




# HEALTH HAVEN

BY TERESA KILLIAN TATE



THE STATE-OF-THE-ART LABS, CLASSROOMS AND COMMUNITY SPACES IN THE FIRST BUILDING ON WCU'S WEST CAMPUS PROMOTE COLLABORATION, PARTNERSHIPS AND SERVICE

Outside, metallic sunshades stretch like giant blinds across the Health and Human Science Building's walls of windows – letting in natural light while regulating heat in an energy-efficient way. Inside, students use computers at tall café tables in a multistory atrium, gather with study groups or professors in nooks and crannies throughout the building or take a break on the rooftop garden. Deeper inside, they work together and exchange ideas in dozens of high-tech laboratories, classrooms, seminar rooms, study areas and clinical spaces – all designed to offer extraordinary educational experiences and support a range of new, interprofessional collaborations.



Physical therapy and nursing students learn how their respective disciplines work to assess and mobilize patients.

**ENDLESS POSSIBILITIES:** Three years after the \$46 million building's official groundbreaking, the four-story, 160,000-square-foot facility nestled into a mountainside has opened to more than 1,000 students, faculty and staff from WCU's College of Health and Human Sciences. Now under one roof are colleagues in nursing, physical therapy, communication sciences and disorders, social work, athletic training, emergency medical care, environmental health, nutrition and dietetics, and recreational therapy programs.

"The possibilities in the new building are endless, especially for collaborative work involving students and faculty from different programs," said Marie Huff, interim dean of the College of Health and Human Sciences. "Professionals in health and human

sciences fields do not work in silos. They work more efficiently and more effectively when they collaborate to help a patient or client. Whatever we can do to encourage learning from an interprofessional perspective is only going to be better for our students and everyone they will serve."

The facility, which opened this fall and will be dedicated Thursday, Feb. 28, already has won over students. Despite spending almost every day for eight weeks in the new Health and Human Sciences Building, athletic training student Kyra Dodson said

she still can't say enough good things about it. "First of all, the classrooms are amazing," said Dodson. "The labs are huge. We can spread out. Everyone is together instead of working separately with some of us in the hall or different classrooms. The whole building enables more collaboration. We would have study groups meeting in the lobby and other places. During our lunch breaks we would go outside to get some fresh air. The rooftop garden is one of my favorite parts. It just brings so much personality to the building, which is so more than just a 'normal' building."

**"WCU WILL BE ON THE LEADING EDGE OF EDUCATING THE NEXT GENERATION OF HEALTH CARE PROFESSIONALS."**

—BRUCE D. THORSEN, PRESIDENT, MISSION HEALTHCARE FOUNDATION

**GOING WEST:** The facility is the first to be constructed on WCU's West Campus, 344 acres across N.C. Highway 107 from the main campus acquired in 2005 as part of the Millennial Initiative. A comprehensive regional economic development strategy, the Millennial Initiative promotes working on campus with private industry and government partners to enhance hands-on student learning and collaborative research. The initiative already is coming to life in the new building in such ways as making space available within the building's interdisciplinary clinic on the first floor for a sports medicine clinic in which physical therapy and athletic training students will get hands-on experience.

The mission of the interdisciplinary clinic is to offer specialized diagnostic and rehabilitative services that address needs in the community in a way that enhances and emphasizes student education and training. Already operating there is WCU's nationally recognized Speech and Hearing Clinic, which serves clients from the community and involves students studying communication sciences and disorders. Bill Ogletree, head of the communication sciences and disorders department, said the new space offers more treatment rooms, more ability to observe sessions and more opportunity to collaborate with the physical therapy and recreational therapy programs. "The new clinic allows us to expand the solid interface we have between

