Contents

COVER STORY
Biofuels in Our Future .......................................................... 14
WSU gears up to develop bioeconomy.

FEATURES
Students Stir Up New Foods ............................................. 9
Food Science students create new taste treats.

Afghanistan ................................................................. 10
The Center to Bridge the Digital Divide brings a whole new world of technology and teaching to Afghanistan.

A New Take on Ag Education ....................................... 12
Includes first organic ag major in the U.S.

Alumnae Honored ........................................................ 20
Contributions celebrated during Women’s History Month.

DEPARTMENTS
CAHNRS Kernels ............................................................. 1
Discoveries ...................................................................... 5

Alumni and Friends
In Memoriam ................................................................. 19
Golden and Diamond Grads ............................................. 22
Private Giving .................................................................. 23

Dean Bernardo Reflects on First Year .................... Inside back cover

DATES TO REMEMBER

September
2 Auburn vs. WSU
   Auburn, AL
9 Idaho vs. WSU
   Pullman
14 WSU at Pike Place Market
16 Baylor vs. WSU
   Seahawks Stadium, Seattle
23 Stanford vs. WSU
   Stanford, CA
30 USC vs. WSU
   Pullman

October
7 Oregon State vs. WSU
   Corvallis, OR
14 California vs. WSU
   Homecoming
   Pullman
21 Oregon vs. WSU
   WSU Foundation Day
   Pullman
28 UCLA vs. WSU
   Pasadena, CA

November
4 Arizona vs. WSU
   Dads’ Day/Armed Forces Day
   Pullman
11 Arizona State vs. WSU
   tempe, AZ
18 Washington vs. WSU
   Pullman

For a complete Extension calendar visit:
ext.wsu.edu/calendar/index.asp

Visit the CAHNRS Alumni and Development Web site at:
cahnrsalumni.wsu.edu

On the cover: The future demands sustainable fuels. Created by graphic designer Miro Vejzovic, Extension Information Department.

Inside cover: Photo of Lake Chelan by Tim Smith, Extension educator, Chelan County.
WASHINGTON STATE UNIVERSITY is honoring retired Extension educator Roy Goss’ 30-year career by naming its primary turfgrass farm in Puyallup the “R. L. Goss Research Farm.”

“Roy Goss helped to build a multi-million-dollar turf industry in the state with his research and extension work,” said Extension Dean and Director Linda Kirk Fox. “His respect and influence in the industry has made WSU’s turfgrass program a leader nationally and internationally.”

Goss enrolled at what was then Washington State College in 1948. He earned his bachelor’s degree in agriculture in 1950 and his bachelor’s in education in 1951. He started his doctoral work in 1955. After three years of coursework and research—and a long struggle fulfilling his foreign language requirement (he chose Russian)—Goss accepted the newly created turfgrass research and extension position at the Western Washington Experiment Station in July 1958. He received his Ph.D. in May 1960.

Turfgrass nutrition would become the major focus of his career. Initially spurred on by the demands of golf course superintendents in Washington and elsewhere, Goss developed nutritional ratios for all types of turf including those for golf course putting greens and sports fields.

He also worked with WSU plant pathologist Chuck Gould to determine the relationship between fertilizer ratios and levels and several turfgrass diseases. Goss conducted extensive research on weed control in turfgrass, pioneering some of the most intensive work on sulfur and its effect on turfgrass quality.

Goss retired early from WSU Extension in 1988. He and his wife, Marcie, live in a home overlooking the golf course in Okanogan and continue to contribute to the turfgrass industry. They created the Roy L. Goss Turfgrass Endowment at WSU to help fund turfgrass research and provide scholarships for students majoring in turfgrass management.
Cunningham Farm Changes Name to Honor Cook

THE CUNNINGHAM AGRONOMY FARM, located northeast of Pullman, has been renamed the Cook Agronomy Farm in honor of R. James Cook, a leading wheat researcher and National Academy of Sciences member who retired last year as dean of the College of Agricultural, Human, and Natural Resource Sciences. WSU Regents approved the name change earlier this year.

In 1988, Cook led the team of researchers at WSU who made the first field test of a genetically modified organism in the Pacific Northwest—a micro-organism for control of root disease in wheat.

He has worked at the interface of science and policy on biotechnology applied to food and agriculture for much of his career. He chaired an international working group that produced the 1993 report of L’Organisation Européenne de Coopération Economique (OECE) on Safety Considerations for Biotechnology: Scale-up of Crop Plants; co-authored a white paper, “Transgenic Plants and World Agriculture,” released jointly in July 2000 by the Brazilian, Chinese, Indian, Mexican, Third World, United Kingdom, and U.S. Academies of Science; and served on the USDA Advisory Committee on Agricultural Biotechnology.

Cook was a research plant pathologist with the USDA-Agricultural Research Service at Pullman from 1965 through March 1998, investigating biological approaches to control root diseases of Pacific Northwest wheat. He has co-authored two books on biological control of plant pathogens and one book on the health management of wheat.

WHAT NEXT, BOSS?

SEVENTEEN-YEAR-OLD Anders Thoreson, and his dog, Topper, took home the top prize in the Junior Handling competition at the Westminster Kennel Club in New York this year. Anders, a 4-H member from Snohomish, has been working with the five-year-old German Short-hair Pointer for over three years.

“Topper loves people, is always alert and likes to have fun,” said Anders, who trains with his canine companion an hour a day to ensure he shows well. Anders is part of the D.O.G.S. (Dogs of Greater Standard) club in Snohomish County. He credits his nine years in 4-H with helping him prepare for his experience at Westminster.
James J. Zuiches, dean of WSU’s College of Agricultural, Human, and Natural Resource Sciences from 1995 to 2003, moved to Raleigh, N.C., in March to become vice chancellor for extension, engagement and economic development at North Carolina State University.

In his new role, Zuiches will lead and coordinate extension, engagement and economic development programs. Before leaving, he said, “I am very proud of my time at WSU and the experiences I’ve had, and it helped prepare me for my next position.”

Zuiches came to WSU in 1986 to become director of the Agricultural Research Center (ARC) and associate dean of the College of Agriculture and Home Economics.

In 1995, he was selected from among four finalists to serve as the dean of CAHE and director of both Cooperative Extension and the ARC. He served in that post until 2003 when he took a faculty position in WSU’s Department of Community and Rural Sociology.
Passion for Fashion Flares at Annual Show

Bethany Hicks, an Apparel, Merchandising, Design and Textiles major with an option in design, who graduated in May 2006, received the Faculty Choice Award at the department’s annual fashion show this spring. Her collection was inspired by 1950s cocktail dresses in the colors of a southwest sunset. Bethany enjoys the mental challenges of pattern-making as well as finding creative solutions to garment construction obstacles.

The deep, rich tones of silk found on a trip to Thailand were the inspiration for student MinJeong Kim, who won the Outstanding Achievement in Design Award for her line “Illuminare.” Min is a major in Apparel, Merchandising, Design and Textiles with an option in design and an international business minor. She is from Korea and graduated in May 2006. Min’s collection (below) is a mixture of various inspirations including elegance, class, sophistication, and the drama of a fabric that emits an iridescent light.

PORT SUPPORTS NWREC RESEARCH/REMODEL

Citing the importance of agriculture to Skagit County and their specific charge to encourage economic development, Port of Skagit County commissioners have committed $250,000 to Washington State University’s Northwestern Washington Research and Extension Center. The funds will support research being conducted at the center as well as the revitalization currently underway there.

“The WSU research center in Mount Vernon is a cornerstone to our Valley’s economic survival. Crops produced in the Skagit Valley provide over $245 million annually to our local economy,” said Port Commissioner Glenn Allen. “The future of the agricultural industry depends on its ability to adjust to changes over time.”

Dan Bernardo, dean of the WSU College of Agricultural, Human, and Natural Resource Sciences, said the port has been a long-time supporter of the research and extension center at Mount Vernon. “The Port of Skagit County Commissioners understand well the economic value of having a research and development organization working for local growers,” he said. “This gift helps WSU, area producers, and the Skagit County economy.”

Working with the Northwest Agricultural Research Foundation, the port has provided $25,000 per year to agricultural research for the past decade.

In addition to awarding $100,000 to the research center revamp the commissioners also finalized a formal agreement with NARF to continue to provide $25,000 a year for the next six years, a total gift of $250,000.

