of public lands, but of private lands." Natural-resource professionals everywhere are doing their jobs in a fishbowl of public scrutiny. Says Bliss, only half joking, "There was a time when foresters complained they were invisible. Now everybody's on our case, and we wish they'd go away. We're like deer in the headlights."

Squeezing it all in
With everything a professional has to know, the shape, scope, and timing of a natural-resource education has changed. For many careers, the educational bar has been raised; a bachelor's degree is the minimum qualification for jobs that once could be filled by a tech-school graduate or someone with a few years' experience.
OSU's College of Forestry educates more than one kind of forester. Changing social demands and scientific developments over the last 100 years have spurred a variety of Forestry programs.

"It's important to remember that there's no such thing as 'a' forestry education," says Rebecca Johnson, the College's Assistant Dean for academic affairs. The College's programs are designed to meet the educational needs and career goals of a diverse group of students. "We offer different programs for different purposes, and each one is excellent for the right student."

**Forest Engineering**
OSU's Forest Engineering Department is the largest in the United States, and its graduates are highly sought after by employers. The curriculum includes a mixture of forestry and engineering classes, as well as coursework that is specific to forestry engineering. A sound education in the basic sciences is also provided.

As in the Forest Management program, Forest Engineering students spend a lot of time in the field and must complete 2 summers of forestry-related work. A 5-year dual degree is also available in Forest Engineering and Civil Engineering. Most graduates are employed by private companies; some pursue graduate work leading to a career in forestry research or operations.

Students graduating with a degree in Forest Management find employment with a variety of employers including private timber companies, public agencies involved with managing forest lands, legislative bodies, and consulting firms.

**Natural Resources**
The Natural Resources degree at OSU is one of the most flexible. Offered jointly by the Colleges of Forestry, Agricultural Sciences, Science, and Liberal Arts, the program allows a student to choose an area of interest and pursue it with a flexible schedule. The program educates students about the way humans interact with their natural environment and what they can do to sustain natural resources.

Natural Resources graduates work for public land-management agencies in a wide variety of positions, as well as for environmental organizations and legislative bodies concerned with land-use policy and laws. They also work in public relations and education.

Students complete a supervised summer internship and a field experience course which takes them to another region of the United States. All this leads to employment as park ranger, naturalist, environmental educator, wildland law enforcement officer, or opportunities in a variety of other areas.

**Forest Products**
The Forest Products program at the College of Forestry offers two options. The Wood Industry Management option includes an extensive grounding in wood products education and calls for a minor in business administration. The Wood Sciences and Engineering option allows students to explore the scientific and engineering aspects of the wood products industry. The Forest Products program, like the others, emphasizes student involvement, problem solving, and decision making.

Graduates are in high demand. They find jobs within the wood products industry ranging from research to manufacturing to sales.

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-N.F.
A Forestry education is not all work—not here, at least. CoF students enjoy hamburgers and potato salad at the College’s annual fall barbecue—there’s one in the spring, too. Far right, a canoe race at the Annual Ring, the College’s field day, held each fall at Peavy Arboretum to welcome new students.

Because knowledge changes so fast, professionals should expect to educate themselves throughout their careers, says Mike Cloughesy, director of the College’s Outreach Education office. With his fellow professors and with the help of practitioners outside the College, Cloughesy designs and organizes 30 to 40 events a year for mid-career natural-resource professionals (please see the schedule of forthcoming Outreach Education offerings on page 20).

A master’s degree for an entry-level job,” says Pam Henderson. “In areas such as silviculture, GIS, and watershed management, you need to be educated at some depth in the discipline, and you also need a good grounding in natural resources generally. A bachelor’s degree can’t give you everything.”

“There’s an adage that the half-life of any college education is five years,” Cloughesy says. “I think that process may be accelerated now. When half of what you’ve learned is no longer valid after only a few years, continuing education becomes crucial.”

BRIDGING THE LEARNING GAP
The conclusion of Sample’s article is that forestry schools may not be meeting the demand for adequately trained and educated forestry professionals.