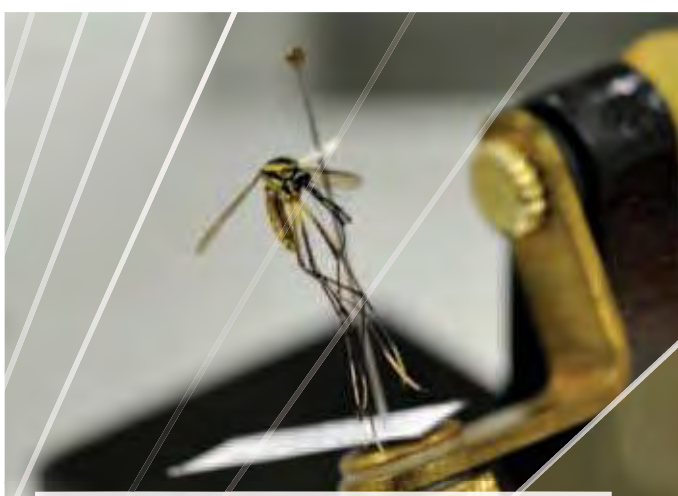
the academic side and the clinic side," said Ogletree. "Our students are getting a rich experience, and it's only going to get better and better as there are more interprofessional opportunities." Another space will be used for a Balance and Fall Prevention Clinic expected to open this spring. In addition, WCU is exploring partnerships, including one that could enable a free community medical clinic to serve patients at the HHS building.

Meanwhile, the second floor of the building hosts an atrium with floor-to-ceiling windows that look out on the mountains, a community seminar room with the capacity to seat 175 people, a 100-person auditorium and a coffee shop/restaurant. Just outside is a rooftop garden featuring native plants indigenous to the region, an element of the energy-efficient design that is positioning the building for certification at the silver level in LEED, or Leadership in Energy and Environmental Design, from the U.S. Green Building Council. For athletic training student Nichole Eads, the space offered a sense of sanctuary during the eight weeks of intensive coursework before going to a clinical site. "It was pretty in the morning walking up and seeing the mountains," said Eads.

Throughout the building are faculty offices, study spaces, classrooms, seminar rooms and 21 specialized labs. They include a secure insectary, which is a laboratory for the study of live insects,



Chairs equipped with tables for laptops or books enable students to study and work in the building's multistory atrium.



## THE BUZZ: THE STUDY OF MOSQUITO-BORNE DISEASE BENEFITS FROM INSECTARY AND LAB

A secure insectary and research lab in the new Health and Human Sciences Building is helping make it possible for students and faculty to fill a need for research related to mosquito-borne illnesses in Western North Carolina.

Legislative budget cuts in 2011 led to shuttering of the N.C. Public Health Pest Management Section of the North Carolina Department of Environment and Natural Resources "This has created a significant void in the state that left many other state and local agencies scrambling to coordinate control activities related to mosquito control," said Brian Byrd, a public health biologist and assistant professor of environmental health. "This is an area where I feel WCU may play a vital role in the education of local environmental health professionals and provide resources and lab capacity to enhance local response and education efforts. To work with mosquitoes safely, we needed an appropriate laboratory infrastructure and protocols to prevent them from escaping."

The focus of the new laboratory is to address needs for surveillance, prevention and response of La Crosse encephalitis, the most common human mosquito-borne disease in North Carolina. La Crosse encephalitis can cause brain swelling, seizures, coma and even death. Features of the new lab space include a secure, two-door entry in which a whoosh of air blows down as visitors enter and exit to prevent any mosquitoes from leaving the premises. The facility will expand the capabilities of WCU students who have, since August 2008, presented related research at 25 national, regional and state venues.

Currently, Tyler McKinnish, a senior from Canton majoring in biology, is using molecular methods to examine the validity of methods to identify two similar-looking mosquitoes that carry West Nile virus. McKinnish said he is particularly grateful for the extra storage and bench space. "That has been the greatest thing for my project – the ability to spread out a bit and to easily and efficiently access the reagents that I use," he said. For Michael Riles, a senior from Miami, the lab has made it easier to complete his work investigating where particular types of the mosquitoes capable of carrying the virus lay their eggs and examining methods to distinguish two closely related species of the mosquitoes. ■



Meghan Colescott, a student in an etiology class within the environmental health program, looks at a sample under a microscope.

complete with double-door entry and fans at the entrance powerful enough to prevent any specimens from escape. The measures are needed to allow for safe research of mosquitoes that carry illnesses such as La Crosse encephalitis. They also include facilities such as a quantity foods lab that enables nutrition and dietetics students to get experience on campus that they previously had to go off campus to acquire. In the lab, students use industrial-grade equipment such as ovens, mixers and skillets to learn about preparing quantities of food for hospitals, nursing homes or schools where there are a range of special diet considerations, said Wayne Billon, director of the nutrition and dietetics program. “When our students go into food service management, they are expected to know how to use this equipment,” said Billon.