“The Port of Skagit County, as one of the primary engines driving economic development in the county, has long recognized the value of research to the ongoing success of the ag industry,” Allen noted.
Better apples, peaches, pears, and cherries at market sooner. That is one benefit of research by WSU’s bioinformaticist Dorrie Main.

Piece by piece, Main is mapping the DNA mosaic of the rosaceous family, which includes Washington’s largest crop—apples—and other tree fruit such as cherries and peaches, as well as berries and nuts. One result of that work is a shortening of the time between breeding improved tree fruit varieties and planting them for production.

Main focuses on genes connected primarily to fruit quality—sugar and acid levels, color, firmness, and fruit size—as well as other useful traits such as cold hardness, disease resistance, and postharvest decay. DNA-based markers for genes with these traits give orchardists the ability to pre-select seedlings that contain the improvements, which shortens the time it takes to develop commercially acceptable varieties.

“We’re working on speeding up the time to crop improvement, which will enhance the productivity and competitiveness of Washington fruit tree growers,” she says. “In collaboration with other WSU researchers, breeders, and growers, this research will help generate a population of new apple and cherry cultivars with desirable traits much more quickly.

A self-identified “data miner,” she uses a 128-processor computer to analyze and house data for the Genome Database for Rosaceae, the international repository for all genetic information currently available about the family.

“Basically, we take the raw data generated by researchers worldwide and try to make sense of it,” said Main, who is an associate professor of horticulture and a scientist in the WSU Agricultural Research Center. “We take all of the known genes in the public gene bank and analyze them based on function. We are looking at 250,000 gene fragments and pulling out what’s meaningful.”

In terms of economic volume, the rosaceae family is the third most important family in the U.S. and other temperate regions of the world. Its aggregate wholesale value in the United States alone is approximately $7 billion.

WSU LICENSES CROTEAU’S RESEARCH FOR MANUFACTURING CANCER TREATMENT

WASHINGTON STATE UNIVERSITY and Exelixis Plant Sciences, Inc., have signed a commercial licensing agreement covering patent rights and biological materials for use of plant cell cultures in the production of paclitaxel and other valuable taxane products used in cancer treatments.

The rights granted by the WSU Research Foundation under this commercial license are related to pioneering discoveries made by Rodney Croteau, a fellow in WSU’s Institute of Biological Chemistry and a scientist in the Agricultural Research Center.

Because they suppress cell division, paclitaxel and other taxanes are important therapeutic compounds for the treatment of cancer and other diseases. The market for paclitaxel and newer generation taxane-active ingredients is large and growing.

Currently, the supply of paclitaxel and taxane intermediates is largely derived from the harvest of Yew trees. Cell cultures hold the potential for an environmentally friendly, less capital-intensive, and more reliable method of production that can generate large quantities of paclitaxel and taxane intermediates at costs significantly lower than those of current tree-harvest methods.
CONNECTIONS—Fall 2006

Strengthening Families Program
Producing Results for Adolescents

Schools and social service agencies implement many programs intended to promote healthy youth development, but only a few are known to actually achieve their goals. A seven-week education program called “The Strengthening Families Program: For Parents and Youth 10–14” from Iowa State University is one of the most successful, according to a national study.

WSU Family Living faculty members Laura Hill and Louise Parker are tailoring the program to be even more effective in a variety of community settings throughout Washington.

In 1999, WSU Family Living faculty identified early adolescents as an underserved group in Washington and turned their attention to locating a program proven effective in promoting healthy development in youth this age. Long-term research results show that SFP helps parents improve their communication skills and reduces substance abuse and aggressive behavior in their children.

The WSU SFP team includes field- and campus-based faculty. Two years ago, the team formed a statewide partnership with the Washington Division of Alcohol and Substance Abuse and other state agencies for coordinating the dissemination of SFP. This developing network allows for efficient communication among practitioners and researchers, which in turn enables effective program delivery across the state as well as large-scale research on program effectiveness. The National Institute of Drug Abuse has awarded a two-year grant to the Washington partners to support a continuing program of research on the translation of evidence-based programs to “real world” settings.

The statewide network has permitted the WSU team to collect data on program implementation and outcomes from more than 60 programs with more than 1,200 participants. This research provides information that is being used both in Washington and in the prevention field nationally to improve program training and delivery, and ultimately, to maximize program effectiveness in reducing rates of adolescent illegal substance abuse.

Small plants loom large
WSU researchers find a key to plant growth

Waist-high corn stalks laden with full-size ears; squash plants that don’t sprawl over half your yard; a miniature tomato plant offering hefty red fruits to astronauts weary of freeze-dried food: these are just a few of the possibilities raised by new research at Washington State University.

Lead investigator Professor B.W. (Joe) Poovaiah and research associate Liqun Du have discovered a way to control the ultimate size of a plant. By altering a specific gene, they were able to change the size of plants that grew from experimental seeds, showing that plants might be “size-engineered” to fit the needs of growers. Their findings have been reported in the prestigious journal Nature. WSU has applied for a patent on the process. Grants from the National Science Foundation and U.S. Department of Agriculture supported the research.

Size-engineered plants could be a potent tool against worldwide hunger because they use less water, are more resistant to wind and rain damage than normal-size plants, and devote a greater proportion of their energy to producing seeds or fruit rather than stems and leaves.

Poovaiah’s findings are comparable to the 1960s development of semi-dwarf wheat varieties that boosted Third World wheat production in what became known as the “Green Revolution.” Poovaiah, a professor in the Department of Horticulture and Landscape Architecture and Center for Integrated Biotechnology, and Du worked primarily with Arabidopsis, a member of the mustard family, but have found similar genes with the same function in every plant they have examined, including important crop plants such as peas and rice.
A NEW WAY TO INHIBIT POTATO SPROUTING

Scientists at Washington State University have discovered a new class of potato sprout inhibitors that could reduce production costs for commercial potato growers and processors and open export markets that have established a zero-tolerance for residues of the most widely used sprout inhibitor.

About half of the 9.4 billion lbs. of potatoes grown in Washington each year are stored to provide a continuing supply to fresh markets and processing plants. Most varieties begin to sprout three to four months after harvest. Sprouting hastens deterioration and reduces overall quality. Chlorpropham (CIPC), the most widely used sprout inhibitor, has been on the market for more than 40 years. Growers and processors in the Pacific Northwest spend an estimated $7 million to $9 million annually to inhibit sprouting of stored potatoes.

Researcher Rick Knowles of the Department of Horticulture and Landscape Architecture leads the team that discovered specific classes of organic compounds that effectively control sprouting in storage. Many of the substances identified occur naturally in plants and are low in toxicity. In fact, they contribute to flavor and aroma of ripening fruits and vegetables. Some of the compounds are used in the flavor and fragrance industries and are registered as food additives.

Knowles’ research group has demonstrated that these chemicals leave little residue and are effective for more than a year as sprout inhibitors. The researchers, who recently received a patent on their finding, are in the process of determining optimal application protocols for the major varieties of potatoes grown in the Northwest. They also are collaborating with potato industry and academic partners to evaluate and develop the chemicals for large-scale use.

WSU Teams up to Study Cassava Root

Washington State University Professor John Fellman is a member of an international team recently funded by an $8.3 million grant from the Gates Foundation to improve the nutrition and shelf-life of a staple that feeds more than 500 million people around the globe—cassava.

Specifically, Fellman, a postharvest plant physiologist in the College of Agricultural, Human, and Natural Resource Sciences, will study why the dark brown, sweet-potato-like root begins to lose its nutritional values within 72 hours of being harvested. “We’ll be looking at an oxidizer that renders what little protein exists in the root indigestible almost immediately,” he said. “What sort of signals does the root receive to self destruct?”

Cassava ranks fourth in the world, behind rice, sugar, and corn, as a staple food. Originating from South America, it is grown throughout the tropical world, and can be grown in poor soils and drought conditions. While a good source of carbohydrates, cassava is low in protein and deficient in micro-nutrients such as iron, zinc, and vitamin A.

Cassava not properly prepared can be deadly. The plant generates naturally-occurring cyanogens, which liberate cyanide into the root. However, shredding the roots and squeezing the juice out removes much of the toxins, and the heat used to dry the resulting flour removes most of the remaining compounds.

