

R
E0/F76
3F68
9/1

c.003

A0000107181950

OREGON
DISCARD
STATE LIBRARY

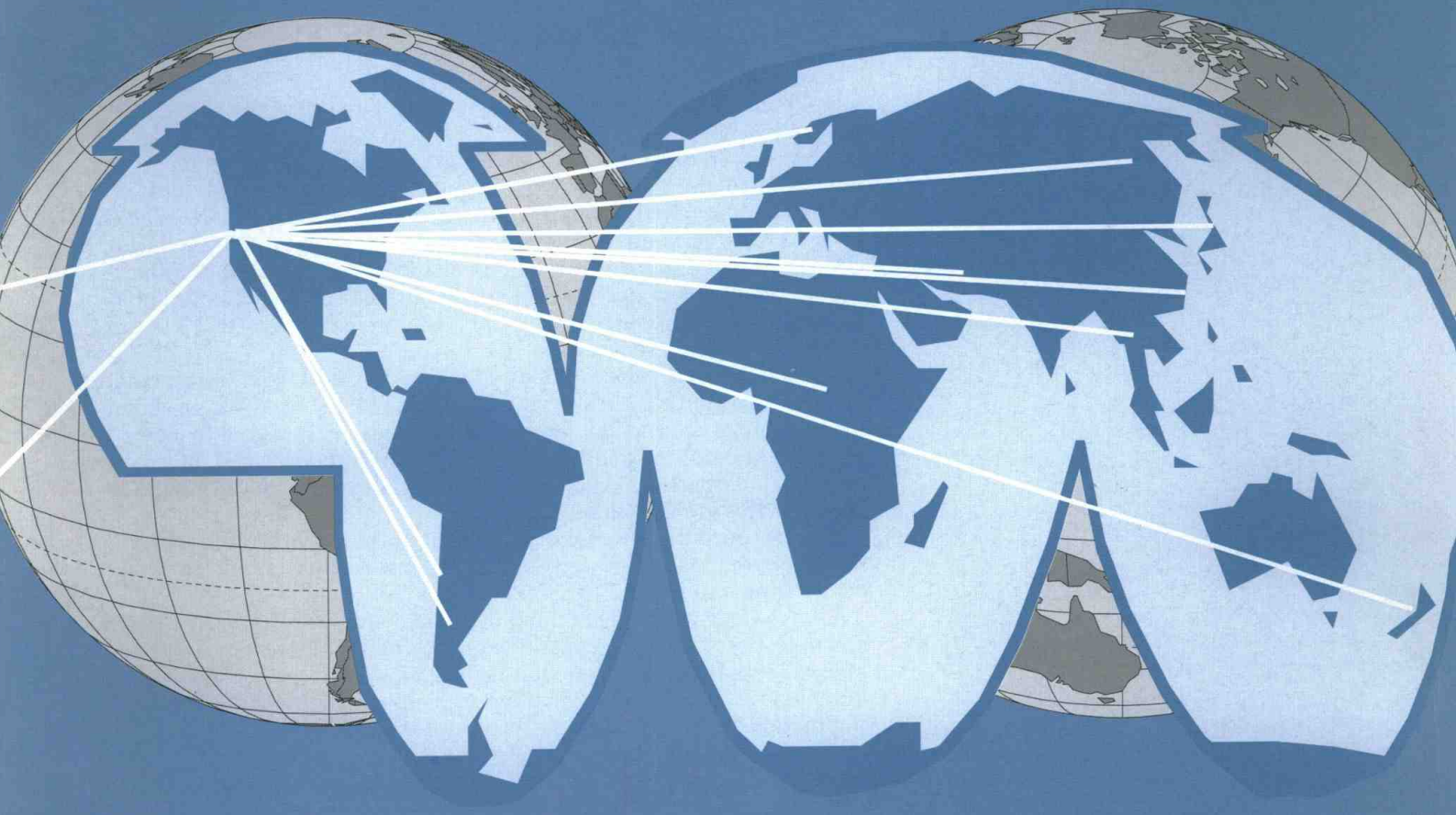


focus on *forestry*

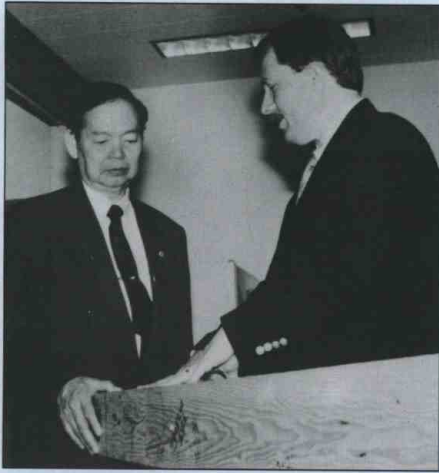
at Oregon State University

Winter 1996

Covering the earth



How the College's influence
extends worldwide



Honored guest. Sanga Sabhasri talks with Forest Products head Tom McLain on a recent visit to OSU. Dr. Sanga was here to receive an honorary degree.



Winter 1996
Volume 9, No. 1

College of Forestry
Oregon State University

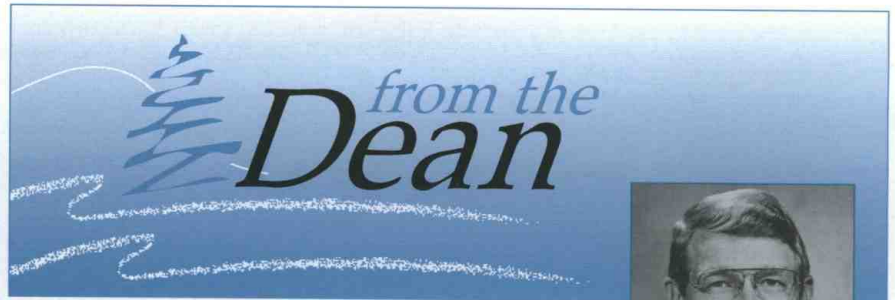
George W. Brown
Dean

Lisa C. Mattes
Director of Development

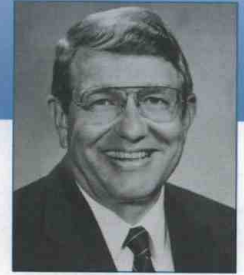
Gail Wells
Editor

College of Forestry
Oregon State University
218 Peavy Hall
Corvallis, OR 97331-5711
wells@frel.orst.edu

Focus on Forestry is published three times each year (Fall, Winter, Spring) by the College of Forestry, Oregon State University. Any or all parts of this publication may be reproduced with credit to the College of Forestry.



WINTER 1996



The College of Forestry has a long and proud history of participating in international forestry education and research. This issue of *Focus on Forestry* highlights several of our distinguished international alumni, along with research and Extension projects conducted in cooperation with forestry colleagues in many countries. It is an interesting and impressive story; I hope you will enjoy reading this issue.

The stories included represent only the tip of the iceberg, however. Our faculty are providing leadership in many international organizations and programs, and we have a wonderful mix of international students in our student body. Many of our international alumni hold leadership positions in their home countries, and a growing number of our U.S. students and alumni are focusing on careers in international forestry.

I am frequently asked why the College of Forestry is involved internationally, rather than focusing exclusively on Oregon's forests and our own issues.

The answer, of course, is that we can't afford *not* to be involved internationally.

There are several reasons, but consider these three. First, the need for knowledge about forests knows no geographic or political boundaries. Universities have a professional, moral and ethical obligation to share knowledge. Interestingly, we often learn more from our international colleagues than we contribute to them, and in many cases that's because our focus has been so local.

Second, Oregon is being rapidly thrust into the global forestry community. We are importing more wood from offshore sources as our federal forests reduce production. Many Oregon firms are involved in joint ventures and our finished wood products are being shipped internationally. Our international connections provide an entrée for Oregon businesses in this global marketplace.

Finally, our international involvement opens opportunities for our students to expand their personal and educational vistas and to obtain challenging and rewarding employment.

Our College, and indeed the forestry and natural resources research community in Corvallis, constitute an internationally recognized center of excellence in forestry research and education. I hope you'll take pride in that fact and in knowing that we are helping to prepare for a global population that will double by the middle of the next century.

