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Committed to the Environment

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Nancy Broshot

Committed to the environment

Nancy Broshot, left, measures a sapling in Portland’s Forest Park with help from Tanya Helm ’08, right. Broshot’s ongoing commitment to students and research has earned her the Edith Green Distinguished Professorship. The award is made annually to a Linfield faculty member who has demonstrated outstanding performance in teaching and related faculty roles.

“Her friends call her a tree hugger, and that’s fine with Nancy Broshot, associate professor of biology at Linfield College. “You have to hug them in order to measure them,” she said with a laugh.

Broshot, chair of Linfield’s health sciences program and this year’s Edith Green Distinguished Professor, has been measuring trees in Portland’s Forest Park since 1993, when she began a comprehensive research project to study the effects of urbanization upon a naturally forested area. Established in 1948, Forest Park covers 5,090 acres and is the largest wooded park within city limits in the United States. Broshot found it to be the perfect setting for her research.

“It allows me to look at one contiguous forest area and there are parts of it right next to downtown Portland and other parts that are still pretty remote,” she said.

In 1993, Broshot chose 25 sites, scattered throughout the park, to measure the plant and bird communities. One site lies adjacent to the Pittock Mansion parking lot, while other sites are farther from the urban area. She returned to re-measure the 25 sites in 2003. “One of the things I found most alarming is I didn’t see many young trees coming up in the forest. That has been magnified with the second set of data in 2003. Seedlings and saplings present in 1993 are gone, and many of the larger trees are dying.”

To find out why, Broshot, in conjunction with Portland Parks and Recreation, planted several hundred western red cedar saplings in the park in 2004. Last summer, Tanya Helm ’08, Katelyn Selzer ’08 and Robin Walker ’08 worked with Broshot to monitor growth. They took soil measurements and samples, measured saplings and collected seeds. Back in the lab, they analyzed the seeds and soil to gain clues about the saplings’ decline.

So far, they have learned that deer and elk are grazing some branches, but they do not appear to be responsible for tree death. They are trying to find out whether lack of moisture, pollution or soil changes are to blame.

At the heart of Broshot’s work is her passion for working with students. “I like connecting with the students and I love turning students on to the research process,” she said. Students call Broshot knowledgeable, patient and accessible.

“She’s engaging and she knows her stuff,” said Helm, a health sciences major who hopes to pursue medical school. “She’s not one to just hand you an answer. She makes you go through the possibilities, find the answers for yourself and become more reliant on your own critical thinking skills.”

“Microbiology is not my strong point, but she made it very easy to understand,” added Walker, a nursing major.

At Linfield since 1984, Broshot maintains a passionate environmentalist ethic as a scholar and educator, according to Barbara Seidman, dean of faculty.

“Her ongoing research in urban natural environments like Portland’s Forest Park is a model of the reach of academic inquiry beyond the campus itself and into the life of the community encompassing it,” Seidman said.

Looking ahead, Broshot already knows where she’ll be during the summer of 2013. “I’ll be in the woods measuring all my trees and counting birds again,” she said.

— Laura Davis

Sharing his knowledge with Africa’s students

As a young boy growing up in Ghana, Martin Dwomoh-Tweneboah always knew he’d go to college, thanks to the encouragement of his father. Now he’s helping other Africans achieve a quality education as well.

Dwomoh-Tweneboah, chair of the Linfield College Computing Science Department, has spent the past three summers bringing technology to Africa University, the first private institution of higher education in Zimbabwe.

First, he helped the institution establish a computer science department and develop a curriculum. Then, he designed and implemented a campus-wide computer network, installing state-of-the-art fiber optic cables and “smart” classrooms, saving the university hundreds of thousands of dollars.

“As an African, I feel that sense of responsibility to help improve the educational system on the continent,” Dwomoh-Tweneboah said. “That will be my contribution to help improve the lives of the younger generation to bring about peace and prosperity.”

Thanks to his efforts, 30 students are now in their second year of computer science study at Africa University, according to Rekakodi Joseph Murapa, vice chancellor of Africa University.

“Africa University has one of the best campus networks in Southern Africa,” Murapa said. “Students and staff will now be able to collaborate with colleagues around the world.”

Dwomoh-Tweneboah has brought extraordinary assets to the African continent, said Vivian Bull, Linfield president emerita. Bull, a former trustee of Africa University, is associated with the General Board of Higher Education of the United Methodist Church, which is supporting the work.

“He’s African, and the African people respond to him,” she said. “He’s a hands-on person and he has brought a wonderful work ethic to the people. There’s nothing he won’t do.”

Dwomoh-Tweneboah works side by side with staff and students, teaching them about the equipment. He said his work in Africa is a way to put into action Linfield’s mission, Connecting Learning, Life and Community, while modeling service to Linfield students.

“I talk with my students about the project,” he said, “and they learn how technology is important in the lives of others outside the U.S.”

Now, as part of the assessment team for the

— Laura Davis

Martin Dwomoh-Tweneboah, associate professor of computer science, helps to install a satellite dish on the roof of a learning center in Mozambique. Due to lack of infrastructure, African universities can accommodate only 5 percent of eligible students.

Methodist Global Educational Foundation Initiative, Dwomoh-Tweneboah is helping to expand Africa University through distance learning at satellite campuses. He and Bull have conducted feasibility studies for future sites in Congo, Angola, Nigeria, Ivory Coast, Liberia and Sierra Leone.

In July he hooked up a center in Mozambique, which will transmit courses in Portuguese from a Methodist university in Brazil via Africa University. In typical fashion, Dwomoh-Tweneboah rolled up his sleeves to knock down walls, build new partitions, run wiring, install a satellite dish, lay carpet, put together desks, paint and more.

“I do the work with them to show them that they can do it themselves,” Dwomoh-Tweneboah said. “That sense of ownership, participation and control is what I want to impart to them.”

— Laura Davis