As part of its Grand Challenges in Global Health program, the Gates Foundation supports “BioCassava Plus” to “improve the health of Africans through development and delivery of novel cassava...via increased...levels of zinc, iron, protein, and vitamins A and E,” according to the team’s grant proposal. Nineteen scientists from the U.S. Department of Agriculture, and universities and government agencies around the globe are working on the project.

The team also will examine postharvest durability and ways to reduce cyanogens. Fellman said he will spend his portion of the grant to hire a post-doctoral researcher and look at the chemical signals that spur and speed deterioration of the cassava root once it is harvested.
WHERE DOES all of the rainwater in western Washington end up, and more importantly to WSU Extension educator Curtis Hinman, how is it getting to its final destination?

Development of once open, plant-covered spaces that changes stormwater movement over and through the landscape is one of the greatest threats to water quality, supply, and aquatic habitat in the Puget Sound area, according to Hinman, who is stationed at the WSU Pierce County Extension office at Tacoma. One of five Extension faculty working on water issues in the Puget Sound Basin, he researches, designs and monitors low-impact development strategies for that region.

“Both resources and attention are turning to stormwater management throughout western Washington,” said Hinman. “We have started to realize that even a small amount of urbanization can dramatically affect a watershed.”

The major challenge of stormwater management is its complexity, he added. “There are literally thousands—maybe even millions—of individual actions that contribute to the issue.”

For example, the transition from meadow to shopping mall increases impervious surfaces. Native plants and the upper soil layers that filter, store, or allow rainwater to return to the atmosphere are typically removed, creating a "double whammy" to water quality and movement.

“Water quality is impaired as stormwater flowing from impervious surfaces collects oil, grease, and other pollutants and is discharged to streams, wetlands, and the Sound,” Hinman explained.

Those same surfaces also cause stormwater to move out of a specific landscape more quickly, altering stream channel form and degrading aquatic habitat.

Properly managing stormwater “comes down to good watershed planning, effective design at the project site, and to individual residents,” Hinman said. “It is much more based on the actions of individual property owners; it brings the individual into the ecology of the watershed.”

Low impact development can be a solution, he added. It is a land-use development strategy that emphasizes protection and use of features already on a building site as well as small-scale, engineered controls on individual lots and at the subdivision level.

Strategies include minimizing building footprints and road widths to reduce impervious surfaces, using permeable paving wherever possible, creating “bioretention” areas with appropriate soils and plants, and managing stormwater as close to its origin as possible.

WHAT’S YOUR LEGACY?

Have you included the College of Agricultural, Human, and Natural Resource Sciences in your estate plan?

- In a bequest through your Will or Living Trust?
- As a beneficiary designation on your life insurance or IRA?
- Through a Charitable Remainder Trust or Gift Annuity?

The CAHNRS Alumni and Development Office and WSU Foundation Gift Planning Office will be happy to provide you and your advisors with examples tailored to your personal goals.
A base of science, a touch of creativity: Students stir up new foods

BY KATHY BARNARD • INFORMATION DEPARTMENT

HEALTHIER BUBBLE TEA, chocolate-filled string cheese, a beverage package that helps you prepare and recover from your workout. These are just a few of the exotic food products developed by Washington State University’s Food Product Development Team.

Over the past several years, the student teams have repeatedly placed or won national competitions, which is a testimony to their dedication and preparation, according to Professor and team adviser Stephanie Clark. Developing the latest, greatest new food is as much a matter of hard-core science as it is creativity and marketing, she said. “Food product development entails both science and art, and that blend of the creative and the science makes it satisfying. Bottom line, though, you have to be a scientist.”

Take one of the team’s latest creations—SymBoba, a probiotic bubble tea—for example. The green tea features tiny, chewable “bubbles” which house live and active cultures, much like those found in yogurt.

The students had to find a way to encapsulate the cultures that would allow them to remain dormant while sitting in the liquid and still become activated once swallowed. Their solution? The “BobaBlaster 10,000.”

The students created the equipment necessary to blast larger balls of the encapsulated cultures into buckshot-size bubbles without killing the microscopic critters.

Clark said the project—which took first place in the Danisco Knowledge Award Product Development Competition—is the first joint effort between students at WSU and the University of Idaho. The two schools are working toward developing a bi-state School of Food Science and Technology.

Each fall, the Food Science Club chair coordinates a number of brainstorming sessions where students toss out ideas for new food products.

Eventually, the club narrows its ideas to those the members deem most competitive. They develop the product, a processing line to produce it, its marketing, nutritional information, cost analysis, price analysis, and more.

For example, the team that developed “Cheezlers,” a chocolate-filled string cheese, struggled with how best to insert the chocolate into the core of each string cheese. They finally came up with an attachment to a traditional extruder, the food-processing machine that helps shape things like pasta, cereal, and string cheese.

Representatives from the Land O’ Lakes Corporation visited the Pullman campus to see the new equipment at work. “Cheezlers” hasn’t gone to market yet, but could, Clark said.

Some products developed by the team do end up on grocery shelves. The 2005 team created “Load N Reload,” a pre- and post-workout beverage. Uniquely packaged, the “Load” portion is designed to hydrate and prepare cells for exercise. The “Reload” portion is a recovery beverage with protein and other substances to replenish the body after a workout.

One member of that team started a small business with other (WSU) business students—ATP Beverages. The company produced the “Load” portion of the package, and it is now being sold in area stores.

WHAT DO YOU GET when you mix dry peas, potato starch, and apple fiber? Surprisingly, the base for snack foods and breakfast cereal with twice as much protein and four times more dietary fiber than other snack products.

Developed by a team of scientists from the WSU Departments of Biological Systems Engineering and Food Science and Human Nutrition, the new snacks are healthy for both consumers and Washington farmers. “The added health benefits will definitely help promote the products in both domestic and international markets and bring economic returns to the growers in the state of Washington,” said Professor Juming Tang, leader of the project and a fellow in the WSU International Marketing Program for Agricultural Commodities and Trade (IMPACT).
THE IMPACT of WSU Extension reaches far beyond the borders of Washington State or even the United States. Thanks to a multi-million-dollar grant from USAID, WSU Extension’s Center to Bridge the Digital Divide is working in Kabul, Afghanistan, to rebuild higher education in the war-torn country.

Maria Beebe, director of CBDD’s global initiatives, began working with the United States Agency for International Development last September on the Afghan eQuality Alliances project. It came on the heels of a resounding success in developing higher education alliances in Africa. That project, known as NetTel, involved working with seven African universities and three U.S. universities to develop content and delivery systems for online learning.

“When we started that project, some people thought we were crazy to even think two universities would talk and work together,” says Beebe, “but they did. In fact, the seven universities grew to 20 by the time we were done.”

The African project was so successful that the federal government specifically asked that Beebe, a former USAID contractor, head the Afghanistan initiative. “She was the only person they were familiar with who they knew was capable of pulling off a project of this size,” said Colleen Taugher, CBDD’s communications and grants coordinator.

Now Beebe, along with Deputy Director Ryan Sain and Hila Hanif, the Extension educator based in Kabul, is working to build similar alliances in Afghanistan. Their primary partner currently is Kabul University, headed by President Ashraf Ghani, but they work with Kabul Medical University, Kabul Education University, and Kabul Polytechnic.

“Just recently, with some success under our belt, we are ready to move out to the provinces,” Hanif said, “to work with Balkh University in Mazar-e-Sharif and Herat University in the Herat province.”

The Afghan eQuality Alliances, all of which are led by Afghans, focus on a variety of different areas that cut across academic disciplines and universities. They include building a digital library that can be shared with the other 19 universities in Afghanistan; developing an e-Learning infrastructure; teaching 21st Century skills for college preparation; and English as a second language.

“CBDD’s involvement varies depending on the alliance,” Beebe explains. “For example, on the digital library project, our role is to work with the president from Kabul University and USAID to recruit, negotiate, and build partnerships. It’s a matter of pulling together all of these small pieces to make something much bigger. We pull it all together.”

Sain, an eastern Washington native, sees Afghan eQuality Alliances as “an immediate opportunity to jump beyond the errors made over the past 15 years in education, and actually apply the technology and other lessons learned to make a difference.”

He said one of the major challenges they face is “a difference in expectations of what we’re going to do.” For example, the CBDD project does not include providing infrastructure, such as computers and connectivity. “It is not our role to provide that, yet we have to convince our alliances not to focus on that but work around it,” he said. “Let’s get your skills up to speed while the infrastructure is being put into place.”