George Brown

GEORGE BROWN
DEAN, COLLEGE OF FORESTRY
OREGON STATE UNIVERSITY

Educating the world's forest scientists, teachers, and resource managers

INTERNATIONAL GRADUATES OF OSU COLLEGE OF FORESTRY ARE MAKING A WORLD OF DIFFERENCE

One of the College's major bragging points is that it attracts bright students from all over the world. Indeed, our current crop of 51 international graduate students from 21 different countries bears witness to the esteem in which the College is held world-wide.

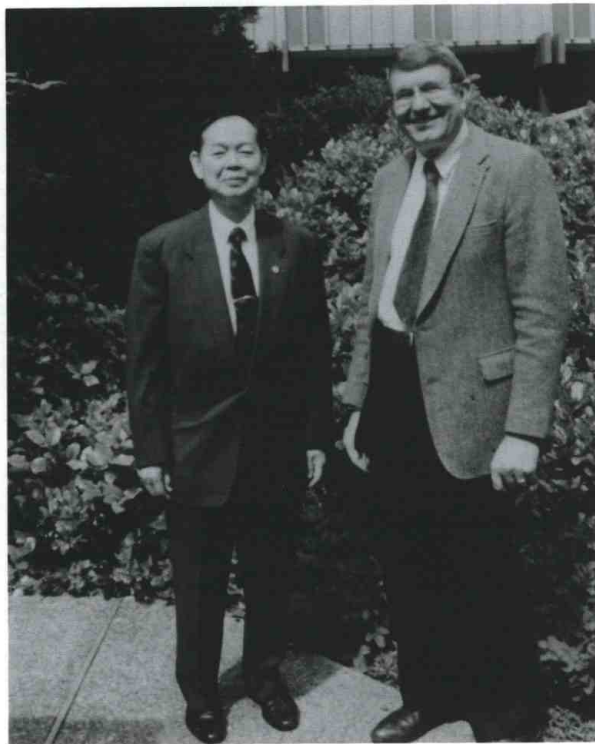
What happens to these young people when they go back home? For many, an OSU education is a major steppingstone to a career that advances both their own goals and the aspirations of their native land.

In this issue we profile five international graduates of the College of Forestry who are making an impact at home and around the world.

SANGA SABHASRI: Moving his country forward through research

Thailand has had a particularly long and fruitful relationship with OSU. Many of the country's leaders

An international scholar. Prof. Sanga Sabhasri with Dean Brown; touring the Forest Research Lab with Forest Products head Tom McLain (below right).



have been educated here, not a few at the College of Forestry. One of the most eminent is Prof. Dr. Sanga Sabhasri of Thailand, who received bachelor's and master's degrees in forestry from Oregon State in 1957 and 1959. Dr. Sanga is now chancellor of Kasetsart University and chairman of the Botanic Garden Organization within the Prime Minister's office—an organization he established. (For a more personal glimpse of Dr. Sanga, please see the profile on page 12.)

He has had a long and distinguished career as a research scientist

and leader of research initiatives within his own country and internationally. He has a worldwide reputation as a scholar of tropical forests, from the cultivation of teak and pine to the complex interworkings of mangrove ecosystems. His work is credited with improving environmental conditions in Thailand's forests and strengthening the country's environmental research base.

Dr. Sanga is held in high esteem by his fellow scientists and research administrators. The list of his awards and honors fills two closely typed pages and includes royal orders and decorations from the kings of Thailand, Denmark, Belgium, Finland, Sweden, and Norway. He also has 10 honorary degrees—the latest one awarded by OSU president John Byrne last June.



It is gratifying, he says, to be recognized by his alma mater. "And also as a foreigner, a Thai, to be recognized by an American university is something not only for me but also for my countrymen, the Thai people. It is beyond my expectation, and I am very happy."

AFTER COMPLETING HIS EDUCATION IN the United States, Dr. Sanga returned to Thailand to join the forestry faculty of Kasetsart University in Bangkok. As his gift for management and administration became apparent, he was promoted to associate dean of the faculty, then dean of the university's graduate school. In 1970 he became dean of the forestry faculty at Kasetsart, and in 1972 he became vice-rector for academic affairs—equivalent to the provost at an American university.

The following year he entered government service as secretary-general of the National Research Council of Thailand, which formulates the nation's research policy in all the sciences. At that time there was no scientific or research presence at the highest levels of government. Dr. Sanga proposed a new cabinet ministry, the Ministry of Science, Technology, and Energy. In 1981 the ministry was formed, with Dr. Sanga as its permanent secretary.

The new ministry was needed, he says, because "in order to have a voice in the cabinet for science and technology, we have to have a ministry of science. Otherwise it's difficult to push through the budget decisions that are necessary."

Dr. Sanga, according to a recent article, was appointed as a scholar, not as a politician. "In fact, he is without party affiliation, and his appointment was in recognition of his high standing as scientist and administrator."

In 1991 Dr. Sanga rose to the minister's post; by then his portfolio had been renamed Science, Technology, and the Environment. After a year he moved to chair the executive board of the Thai National Research Council. He completed his four-year term as chairman last fall and remains with the Council as an advisor.

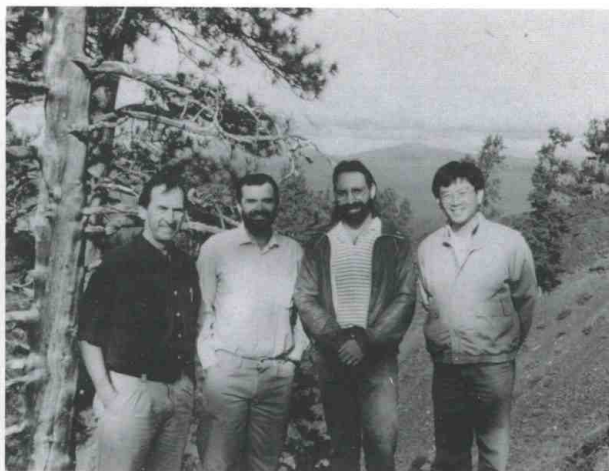
DR. SANGA'S OWN RESEARCH HAS centered around forestry and ecology, in particular the ecosystems of the evergreen and deciduous forests

of northern Thailand. He was one of Thailand's first scientists to advance the idea that forests need to be studied as interdependent systems, and one of the first to call for forest protection. He backed a ban on commercial logging, promoted aggressive reforestation, and pushed successfully for environmental-impact legislation. He also conducted research into the relationship between humans and the ecosystem, recognizing that natural systems and human welfare are inextricably linked.

Equally important is Dr. Sanga's advocacy and coordination of research projects both in Thailand and internationally. He has helped pull

should have 200 universities. It will take time, but we're working in that direction."

The many Thais who, like himself, were educated in America are playing a crucial role in Thailand's development, says Dr. Sanga. "And I would like to tell you that graduates from Oregon State University are doing an excellent job at home." Among OSU graduates in Thailand are four university presidents, as well as several elected officials, government ministers, agency directors, and corporate CEOs.



From student in Oregon to professor in Chile. Andre Laroze (second from left), while still a student, on an eastern Oregon field trip with colleagues Hal Kingslien, Brian Greber, and Jun-Yen Lee.

together—and find funds for—many cooperative research ventures for various UN agencies and other nongovernmental organizations. In his work with the National Research Council and as university chancellor, Dr. Sanga has been instrumental in developing the research infrastructure of Thailand. He founded the national Thai botanical gardens, science museum, and science park. He helped set up an agency for developing science and technology. He continues to establish research funds and scholarship programs.

The success of this ongoing scientific modernization, Dr. Sanga believes, depends critically on developing Thailand's human resources. "People must have the opportunity to receive a higher education," he says. "We have 25 state universities in Thailand, and 25 private universities. But if we consider our population, and if we use the state of Oregon as a standard, we

ANDRE LAROZE: Helping to grow a young forest economy

WHEN HE DECIDED TO STUDY FOR HIS doctorate in forest management, Andre Laroze was attracted to the College of Forestry by its history and tradition. He was also pleased to find rigorous, up-to-date instruction in his area of interest, optimization techniques for silvicultural and harvesting decisions.