Maybe that’s the case at some schools, says Interim Dean Bart Thielges, “but we believe we are meeting the demand. All the feedback we get from employers is that College of Forestry graduates are highly qualified.” Pam Henderson agrees. “Our students do very well in the job market.” The College has tried hard to keep abreast of the changing demands on forestry professionals in all its programs. Here are some examples of recent developments:

Forestry classes incorporate learning from a broader disciplinary menu. Within all the Forestry majors, professors strive to integrate knowledge from a wider array of disciplines into coursework. Required courses in ecology, forest policy, and natural resource conservation have been added in the past decade, and writing-intensive courses have been mandated across the University.

Forest Management and Forest Recreation Resources seniors must take a class called Managed Forest and Wildlife Interactions. It’s a “capstone” class both for them and for Fisheries and Wildlife students; both groups get a chance to meet and work with others of a different disciplinary bent. (“Capstone” refers to a senior-level course that requires students to integrate theory and practice in a class project.)

In addition to a minor, students in FM and FRR may choose an option consisting of classes drawn from other University departments. The idea of options is not new, but the array of choices has
changed with changing technology and professional qualifications. For example, the College was quick to offer an option in GIS when that technology became more important in the workplace about a decade ago. FRR students may now choose an option in tourism.

Forestry education deals with places outside the Northwest. In the early 1990s, the University revised its baccalaureate core requirements to include more courses on global issues. Two are offered in Forestry: Issues in Natural Resource Conservation and International Forestry. In addition, professors in many classes try to show students how principles of forestry and land management can be applied to different regions and environments. The all-day field trips in the silviculture “block” (every Tuesday during spring term) allow students to visit forests in southern or eastern Oregon. Royal Jackson takes his FRR students on a yearly 10-day field school to Grand Staircase—Escalante National Monument in Utah to give them a taste of recreation management in a desert setting.

Professors try to keep up with the latest technology of the workplace. In Forest Products, the fundamentals of chemistry, physics, mechanics, and math are the same as ever, “but we know more about wood than we did 25 years ago, and we’ve changed processing technologies,” says Tom McLain. “Fifteen years ago there was not the emphasis on composite materials. Now they dominate the market.” Students learn about these materials by visiting plants where they’re made.

There’s still a gap between the technification of the university and that of most private companies, says Ward Carson, who teaches photogrammetry and remote sensing. “We can’t keep up with the industry technologically—it’s just too expensive. But we justify this by having to teach students the underlying principles of solving problems. They should know more than just how to run the numbers through a hand-held calculator.”

The shift in society’s attitudes away from exploitation and toward preservation of forests, says Tom McLain, should be assessed in light of certain facts. “Such as, we are using 40 percent more wood today than we did in 1970, and we are importing wood from Canada because we can’t meet our own demand. It’s the age-old problem of people wanting to have their cake and eat it too.”

McLain, head of the Department of Forest Products, says the same social factors driving changes to the forest management curriculum are also at work on the forest products side, but they’re playing out in slightly different ways. “Given that we have a finite resource base and a declining availability of raw material, we have to find ways to use technology to produce more products with less wood. If we don’t use fiber in an efficient way, that has an impact on the land.”

The other main influence on the FP curriculum has been the increasing demand for marketing and business skills. Most FP students take a wood industry management track, which gives them a minor in business. Until now FP students have taken all their minor classes, including marketing, from the College of Business. This fall Forest Products professor Eric Hansen will begin teaching a marketing class that’s specific to wood products.
In this file photo, Cindy Wolski examines a patch of forest at Peavy Arboretum as she prepares to draft an interpretive plan for a hiking trail. Cindy graduated in 1998 with a Forest Recreation Resources degree.

His own field has seen dramatic technological changes. “Photo interpretation is still done by a trained and experienced operator; it’s hard to beat the human brain at this task,” says Carson. “But photogrammetry—the technology for gathering the photographic information—has really moved.”

Forest photogrammetry is the art and science of mapping from aerial photographs, usually from stereophotographs taken from two perspective points. Stereophotographs expose the three-dimensional relief of the landscape in the same way that children's 3-D slide viewers give the illusion of depth to pictures of Cinderella or Donald Duck.

Photogrammetry has gone from using a machine the size of a small living room to mechanically render stereoscopic photos into maps, to recreating the topography mathematically from digital versions of the photographs held in the computer. The results of the latter are digital, ready for a GIS. Although the full technology is too expensive to implement in the classroom, students learn and practice its principles in their classes, says Carson.