The needs are many. Afghanistan has been at war in one way or another for the past two decades. Just establishing an office in Kabul was a struggle, Hanif said.

“The power goes out all the time, especially in the winter,” she said. “It’s hard to plan a workshop without electricity.” Internet connections go down as well, traffic is always a concern, and all transactions are in cash.

“The infrastructure was totally destroyed,” Beebe said. “And it wasn’t just the gutted buildings. We zeroed in on the fact that they were still teaching with 1973 course descriptions and no textbooks.”
A YOUNG, UNMARRIED WOMAN in a position of influence is a novelty in post-Taliban Afghanistan. Yet, Washington State University Extension educator Hila Hanif has found that professors with whom she works treat her with a respect she had not expected.

“I was working with a group of engineering professors, and they kept referring to me as the ‘commander,’” Hanif said, laughing. “It’s a respect I’ve earned by working with them. Of course, that is not necessarily the case overall in Afghanistan.”

A native Afghan, Hanif, 25, was raised in the United States. Formerly with Cisco Systems, she jumped at the chance to return to her homeland to work with the Center to Bridge the Digital Divide Afghan eQuality Alliances project.

“The challenge of working in a developing country and the reward of actually making progress make working hard worthwhile,” she said.

Still, Hanif says, Afghanistan is the most culturally conservative place she has ever worked. As a young, unmarried woman, she must be accompanied by her father or a male driver when she’s running errands or otherwise out in public. “I feel at times very claustrophobic,” she said. Other aspects of life also are strictly regimented.

“I always wear slacks to the ankles to work, a shirt almost to the knees—your back end has to be covered, sleeves that fall between the elbow and wrist, and a loose head scarf,” said Hanif, who dresses more conservatively when she’s going out of the office.

Some male students do stare, point, and comment when they see her walking on campus.

“For many of them, being on a university campus is the first time they’ve been able to interact with women who are not members of their family,” Hanif explained. “Once they see me talking with their professors, though, the comments usually stop.

“Social interactions also are very conservative,” she added. “If there is a gathering, it is segregated between men and women unless it is just very close family.”

Maria Beebe, director of WSU Extension’s Center to Bridge the Digital Divide international initiatives, has had a slightly different reception in Afghanistan. With a last name that rhymes with the Dari word for grandmother, she has not encountered the discrimination many would expect for a woman working in a male-dominated culture. “Women my age are much respected voices in the community, so I haven’t had any trouble at all being effective here,” she said.

And, Beebe added, despite the conservative nature of the workplace, Hanif is effective. “Some of our partners—male and female—call her ‘Commander, Sir,’” she said, laughing. “I think they’re a little bit afraid of her, but it is all part of this network of relationships. We are lucky to have her.”

And, Hanif noted, professors in Kabul can earn as little as $50 a month from the universities, so most of them hold second jobs working at NGOs. “A lot of them don’t have a lot of time to work on courses and building their skills.”

For example, a workshop schedule for Kabul Medical University professors and lecturers conflicted with their outside work. The first day of the first workshop fewer than 10 people showed up; by the end of the first workshop 15 were showing up.

Another challenge is lack of critical mass in higher education, Beebe said.

“There is no one university in the country that can respond to all the needs and requirements,” she continued. So, she and her team build partnerships and introduce technology to leverage the resources that are available.

They have encountered some skepticism about using the Internet. And the language barrier and lack of physical infrastructure are challenging.

“But they are so, so hungry for new information and to be connected with the rest of the world,” Beebe said.

For example, the alliance working with medical school lecturers was very skeptical about using computers in the classroom. “They show up really scared of computers, but once they can see what the technology can do for them, they are on board.”

Hanif and Sain agree.

“Despite some initial hesitancy, people are very pleased,” Hanif said. “The nature of our program is very results-oriented, so our clients know our workshops are not just a bunch of fluff. We’re getting results faster than anticipated, so they are very pleased.”
A New Take on Ag Education

This Fall, the College of Agricultural, Human, and Natural Resource Sciences unveiled a new undergraduate degree in agriculture and a new organic major that is the first of its kind in the nation.

The new Bachelor’s of Science in Agricultural and Food Systems (AFS) will provide students with a broader perspective of agriculture and equip them with leadership, problem-solving, and other professional skills to supplement the technical skills they learn.

“Employers tell us our graduates are very good technically, but a lack of communications skills and lack of breadth is sometimes a hindrance,” said Ray Folwell, associate dean and director of academic programs. “Our goal is to teach them how to work in systems and how to work with people who are not in their technical discipline but are going to be affected by it.”

The new degree replaces five others, in general agriculture, agricultural technology and management, entomology, biological systems engineering, and an integrated cropping systems degree offered at WSU Tri-Cities. Portions of the majors and options offered under these degrees, along with key teaching faculty, have migrated to the new degree.

WSU joins Wisconsin, Minnesota, and Ohio State in adopting a systems approach to agricultural teaching at the undergraduate level, according to Folwell.

The systems approach focuses on the relationship of components, according to Cathy Perillo, who has been involved in the program since its inception and took over coordination of the faculty effort last summer. “We’re trying to make certain students have a broad perspective of agriculture and see how the pieces fit together,” she said.

The degree proposal was approved by WSU’s Faculty Senate in February and by the state Higher Education Coordinating Board and WSU Board of Regents this past spring.

Under the new ag and food systems degree, students will have a choice of five majors—agricultural business and technology systems, agricultural education, students in Hort 439, Ornamental Plant Production, prepare plants for the annual Mom’s Weekend horticulture club plant sale. The lab portion of this class gives students experience in learning how to grow greenhouse plants in quantity.

Consolidation Will Provide Opportunity

Consolidation of the College’s agricultural program under one degree should translate into more job opportunities for students. Just ask Jim Durfey.

Durfey, who has been teaching courses for the past 14 years in the Agricultural Technology and Management program, which covers precision agriculture, electricity, power machinery, risk management, hydraulics, irrigation, and water quality in agriculture, speaks from experience.

“I farmed until I was 35 when I came back to school,” Durfey said. “I found that to succeed, you need a good foundation in business, technical areas, as well as science.”

Durfey laced business courses into the AgTM curriculum in the early 1990s. “Students coming out of the AgTM program came out with a certified business minor.

“John Deere Corp.; Lamb-Weston, a division of Conagra Foods, Inc.; and Case IH and other multi-national corporations tell us it’s a great combination,” he said. Durfey’s daughter Audra was recently employed by John Deere at its corporate headquarters in Moline, Ill.

The combination of training also has enabled his students to compete successfully for jobs in the banking industry, including Farm Credit Services. Many of his students are employed by firms in the farm chemical, plant health food fields, including Simplot, Western Farm Service, United Agri-Products, and the McGregor Co.

“We’re turning out multi-faceted people who are not locked into narrow fields,” he said.

“We have changed our degree program to address the changing needs of agriculture. The new ag and food systems degree will equip our graduates with the knowledge and skills they will need to hit the floor running. We have listened to what the employers want and addressed those needs with this new degree program.”

AgTM is now an option under the Agricultural Business and Technology major.

Students in Jim Durfey’s Agricultural Technology and Management 315 class taught in one of the high-tech classrooms in the Smith Center for Undergraduate Education.
WASHINGTON STATE UNIVERSITY welcomed students into its new major in organic agriculture this fall.

“The organic major is the first in the nation,” said Cathy Perillo, who is coordinator of the new Agricultural and Food Systems degree in the College of Agricultural, Human, and Natural Resource Sciences, under which the Organic Agriculture Systems major falls.

The major is expected to appeal not only to aspiring organic farmers but also to people interested in playing supporting roles in the marketing of organic foods globally or locally.

“There’s quite a bit of large industry interest in the new degree, too,” Perillo said. “Large corporations are increasingly interested in meeting the nation’s growing appetite for organic foods and are seeking employees who understand organic agriculture systems, which are significantly different than conventional agriculture.”

Organic foods is one of the fastest growing segments of agriculture, with growth of retail sales increasing 20 percent annually since 1990, according to a 2002 U.S. Department of Agriculture report.

The organic major is one of five new majors offered under WSU’s new Agricultural and Food Systems degree. In addition to basic and advanced classes in organic agriculture, students majoring in organic agriculture will take courses designed to help them work across disciplines. Within the major, students can tailor their education to meet their specific interests, ranging from production to marketing.