Dr. Laroze finished his degree in 1994. Now, back in his native Chile, he is teaching at Catholic University in Santiago and conducting research to help develop long-term management strategies for Chile's plantations and native forests.

"Forestry in Chile is developing very rapidly based on radiata pine plantations, and the technological level reached in specific areas is really second to none in a worldwide

context," Dr. Laroze says. "We are dealing with a young forestry project that is trying to reach its maturity."

Chile has not quite 2 million hectares (about 5 million acres) in plantations of radiata pine and eucalyptus, two fast-growing exotic species. The plantations, the result of a large-scale afforestation program that began 25 years ago, are now beginning to produce timber.

In addition, Chile has about 10 million hectares (about 25 million acres) in native forests. Because Chilean forestry has so far concentrated on plantations, the native forests are mostly out of production.

Chile's economic growth will probably spur increased management for timber and other values in some of these forests, says Dr. Laroze. Developing efficient and environmentally sound techniques to manage these native forests is an important research mission of Catholic University's college of agriculture and forestry, where Laroze is an assistant professor.

"Ideally," he says, "such a resource should be managed from the beginning with advanced technology and high environmental standards." Yet will be a challenge to manage native forests successfully in the face of growing environmental concerns. Says Dr. Laroze: "I would like my long-term role to be to promote entrepreneurship, stewardship, and the goal-oriented concepts of private industry into an efficient and sustainable management of the country's native forests."

Chile, he says, is a fulfilling place to pursue a forestry career right now. "It's probably the most exciting place to be regarding intensive silviculture and production issues. And without any doubt, the knowledge I acquired at OSU has been critical in my being able to contribute to my country's development."

BIJAN PAYANDEH: Wrong job, right move

WHEN BIJAN PAYANDEH WENT BACK TO his native Iran after completing his doctorate in forest management at the College of Forestry in 1968, he intended to stay and contribute his skills to his homeland. He was elated to be offered the job he really wanted, a teaching and research position on

OREGON WOODLAND OWNERS EXPAND THEIR HORIZONS

What are the effects of long-term forest management in Germany? How have the New Zealanders been so successful in pruning their forest plantations? What's the latest in small-log harvesting machinery from Scandinavia?

Some nonindustrial forest landowners have answered such questions for themselves by attending one of a variety of study trips sponsored by the Oregon Small Woodlands Association and led by OSU Forestry Extension faculty.

These trips are intensive, immersion-style, hands-on short courses tailored to the needs of private, nonindustrial forest landowners, says Rick Fletcher, OSU Forestry Extension agent for Benton County. Last spring Fletcher and another Forestry Extension agent, Mike Bondi, led a 19-day tour to New Zealand for a group of 39 woodland owners and professional foresters.

Says Fletcher: "These tours are not for the person who wants to lie on the beach. We worked these people hard—there was a lot to learn." Tour members paid \$3,500 to put in 10- to 12-hour days looking at pruning operations on radiata pine plantations, learning the merits of various pruning regimes, and checking out the specialized machinery developed by the New Zealanders.

They also visited agroforestry research sites, a tissue-culture laboratory, a sawmill, and a log sort yard. They stayed three nights at private forest-farms.

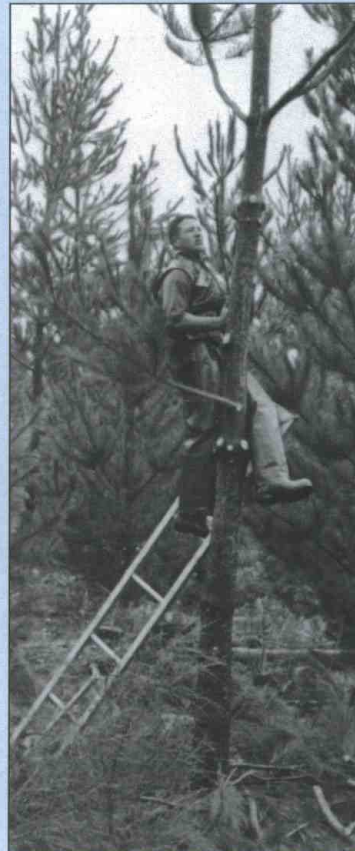
The tour members also learned

about New Zealand's recent transition from socialism to a market-driven economy. The shift has been difficult, requiring unpopular cuts in government services and sale of some government assets. But by most accounts it has been successful, says Fletcher—New Zealand's currency is stable, its budget is balanced, and its economy is thriving.

"To understand the forestry aspect of New Zealand's economy, it's important to understand the larger social and economic conditions," he says. "The tour allowed us to experience them firsthand." This comprehensive, close-up learning, he says, is

what makes these Extension tours so richly informative.

"I was impressed with how skilled and aggressive the Kiwis are in their pruning," says Bud Baumgartner, a professional forester and woodland owner who went on the New Zealand tour. "I see a lot of potential application of their techniques in western Oregon."



Learning from abroad. A New Zealand contractor demonstrates pruning technique on a radiata pine tree.

Western Oregon forest landowners apparently agree. A two-day Extension workshop last fall focusing on information gleaned from the New Zealand tour attracted 130 foresters and landowners. And one man who went on the tour brought back some New Zealand pruning ladders and is thinking about importing them commercially.

the agriculture faculty at the University of Shiraz.

But the job failed to materialize because of "bureaucratic bungling," as Dr. Payandeh puts it. "Yet it turned out to be a blessing in disguise," he says, "because if I'd taken that job, I would have made no effort to leave Iran."

As it turned out, Dr. Payandeh took another job much less to his liking. After nine months he began looking farther afield. The Canadian Forestry Service offered him a position as research scientist, and Dr.



gave him particular problems. "I had looked in my dictionary so many times that day I was exhausted," he says, "so when I got to the word 'greenhouse,' I figured since I already knew the meaning of 'green' and 'house,' I didn't have to look it up. But I couldn't figure out why one needs to paint a house green to grow seedlings in it!"

For three decades Dr. Payandeh has built a distinguished career in forest biometrics (the quantitative analysis of biological data), including computer modeling of forest regeneration and tree growth and yield.

He has published some 180 scientific and technical articles.

Right now he and his colleagues are developing a so-called "expert system," a software tool for classifying ecological sites. The program applies specified facts and

rules of inference to a limited problem domain, Dr. Payandeh explains, and thus has some human-like diagnostic capabilities.

To classify a site by its ecological characteristics, a human researcher must evaluate many minute details of soil and vegetation. "Looking everything up in the manual is time-consuming, and the decision is apt to be subjective," says Dr. Payandeh. "On a computer you can do it much faster and more accurately, because all the pertinent information has been loaded into it. And you can back up and change an earlier decision, and not get lost." The program, called FEXPERT, is available free over the Internet.

Dr. Payandeh also uses that global electronic network to stay in touch with colleagues in his homeland. He and half-a-dozen Iranian colleagues regularly exchange knowledge on forestry management and biometric modeling. "I'm surprised at how much forestry has developed in Iran in the last 20 years," he says. "They're not too far behind us in technology and computing."

Dr. Payandeh is happy to be using his education to help his homeland, the way he'd always planned to do.

MARTIN GOEBEL: No cookbook; no recipes

MARTIN GOEBEL'S RECREATION resources degree took him first back home to the pine forests of his native Mexico, where he helped village leaders develop a home-grown industry base for their communally owned forests.

It was then, working with poor peasant communities, that Goebel realized that conservation and economic development are two verses of the same song. "The human dimension of an ecosystem is part and parcel of the whole system," he says. "You can't have one without the other."

Now Goebel is promoting that philosophy back in the Pacific Northwest, his adopted land. He's president of a new nonprofit organization, Sustainable Northwest, whose mission is to promote lasting economic development tied to a continuously healthy natural environment.

The organization is trying, says Goebel, to step into the breach between the polarized ideologies that now dominate the debate about the future of the Northwest's resource-based economy.

The prospectus for Sustainable Northwest talks of "dramatic changes" in the Northwest "that require new ways of thinking, behaving, and interacting" about the relationship between people and their natural environment. Says Goebel: "We're driven by two convictions: that economic health must be based on environmental health, and that these two can be made to develop synergistically."

