MESSAGE FROM THE DEAN

Understanding our world’s natural environment and its resources has never been more important. Society’s focus on resource sustainability prompts healthy scholarly debate in our College and across the planet. Our efforts improve the lives of future generations, promoting stewardship of terrestrial environments through land and ecosystem management in an urbanizing world and sustaining forest enterprises. We continue to bring world-class, internationally recognized knowledge and leadership to bear on these challenges.

The College continually reviews its academic, research, and outreach efforts. I’d like to tell you about our progress in transforming our programs to ensure their relevance to students, employers, and society.

A recent, near unanimous, faculty vote to integrate our current seven undergraduate curricula is now being refined and implemented. The vote, a result of strategic planning over several years, approved a two-curriculum structure—paper science and engineering and a new curriculum focusing on environmental science and resource management. The new curriculum is anchored by an innovative junior-level core sequence that emphasizes real-world problems integrating knowledge areas of physical, biological, and social sciences. It will use the remarkable array of biological-social interactions in landscapes of the Pacific Northwest as a world-class learning environment for problem-based, interdisciplinary inquiry. The new curriculum promotes access, efficiency, and flexibility through a large array of elective courses. Students can easily transfer into our program and choose concentrations such as forestry, horticulture, and wildlife.

Since 1907, the College has educated professional forest managers and engineers. Over the years our offerings have expanded to include wildlife, conservation, environmental horticulture and urban forestry, sustainable resource sciences, and paper science. These programs developed into intellectual areas that define our unique academic niche at the University of Washington—studying key principles and processes that explain the behavior and interaction of biotic and social systems along gradients from highly to minimally impacted terrestrial ecosystems.

We all know that natural resource management is complex, contentious, and of great interest to most Americans. Institutions and individuals responsible for these resources need a new kind of professional for the demanding challenges they face. The multiple dimensions involved in resource stewardship require a shift away from traditional, single-discipline approaches to one that integrates knowledge from the ecological, economic, and social sciences. Natural resource scientists and managers need more flexible and more complex skill sets. They need to work effectively on teams and they need to use the knowledge and skills of interdisciplinary analysis and creative problem solving.

We believe our new curriculum structure does this and will attract high quality undergraduates because it better prepares them for careers in a wide array of professional disciplines. It also provides areas of professional and scientific specialization, with further opportunities at the graduate level. In addition, accredited fifth-year professional masters programs in forestry and horticulture, providing in-depth technical knowledge, are being developed.

Our transformed programs will enhance collaboration with other disciplines across campus and continue vital partnerships in the private and public sectors. With natural resources at the heart of many pressing technological and social issues, I am excited by this opportunity and challenge to contribute to a successful future for the University of Washington and to enhance knowledge and service for our constituents.

Bruce Bare
Biosolids Research May Improve Inner City Health

Adding composted biosolids rich with iron, manganese, and organic matter to a lead-contaminated home garden in Baltimore appears to bind up the lead so it is less likely to be absorbed by the bodies of children who dirty their hands playing outside or are tempted to taste those delicious mud pies they “baked” in the backyard. The garden soil in the study is similar to potentially hundreds of thousands of yards contaminated with lead in Baltimore and other inner cities, according to Sally Brown, CFR Research Assistant Professor and lead author of an article in the current issue of the Journal of Environmental Quality.

Even yards that were never near smelter operations may contain contaminated soils because of lead-based paints from older buildings and auto exhaust from leaded gasoline. The Center for Disease Control and Prevention says that 50 percent of inner-city children in the U.S. have lead levels in their blood high enough to cause irreversible health damage. Children swallow particles of lead if they are still at the age when they’ll put anything — including dirt — into their mouths or if they pick up dirt on their hands or clothes and then eat a snack. The amount of lead available to enter the bloodstream was lowered 20 to 38 percent after mixing composted biosolids with the contaminated garden soil, according to Brown and her co-authors, Ruhs Chaney, Judith Hallfrisch, and Qi Xue of the USDA Agricultural Research Service in Maryland. Baltimore biosolids contained more iron and manganese than the others tested were the most effective mixture.

Biosolids are the organic residuals produced during wastewater treatment. When composted, biosolids look like other commercially available composts and are approved for use by the U.S. Environmental Protection Agency as a soil amendment. Using composted biosolids to remediate soils would be far cheaper than other alternatives. While contaminated soil at a Superfund might be removed and replaced, that is just not possible within cities. “We’re not going to be able to remove Baltimore,” Brown says.