Keeping up with the latest software is another challenge. “We have an advantage in this regard because of our large research program,” says Pam Henderson. “The faculty here are often the ones who write the programs being used in the field, and they’re also teaching in the classroom. So our students are introduced to the state of the art by learning these programs in class.”

She cites Forest Engineering professor John Sessions, with his optimal-bucking computer model (called, logically enough, BUCK), harvest-transportation models (NETWORK and SNAP), and cable-logging layout model (LOGGER-PO), which are widely used in public and private forestry both in the United States and abroad.

Communication, teamwork, and problem-solving opportunities are emphasized in class and in the field. All undergraduate programs require an integrative senior class project that students must complete in teams. The senior-level forest policy class, required of all FE, FM, and FRR majors, is a writing-intensive course, one of many offered throughout the University. So is the senior-level Forest Products projects class, in which a student researches a topic in cooperation with a wood-products company, and then writes a senior thesis and presents it to her or his peers.

The College keeps in touch with the professional world. Professors and department heads make it a point to visit frequently with forest industry leaders, agency staff, and decisionmakers to be sure students are well prepared for the world of work. Two years ago the Forest Engineering department invited a panel of industry leaders to review the FE and FE/CE programs and suggest improvements. The panel recommended that the department seek accreditation from the Accreditation Board for Engineering and Technology (ABET), to add to the SAF accreditation already in place. The department acted on this recommendation, and the accreditation is now pending.

What's our report card?

Most professors and administrators feel the College's undergraduate programs are pretty much on track. Forest Engineering head Steve Tesch says, “We're very proud of how well we've kept up with the needs of employers, the industry, and society.”

“We've all been thinking again about our curriculum as we come up on this review,” says Tom McLain, “but I don't have the sense that anything is broken.”
Like students every where, Forestry students express their personalities, views, and life goals in a variety of styles of dress.

If you had to make some guesses about Carson Hundrup from his heavy work boots and his Carhartt canvas jacket with the logging sports team logo on the back, you might guess he identifies with forestry's more traditional values.

And you'd be right. The Forest Engineering senior from Lewiston, Idaho, who is headed for a career in private industrial forestry, and he is confident about his choice. "Lumber and pulp and paper are important in Lewiston; there's a lot of forestry going on around there. I know it's not a declining industry—it's just changing. And the jobs are out there, because with all the regulatory issues and environmental protection you need to do, there's a good demand for skilled people."

Carson, who's graduating this June, isn't looking yet for a permanent job—he has a good summer job waiting for him on Willamette Industries' roadbuilding in Lebanon, Oregon. His ideal career would be designing roads and harvest units for a private industrial forest firm like Willamette.

Carson enjoyed math and drafting in high school, so he was drawn to civil engineering at first. He enrolled in OSU's program, discovered that there was a dual-degree program in Forest Engineering/Civil Engineering, and switched to that.

Eventually, realizing forestry was his first love, he dropped the CE degree. "I really found my place here," he says. The Forest Engineering curriculum, he believes, is preparing him well for what he wants to do.

He appreciates especially the real-life experience gained in many of his classes, such as Brian Kramer's road-design class. A team of four or five students goes out to a real site, surveys it, and designs a road with a bridge. "We have to consider the grades, the curves, the cost of construction—everything."

Collaboration with fellow students, he says, is a big part of professional preparation. "Because that's what it's like in the real world. We're all racing to beat each other to the good jobs, but once you're in a company, you work together." He appreciates his professors' overall commitment to collaborative work—unlike some schools, he says, where competition is stressed.

Not all of a Forestry education happens at home. Carson studied at Lincoln University, on New Zealand's south island. "I wanted to see how forestry is done in other countries," he says. He found differences both in forestry practice and in public attitudes. "The standard is short-cycle, plantation forestry with radiata pine, an introduced species that grows fast—they harvest after only 20-30 years."

People's views on forestry are different from here, he says, possibly because of a long history of intensive land management, especially grazing of sheep and cattle. "The sight of a bare hillside doesn't seem to bother New Zealanders as much as it does people in Oregon." Plantation forestry also is less of an issue among environmental groups there, "but then, the remnants of the native forest are mostly preserved."