Sustainable Northwest plans to work with small communities mainly in the intermountain region of Oregon, Washington, and Idaho to help them find ways to reshape their resource-based economy and still conserve resources like timber, minerals, and farm and grazing land. Projects are already beginning in Wallowa County, Oregon, and Okanogan County, Washington.

The organization also hopes to become a regional clearinghouse for information on how others have tried to build a sustainable economy and community—working with other institutions, like OSU, to find answers.

Payandeh decided to take it. His bride, Simin, followed a year later.

Now they and their three children call Sault Ste. Marie home. "We've become fully acclimatized to its cold and snowy winters and beautiful summers," says Dr. Payandeh.

Dr. Payandeh first came to the United States in 1960 to study for a master's degree. He chose OSU over North Carolina State and Penn State because of its academic excellence, friendly atmosphere, "and the warmth of Oregonians in general."

In his first year, he says, the language barrier presented some difficulties. He wasn't used to struggling with his studies—in Iran he'd been a top student. "I was determined to succeed," he says.

He spent hours consulting his English-Persian dictionary, and he still remembers when "greenhouse"

GOEBEL WAS BORN AND RAISED IN Mexico City in a trilingual household—his father is German, his mother is from Oregon. After he graduated from OSU with a degree in forest recreation resources in 1979, he went back to Mexico, working first for a paper company and then as a service forester for the State of Mexico (not to be confused with Mexico the country; Mexico State covers the region surrounding Mexico City).

About two-thirds of the forest land in the nation of Mexico is owned by rural communities, in cooperative arrangements called *ejidos*. Goebel's job was to help *ejidos* and small, private forest landowners in Mexico State develop their forest industry to a higher degree.

He worked with them to develop forest plans, administer profitable timber sales, improve forest conditions, manage the business end of things—even build sawmills of their own. "It was a very fulfilling job," says Goebel, "and also very draining. In many cases I was working with *campesinos* who couldn't read or write." Of the three *ejido* cooperatives Goebel worked with, he says, two are still in business.

He returned to the United States in 1981 for a master's degree in natural resources conservation and development from Texas A & M. After a two-year internship in Germany—his father's native land—he came back to the United States to join The Nature Conservancy's new international program, working in several Central and South American countries.

He left that organization four years later and helped found Conservation International, another nonprofit body with a similar mission. Goebel helped pioneer the first people-centered

ecosystem conservation programs in the region, focusing on the southern Mexican state of Chiapas and in the Sea of Cortes region. Between 1992 and 1994 he did similar work for the World Wildlife Fund in Oaxaca State and the Yucatan Peninsula. "Making these programs successful," he says, "required working from the bottom up—with communities—but also from the top down, with business people, government leaders, and financial institutions."

GOEBEL FINDS THAT WORKING IN THE more homogeneous, more affluent American society presents obstacles he didn't have to face in Mexico. "There are very complicated problems here in the Northwest. We have huge institutions, very developed, very sophisticated, but also very

ways to reshape a lasting economy in the Northwest that is ecologically sustainable. Our plan is to establish long-term partnerships with communities to help them achieve that goal."

That doesn't mean he's offering easy answers. "There is no cookbook for how to do this; there are no recipes. We will work with the people of each community to help them find the right answers for themselves and the ecosystems, watersheds, and resources that surround them and upon which they depend."

JENQ-CHUAN YANG: A forest geneticist—and proud Beaver—in Taiwan

OSU has 15 active alumni clubs worldwide. Four of them are overseas, in Taiwan, Japan, Korea, and Thailand. The president of the Taiwan chapter—one of the newest—is Dr. Jenq-Chuan Yang, who received his doctorate in Forest Products in 1974.

An estimated 200 OSU graduates live in Taiwan, says Dr. Yang, director-general of the Taiwan Forestry Research Institute. However, there was no move toward organizing an official club until then-President John Byrne and his wife, Shirley, visited Taiwan in 1991. Yang and several other alumni got together informally to host a reception in their honor.

"The President," says Dr. Yang, "indicated the necessity of establishing a local alumni club." With that encouragement, Dr. Yang worked with his fellow alums to establish an official chapter, which was chartered in April of 1993. Dr. Yang was elected its first president.

Big problems, big opportunities. North America presents special challenges, says Martin Goebel. Below, Dr. Jenq-Chuan Yang. Dr. Yang recently welcomed Oregon governor John Kitzhaber to Taiwan.



entrenched in their ways. Essentially we have a culture of immobility—so many powerful interest groups, all counterweighted against each other. Their horns are locked, and the arena in which to make decisions seems very, very small."

Nevertheless, he says, "where there are big problems, there are also huge opportunities to do things that haven't been done before." The people of the Northwest agree on the basics—they want a healthy, stable economy without sacrificing the land's well-being—and that's the starting point of Sustainable Northwest. "We want to focus on creative



The Taiwan club enjoys welcoming visitors from Oregon, says Yang. One recent guest was Oregon governor John Kitzhaber, who stopped in Taiwan on a mid-November Asian tour that also included Japan and Korea. Dr. Yang attended the official reception for Kitzhaber and presented a gift to the governor on behalf of the OSU Alumni Club of Taiwan.

Dr. Yang, who came to OSU in 1969, remembers the hardships and rewards of his student days. "The first year, I, like other foreign students, had difficulty speaking and listening to English," he says. "Therefore, I had to work much harder than my American classmates. I spent most of my time, even till midnight, at the Forest Research Laboratory carrying out my experiments and preparing for my thesis."

Dr. Yang is one of the many OSU international alumni who have risen to prominence in their own countries. Returning to Taiwan in 1975, he worked as senior scientist and forest geneticist at the Taiwan Forestry Research Institute (TFRI). In 1982 he became chief of a TFRI regional experiment station, and then after four years came back to Taipei as chief of silviculture. He was named director-general of the Institute in 1990.

Dr. Yang visited OSU again in 1985, while on his way back home after spending six months as a visiting scientist at Harvard. "I have many pleasant memories of my student days here," he says.

He would like to see more research collaboration between our Forest Research Lab and the TFRI. "We have an international cooperative project between the USDA Forestry Sciences Laboratory in Corvallis and TFRI in Taiwan, in the field of sustainable ecosystem management," he says. "It is our hope that collaboration can be extended to the College of Forestry with TFRI in some other areas."

THESE FIVE DISTINGUISHED ALUMNI ARE only a few of the hundreds who, quietly and effectively, are improving the research, teaching, and practice of forestry all around the world. The College of Forestry is proud of them, and we're grateful to them for extending our influence and our reputation to the far corners of the earth.

INTERNATIONAL RESEARCH: THE BLESSINGS FLOW BOTH WAYS

Research in other countries is a vital element in the scholarly mission of the College of Forestry. The results of this work not only help solve forestry-related problems in the host country, but contribute to the forestry knowledge base here at home.

What follows is a small sampling of the work some College faculty members are doing in other countries. Their stories reveal the abundance of benefits from international research and technology transfer—blessings that flow both ways.

Tom Adams, a geneticist with the Forest Science department, is helping Turkish scientists and land managers put together a project to conserve the gene stocks of native plants. Turkey is rich in plant resources, especially of important crop species like wheat, barley, and chickpeas. It also has many native tree species that are important both for farming and for wood and fiber production. This World Bank-funded project, unique in the world, will help Turkey guard against the extinction of these genetic stocks.

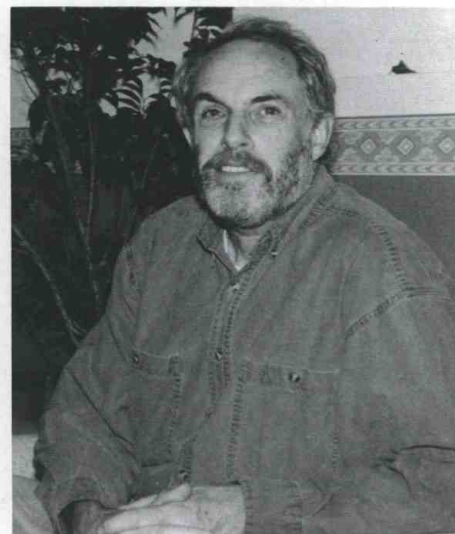
A main goal of the project is to develop a national plan for "in-situ" conservation—preserving vital gene stocks within the plants' native habitat. For his part, Adams has developed a training program that will bring 34 Turkish foresters to OSU this winter and next spring.