**HIGH-TECH TOOLS:** Some of the most heavily used labs are the simulation laboratories in which students work with mock patients or mechanical patient simulators, including a “SimBaby,” in settings from hospital rooms to apartments. Macey Bright, a nursing student from Forest City, said those experiences were valuable. “We did a respiratory assessment on the manikins in the lab, and our professors set them to have rales, rhonchi, wheezes and other abnormalities that we would be assessing for in our patients,” said Bright. “After hearing these sounds in the manikins, I was much more comfortable going into the clinical and doing assessments on my patients. We also were able to see some of what the SimBaby could do, such as turning blue, swelling of the tongue and what happens when a baby’s lung collapses.”

The building also has specially designed features, such as space for environmental health students returning from gathering samples in muddy, wet environments and an ambulance pad built into the back of the emergency medical care lab. In addition, a hydrotherapeutic pool donated by MedWest – Harris is on-site for teaching and performing aquatic therapy. The pool features jets that create current, an underwater treadmill and video cameras to record clients’ movements. The features are particularly useful for people such as injured athletes who need a safe way to train and older adults who have balance and fall issues and need help improving their gait, regaining their strength and expanding their range of motion. The pool will enable athletic training, recreational therapy and physical therapy students to learn about

aquatic therapy and benefit community members whom the students work with, said Jay Scifers, director of the School of Health Sciences and professor of athletic training. “This is the only therapeutic pool of its kind in the region, and it will provide some great benefits for members of our community as well as our students,” said Scifers.

Another highlight is the building’s technology features, which range from video capabilities in the interdisciplinary clinic that allow patients, health care providers, faculty and students to review sessions, to vast telecommunication and videoconferencing capabilities. Guest speakers off-site are able to meet live – virtually – with students, faculty or classes. Earlier this year, epidemiologist Richard Wilkinson delivered a lecture live from England to 75 students, faculty and community members at the Health and Human Sciences Building as well as participants at Wake Forest University and the University of Tennessee. The technology enables events in one classroom, seminar room, clinic or community area to be streamed to other rooms in the building or recorded for review at a later time. The capability enhances WCU’s ability to serve distance learners or host large community or continuing education events at the building.

The sheer amount of space available in the new building is something faculty members say has enhanced the quality

“THE POSSIBILITIES IN THE NEW BUILDING ARE ENDLESS, ESPECIALLY FOR COLLABORATIVE WORK INVOLVING STUDENTS AND FACULTY FROM DIFFERENT PROGRAMS.”

–MARIE HUFF, INTERIM DEAN

of education for students. Athletic training has almost twice as much lab space, said Jill Manners, director of the program. Twice as many hospital beds for nursing students are available as were in Moore Hall, previous home for nursing students, said Judy Neubrandner, director of the School of Nursing. The additional space also made it possible to return the senior pre-licensing nursing students to campus after several decades of being located in the Asheville area. “Bringing the senior year of the pre-licensure program back to Cullowhee is a true homecoming,” said Neubrandner. “It will give our senior nursing students the true college experience all four years and provide for a seamless educational nursing experience.” Katlyn Moss, a nursing student from Hayesville, said nursing students appreciate being in the same building and are using the many group study spaces. “I have definitely seen a community being built between the nursing cohorts,” said Moss.



From left, Brenda Marques, associate professor, and Laura Parker, nutrition and dietetics student, work in the quantity foods lab.