The closer Carson gets to graduation, the more sure he is that he made the right choice. "Every time someone asks me, 'are there really jobs in forestry?' I just answer, 'Yes, there are really jobs out there.'"
For at least three students here, an OSU Forestry education is a family tradition. One of these students, Forest Management freshman Jim Starker, has a dad, a granddad, and a great-granddad in his OSU Forestry lineage.

"I've been going to work with my dad ever since I was little. I can't even remember the first time."

—Seth Barnes

Jim is the son of Bond Starker '69, partner in Starker Forests, Inc.; the grandson of the late Bruce Starker '40; and great-grandson of the late Thurman James "T.J." Starker '10, who started the family tree farm business.

Growing up in such a family, Jim couldn't help but learn a lot about forestry. "I started working for my dad and my uncle (Barte Starker '72) when I was 12, doing road brushing, pruning, surveying, and GPS data collection. Lately I've been doing more forestry stuff, cruising, stocking surveys."

His first goal was a business degree, after taking business classes in high school and liking them. "Then I came here and started taking forestry and business classes, and decided forestry was what I was most interested in."

Jim hopes eventually to be a fourth-generation partner in Starker Forests. However, he intends to broaden his perspective by working elsewhere for a while after he graduates.

Seth Barnes, Forest Management sophomore, is the son of Mike Barnes '71, a consulting forester who manages 640 acres of forest land near Gaston, Oregon. He's also the nephew of John Barnes '77, now the public use coordinator for the Oregon Department of Forestry's Northwest Oregon area.

Immediately out of high school, Seth traveled to Brazil on a two-year religious mission and learned to speak Portuguese. Then he enrolled at Ricks College in Idaho. Last fall he transferred here to finish in forestry.

"I've been going to work with my dad ever since I was little," he says. "I can't even remember the first time." He's worked summers on the family tree farm since he was 12 or so. "I always liked what my dad did, being in the forest, raising up trees, and it's what I wanted to do. This is one of the best forestry schools in the nation, and it was the wisest choice for me."

He may continue with graduate school after he's finished, perhaps
to study environmental law. Or he may become a consulting forester, perhaps overseas—perhaps in Brazil.

Gavin Smith, who’s graduating this year with a Forest Engineering degree, is the son of Mark Smith ’76, a consulting forester and tree farmer in Lake Oswego.

Gavin grew up on the rural margin of Wilsonville, a suburb of Portland. “We had 57 acres on the edge of town,” he says. “I was known as the farm kid.” He wasn’t naturally drawn to forestry in high school, even though he worked for his dad and liked it. “The peer pressure in my high school was steering me away from forestry and toward business,” he says. “I didn’t like being stereotyped as the yokel.”

Then he was asked to help with a 4-H group of elementary and middle school children. The children’s activities centered around agriculture, not forestry, “but the roots started kicking back in.” Then, visiting his grandmother in a nursing home, he fell into conversation with a retired logger who told him stories about the old days. “After that, everything just went together.”

One of his greatest rewards, he says, is using his schooling to help improve the family tree farm. “My dad and I just put in a 40-foot culvert, and I did all the design work. I’m also in the process of setting up a cable logging side that will be logged this summer, something we’ve never thought of doing until now.”

Gavin hopes eventually to become a contractor or a forestry consultant. He might end up working for his dad, and that would be fine. Whatever happens, “I’ll be hitting the ground running with all the software and technology I’ve learned. I’m going to walk out of here knowing I can find a job that suits me.”

Mike Newton, professor in the Department of Forest Science, received an unusual retirement send-off in April: a day-long seminar of presentations on “Newtonian silviculture.”

The seminar, organized by Newton’s colleagues, attracted more than 200 people who’d known him throughout his 40-year career at OSU. They included many former students of Newton’s—some of whom might concede, if asked, that they’d stood on his giant shoulders.

There were 15 presentations around the theme of intensive forest management. Speakers included Diane Haase of the

College of Forestry, Mark Gourley and Gary Blanchard of Starker Forests Inc., Dave Marshall and Bob Curtis of the Pacific Northwest Experiment Station in Olympia, Newton’s long-time research associate Liz Cole, and finally Newton himself, who spoke “the last word” on opportunities for multiple-use management. The seminar was followed by a dinner and vigorous roast of Newton by his colleagues and friends.