Says Adams: "I've become involved with a group of geneticists right here in the Pacific Northwest who are looking at how we might design our own regional gene conservation program. In some ways the Turkish are more advanced, because they're going about it in a systematic way, something we've just begun here."

Dave Hibbs, an ecologist with the Forest Science department, has recently returned from France, where he studied growth trials of *Alnus rubra*, the alder species that grows prolifically in the Pacific Northwest. French foresters are interested in

Alnus rubra because it promises—as in this country—to become a valuable plantation species. The French are particularly interested in alder's capability of fixing nitrogen and thus improving the fertility of soil.

"This research has direct application to Oregon," says Hibbs, "because we were able to characterize the patterns of genetic variation that exist within the range of red alder in

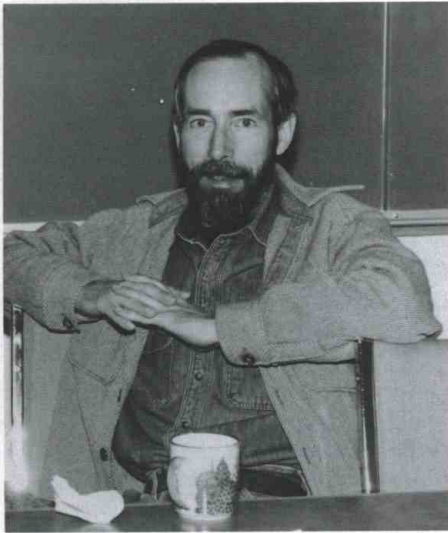


Tom Adams

Oregon and Washington. This information is vital in identifying seed sources and as a basis for tree-improvement programs here."

A few years ago Hibbs was involved in an agroforestry project in Nigeria aimed at finding alternatives to traditional farming practices. Hibbs and a Nigerian botanist, David Ladipo, were looking for native shrub species that would lend themselves to "alley farming"—the planting of farm crops in between hedges of woody plants—and also for shrubs that might improve the fertility of soil left fallow for periods of time.

They wanted plants that would serve several functions—nitrogen-fixing plants, and/or fast-growing plants that would enrich the soil with leaf litter, and/or plants with leaves that are edible by humans or livestock.



Dave Hibbs

Such plants would give Nigerian farmers more options and would help protect the land from overuse. In the traditional farming system in Nigeria, farmers plant for a few years, burn their fields, and then abandon the land and let it lie fallow to regain its fertility. The soil requires a fallow period of 15 to 20 years to stay fertile. But because of population pressure, this fallow period is being shortened; farmers are returning to the land too soon.

The scientists surveyed farms and fallows, and they talked to farmers. "We found a lot of interesting species that would work well with this alley-farming technique, for those farmers who were looking for a permanent farming system," says Hibbs. "We also found that they'd help improve soil fertility on fallow sites, allowing a shorter fallow period for those who were practicing traditional methods."

He and Ladipo then experimented with selected species to find out the best ways to propagate and manage them. Finally, they put on a workshop to show their findings to farmers and foresters from all over West Africa.

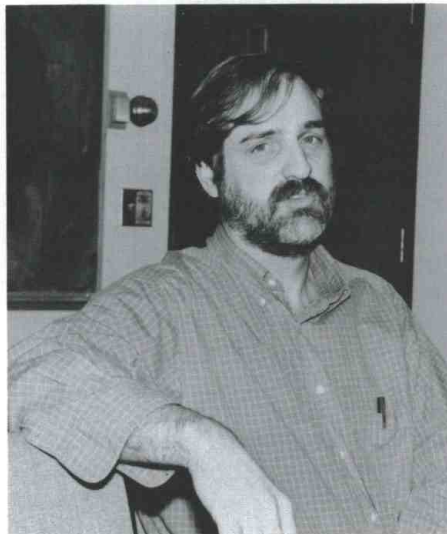
Says Hibbs: "Maybe the technology in other countries isn't as sophisticated as it is here, but we have things to learn from them—like managing for complexity. Agroforestry ideas have a lot of potential for application in this country, and we took home some very important lessons."

David Marshall, a biometrician in the Forest Resources department,

spent three weeks looking at pruning trials in Douglas-fir plantations in New Zealand. Although Douglas-fir is a minor plantation species there, small amounts have been planted since the 1920s. Many of these trees were pruned of their lower branches in the 1960s with the aim of producing more high-quality clear wood on the bole.

Now some of the pruned trees are being harvested. Marshall and silviculturist Steve Tesch are cooperating with New Zealand researchers to see how much the quality of the wood can be improved by pruning. The trip also provided the opportunity to see production pruning operations and different pruning treatments.

"As older wood has become less



David Marshall

available in the Pacific Northwest, interest in pruning has increased," says Marshall. "This trip allowed us to learn from the New Zealanders, who have considerably more experience in pruning Douglas-fir."

The research also enhanced Marshall's teaching by providing him with concrete examples to use in the classroom. "Bringing back these principles and examples from other countries," he says, "makes the College of Forestry a much richer teaching institution."

Robin Rose, director of the Nursery Technology Cooperative, recently went to Thailand to help develop more effective tree-nursery techniques. The USAID-funded demonstration project was part of a

larger effort to restore Thailand's depleted forests.

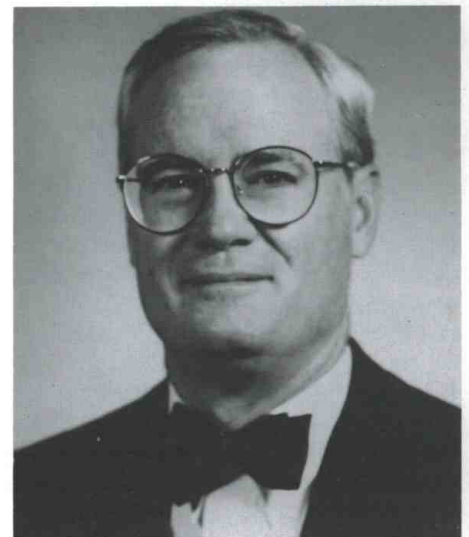
Pressures from expanding agricultural use and increasing urbanization have reduced Thailand's forest cover by half in the past 35 years—from 68 million to 34 million acres. The Thai government has begun a massive project to bring the native hardwood forests back.

The project, started in 1994, is one of several nationwide initiatives launched to celebrate the 50th anniversary of the reign of Thailand's King Bhumibol in 1996. It calls for planting millions of seedlings of several major tropical hardwood species.

USAID's policy is to recruit private U.S. firms to provide technology that the host country can learn easily and use and maintain on its own. For the nursery project, USAID recruited a private Oregon company, Oregon Woods Inc. of Eugene, which hired Rose as a consultant.

The common method of growing tree seedlings in Thailand, says Rose, is to start them in heavy native soil and raise them without fertilizer in polyethylene bags about the size and heft of a half-gallon of milk. The fat, round bags encourage the roots to spiral instead of growing straight, as they're supposed to. The bags are also inconveniently heavy to lug out into the field, necessitating a four-person planting crew—one to carry, one to dig, one to place the seedling, and one to fill in the hole.

Rose and Rick Herson, president of Oregon Woods, introduced a new way to grow seedlings—in light-



Robin Rose

weight potting mix in containers that look like fat carrots. The reusable plastic containers, called Styro-8s, are ribbed down the inside, so roots grow straight. Fertilizer helps seedlings grow faster.

"Normally, in the poly bags, these species take two or three years to grow to a usable size," says Rose. "We found we could grow bigger, more uniform, better quality seedlings in four months in the containers." What's more, the seedlings are so lightweight that one person can carry and plant a bag of several hundred.

Rose helped build a shelter house for the seedlings and trained Thai nursery managers in the proper cultivation techniques. The first group of seedlings was supposed to be planted in April, during the rainy season. However, 1994 was a year of drought, and April proved too dry for planting. Rose and his colleagues transplanted the seedlings into nursery beds, not knowing how they'd respond. (Being hardy, Rose, says, they did fine.)