## GOING GREEN: LEED CERTIFICATION SOUGHT FOR NEW BUILDING

Daylight bounces into the interior corridors of the new Health and Human Sciences Building while the reflective surfaces of the roof and rooftop garden keep heat absorption at bay. Such details position the building designed by Asheville-based architects with Pearce Brinkley Cease + Lee to meet the U.S. Green Building Council’s standards for Leadership in Energy and Environmental Design, or LEED, at the silver level. Its “green” features include:

**Overall design** – To minimize impact on the site, the building’s footprints respond to existing contours of the mountainside.

**Reduction in copper** – The use of hydroelectric power and electric heat system enabled a reduction in the amount of copper piping needed.

**Natural light** – The orientation of the windows and the pattern of the exterior sun screens allow for natural light to enter and reduce lighting needs while supporting heating and cooling efforts.

**Roof and rooftop garden** – A 20,000-square-foot rooftop garden reduces the amount of heat the building gives off back to the atmosphere. Reservoir cups resembling a giant egg crate catch stormwater to be absorbed by plants.

**Stormwater filters** – Sand filters and bioretention ponds reduce the amount of runoff and increase the quality of water that does run into nearby streams.

**Regionally made materials** – Brick and precast concrete panels are manufactured within 500 miles of WCU, and wood used in the building is certified by the Forest Steward Council for the renewable way it was grown and harvested.

**Low-emitting materials** – Building materials have a low volatile organic compound (VOC) content, often emitted as gases with potential adverse health effects.

**Occupancy sensors** – The lighting system uses occupancy sensors that turn lights on when someone enters a room and off when unoccupied. A control system in the atrium also assesses the amount of light needed based on sunlight.

**Reduced water use** – With low-flow toilets, pint-flush urinals and select sinks and plumbing fixtures, the building is expected to use 41 percent less water than a typical building of the same size.

**Individualized temperature control** – The mechanical system offers more control of temperature settings within groups of offices, a measure expected to result in a 20 percent reduction in energy use. ■

## MISSION ACCOMPLISHED: AN ASHEVILLE HOSPITAL SYSTEM'S GIFTS ARE HELPING STUDENTS IN HEALTH-RELATED MAJORS

Twenty-four students who are enrolled this academic year in several of the bachelor's, master's and doctoral programs offered by the College of Health and Human Sciences are attending the university thanks to a \$250,000 gift from Mission Health System of Asheville. The Asheville-based hospital system is providing \$50,000 annually over a five-year span to WCU to be used for scholarships for students in health-related disciplines.

The gift, announced last fall is providing financial assistance to students from Western North Carolina who want to study in health-related programs at WCU. In announcing the gift, Chancellor David Belcher commended Mission for its ongoing commitment to the education of the next generation of health care providers.

"This gift, which represents the latest in Mission's long history of support for Western Carolina's educational efforts in the area of the health sciences, will provide critical financial assistance to students who might not otherwise be able to afford to attend the university, with the hope that these students will graduate and serve the region as health care professionals," Belcher said. "It's a prudent investment by Mission, which through its generosity also is helping ensure that it continues providing the highest quality health care to the people of Western North Carolina."

Mission Health System previously has contributed significant financial support to help establish WCU's physical therapy program and its program in certified registered nurse anesthesia, joining other regional hospitals, medical centers and health care organizations comprising the WNC Health Network in efforts to address a shortage in those professions.

"One of the goals of Mission's community benefits committee is to ensure we are investing in our region. We felt there was no stronger investment than in helping motivated young people from this part of the state get interested in health careers at Western Carolina by providing them scholarships," said Cindy Shivers, chair of the committee. "We feel this is a very wise and well-placed grant and will pay many rewards to the region." ■

**COLLABORATIVE SPIRIT:** The community is strengthened further by the interprofessional collaborations tying different disciplines together. In addition to the collaboration between nursing and physical therapy that has occurred this semester, Anne-Marie Jones, assistant professor of nursing and undergraduate team coordinator, said they hope to build future collaboration with other professions in the college. Nursing students could work with colleagues from communication sciences and disorders to enhance communication with patients as well as work with patients with swallowing issues, from social work to improve collaboration in accessing resources available to patients, and from emergency medical care to learn about the critical communication that needs to take place between nursing and emergency medical personnel.