The major includes a summer practicum at WSU’s three-acre organic farm near the Moscow-Pullman airport. Students will get hands-on experience in planting, nurturing, harvesting, and marketing organic produce.

“They will develop production skills needed for an organic market garden or farm as well as an understanding of the applied science inherent in agricultural operations,” Perillo said. “They also will participate in the marketing of community-supported certified organic fruit, vegetables, herbs, and flowers.”

The practicum is not restricted to students majoring in organic agriculture.

“The class is open to upper level students of any discipline who have some basic gardening or farming experience, or who have taken at least the introductory organic gardening and farming class,” Perillo said. “It’s also open to members of the community or interested professionals for continuing education. During the first two years of operation, the organic teaching farm has created wonderful ties with the local community.”

BY DENNIS BROWN
INFORMATION DEPARTMENT
COVER STORY

Getting Ready for the BIO-WORLD

BY DENNY FLEENOR
INFORMATION DEPARTMENT
POLICY-MAKERS in Washington state have been quick to embrace the biofuel potential. The state Legislature last session mandated two percent biodiesel be blended into diesel fuel and sold in-state by 2008 and established a financial grant program to spur development of alternative fuel processing facilities. Snohomish County already has converted 30 percent of its diesel fleet, some 150 vehicles, to burn a 20 percent biodiesel blend.

Local ethanol production, methane generation from anaerobic digestion of dairy manure and generation of electricity and steam by burning forest products wood waste, are other biofuel options being explored, and in some cases implemented, according to Dave Sjoding, program coordinator with the Washington State University Extension Energy Program.

WSU researchers have responded by partnering with the Pacific Northwest National Laboratory in the Tri-Cities to develop new biorefinery technologies and processes to convert a wide range of Washington-based biomass feed stocks into a number of bioproducts, including biofuels. That partnership has resulted in construction of a new research and teaching laboratory building at WSU Tri-Cities, the Bioproducts, Science, and Engineering Laboratory. The work conducted there could include research on converting byproducts like wheat straw, forest residues, manure, and biodiesel production residuals into new, high-value products from Washington businesses.

Five years ago, there was very little public awareness of biodiesel and therefore no demand for it within the state, says Energy Program resource specialist Kim Lyons. That’s when he undertook a nonscientific experiment to test consumer interest.

“I got 500 gallons of biodiesel from Florida and gave it away to boaters at a Seattle marina, and they loved it,” says Lyons. “I was surprised by the response. They said they preferred it to regular diesel, in part because it smelled better, and that they’d be willing to pay a premium price to get it.”

Lyons says that in the past five years in-state demand for biodiesel has grown from virtually zero to nearly five million gallons annually.

Growing demand coupled with petroleum diesel prices above $3 a gallon and concerns about U.S. dependence on oil imports have both farmers and policy-makers looking at whether growing oil seed crops such as canola and mustard, and other biofuel feedstock might provide economic development opportunities for rural Washington.

“The core issue is providing a domestic supply for our fuel needs, but the underpinning issue is supporting our farmers and rural communities,” says the Energy Program’s Sjoding. “Our goal is to build a bioeconomy, which means producing fuels and energy, and bringing real economic development to our state.”
Even though biofuels have come a long way in recent years, both Sjoding and Lyons say there is a lot of work and analysis to be done to determine if and how to make their potential benefits a reality.

“The challenge for farmers in considering oil seed as a crop is how you grow it profitably with our state’s various climate zones and growing conditions,” Sjoding says. “We need front-end research on growing oil seed crops at a very practical level.”

Another factor in that decision may be the potential for products in addition to biofuels from oil seed crops. Professor John Browse has successfully doubled the yield and characteristics of fats in plant oils, which eventually could help the U.S. reduce its dependence on fossil fuels with biodiesel, but also provide environment-friendly ways to produce plastics, resins, and other chemical products.

Washington is ahead of other states on biodiesel right now, according to Sjoding, but the state is just starting to look at ethanol. The Midwest has a well-established ethanol industry.

He says that three ethanol production facilities currently are proposed for Washington, and another may be built near Boardman, Ore.

Lyons says a market for ethanol fuel already exists within the state. He calls it the state’s phantom fleet.

“A lot of new cars sold in recent years are E85 capable, which means they can run on fuel that is 85 percent ethanol,” says Lyons. “Vehicles in the state motor pool and many local fleets are E85 capable, so if we can produce the product, a market is there. Working with the state Department of Licensing, we’ve identified more than 100,000 vehicles in the state capable of burning E85 right now.”

Sjoding says ethanol production facilities likely will import...
feedstock from the Midwest at first, but there is strong potential for providing local feedstock in the future. “The holy grail of biofuel is what's known as cellulosic ethanol production,” he says.

Where most ethanol today is made by extracting starch and sugars from corn and high sugar crops to ferment into alcohol, cellulosic production involves transforming cellulose from high cellulose-content plants into sugars to make ethanol.

“It’s not competitive yet, but if we can speed the digestion process for extracting the sugars, it becomes more feasible,” says Sjoding. “That means a wide to determine whether it makes sense to grow the feedstocks here. We need front-end research on growing oil seed crops at a very practical level.”

Kruger agrees, saying more research is needed on locally adapted varieties of canola and mustard, whose seeds are crushed for the oil, to find those that produce the highest yields.

Then there are the economies of scale in crushing the seed to extract the oil for processing.

Kruger says some Midwest facilities can crush up to a million tons of seed a year, but most facilities planned for Washington have a maximum of 50,000 tons annually. So, the Midwest can produce biodiesel more cheaply.

The added value of the meal left from crushing the oil seeds may help offset the higher oil production cost. Canola meal is commonly used as dairy cattle feed, and research by WSU, the University of Idaho, and others has demonstrated nutrient and fumigant benefits of using mustard meal as a soil amendment.

Merritt Wolfkill, owner of Wolfkill Feed and Fertilizer, says he imports carloads of canola meal from Alberta, Canada, every day to supply western Washington dairy farmers.

“I’d be willing and able to pay a higher price for locally produced canola meal if I could get it because I’d be saving money on the costs of importing and shipping,” Wolfkill says. “Besides, I’d rather support local farmers and the local economy.”

Don’t expect farmers to jump on the bandwagon just yet, says Kate Painter, a sustainable systems analyst with WSU’s Center for Sustaining Agriculture and Natural Resources.

“Farmers feel squeezed between low world market prices for their commodities and high world market prices for fuel and fertilizer,” she said. “Right now (at the time of writing), the market price for canola is quite depressed. It's below the cost of production. Even in the higher rainfall area of eastern Whitman County, higher yields don’t quite cover variable and fixed production costs.”

The crop, which is often grown in rotation with wheat, has been planted in Washington since the 1970s, but poor returns have dampened farmer interest. Certified canola acreage has shrunk from 15,106 acres in 2000 to 3,907 acres this past year. The figures reflect acreage farmers certified with the Farm Service Agency to be eligible for farm programs, so may not correspond to total acreage.

In the bioenergy arena, value-added products may prove to be the key to the economic viability of anaerobic digestion of dairy manure. WSU is a research partner in the state’s first commercial anaerobic digester located on the Vander Haak dairy farm in Whatcom County.

The technology for generating energy from methane produced by manure digestion has been around for decades, but it’s never been economically feasible in the Northwest, according to Craig MacConnell, director of WSU Whatcom County Extension.

“Most digesters pay for themselves by selling electricity generated by burning the methane it produces,” says MacConnell, “but Northwest power rates are too low to make it work economically, so we’re looking to the value-added products to make it pay.”

MacConnell has applied for a U.S. patent on a process for converting the solid fiber component of digested manure into a high-value potting medium substrate that can be substituted for peat moss. His research is finding that plants grow as well or better in the fiber potting medium as they do in peat moss.

“There is a lot of interest in a substitute for peat moss because of the environmental costs and consequences of peat extraction,” says MacConnell.

“A year ago, we surveyed commercial greenhouses and found that 96 percent would be interested in a peat substitute.”
variety of crops and even agricultural wastes like wheat straw could be used as feedstock.”

Last October, WSU scientists Shulin Chen and Craig Freer published a statewide biomass inventory that analyzed some 40 sources of feedstock for biofuels and other products within Washington.

“It’s the best inventory of its kind in the country,” says Sjöding. “And it shows we have the basis within the state to establish a bioeconomy.”

In Whatcom County, another form of bioenergy is being produced by converting a readily available bioproduct into electricity.