“Retirement” is a bit of a stretch for what he’s planning to do, Newton admits. He’s finished with classroom teaching, but will continue as guest lecturer, lab leader, and, of course, researcher. “There won’t be a whole lot of change in my research activities until 2009.”

It’s hard to quit, he says, when you’re having fun. “I have fascinating work to do, superb people to work with, the world’s most beautiful places to work in—it’s a chronic high.”
Jessica Leahy, a first-year graduate student in the Department of Forest Resources, has been selected to receive the D. Barton DeLoach Graduate Scholarship in Economics. This is one of just three scholarships/fellowships awarded by the University Graduate Faculty of Economics. Jessica is working with Becky Johnson and other economics faculty toward a master's degree with a concentration in Forest Economics. The scholarship will help her complete a supervised teaching experience of a forestry or economics course.

Cattriona Armstrong, a master's student working with Becky Johnson, won a Sigma Xi science award for the poster she presented at the recent Graduate Conference held on campus. The title of her poster is "Oregon Forestry: In a State of Change."

David Rosowsky, a civil engineering professor at Clemson University, will become the Richardson Chair in Wood Science and Forest Products. Rosowsky's expertise is in wood engineering and mechanics, with special interests in structural reliability, probabilistic modeling, and performance of light-frame wood structures subject to natural hazards. He holds a doctorate from Johns Hopkins University and has been on the faculty at Purdue, Johns Hopkins, and Clemson Universities. Rosowsky's appointment completes the filling of the three Richardson Chairs, established by a 1992 bequest to the College from Kaye Richardson. The others are held by Jeff McDonnell, of the Department of Forest Engineering, and Mark Harmon, of the Department of Forest Science.

John Tappeiner received the Distinguished Scientist Award from the Northwest Scientific Society at its March annual meeting. He was honored for a long and distinguished career in forest ecology, and particularly for the applicability of his research to applied forestry. Tappeiner has studied how herbs and shrubs develop in the understory of forest stands, how these plants can be managed for both wood production and wildlife habitat, how old-growth forests have originated and matured, and how thinning and partial cutting affect forest structure and composition. Tappeiner has been a professor at OSU since 1981. He holds a joint appointment in the Department of Forest Resources and the USGS Forest and Rangeland Ecosystem Science Center, where he leads the silviculture and forest ecology research program.

Michael Newton, professor in the Forest Science Department, received a lifetime achievement award in January at the Forest Vegetation Management Conference in Redding, California. In his 40 years at OSU, Newton has conducted research contributing to the understanding of how trees utilize resources made available to them through management, including weed control. He has studied the effects of herbicides and tree harvesting on small forest vertebrates, as well as methods to protect water quality and stream habitat through design of stream protection zones. He has also been influential in the development of forest pesticide policies.

Pam Henderson is retiring after 25 years of service to the College in student services and outreach programs. Henderson joined the College in 1974 to develop and manage the College's continuing education program. To that, a year later, she added the half-time job of coordinating student services. She then became full-time head student advisor and College coordinator of student services. For at least the first year after her retirement, Henderson will work with Inner-City Youth Institute, a regional partnership among the College, the Forest Service, and the Portland school district designed to encourage inner-city young people to consider natural-resources careers. She helped craft the program in 1996.

The American Society for Testing and Materials selected a paper by Bob Leichti and his student, Tonghate Nakhata, as the best to appear in the 1999 volume of the Journal of Testing and Evaluation. Their paper was selected from a pool of over 80 papers on the basis of style, clarity, and content.
Jim Brewer '56, Bemidji, Minn.  
"It seems like the percentage of 'Good Intentions' unmet rises as I get older. Since it has been quite a while since I last sent in a status report, here is a brief one.

"I retired from the Forest Service in 1985 after 12 years of supervising the Chippewa National Forest in Minnesota. I then spent five years as City Manager in Ironwood, Michigan and Windsor, Vermont, where the engineering I learned from Bill Davies was as useful as it was for doing logging plans in Oregon and Alaska.