Already this fall, physical therapy and nursing students worked together in several interprofessional collaborative lab experiences, including one in which they assessed medical status, history and medications of a simulated patient – a 59-year-old recovering from cervical fusion surgery. Together, they discovered how and what to communicate to make sure the patient received the best possible overall care from both: nursing students shared what the physical therapy students needed to know about the patient before beginning therapy, and the physical therapy students advised what kind of mobility assistance a patient might need. Hannah Helfer, a graduate student from New Mexico studying physical therapy, said she valued hearing from nursing students. "As a physical

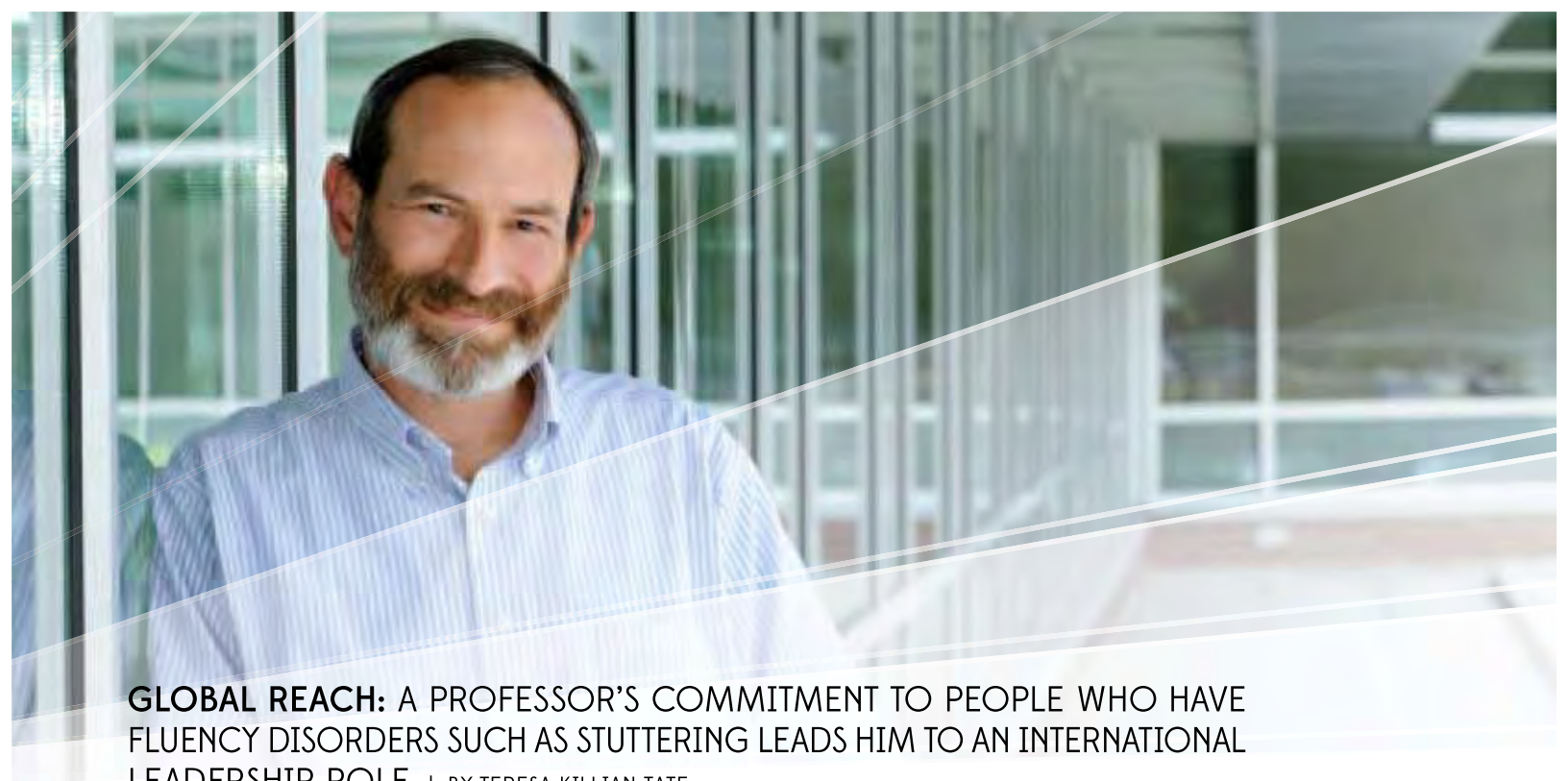
therapy student, I tend to focus on the patient's movement capabilities or lack thereof. The nursing students brought an entirely different perspective to the situation and helped me think about other aspects of the patient's recovery," said Helfer. Meanwhile, Bright, a nursing student, said it was helpful to practice sharing findings. "If we didn't understand each other's terminology or charting abbreviations, we were able to figure that out in the lab and learn about them before going into the clinical setting," she said.