The Vander Haak dairy, a public/private partnership in which WSU is involved, is operating the state’s first commercial anaerobic digester for dairy manure. The digester captures methane gas, keeping the greenhouse gas out of the atmosphere. The gas is then burned to generate electricity used by the farm, with any surplus generation being sold to the Northwest power grid.

Currently the digester is generating about 285 kilowatts of power and processing the manure of 1,200 cattle.

Anaerobic digestion and electrical generation from methane aren’t new technologies, but the high costs and low returns have kept them from being widely adopted.

To make the Vander Haak digester cost-effective, WSU and its partners are analyzing potential markets for other byproducts of the digestion process, says Sjöding.

WSU Whatcom County Extension Director Craig MacConnell has a patent pending on a process for transforming the solid fiber produced by digestion into an effective, high-value planting medium that can be substituted for peat moss.

Sjöding says other digester byproducts also may be potential revenue generators.

“You can sell the electricity generated, you can sell carbon credits for reduced emissions, you can sell the fiber as a planting medium, and you can sell the liquid component as a fertilizer,” says Sjöding. “Greenhouses and nurseries are even interested in buying the captured carbon dioxide.

“Creating additional revenue streams to make these alternatives cost-effective, that’s what we want to get to,” says Sjöding. “That’s the vision for the future. That’s what will benefit our rural communities.”
In Memoriam

Alumni & Friends

Ed Erickson—’39
Baker Ferguson
David Hoffman—’85
Margaret Jones—’35
Jess Knutzen

Jeffrey Krautkraemer—’76
Kristi LeRoy—’78
Lena Manus
Agnes McQuarrie—’41
James Nofziger—’61

Clydeanna Pouria—’56
Jay Swanson—’46
James Webb—’35

Faculty & Staff

Elmer Catts
H. Martin Jensen—’47
George Tamaki

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Food Specialist Honored for History of Helping

If you want to change food traditions, talk to the grandmothers.

Virginia (Val) Hillers knew that and used it to dramatically decrease the incidence of foodborne illness among Hispanic populations in central Washington.

The recently retired Extension food specialist and WSU alumna received the 2006 CAHNRS Women’s History Award for Professional and Academic Leadership for a 30-year career dedicated to educating consumers about how they can protect themselves and their families from foodborne illness.

For generations, Hispanic families had made a delicacy known as queso fresco—or “fresh cheese”—with unpasteurized milk. One serious consequence was a remarkably high incidence of food poisoning.

Hillers directed a team of WSU faculty and staff to find a safe alternative for making queso fresco. But rather than disseminating the new information generally, she created an education program for Latin grandmothers, or abuelas. She started with 15 abuelas, teaching them the new way to make the traditional treat. In turn, those 15 taught the younger generation, and in a matter of months Hillers was able to document a decrease in foodborne illness in that community.

“To our knowledge, no other food safety intervention has actually documented a community impact,” wrote Raymond W. Wright, interim chair of the WSU Food Science and Human Nutrition Department, who nominated Hillers for the award. The work was so successful that the U.S. Food and Drug Administration printed both English and Spanish versions of her work that continue to be distributed throughout the United States.

Hillers has witnessed remarkable change in American attitudes about foodborne illness during her tenure.

“When I began, people were really complacent about foodborne illness,” she said. “They saw it as a temporary thing, like the flu, that wasn’t too serious.”

An incident in 1993 changed that. That was the year four children died of food poisoning and hundreds more were treated after eating undercooked, contaminated ground beef at a number of Jack-in-the-Box restaurants in the Seattle area.

“That was a tremendous wake-up call that what we were talking about was much more dangerous than 24-hour flu,” Hillers said.

Following the 1993 outbreak, Hillers’ work focused in part on how to cook ground meat safely. She’s a missionary for meat thermometers, and even in retirement, is still considered an expert on mad cow disease.

So what is Hillers’ assessment of the American food culture today?

“There’s been a huge change in how we think about food,” she said. “What I find troubling is the loss of eating as nourishment to the soul. So many people don’t take the time to enjoy their food. They don’t cherish its origins, its flavor. We are so entwined with big, corporate food service and food manufacturers; I don’t know how we move away from that.”

Award Winner Tells Story of World Hunger

In many ways, Shahla Shapouri serves as the eyes, ears, and voice of poverty and hunger around the globe.

As the lead economist in the U.S. Department of Agriculture Economic Research Service’s International Food Security Program for Developing Countries, she tells the economic, political, policy, and human story of world hunger to those who can make a difference.

“Hunger and poverty runs so deep in the world,” Shapouri said. “You can approach it from a science perspective, the political aspect, and policy aspect, and then there’s the human aspect. It is not something abstract.”

The College of Agricultural, Human, and Natural Resource...
Sciences honored Shapouri this year with the Women’s History Award for Community Leadership and Public Service.

“Dr. Shapouri’s contributions are documented in a very large set of insightful and rigorous professional reports, papers, and presentations to a wide-ranging clientele, including the United States Agency for International Development and the United Nations,” wrote Professor Ron Mittelhammer, director of the WSU School of Economic Sciences. Shapouri earned her Ph.D. in agricultural economics from WSU in 1978.

The world hunger issue is so compelling, Shapouri says, that it helped to overcome the challenges she initially faced as a native Iranian trying to communicate in something other than her native language. “The message was so strong that it overcame my early limitations.”

And today, urgency adds to the strength of that message. Shapouri currently is working on a 10-year progress report from the World Food Summit held in 1996. There, countries from around the globe pledged to reduce the number of hungry people by 2015.

“It is really a challenge,” Shapouri said, “because we really haven’t done much toward meeting our goals. The number of hungry people actually has increased, especially in Africa.

“It’s a tragedy,” she continued. “We are living in a world of plenty, yet we cannot reach those people and provide them with basic human needs.” Shapouri said part of her responsibility is to focus the attention of policy-makers.

“The U.S. has such huge wealth. But to get the attention of policy-makers you have to focus, come up with a core area,” she said. “Hunger is a legitimate base for action, not only as a human issue, but as an economic issue.

“In the past 10 years, the United States has been providing about half of the global food aid, the largest provider in the world. I’m hoping to help policy-makers make the best use of these resources—and they are limited compared with what is needed.”

Despite the challenges, Shapouri said she considers herself “among the lucky ones. “I have a good message and a very good platform to deliver it,” she said. “I feel really privileged to have this kind of job.”
Golden Grads

Front Row, L to R: Gretchen (Dow) Heuterman,
    Betty (Cowan) Fafnis, Cecelia Stallcop,
    Dorothy (Caro) Thompson, Russ Quackenbush,
    George Brunstad, Norma (Meeks) Conklin,
    Muff (Deeter) Edwards, Pete Toomey, Bob Mock

Middle Row, L to R: Dorothy Franklin,
    Gerald Mitchell, Lynn Heminger,
    Marsha Davis, Margaret (Oltman) Roser,
    Molly (McCoy) Phillips, Betty Jo (Krause) Jensen,
    Mary (Harris) Shinn, Elsie Shan (Drumheller) Golding,
    Jacque (West) Prescott, Janet (Hugdahl) Dickey,
    Jane (Jacobson) Baker, Larri Ann (Smith) Clark,
    Shirley (Stennett) Johnson

Back Row, L to R: Ernie Preedy, Hauk Husby,
    Darrell Thayer, Fred Flesichman,
    Fred Stallcop, Glen Rollman, Don Steiger,
    Norris Holstad, Mary Jeanne Murphy

Diamond Grads

Front Row, L to R:
    Blanche (Adams) King,
    Dorothy (Seiter) Puryer

Back Row, L to R:
    Lorraine Juvet,
    Katherine (McAbee) Barr,
    Jean (Dahl) Sunderland
THE COLLEGE OF AGRICULTURAL, HUMAN, AND NATURAL RESOURCE SCIENCES

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❖ Indicates deceased
GRADY TOD AUVIL was born in Virginia and moved with his parents to Entiat, Wash. at age two. The family started an orchard there, where Grady lived for 26 years before moving to his own orchards in Orondo. He and his wife, Lillie, co-founded Auvil Fruit Company in 1928 when he was 22 years old. They were the first in the state to plant the Granny Smith apple and the first to market Rainier cherries. They also introduced Red Haven peaches and Red Gold nectarines to the Northwest. Auvil Fruit Company grew to include orchards, tree fruit packing, production, and marketing complexes in the Orondo and Vantage areas of Washington state.