Finally, nine months after germination, the seedlings were set out in Thap Lan National Park, in northeastern Thailand's dry, rugged hill country. They're now vigorous young trees, a living monument to the successful first phase of the reforestation effort.

"It was a win-win situation all around," says Rose. "OSU strengthened its forestry ties with Thailand, an Oregon business gained a working relationship in Thailand, and the Royal Forestry Department was introduced to a new technology of proven value. Further, we demonstrated that native species can be successfully outplanted in ecologically sensitive areas."

John Garland, timber Extension specialist in the Forest Engineering department, spent a sabbatical year in Norway looking at the productivity of forest-industry workers. He found a stable industry committed to worker training and development.

The concepts and methods that inform the Scandinavian forest industries—for example, continuing education for forest workers and ergonomically designed harvesting machinery—lend themselves well to operations in the United States, Garland believes.



John Garland

On the more technical side, Garland saw promising advances in small-log harvesting machinery in Scandinavia. Light, rubber-tired tree harvesters and other equipment can log smaller trees cost-effectively and with less environmental impact.

Overseas research, says Garland, allows Americans to experience the technology and ideas of other countries, review and modify them, and bring them home. Drawing largely on his experience in Europe, Garland developed the first Future of the Forestry Workforce conference, hosted by OSU in 1992.

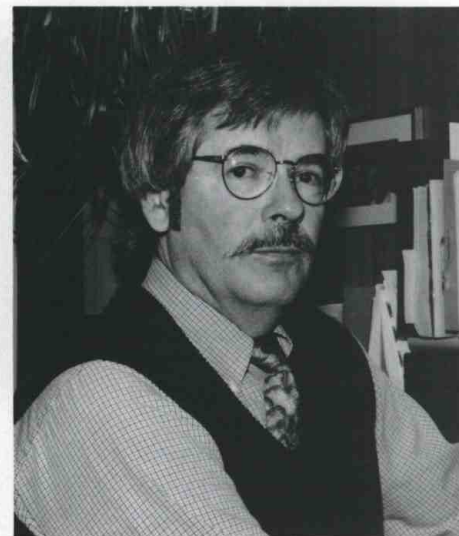
"One important thing we're doing with these visits abroad," he says, "is benchmarking—we're seeing how we measure up compared to overseas competitors. This has tremendous commercial impacts at home, because it's a world market out there."

Norm Elwood, an economist with the Forest Resources department, spent four months in Japan studying the marketing cooperatives organized by small-woodland owners. Most of Japan's forest land is held by private, nonindustrial owners, and holdings are typically small—an average of 1 acre.

To take advantage of strength in numbers, most woodland owners sell their logs through voluntary marketing cooperatives. Together landowners can negotiate a better price than they could if they were competing with one another. Co-ops are also the pipeline for various forestry-related subsidies disbursed by the Japanese government.

"Here in America we have farm co-ops, Grange groups, consumers' co-ops, electrical co-ops, water co-ops," says Elwood. "You'd think woodland owners' co-ops would thrive here, but they don't seem to." Elwood has come across two or three attempts at cooperative marketing in the Pacific Northwest, but these efforts are languishing, he says, because of individual competitiveness and lack of cohesiveness.

Clearly, fundamental differences in economy and culture influence the different ways Japanese and Americans view the cooperative effort. Some of it can be explained, says Elwood, by the Japanese emphasis on group activity and harmony, and the contrasting American tendency to



Norm Elwood

prize rugged individualism. "This is a profound difference, one that you must experience to appreciate its effect," Elwood says.

Nevertheless, "I don't believe Americans are too independent to make co-ops work. There is strength in numbers. When owners decide that it's to their advantage to band together, they'll do it."

The value of this kind of intensive first-hand study, Elwood says, is in the cross-fertilization of ideas it brings. "When you come back to your home country, you tend to see things in different ways. It opens the way for a lot of creative thinking."

COLLEGE DONATES FORESTRY VIDEOS TO CROATIAN UNIVERSITY

Like our own College, the forestry faculty at the University of Zagreb, Croatia, has its own forests for research and teaching.

However, they're too dangerous to use just now. The reason: land mines.

What's more, says Slavko Matic, professor of silviculture at the university, until recently two of their five experimental forests were completely out of reach because they lay in territory occupied by the Serb army.

The five-year-old war in the Balkans has forced Zagreb forestry students to get their learning mostly from books. Now, thanks to a tip from one of OSU's traveling forestry professors, the Croatian students have something more: nine donated audiovisual programs produced by the OSU Forestry Media Center. The programs, worth about \$1,200, cover such topics as mechanized and aerial logging, forest vegetation management, preventing soil compaction, and interpreting aerial photographs.

The Croatian connection was made by Paul Adams, professor in the Forest Engineering department, who met a forestry graduate student from the University of Zagreb last year at a conference in Germany. The student, Zeljka Ivanovic, told him of the plight of her fellow students and asked

about the availability of some of the College's audiovisual materials, which he had mentioned in a talk he gave at the conference.

When Adams came home, he asked Dean George Brown whether the College might donate the programs as a gesture of goodwill, in view of the "almost unimaginable" situation in Croatia. The Dean sent them along, with a note expressing the College's hope "that the war will be stopped and that your beautiful country may once again be at peace."

Croatia is a heavily forested land of great scenic beauty—an image seldom conveyed in the grim reports of war. Forests, principally of beech, oak, and other hardwoods, cover almost half the land. The University of Zagreb grants about 90 undergraduate forestry degrees a year.

The university has regained its once-occupied research forests, says Ivanovic. "But we are still healing the wounds which remain after five years of destruction and killing.

"However, the Croats are eager to rebuild our beautiful country and are looking forward to a better future and prosperity.

"Thank you for helping us."

TREE GUIDE IS ON THE WEB

A field guide to Northwest trees is now available on the World Wide Web. *Trees of the Pacific Northwest*, developed by Betsy Littlefield and Ed Jensen of the Forest Resources department, is a hypertext-linked, abbreviated version of Jensen's 1994 book, *Trees to Know in Oregon*. The electronic version features descriptions of all the major conifers of the region, a dichotomous key for identifying unknown species, and a "mystery tree" puzzle.

The stylishly designed, user-friendly *Trees of the Pacific Northwest*

is intended to augment the learning materials for Jensen's tree-identification classes, Forestry 141 and 241. It's also aimed at the general Web user who wants to know more about trees in this region.

Trees of the Pacific Northwest may be accessed directly with this address: <http://www.orst.edu/instruct/for241/>. You can also get there by going to OSU's home page (address: <http://www.orst.edu>) and clicking on the "What's Hot" button.

INTERNATIONAL DEGREE PROGRAM OFFERS GLOBAL OUTLOOK

Undergraduate students can give their forestry education an international perspective through OSU's International Degree program.

The program offers a concurrent bachelor's degree to students pursuing a BA or BS in forestry or in agricultural sciences, business, engineering, health and human performance, liberal arts, pharmacy, or science.

To be admitted, a student has to complete at least 32 credit hours toward the primary degree, maintaining a C-plus average, and must also be proficient in a foreign language. To complete the program, the student must take at least 32 hours of course work beyond regular University requirements for the primary degree, including courses in Western culture, cultural diversity, and contemporary global issues.

The student's primary college may also impose more requirements. For example, a forestry student getting an international degree must take courses in international forestry and nature-based tourism, and also must select his or her international-degree courses to accomplish a specific educational goal.

There's also a requirement to spend at least 10 weeks abroad in study, research, or work; scholarships are available to help cover expenses. Finally, the student must write a rigorous senior thesis based partly on research conducted during the overseas stay.

Passing on the power of knowledge

**"I NEVER GIVE UP," SAYS THE HIGHLY DECORATED SCIENTIST,
ONE OF THE COLLEGE'S MOST DISTINGUISHED ALUMNI**

Thirty-five years ago, when Sanga Sabhasri was a young master's student in forestry, his advisor, Bill Ferrell, told him something he never forgot. "He said, 'Information is not a power unless it is passed on, in the right time, the right place, and the right style.'"

Dr. Sanga has spent his career turning information into power, both in his native Thailand and inter-

His work at all these levels has vastly enlarged the base of natural resource knowledge available to



Working with the people who live on the land. Conservation and economic development must be linked, says Dr. Sanga, if Thailand's rural poor are to improve their lives.

nationally (please see cover story, page 3).