Bruce D. Thorsen, president of Mission Healthcare Foundation and 40-year veteran in the health care field, underscored that the teamwork required to care for patients is one of the most important aspects of health care today. Mission Health System, which contributed significant financial support to help establish WCU's physical therapy and nurse anesthesia programs, in September announced a \$250,000 gift to provide financial assistance to students who will study in health-related programs, many of whom are participating in studies in the new building.

"The beauty of the new WCU Health and Human Sciences Building is it will provide the space and the atmosphere for the various health disciplines to study and interact together," said Thorsen. "That, coupled with its high technology both in its simulation laboratories and in teaching students how to use electronic medical records, means WCU will be on the leading edge of educating the next generation of health care professionals." ■



Students in an emergency medical care course enjoy the technological capabilities of a lecture hall at the Health and Human Sciences Building.



## GLOBAL REACH: A PROFESSOR'S COMMITMENT TO PEOPLE WHO HAVE FLUENCY DISORDERS SUCH AS STUTTERING LEADS HIM TO AN INTERNATIONAL LEADERSHIP ROLE | BY TERESA KILLIAN TATE

As a person who stutters, David A. Shapiro swore an oath that if he could find a way to talk, then he would do all he could to help others. With loving acceptance and support, Shapiro did find a way and in turn has served others for more than 35 years as a speech-language pathologist. As Western Carolina University's Robert Lee Madison Distinguished Professor of communication sciences and disorders, he also works with aspiring speech-language pathologists and with colleagues and clients around the world. His service has extended to the International Fluency Association, whose members presented him the Award of Distinction for Outstanding Clinician in Dublin, Ireland, in 2006 and recently elected him president in Tours, France. The organization is composed of researchers, speech scientists and speech-language pathologists from more than 30 countries on six continents.

"One of the most exciting developments is that WCU has become the hub for dialogue related to fluency disorders among professionals and consumers around the world," said Shapiro. In his first three months as president, Shapiro assembled a leadership team from across the world, held elections, completed a survey of more than 1,500 constituents, established a committee to revise the bylaws and develop a strategic plan, and was offered space in the most recent and subsequent issues of the *Journal of Fluency Disorders* to summarize IFA's activities.

"To serve as IFA president is a dream come true for me," said Shapiro, who has engaged in teaching, clinical service and research on six continents. In 2004, concerned with the unavailability of clinical services for people who stutter in developing countries, he collaborated with Margaret Wahlhaus in Australia to introduce a concept to the International Stuttering Association called the International Speech Project – Stuttering. "Similar to Doctors Without Borders, the project is now bringing information and coordinating self-help/mutual aid projects where they otherwise did not exist in remote corners of the world," said Shapiro.

His professional presentations number more than 150 and include "A Multinational Investigation of Stuttering Intervention," which represented the collaborative work of 17 co-authors from 15 countries. His publications include more than 60 articles, some of which have been published

in six languages, and his book, "Stuttering Intervention: A Collaborative Journey to Fluency Freedom," incorporates international perspectives that cross disciplines and cultures in its examination of ideas, practices and strategies for assessing and treating people of all ages who stutter.