"Jo and I have been really retired since 1991, and live in Bemidji, Minn., in the summer and winter, flying our Cessna 182 back and forth as the seasons change and the birds migrate. In addition to the flying hobby and some Civil Air Patrol activity, our lives involve some reading, investing, our six children and nine grandkids, a little traveling, a little skiing, hiking, fishing, etc. A little of this and a little of that and pretty soon it adds up to full time.

"An editorial note—Were I still in the Forest Service today I would be fired for insubordination. Like many who dedicated our lives to public service, I am disturbed at what the politicized Forest Service has become and the way the American people are being short-changed by its direction today. Enough said!"

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**Calling all forestry alumni! Drop us a note or send us an e-mail and tell us what you’re up to.**

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**Publications of Note**

Here is a selected list of reprints available from Forestry Publications. You may order them by calling 541-737-4271, or consult this web page: www.cof.orst.edu/cof/pubs/home/.


Emmingham, W., S. Chan, D., Mikowski, P., Owston, and B. Bishaw. 2000. Silviculture practices for riparian forests in the Oregon Coast Range. Research Contribution 24, Forest Research Laboratory, Oregon State University, Corvallis. (No. 1176)


COLLEGE RECEIVES THREE SCHOLARSHIP FUNDS

TWO MEMORIAL FUNDS . . .

The College has received scholarship gifts in memory of a Yamhill County tree farmer and a well-loved former College faculty member.

Mary Jane Brown gave $50,000 in memory of her father, Rex Brown, who lovingly tended a 160-acre tree farm near Carlton in Yamhill County for more than 40 years, until he died in 1981. Mary Jane Brown grew up on the property, which she says was “a forestry showplace” in the county. “Whenever any visitors came to Yamhill County who were remotely interested in forestry, they’d come see our place.” Brown even operated a one-man sawmill on his tree farm.

Brown was not an alumnus of the College, although he knew of its research programs through friendships with now-retired Forestry Extension agents Charlie Ross and Paul Goodmonsen. “It was my idea to make a gift to the College of Forestry,” says Mary Jane Brown. “I thought it would be a neat way to remember my father.”

She reluctantly sold the tree farm this year. “I don’t have the knowledge or the energy to run it,” she says, and there is no other family member to take it on. “Small, individually owned forest farms are a fast-disappearing resource, I’m afraid.”

The first Rex Brown scholarship will be awarded in the spring of 2001. It will go to a Forestry undergraduate from Oregon with proven scholarship and professional potential; preference will be given to a student from Yamhill County.

The James T. Krygier Memorial scholarship fund was started by an $11,000 gift from Theodore Daniel, Krygier’s major professor at Utah State. The fund now stands at almost $12,000.

Krygier joined the School of Forestry at Oregon State in 1954. He taught over a dozen courses, including conservation, forest protection, forest measurements, and watershed management. He was a leader in establishing the School’s watershed management program. He took part in the Alsea Basin logging and aquatic resources study, which established the effects of clearcutting on water quality, water supply, floods, and fish habitat. The study’s findings were instrumental in forming the logging policy and practices still in place today. He was an original director of the OSU Water Resources Institute.

Krygier also served as coordinator of Forestry Extension, receiving national recognition for his role in developing programs and for his work in developing the Renewable Resources Extension Act. Krygier retired from OSU in 1985. He died last May.

The first Krygier scholarship, to be awarded this year, will go to a Forestry undergraduate with proven scholarship and professional potential.
AND ONE IN HONOR OF GEORGE BROWN

A third scholarship fund was launched this spring as a surprise honor to Dean Emeritus George Brown. The campaign raised $10,000 in the first 30 days.

The ultimate goal is to raise $100,000—half each from Forestry alumni and the industry community, says Dan Green '69, who served on the fundraising committee. "We like to set pretty lofty goals. We consider the first $10,000 a success, but we don't want to stop there."

The campaign was spearheaded by Jim Rombach '64, recently retired from Weyerhaeuser Co. He recruited Green, and they gathered a group of Forestry alumni who helped them take the appeal to their fellow alums and their colleagues in the wood-products industry.

On the scholarship fundraising committee are L.L. Stewart '32, Clarence Richen '35, Faye Stewart '38, Jim Rombach '64, Mike Beyerle '64, Dan Green '69, Barte Starker '72, Julie Stangell '82, Nancy Peckman '87, Leslie Barren '90, and Bree Anna Wells Bouse '95.