Grady was a leader of Washington's tree fruit industry. He was a president of the state horticulture association, served as first chairman of the Washington Tree Fruit Research Commission, and was on the central committee of WSU's Agricultural Advisory Board when Wilson Compton was the university's president. He was awarded the College of Agriculture's prestigious Centennial Medallion Award for outstanding support of agricultural research. Grady died on Dec. 28, 1998.

Lillie and Grady had three children, Deanna (Navone), Alan, and John. Lillie was active in her church and a number of women's organizations in Orondo and Wenatchee. She passed away on Jan. 23, 2005.

Through a substantial trust at the Washington Apple Education Foundation, the Auvils made generous provision for perpetual funding of scholarship and research at WSU and Wenatchee Valley College, both in horticulture and generally. Grady once said, "I believe everyone has an obligation to try and improve the future of people. Education and research are the only ways."
Larry Smith Scholarship in Home Economics

Larry Smith was born in Waterville and grew up in Ephrata, where his father was a city marshal and the first chief of police. Larry went to Washington State College for one year before entering the military. After serving four years in Korea, he returned to WSC, where his final three years of education were paid through the GI Bill. He graduated in 1958 with a major in civil engineering and took a job in Portland, Ore., with American Bitumuls & Asphalt Co., a subsidiary of Standard Oil Co. Larry stayed with Standard Oil and its successor company, Chevron, until his retirement in 1991 as a district manager of the asphalt division.

While at WSC, Larry met Mary Jane Freimann, who grew up in Bellingham. Both Mary Jane’s parents were alumni of WSC and her father, Levern, was also a WSC Extension agent. Mary Jane majored in dietetics, graduating in 1958 with a B.S. in home economics. She and Larry married before their senior year of college. Over the course of time, Mary Jane and Larry lived in a variety of places. Their three children, Laurie, Stuart, and Valerie, grew up mostly in Tucson. In addition to providing a home for her husband and children, Mary Jane worked as a dietitian for many years. She had many other interests, including playing bridge (she was an American Contract Bridge League bronze life master), traveling, and cooking. In 2004, she passed away after a courageous struggle with cancer.

To honor the memory of his wife of 47 years, to acknowledge the important role WSU played in his and Mary Jane’s lives, and to help future students with tuition expenses, Larry Smith has created this scholarship fund to benefit students studying apparel, merchandising, design and textiles, food science and human nutrition, human development, and interior design.
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June Roberts Endowed Agriculture Scholarship

UNE ROBERTS was a faculty member in agricultural engineering at WSU. This fund was established with a bequest at his wife Ellen’s death, who also endowed scholarships in fine arts and bioengineering through her estate plan. Ellen W. Roberts graduated from Washington State College in 1942 with a degree in home economics. Years later, she returned to WSU and received a master’s degree in fine arts in 1973. Funds from this endowment shall be used to provide one or more annual scholarships to undergraduate students studying agriculture within the College of Agricultural, Human, and Natural Resources Sciences. First preference will be given to students pursuing a degree in agricultural technical management.
William Pan & Vicki McCracken
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Daniel Beth ’76
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Kyle ’94 & Kelly (Keller) ’97 Reep
Jerry & Heidi (Johnson) ’79 Reeves
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Janet Roberts Mooers ’46
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’76 Scott
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James & Debra Sterk
Fredrick ’59 & Alice Stormshak
William & Eunice Summers
Paul ’59 & Betsy (Holmberg)
’60 Sunich
Syngenta
Barry Tee ’90
Gifford Thomas ’58
Jean Thornton ’48
Robert ’72 & Carol Thornton
Mary Tollett
Robert ’87 & Kittie (Ralph)
’87 Tucker
UAP Distribution, Inc.
R. Clayton Udell ’58
United Way of Benton & Franklin Counties
United Way Silicon Valley
Edward ’58 & Sally Veenhuizen
W. K. Kellogg Foundation
Tim ’84 & Beth Wallace
Waltner Family Farms
Lihua Wang
Washington Organics Recycling Council
Washington State FFA Association
Washington State Seed Potato Commission
Washington-North Idaho Seed Association
Richard ’84 & Deanna Weber
Dennis ’93 & Madoka Werner
Peter ’54 & JoAnn (Worman) Weston
Whatcom County Farm Bureau
Russ & Dina Wheeler
Paul ’77 & Peggy (Anderson)
’78 Wiggum
Ken Williams
Wineglass Cellars
Michael Wohld ’60
Woodward Canyon Winery, Inc.
Yakima Fruit & Cold Storage Co.
Michael ’66 & Jeanne (Peterson)
’67 Youngquist
J. Dennis & Linda Yriondo
Zinpro Corporation

Thomson and Catherine Hyslop Family Graduate Fellowship in Crop and Soil Sciences

His Fellowship was established in honor of former WSU Regent Thomas Hyslop, and his wife Catherine, who met at WSU as students in the 1930s. Tom and Catherine are part of a group of 18 direct family members who have attended WSU from 1904 to the present. In 1990, Tom and Catherine received the WSU Alumni Achievement Award in recognition of “50 years of distinguished leadership and loyal service...to their alma mater.”

Tom was appointed to the WSU Board of Regents in 1982 and served until 1984. He graduated from Washington State College with a bachelor’s degree in agriculture, and served in the Army Air Corps during World War II, retiring as a major. Upon moving to Spokane after the war, Tom assumed management of the family farm, founded in 1879 by his grandfather near Reardan, which he operated until his retirement. The Hyslop Family farm was honored as a pioneer farm at the Washington State Centennial in 1989. Tom was honored as Conservation Farmer of the Year for the Davenport-Reardan District in 1950, Spokane County Cattleman of the Year in 1953, and Conservation Farmer of the Year for Spokane County in 1981. He served on the Board of Directors of the Reardan Grain Growers for 21 years and was president from 1966 to 1973. He also served on the Spokane County Board of Equalization and Washington Commission on Vocational Education. Tom was involved in numerous other activities, including Future Farmers of America, Spokane County 4-H, the Masonic Lodge, and the Boy Scouts of America.

Catherine, a home economics major from Bridgeport, Wash., has had a longtime affiliation with Alpha Gamma Delta, both at WSU and on the international level. She served as 3rd Grand Vice President and National Panhellenic Delegate for the International Grand Council, National Panhellenic Collegiate Adviser for the Pacific Northwest, and Province President. She was instrumental in the foundation of AGD chapters both at the University of Idaho and University of Alberta, Canada. Catherine also served as Spokane Chapter alumna president, Spokane City Panhellenic president, and twice as president of the AGD House Corporation.

Numerous other activities have included a term as president of the Spokane Council of Scout Mothers, Plymouth Congregational Church Board of Trustees, president and Board of Trustees for the Eastern Washington Genealogical Society, and Board of Trustees for the Kahana Sunset in Maui, Hawaii. Since 1966, Catherine has been an active lifetime member of the Board of Trustees of Hutton Settlement Children’s Home.

Tom and Catherine raised four children, a daughter and three sons, all of whom are proud to have had parents who not only took an active interest in their children’s activities, but were leaders and participants in the larger community. Through it all, Tom and Catherine have held great respect for their education and love for WSU, their alma mater. They were members of the WSU Alumni Association, WSU Foundation, and Stadium Builders, major donors to the Lewis Alumni Centre, and avid WSU football fans.
Bryan Society

($500 to $999 annual support)

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Rick & Kandace Holley

B A R B A R A R O B I N S O N B E C K E R graduated from WSU in 1942 with a degree in Home Economics. She was the first in her family to get a college degree. While at WSU, she was a member of the Delta Delta Delta sorority, and she maintained ties with the sorority for many years. Barbara married Carl Becker and moved to Portland, Ore., where Carl was an engineer with Kaiser Shipyards during World War II. They then resettled in Seattle where they raised two sons, Peter and Paul.

Throughout her life, Barbara remained a loyal Cougar and followed the successes of the school both academically and in athletics. In giving this gift to WSU, Barbara and her husband Carl re-affirmed her loyalty and trust in the values and worth of the university, and the department of home economics in particular.

This scholarship is available to students studying apparel, merchandising, design and textiles, food science and human nutrition, human development, and interior design.