The scientists tested seven different biosolids and composted biosolid treatments, adding three inches of each to different areas of the garden, then thoroughly mixing the soils weekly for 30 days. Soil samples and laboratory rats exposed to the soils were tested for changes in lead levels. Since then, results from a pilot program adding compost to home gardens in Baltimore and East St. Louis appear to confirm the findings. Brown says researchers still need to find out how long the effects last and if using compost that doesn’t come from biosolids produces similar results. They’d also like to investigate why composted biosolids change the nature of lead so it’s not so readily absorbed by the body. The researchers hypothesize that this happens because biosolids are generally more than 50 percent organic matter and often contain high concentrations of iron and high levels of phosphorous and manganese. Studied singly by other groups of scientists, each of these soil conditions was shown to reduce lead availability in soils, according to studies published in 1999 and 2000. Brown and her co-authors studied all three components at once and monitored effects on living organisms as well as changes in soils.

Campus Tree Tour Updated with RFID Technology

A collaboration of the Precision Forestry Cooperative (PFC) and a much-loved campus tree tour developed through the generosity of the late Professor Emeritus Frank Brockman and his family has resulted in an MFR dissertation-in-progress and a new way to look at trees on campus.

The PFC, funded by Washington State’s Advanced Technology Initiative, conducts research in forest production, management, and manufacturing at a new scale of resolution and accuracy. One of the technologies under study is radio frequency identification (RFID), first developed by the British for use in World War II. In 1980 Brockman co-edited a booklet on campus trees. This developed into the Brockman Tree tour, containing a campus map and many tree photos. The tour instantly became popular and in 1995 it became a part of a public artwork incorporated into two campus bus shelters. An updated tour appears on the UW website at http://www.washington.edu/home/treetour.

Encouraged by then-PFC-Director Professor Jim Fridley, MFR student Sean Hoyt has updated the tour to use RFID and a personal digital assistant (PDA) display device. This makes it easier to locate and positively identify each tree. It also provides higher detail through a new map displayed on a color screen PDA device at roughly double the magnification of the paper booklet. Because some trees along the tour have been cut down due to disease or to make way for new buildings and some buildings have been replaced or renamed, using the pamphlet tour can be confusing as participants look for trees and landmarks that have changed. RFID technology allows for quick and easy updates of the tour.

The new tour will also serve as a demonstration of RFID for other venues such as forest products industries. Identifying individual trees is becoming more important for environmental, regulatory, and production reasons. Trees are now being included in conservation easements and a method to identify these trees is needed. Regulations are becoming increasingly complex, often requiring protection of individual trees or classes of trees. Greater information about individual trees can improve wood production — information can be passed down the manufacturing process stream once the tree is harvested, providing a way to track certified sustainable products.
ONRC's Washington Virtual Classroom

Spanned from a small contract with the Olympia Natural Resources Center (ONRC) GIS program by the Quilhauta Valley School District in 2001, technical support from ONRC continues on a limited basis for the online Washington Virtual Classroom Water Quality Database. The water quality monitoring project involves 12 school districts and provides elementary, middle, and high school students with the opportunity to investigate the health of salmon spawning streams in their local areas. Using both qualitative and quantitative testing parameters, data is maintained, compared, and evaluated throughout the year via the online shared database. The original contract was for ONRC to repair and redesign the online data entry and analysis web pages and Microsoft Access database for the project. Once the contract was completed and ONRC put the deliverables online, the center agreed to help periodically with updates and limited technical support, as a part of a local community service and interaction with the local schools. It's a good example of ONRC using in-house talent to extend service to the local community and to help children learn about natural resources. It also provides a long-term project through which ONRC interns can learn about information technology in natural resources.

Faculty Searches Underway

Two faculty searches are currently underway in the College. A search committee chaired by Professor Gordon Bradley and with a broad membership representing the College, the UW, the Arboretum Foundation, and horticultural organizations is conducting a search for Professor and Director of the Center for Urban Horticulture and the Washington Park Arboretum. The holder of the tenured full professor position will also hold the title of Orin and Althea Soest Chair for Urban Horticulture. A second search committee chaired by Professor Bob Edmunds is conducting a search for a Research Assistant Professor in plant biotechnology. Both positions have been advertised and are expected to be filled for Autumn 2003.