Laurie Brendle of the College's development office met with the group, helped them develop strategy, got them connected with the right people in the College and the OSU Foundation, and carried out all the logistical chores—designing letters, ordering printing, getting things mailed. "She did all the real work," says Green.

The scholarship, he says, is a fitting tribute to a man who's been intimately connected with the forestry community both in and outside the academic walls. "I think we owe him a debt of gratitude for everything he's done for the College and for the forestry profession over the past 30 years. And of course, he hasn't done it alone—he stands in for all the other faculty at the College and for all their good contributions to the practice of forestry."

"This scholarship will be a permanent, continuing honor to George's leadership," says Interim Dean Bart Thielges. "I remember at his retirement dinner, when he was questioned about ways to commemorate his service, he said a scholarship fund would be the only thing he'd want."

The campaign was announced at this year's Fernhopper Banquet. Contributions are welcome from alumni, friends—anyone who knows, knows of, or appreciates the accomplishments of George Brown. Send your contributions to Laurie Brendle, College of Forestry, Oregon State University, 119 Peavy Hall, Corvallis, OR 97331. Checks should be made out to OSU Foundation and marked "George W. Brown Endowed Scholarship."

COF HAS A NEW FUNDRAISER

Marianne Barker of the Oregon State University Foundation has been assigned to the College of Forestry as its Development Director. She succeeds Lisa Mattes, who left to take a development position at the University of Montana.

Barker has been associated with development at OSU since 1990.

She earned a bachelor's degree with honors from Utah State University and taught adult education for five years. Prior to moving to Oregon, she worked in a United States foreign diplomatic position in East Africa for four years. She completed a professional designation program through California State University at Long Beach to become a Certified Specialist in Planned Giving in 1997.

Barker is currently Director of Development at the OSU Foundation with assignment to the College of Forestry. In this position she assists individuals to develop charitable giving strategies in harmony with sound financial planning principles and to further the mission of the College.

On the scholarship fundraising committee are L.L. Stewart '32, Clarence Richen '35, Faye Stewart '38, Jim Rombach '64, Mike Beyerle '64, Dan Green '69, Barte Starker '72, Julie Stangell '82, Nancy Peckman '87, Leslie Barren '90, and Bree Anna Wells Bouse '95.
Forest hydrology, says Jeff McDonnell, centers around three basic questions: “Where does the water go when it rains? How long does it reside in the soil? How does it get to the stream?”

These questions may sound simple, but answering them is not easy. “The one thing we've determined for sure is that water runs downhill,” says McDonnell with a smile. “The rest of it we're still investigating.”

“...The rest of it we're still investigating.”

McDonnell, 40, is the Forest Engineering Department's most recent faculty arrival. He holds the Richardson Chair in Forest Engineering, one of three chairs at the College of Forestry endowed by a 1992 bequest from Kaye Richardson.

As with most scientists interested in the details of ecosystem function, his work takes him into the world of computer modeling. Right now he's developing models of the way water flows around and through the intricate surface and subsurface topography of real watersheds. These models map the little bumps and hillocks, slopes and channels that control water movement, and then show what happens to the water when the rain starts falling, or the snow starts melting.

Before the advent of computer modeling, McDonnell says, hydrologists understood watershed processes in only a lumped way. “A watershed was essentially a black box—we couldn't see how water was cycling through it in a spatially particular way.”

Knowing the fine details of flow patterns will help answer some very practical and urgent questions. “Forest roads are a particularly important issue. We have 480,000 miles of roads on federal lands, and we don’t really understand, except at a gross scale, how they intercept water on hillslopes and route it to the stream.”

Flowing water also influences how, where, and when landslides occur, a topic of some urgency in Oregon's wet west side. A more refined understanding of water flow patterns will enable better predictions of which slopes are likely to fail, and under what circumstances.