His own research, dealing with tropical ecosystems, has been distinguished enough to garner him many awards and honors. In addition, as university scientist and government minister, he's also coordinated and facilitated many other research projects for U.N. agencies and other nongovernmental bodies.

Finally, he has built up an effective research infrastructure within his own country—creating a cabinet ministry devoted to science and technology, formulating national research policy in the natural and social sciences, and establishing research funds and scholarship programs at Thailand's universities.

developing countries, like his own, that are traveling the sometimes-rocky road from an agricultural to an industrial economy.

As head of Thailand's National Research Council (a post from which he just stepped down) Dr. Sanga coordinated development projects designed to improve the lives of rural villagers and to halt the degradation of Thailand's forests.

The aim of such projects is to enlist the aid of Thailand's rural villagers in combatting soil erosion, increasing crop production without degrading the land, and stabilizing farm incomes. A stable rural population would help halt the environmentally damaging practice of shifting cultivation, whereby people clear a patch of

forest and raise crops for a few years, then move on.

The key to success in such projects, says Dr. Sanga, is to formulate conservation goals that improve the lives of the people who actually live on the land, and then enlist their aid in carrying out the goals. Such an approach must combine technical with social solutions, he says, and conservation measures must be tied to development objectives if the rural poor are ever to become effective natural resource managers.

SANGA SABHASRI WAS DRAWN TO A forestry career at an early age. "My father is a forester. Three of my brothers are foresters. The materials for reading in my home were forestry subjects." He was encouraged to study medicine or engineering after high school, "but I chose forestry."

At the time, no Thai university offered a bachelor's degree in forestry. So Sanga came to the United States for his education, the first of his family to do so. He got his bachelor's degree in 1957 and his master's in 1959, both from the forestry school at Oregon State.

Bill Ferrell, now retired, was his major professor. Ferrell has warm memories of Sanga. "He was a very bright guy, very patient, even-tempered. Easy to get along with, but very much his own person. He's a tolerant person, and certainly the gentlest, kindest man you'll ever meet. That may be why he's so effective in his international work."

Dr. Sanga remembers his time at Oregon State with fondness. "People in Oregon are so friendly and hospitable. I had the happiest life here, so comfortable—it was unforgettable. In the two years and three months I was here, I never had a bad day."

He was president of the Thai Student Association at OSU. The

Continued on page 15

AT CARSON PRAIRIE, FIRE IS A RESEARCH TOOL

On a sunny September day, a meadow goes up in flames. One minute Carson Prairie, on OSU's McDonald Forest, is a bucolic-looking, steeply sloping grassland overlooking Soap Creek Valley, dotted with clumps of poison-oak and fescue and Queen-Anne's-lace. The next, it is engulfed in fire—the latest of hundreds or thousands of fires that have swept this meadow since the last Ice Age, 20,000 years ago.

This fire, though, is touched off by torches wielded by Research Forest and Oregon Department of Forestry workers. They stride across the hill, followed by a ripple of flame. The fire is kept within its bounds by yellow-clad firefighters standing on the sidelines, squirting water and flame-dousing chemicals at the edges of the

burn. The grass is dry and the hill is steep; the fire is over in about 15 minutes.

OSU scientists stand and watch it die, hoping their dramatic research tool will yield answers about how meadows like Carson Prairie might be brought back to conditions that existed before Europeans settled the Willamette Valley.

Carson Prairie is one of six sites around the central part of the valley where scientists from OSU are leading a major cooperative study on native meadow ecosystems. The College of Forestry is contributing not only the Carson Prairie research site but about \$70,000 in funding, spread over four years. Other contributors of funds, expertise, personnel, materials, or study sites for the entire project are the U.S. Army

Today, not quite 200 years after Europeans arrived, native Willamette Valley grasslands are down to less than 1 percent of their former extent. "They're more endangered than old-growth forests," says Mark Wilson, OSU botany professor and leader of the meadow-restoration research project.

These meadows are home to several endangered, threatened, or rare species. The best known are the Fender's blue butterfly and the plant on which it depends for survival, the Kincaid's lupine. Both of these are candidates for listing under the federal Endangered Species Act.

The Fender's blue butterfly was believed extinct for more than 50 years. Then it was rediscovered in 1989 at another site on McDonald Forest and in a few other places in the Willamette Valley. "We've estimated that there are 3,000 to 5,000 surviving butterflies," says Mark Wilson.

Wilson and his colleagues are studying the subtle ecology of native Willamette Valley prairies, hoping to discover the best ways to restore the meadows' vegetation to the way it was before European settlement.

The scientists are working on a computerized model of native prairies that quantifies how various meadow plants interact with one another. The model defines each plant in terms of how it functions within its ecosystem—for example, a plant may disperse seeds widely or narrowly; it may or may not store seeds in the soil; it may be an aggressive competitor or a timid one.

"We will put this information into the model, and then we apply different management regimes," says Wilson. "The computer lets us run experiments we couldn't possibly do on the ground."

The model will be updated and corrected as the researchers monitor their study sites over the next five years or more. Eventually, the model should be able to predict what will happen when various management tools—principally prescribed fire, and to a lesser degree mowing—are applied.

The one thing that's clear, says Wilson, is that these meadows will not heal themselves. "You can't take a hands-off approach. Management is necessary. Without it, these meadows will turn into weed fields or forests."




Bringing the prairie back. Mark Wilson (center, left) consults with a colleague after a prescribed burn at Carson Prairie. Below left, Research Forest silviculturist Rick Schaefer touches off the blaze.



Corps of Engineers, the U.S. Fish and Wildlife Service, the Bureau of Land Management, and The Nature Conservancy.

Grasslands probably dominated the coastal valleys of the Pacific Northwest for several millennia. Aboriginal Americans routinely burned grasslands to keep them clear for game. Then European settlement brought permanent dwellings, the tilling of land for farming, and a war on wildfire. Aggressive plants like poison oak and Douglas-fir, until then deterred by fire, began encroaching on the meadows.



forestry Currents

OSU HAS A NEW PRESIDENT

Paul G. Risser is the new president of Oregon State University. He replaces John V. Byrne, who retired last year after 12 years as OSU president.

Risser, 56, was chosen in November from among about 100 applicants after a six-month search process. He has been president and professor of botany at Miami University in Oxford, Ohio, since 1993. Before that he served in leadership positions in research and academic affairs at the University of New Mexico. He has also been program director for ecosystems studies at the National Science Foundation in Washington, D.C., and chief of the Illinois Natural History Survey.

Risser's research interests include the structure and function of grassland and forest ecosystems, environmental planning and management, landscape ecology, and global change. He was educated at Grinnell College and the University of Wisconsin.

NEW HEAD AT OSU FOREST ENGINEERING

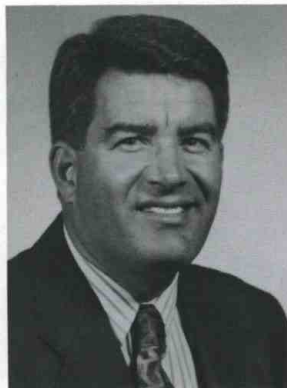
Steven D. Tesch, a silviculturist and forest ecologist, is the new head of the Forest Engineering department. He will succeed William A. Atkinson, who retired in January after serving as department head since 1986.



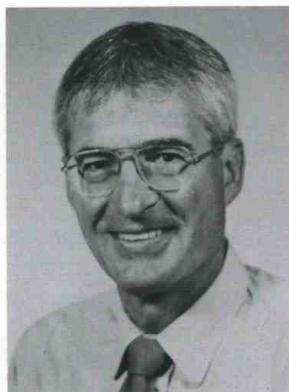
Paul Risser

Tesch has been a faculty member of the College of Forestry since 1981. He worked in the Forest Science department with the Forestry Intensified Research, or FIR, program, which addressed harsh-site reforestation problems in southwest Oregon and northern California. In that effort he collaborated with the Forest Engineering faculty in evaluating and planning forest operations to improve reforestation success. Since 1992 Tesch has been a member of the Forest Resources faculty, teaching courses in silviculture and forest measurements.