Orin and Althea Soest Chair for Urban Horticulture

The Orin and Althea Soest Chair for Urban Horticulture, made possible by the generosity of Orin and Althea Soest who have been long-time supporters of the Center for Urban Horticulture, is the sixth chair or professorship in the College of Forest Resources. Other chairs and professorships include the Corry Family Chair, the MCMC Resources Professorship in Forest Engineering, the Denton Professorship in Pulp and Paper Sciences, the Rachele A. Woods Professorship in Reclamation, and the Virginia and Prentice Blooded Professorship. Endowed chairs and professorships, upon investment in the UW's Consolidated Endowment Fund, provide support in perpetuity in honor of valued friends and supporters of College programs.

New Membership in PNW CESU

The Pacific Northwest Cooperative Ecosystems Studies Unit (PNW CESU), for which CFR serves as the UW host, is happy to announce the addition of two new member agencies — the Environmental Protection Agency and the U.S. Bureau of Reclamation. The PNW CESU is a cooperative venture among twelve leading academic institutions in the Pacific Northwest, one state agency, and seven federal land management and natural resource organizations. The overtaking goal of the CESU Network is to improve the scientific base for managing federal lands by providing resource managers with high-quality scientific research, technical assistance, and education. To date, over 65 projects have been funded through the PNW CESU Cooperative Agreement.

The Wind River Canopy Crane

The Wind River Canopy Crane facility continues to receive national media attention and was featured on the Discovery Channel's documentary " Giant Cranes," in November 2002. The crane, constructed in 1995, is a partnership between CFR and the U.S. Forest Service. It is the largest canopy crane ever operated in the world and the first in a temperate forest. From the gondola of the 250-foot (25-story) crane, scientists can gather samples, install instruments, and conduct experiments in the canopies of trees as tall as 120 feet. It's at the tops of trees and tips of branches where most budding, branching, and photosynthesis occur. It's where, where the forest meets the sky. Scientists want to study such things as how trees absorb carbon dioxide and how moisture evaporating from the forest helps cool the planet.

Restoration of Puget Sound Rivers

The recent listing of Pacific salmon under the Endangered Species Act has led to substantial interest in the scientific basis for river restoration in the Pacific Northwest. Millions of dollars in state and federal funding have been programmed for habitat restoration efforts to stem the decline of salmon populations in the region. A recent book edited by David Montgomery, Susan Brown, Don Booth, and Leslie Wall and published by University Press, addresses the need for a solid understanding of fluvial processes and aquatic ecology in order to predict both river and salmonid response to restoration projects. Brown, CFR Associate Professor, and Booth are co-directors of the Center for Water and Watershed Studies and is center program coordinator.

Arbor Day Fair 2003

Arbor Day Fair, a wildly successful annual event, once again brought over 2,000 kindergarten through third grade students to CFR on October 10. MCMC Alumni Association (MCA) members, along with faculty staff and students, staffed the learning stations that let children experience many aspects of forestry and related sciences. Volunteers assisted with hands-on activities and demonstrations such as the water cycle, composting, papermaking, recycling, and harvest operations. Since the Fair's beginnings in 1996, CFR alumni involvement, enthusiasm, and support have made this exceptional educational outreach event possible.

Alumna in Berlin on Bosch Fellowship

Melissa Keeley (M.S. '00), Craig Ziemba, and John Mortfeldt at Berlin's Pergamon Museum.

College News

Charles Halpern was promoted to Research Professor, effective July 1, 2002.
Susan Bolton was appointed Adjunct Associate Professor of Civil and Environmental Engineering, effective September 16, 2002.
David Ford was appointed Adjunct Professor of Applied Mathematics, effective September 16, 2002.
Two long-time College staff retired this year — Margaret Lahde (21 years) and Joyce Johnson (25 years).
An urban forestry symposium, "Bush and Techniques to Manage the Urban Forest", was held on March 13-14, 2003, sponsored by the College, the Center for Urban Horticulture, the City of Bellevue, the City of Seattle, and WA State Department of Natural Resources.
The College, the City of Seattle, and the Arboretum Foundation recently signed a "working together agreement" to facilitate the implementation of the Arboretum Master Plan.
The College is pleased to announce additions to its Development and Alumni Relations team and welcomes Cara Methvin, newly appointed Assistant Director of Development, Coralie, and Adam Harw, newly appointed Assistant Director of Development, Programs.