JOIN US JANUARY 27, 2007 AT THE SIXTH ANNUAL CELEBRATION OF WASHINGTON WINES DINNER AND AUCTION AT CHATEAU STE. MICHELLE, WOODINVILLE, WASHINGTON. ALL PROCEEDS FROM THIS BLACK TIE GALA BENEFIT WSU’S VITICULTURE AND ENOLOGY PROGRAM.

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CONNECTIONS—Fall 2006
DONALD AND BETTIE STEIGER both graduated from WSU in 1956. Don, the son of Oscar and Bethel Steiger, grew up on a wheat farm in Diamond, Wash., and spent his high school and college summers farming with his father. Graduating with a B.S. in geography, Don joined his father in the wheat growing business. In 1958, he completed a year of graduate work at the University of California, Santa Barbara, and received an ROTC commission in the U.S. Army. Don spent the next 26 years as a career Army officer. Upon retirement from the Army in 1986, Don assumed all management responsibility of the Steiger wheat operation.

Bettie Alexander Steiger graduated with a B.S. in political science and completed graduate work at WSU with an M.E. in secondary education. Realizing that Don's Army career would require frequent moves, Bettie elected to stay at home to raise their two children, Craig Alexander Scott and Ann Alexander Carla. Both children returned to enjoy and experience life on the Diamond farm every summer from age three through age 16 knowing that they would one day inherit the land.

Bettie is a recognized pioneer and futurist for leading-edge concepts, having contributed to the founding of a dozen high-tech companies since re-entering the corporate world in 1975. She helped establish Source Telecomputing Corp., and was named an “Outstanding Woman in Electronic Publishing” in 1984. Bettie received an Executive MBA from Harvard Business School in 1987 when she and Craig made Harvard history as the first mother-son team to receive an MBA in the same year. Ann completed a master's degree in Physical Therapy in 1986.

Donald is a direct descendent of John A. and Amanda Eaton Harper, who homesteaded the Harper Farm on Union Flat in 1870, recognized as a Whitman County Territorial Farm. His grandfather, F.H. Steiger, was active in Whitman County wheat growing from 1899 through 1945.

Bettie is a descendent of Anson Williamson, who homesteaded in the Rattle Snake Hills, Prosser, Wash., in 1890 and grew wheat there through 1929. This land is now used for grape production.

Donald and Bettie are active in many aspects of WSU alumni activities and celebrate their 50th Class Reunion in 2006.

Don is currently an active participant in monitoring government policies and lobbying both state and national legislators to support sound economic measures for the wheat industry.
In the Irrigated Agricultural Research and Extension Center with headquarters in Wenatchee and the Tree Fruit and Extension Center located in Prosser.

Mike and Kathy Hambelton
WSU Perennial Cropping Systems Fund

As third-generation Washington state tree fruit growers and dedicated WSU alumni, Mike and Kathy Hambelton have established an endowment to help ensure the continuation of WSU’s Tree Fruit Research directly within the growing areas of Washington for perpetuity. This endowment is to be limited to the Tree Fruit and Extension Center with headquarters in Wenatchee and the Irrigated Agricultural Research and Extension Center located in Prosser.
FOLLOWING HIGH SCHOOL, Wallace Staatz served in the Army Signal Corps in World War II, which was followed by B.A. and M.A. degrees in horticulture from Oregon State University. Wallace was active in the family bulb farm in Orting, Wash., until 1970 when he converted it to the High Cedars Golf Course and surrounding residential area until its sale in 1999.

Wally was one of the original investors and developers of the Crystal Mountain Ski Area in the early 1960s, served as its board chairman from 1978–89, and was instrumental in its acquisition by Boyne USA.

A past president and member of Sumner Rotary since 1969, he was a strong supporter of their scholarship fund as well as various hospital charities. He moved to Hood Canal in 2003. Distributions from this fund shall be used for research enhancement for turfgrass and ornamental horticulture programs.
Merial Limited Animal Genomics Research Fund

Merial is a world-leading, innovation-driven animal health company, providing a comprehensive range of products to enhance the health, well-being, and performance of a wide range of animals. Merial employs approximately 5,000 people and operates in more than 150 countries worldwide. Its 2004 sales were in excess of $1.8 billion. Merial Limited is a joint venture between Merck & Co. and sanofi-aventis. This fund will be used to support animal genomics research in the Department of Animal Sciences.
The Extension Information Department won an Award of Distinction from The Communicator Awards Print Competition for the Fall 2005 issue of Connections. The Communicator Awards is an international competition that recognizes outstanding work in the field of communications.
From the Dean

IT DOESN’T SEEM POSSIBLE that a year has passed since I assumed the role of dean of the College of Agricultural, Human, and Natural Resource Sciences.

The time has gone quickly, notably because of the whirlwind schedule required to meet the numerous friends of the college, stakeholders, faculty, students, and staff. It is encouraging hearing from so many people who hold our programs in such high regard and want to assist the college in reaching its aspirations.

One of my first-year goals was to meet with external stakeholders to better understand their needs and the issues facing the food and agriculture sector of this state. So far, I have met with dozens of producer associations and commodity commissions, as well as countless industry representatives.

It is no secret that forces such as globalization, high energy and labor costs, and low product prices threaten the very existence of several key agricultural industries in our state. The key to competitiveness is adoption of technologies that reduce costs and enhance product quality. CAHNRS is well-positioned to help in retaining these industries and increasing their contributions to the economic health of our state.

In serving this role, however, our challenges are numerous and our resources limited. To have a globally competitive food and agriculture industry in Washington requires world-class research, extension, and education programs. CAHNRS and WSU Extension are partnering to advance a major food and agriculture initiative as part of WSU’s budget request to the 2007 Washington State Legislature. We have not had such a request for nearly a decade; it is desperately needed. The primary goal is to enhance WSU’s ability to contribute to the economic vitality and sustainability of the Washington food, fiber, and agriculture industry.

We also have worked to advance our programs by making much-needed investments in our facilities. We have made significant progress in obtaining state and federal appropriations to fund the second and third buildings of the six-building life sciences research and extension facility on the Pullman campus. We recently finalized the purchase of a new research orchard in Wenatchee, which will provide us a world-class lab to support Washington’s world-class tree fruit industry. Renovation of important facilities at our Mount Vernon and Prosser research and extension centers continues. In Prosser, the first phase of a new viticulture and enology center is complete, and work has begun on a facility to house the Center for Precision Agricultural Systems.

CAHNRS is an expansive college, spanning a wide array of fields of study. One of my goals is to increase the visibility and excellence of not only the food and agriculture sciences, but also the human and natural resource disciplines. Christmas came early for our apparel, merchandising, design, textiles, and interior design programs when we secured a commitment from the WSU administration to secure new and expanded space for these departments.

Two recently developed centers of excellence will make major contributions to our natural resources programs. The Center for Environmental Research, Education, and Outreach is a campus-wide center spawned by CAHNRS to promote system-wide, interdisciplinary, environmental research and engagement that are regional, national, and global in scope. The Center for Biofuels and Bioprocessing focuses collaborative, interdisciplinary research and education on establishing new industry in Washington that produces bioproducts and bio-energy from its vast biomass resources.

We recently received approval for our new undergraduate degree in Agricultural and Food Systems. Grounded in cutting-edge science, the new degree includes discipline-specific courses as well as courses that develop the skills employers say they want most—the ability to solve problems, think critically, communicate, present information, and work as part of a team. The response has been positive, and I am hopeful this will help us grow the college’s agriculture and food systems enrollment.

The primary goal is to enhance WSU’s ability to contribute to the economic vitality and sustainability of the Washington food, fiber, and agriculture industry.

I am pleased and proud of the leadership CAHNRS shows within WSU. In 2005, our faculty won more contract and grant dollars than any other college. Fifteen patents were issued to WSU in 2005—all but one of those were developed by CAHNRS faculty. Two of the institution’s five new “Regents’ Professors” are from CAHNRS—John A. Browse, a professor of biochemistry and plant physiology in the Institute of Biological Chemistry, and John P. Reganold, a professor in the Department of Crop and Soil Sciences. At a recent university awards ceremony, CAHNRS faculty walked away with three of the university’s six top faculty awards, including Jack Rogers’ receipt of WSU’s most prominent faculty honor, the 2006 WSU Eminent Faculty Award. These are just a few of the college’s “points of pride.” Overall, our success hinges on your continued participation and support. I look forward to working with you.

Best regards,

Dan Bernardo
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