His recent research focuses on ways to actively manage eastside forests to achieve diverse forest goals, including fire and pest resistance, wood production, wildlife habitat, and functional riparian areas, using harvesting and other forest operations as silvicultural tools to manage tree density and species composition. Tesch received his doctorate from the University of Montana in 1981.



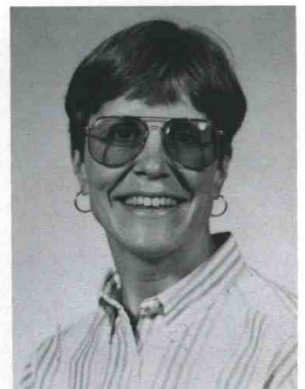
Steve Tesch



Darius Adams

ECONOMISTS JOIN FACULTY

Two economists, Darius Adams and Claire Montgomery, have joined the Forest Resources faculty as professor and assistant professor, respectively. Adams' research will focus on modeling of forest products markets in North America and abroad. He will teach classes in forest products marketing. Montgomery's research will focus on the economics of biodiversity and supply and demand in the housing market. She will teach classes in forest economics.



Claire Montgomery

A husband-wife team, Adams and Montgomery were most recently on the faculty at the School of Forestry at the University of Montana.

KUDOS FOR FACULTY

James R. Boyle, professor of forestry and soil ecology in the Forest Resources department, was named a Fellow of the Soil Science Society of America last October at the organization's annual meeting in St. Louis.

Fellowship in the Society is a distinct honor for a forestry professor, says Forest Resources head Jack Walstad, because most members of this national body are agricultural soil scientists. "It's rather exceptional when a forest soil scientist is recognized."



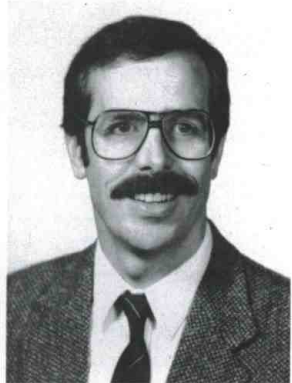
Boyle teaches classes in forest ecology and conservation of natural resources, and conducts research into the soil-science aspects of long-term forest productivity.

Oregon Extension foresters gave their annual "Awesome Force" award to **Rick Fletcher**, Benton County Extension agent. The award recognizes a member of the College's Extension team who has provided exemplary performance over the past year.

According to Scott Reed, associate dean and Extension head, the award's name comes from an observation made by an Extension faculty member several years ago. "He said something like, 'What an awesome force this team can be when we work together.'"

Mike Bondi, Extension Forester in Clackamas County, received an Experienced Staff Award from the

OSU Extension Association at their annual conference in December. Bondi has served for more than 17 years conducting educational programs



Rick Fletcher

for woodland owners and Christmas-tree growers in northwestern Oregon. He recently developed an educational program for motorists that uses low-power radio to transmit messages about surrounding landscapes.

Thomas Spies, forest ecologist and courtesy faculty member of the Forest Science department, received one of 10 Scientific Achievement Awards made by the International Union of Forestry Research Organizations (IUFRO) at the 1995 annual meeting

in Finland. Spies was recognized for his overall contribution to the scientific understanding and conservation of forest ecosystems and landscapes.

James M. Trappe, mycologist and professor in the Forest Science department, won the 1995 Barrington Moore Memorial Award from the national Society of American Foresters. The award recognizes distinguished biological research that advances the field of forestry. Trappe is an internationally known specialist in fungi and their biological functions in forest ecosystems.

JEROLD HICOK DIES

Jerold R. Hicok, friend and donor to the College of Forestry, died Dec. 24 in Lebanon, Oregon. He was 79.

Hicok was born in McMinnville to George and Amanda Hutchinson Hicok. He spent his early childhood on a ranch near North Powder, Oregon. He moved with his family to Corvallis at the age of 12, graduated from Corvallis High School, and attended the OSU School of Forestry. He then worked for the Army Corps of Engineers in Washington.

He married Vera Thamer on Valentine's Day of 1942. Two weeks later he joined the U.S. Army, serving in Europe during World War II. After the war he worked for Cascade Distributing Co. He retired in 1974.

In 1957 Hicok and his wife bought a 200-acre parcel of cut-over timberland which they reforested themselves. They donated the parcel to the College of Forestry in 1992 to benefit the Oregon Forestry Education Program.

In 1965 the Hicoks bought their second property, a 159-acre tree farm and cattle ranch near Lacombe. They spent eight years restoring the barns, fences, and house. They moved to the ranch in 1973.

Hicok was a long-time member of Oregon Small Woodlands Association and was named Tree Farmer of the Year for Linn County in 1980. ■

SANGA

Continued from page 12

group, which had chapters at several West Coast campuses, organized a big dance at the Forestry Club Cabin at McDonald Forest. At that dance Sanga met the woman who would become his wife, a Thai student from the University of Oregon named Vachira Satayayuk. Sanga and Vachira were married in 1962. They have a son, Chayodom, an economist and lecturer at Chulalongkorn University in Bangkok.

DEVELOPING THAILAND'S HUMAN resources, Dr. Sanga believes, is the most critical step right now in his country's economic advancement. Thailand needs engineers and scientists in biotechnology, genetic engineering, electronics and computers, and materials science. The second priority is developing its agricultural sector: Thailand needs to export more value-added products in addition to its bulk exports of rice, rubber, and cassava.

The need for stability and prosperity in Thailand is especially pertinent now, Dr. Sanga says, because of rapid political change and accompanying social dislocation in neighboring countries. "Thailand is a gateway," says Dr. Sanga. "We have so many refugees moving into our country from Vietnam, Cambodia, and Laos. In order to stabilize economic and social development, we cooperate with each other, learn lessons from each other. So we can live in peace."

There is much to be done, he says. "But I never give up. I never give up. If I fail, I try again. And I look for my partners, my good friends in the cabinet or the Congress in order that we together, not myself alone, that we do it together." ■

LEGENDARY "MAC" McCULLOCH IS COMMEMORATED

Thanks to a lengthy fundraising effort by one of his former students, a memorial to the late W. F. McCulloch now has a place of honor in the World Forestry Center in Portland.

Irving Steers, class of '53, spent six years raising the required \$10,000 in memorial funds, giving of his own money and collecting contributions from fellow alumni.

He reached his goal last summer, and now

A colorful and well-remembered figure. He deserved a memorial, says alumnus Irv Steers. This photo of Dr. McCulloch was taken about 1947.

McCulloch's memorial has joined those of two other former Forestry deans, George Peavy and Paul Dunn, and other prominent figures in the history of Northwest forestry.

The memorial consists of a brief biography and photo of McCulloch, stored in a flat file with an engraved nameplate. The biography, written by Center staff, not only gives McCulloch's vital statistics—born in 1905, joined the Oregon State College



Photo courtesy of OSU archives

School of Forestry in 1937, served as dean from 1955 to 1966, died in 1973—but also tells of some of the more colorful traits of this well-remembered professor.

For example, his legendary punctuality. Some students who took his field trips remembered "being left in [towns like] Baker, or Bend, or Burns when they weren't back on board after a '15-minute' rest stop," the biography says.

Steers remembers McCulloch's all-around toughness. "He didn't stand for any nonsense. You either cut the mustard or down the road you went. He was firm and brusque—but he was fair." McCulloch had his compassionate side, according to the memorial biography: "Quietly and without fanfare, he personally provided financial support to a number of students who otherwise would have been unable to graduate."

McCulloch insisted that students call him "Mac," Steers recalls, disdaining the formality that was expected everywhere else on campus. That first-name closeness between professors and students remains a College tradition.

"I'm well satisfied with the memorial; they did an excellent job," says Steers, who is retired from the Forest Service. "It's something Mac deserved. The breadth of his contribution to forestry in the Northwest was such that I thought he had a right to be there."



College of
Forestry



OREGON STATE UNIVERSITY
218 PEAVY HALL
CORVALLIS, OR 97331-5711



Recycled
Paper

Non-Profit Org.
U.S. Postage
PAID
Corvallis, OR
Permit No. 200

**This Publication is being sent
to you because of your
membership in the Oregon
Small Woodlands Association.**