IN MEMORIAM:
Former Professor Ben Jayne, September 2002
Professor Emeritus Walter Schaeffer ('36, Ph.D. '52), November 2002
Professor Emeritus David R.M. Scott, December 2002
Professor Emeritus George Storosch, February 2003
Costa Rica Field Trip

CFR faculty and students participated in an ecology field trip to Costa Rica’s La Cangreja National Park during December and January. La Cangreja is home to many unique plant and animal species and its watersheds are vital to ecosystem health and the water supply and livelihoods of the region’s inhabitants.

Associate Professor Susan Bolton reports on the enthusiastic work of the 15 graduate and two undergraduate students. “The group studied two of the park’s three watersheds, walking and mapping about 15 km of the streams to gain information on geomorphology, tributary inputs, and waterfall frequency. We used this information to divide one watershed into five segments for more intensive sub-sampling. We conducted standard habitat/geomorphology surveys and sampled for fish (10 species were identified), macroinvertebrates, shrimp, crabs, and periphyton. One permanent riparian vegetation plot was installed adjacent to each of the 12 sampled stream reaches. Long term monitoring work involved installation of air and water recording thermometers, recording precipitation gages at various elevations, and gages that measure and record stream water level. Some of the students are assisting with data analysis and one graduate student focused on community involvement, organizing a contest in which local schoolchildren drew and colored animals of the area.”

In March and April, two high school groups supplemented the initial fieldwork. In June 2003, a planned three-week UW course will include studies on alternative design and building, greywater recycling, sustainable building, streamside studies, reforestation, and restoration ecology.

The College’s Frances Rush Bradley Endowed Fund provided support to purchase the equipment and supplies that made the work possible. Says Bolton, “The trip was a huge success, we accomplished a great deal, and many students had truly life-transforming experiences from this opportunity for international fieldwork.”

Merrill Hall Rebuild

The College and its Center for Urban Horticulture (CUH) are grateful to the many generous friends who have donated over $850,000 in private gifts and grants towards a new Merrill Hall. Although additional funds are needed to complete all the hoped for enhancements, private support is helping shape the building’s future and generating excitement about its features and programs in support of the UW and the community.

This excitement has resulted in a series of leadership gifts to incorporate energy- and water-efficient, environmentally friendly elements into the building and surrounding landscape. The reconstructed Merrill Hall will be one of the first LEED certified buildings in the entire state university system — a wonderful example of how donors can help the College realize its mission of sustaining natural and managed environments today and into the future.

Another inspiring example is private support for a new Commons, a light-filled meeting space with access to the Miller Library, the Hyde Herbarium, WSU/KC/Master Gardeners, meeting rooms, and offices. With a view cut through McVay Courtyard and into the Union Bay Natural Area, this will be a unique and special place. Almost 50 percent of this feature has been funded through individual tile sales and direct gifts, with $110,000 needed for completion. With the funding still needed, a major naming opportunity exists.

Other building features yet to be funded will illustrate how humans can manage urban growth while enhancing landscapes and ecosystems. Examples include a creative and practical use of rainwater in an innovative landscape design where water is captured from the roof of the new building and other impervious surfaces and flows through a structured system into neighboring wetlands. A coupled storage system will provide water for irrigation. Funding opportunities for furniture, artwork, and landscaping also continue to be developed.

CFR was a vision realized jointly by the UW and the horticultural community. Today an enhanced Merrill Hall is being visualized by supporters in much the same way. Planning deadlines are rapidly approaching — to learn more about opportunities to continue shaping the new building, call Tom Mentele, the College’s Director of Development (206-543-1880), or Tom Hinckley, CUH director (206-543-1198).

Upcoming Events Calendar

April 30-May 2
Grad Day Fair, UW CFR campus
May 17
Garb Day, Pack Forest
June 2-12
Natural Resources Institute Module 4: Integrated Problem Solving for Natural Resources Professionals, Seattle

June 15-19
Second International Precision Forestry Symposium, Seattle
June 19
CFR Graduation, UW campus (Kane 110)
June 23-25
Global Positioning System (GPS) Workshop, Pack Forest
November 7
CFR Alumni Association Annual Meeting and Banquet

CFR News

Please direct all corrections and inquiries to CFR News, University of Washington, College of Forest Resources, Box 352100, Seattle, WA 98195-2100.
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Share your news: CFR alumni activities and successes are of interest and inspiration to faculty, staff, alumni, and friends of CFR.

This newsletter can also be found on line at: www.cfr.washington.edu.