These models reveal more than a watershed's physical attributes and processes. They also incorporate information about the biology and chemistry of forest soils. “Wet areas are different from drier ones biogeochemically,” says McDonnell. This difference, among other things, the purity of the drinking water delivered to residents downstream.
A relatively new field rooted in civil engineering, hydrology is now broadening to take in the disciplines of biology and chemistry. "Traditionally," says McDonnell, "hydrology has been preoccupied with predicting peak flows of streams and 100-year floods, and coming up with numerical models for civil infrastructure"—bridges, culverts, and the like.

"But in the past few years our scope has taken in biological and resource engineering, range science, forest science and other biosciences. Quite a constellation of people call themselves hydrologists, and a good number have come at it from a basic science, as opposed to an engineering, background."

Many, he says, are motivated by a desire to maintain or restore ecosystem processes.

"Ecohydrology is a new coinage, and for many hydrologists that's the Holy Grail—to understand and model the ecological processes we hope to manage, so that we can do such things as extract timber in a more environmentally friendly way." 

McDonnell collected rocks as a boy, and at first wanted to become a geologist. He also studied piano and accordion all through his childhood, and by the time he was in high school was accomplished enough to consider majoring in music.

In the end, geology won out, and he enrolled at the University of Toronto to study geophysics (teaching piano on the side "to reluctant middle schoolers"). The summer after his freshman year, he traveled to the Yukon Territory to work for a mineral exploration company. "I had a couple of unpleasant encounters with grizzly bears," he says. Mindful that geologists' job opportunities tend to be where the bears are, he began to consider alternatives. "I thought hydrology might not be a bad thing."

Finishing his bachelor's in 1983, McDonnell went on for his master's in watershed ecosystems from Trent University in Peterborough, Ontario. He won a highly selective Commonwealth Scholarship to study at New Zealand's University of Canterbury, where he received his doctorate in forest hydrology in 1989.

Canterbury is in Christchurch, on New Zealand's South Island, which is moist, hilly, and forested, much like Oregon's Coast Range. For his doctoral work, McDonnell investigated what happened to the groundwater in a steep forested watershed during heavy rainstorms.

"There was a battle raging in the literature at the time," he says. "One side said rainfall was channeled into the stream through 'macropores'—large openings—in the soil, while the storm was going on." The other group, using stable isotopes to trace the flow, found no evidence of this. They maintained rainfall soaked into the soil and displaced the water that had been stored there before the rain started falling. It was that "old" water, according to this faction, that was entering the stream during the storm, and not the "new" rainwater itself. "It was a fascinating topic to weigh in on as a graduate student." McDonnell's research developed a new theory to explain these dual processes.

Forest Engineering department head Steve Tesch is pleased to have McDonnell on his team. "In addition to a high level of energy, he brings expertise with some analytical methods that haven't been used much in the Pacific Northwest. We hope his fresh perspective will serve as a catalyst to help solve some of the water-related challenges that land managers have been struggling with."

He's in the midst of a study to model the flow pathways of several watersheds in the Catskill Mountains, the source of New York City's drinking water. Because it's unfiltered and runs over the surface of the ground, this water is apt to pick up contaminants from the farms and septic-tank drainfields that cover the Catskills' rural and suburban landscape.

The city's environmental protection department is under federal orders to install a filtering system at a cost of about $7 billion, a prohibitive sum, says McDonnell. The city won a reprieve from the order to look for alternatives, and they came to McDonnell and his colleagues at the State University of New York at Syracuse, where he was then on the faculty.

Completed portions of the study did not bring good news. They revealed that pathogens like bacteria and viruses can travel much farther than 100 feet, which is the distance required between septic systems in the Catskills. "They can swim hundreds of feet, and they can live for months and months," says McDonnell. "It's looking almost inevitable that the city will have to filter the water eventually." The next phase of the study will look at the effects of land conversion on the quantity and nutrient status of stream water.
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<td>June 5-14</td>
<td>Natural Resources Institute, Module 4: Integrated Problem Solving for Natural Resources Professionals</td>
<td>Eatonville, WA</td>
<td>UW</td>
<td>(206) 543-0867</td>
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<td>June 14-15</td>
<td>Advanced ArcView GIS Applications in Natural Resources</td>
<td>Corvallis, OR</td>
<td>OSU-COF</td>
<td>(541) 737-2329</td>
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<td>July 17-28</td>
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<td>October 23-27</td>
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<td>How to Dry Lumber for Quality and Profit</td>
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