David A. Daly, professor emeritus of speech-language pathology at the University of Michigan, said Shapiro's book, now in its second edition, captures the unique sensitivities and deep feelings experienced by many people who stutter. "In my opinion, Dr. Shapiro's understanding of the problem of stuttering and his thoughtful organization and presentation of the vast research and clinical information on this topic is unparalleled," said Daly.

To Shapiro, it is more than a textbook and reference work; it is a love story. "It is hard to imagine the challenges people who stutter incur on a daily basis as well as the joy that communication success brings," said Shapiro. "It is the birthright of every person to be able to use speech and language freely and to enjoy communication freedom. Success is more than fluency. It is life-altering and freeing in many ways. Helping someone visualize dreams and work toward achieving them is such a special and empowering experience."

J. Scott Yaruss, professor at the University of Pittsburgh, said Shapiro has truly carried his message throughout the world and touched countless lives. "His international accomplishments are unparalleled in our field – he is a model to us all," said Yaruss. Shapiro has helped people who stutter in places as far away as Africa, and Moussa Dao, a pharmacist in Burkina Faso and coordinator of the Federation of African Associations on Stuttering, said he and many others are forever grateful. "He has changed the life of so many persons of my country and other African countries," said Dao. "He will remain in our mind forever."

Locally, Shapiro and his colleagues provide service to clients through WCU's nationally recognized Speech and Hearing Clinic, part of the interdisciplinary clinic in the new Health and Human Sciences Building. For more information about stuttering, including treatment and self-help groups for people who stutter and their families, contact Shapiro at 828-227-3291 or [shapiro@wcu.edu](mailto:shapiro@wcu.edu). ■



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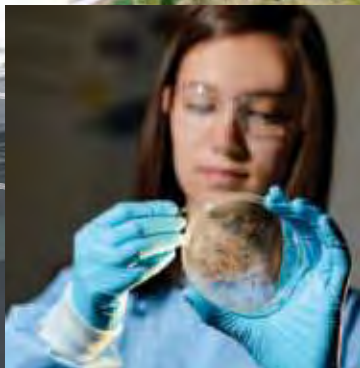
IN TWO HUMAN ANATOMY LABORATORIES, students participate in traditional, cadaver-based instruction.



IN THREE SIMULATION LABORATORIES, students practice assessment skills with lifelike manikins that mimic body functions such as breathing. Students practice CPR, dress wounds and collect vital signs such as heart rate and oxygen saturation.

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FOR MORE INFORMATION call 828.227.7271 or email [healthandhumansciences@wcu.edu](mailto:healthandhumansciences@wcu.edu)



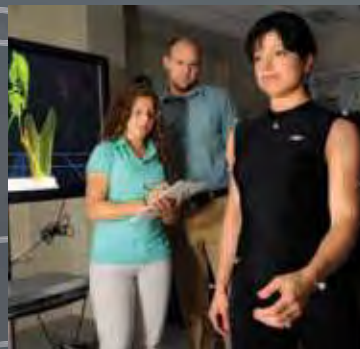
IN THE MOSQUITO INSECTARY LABORATORY – the only mosquito containment lab in Western North Carolina – faculty and students use incubators and work areas to study the basic biology and physiology of arthropods in connection with the assessment and prevention of viruses such as La Crosse encephalitis.



THE ENVIRONMENTAL HEALTH LABORATORY serves students and faculty involved in research related to environmental problems. The state-of-the-art equipment provides technical and analytical support through the analysis of chemical and microbiological sampling of air, water and soil quality.



AN INTERDISCIPLINARY CLINIC on the ground floor hosts the nationally recognized Speech and Hearing Clinic and space for specialized clinics related to physical therapy, nursing, social work, nutrition, athletic training and recreational therapy. A Balance and Fall Prevention Clinic is expected to open this spring.



THE HUMAN MOVEMENT LABORATORY is dedicated to the investigation of movement and musculoskeletal disorders. Students analyze human movement using data gathered through eight video cameras mounted on four walls and pressure-sensitive plates set into the floor. Students, professors and professionals can see a three-dimensional video reproduction of movement and develop a comprehensive analysis.



INSTRUCTIONAL SPACE includes 11 technology-rich classrooms and seminar rooms spread throughout the building and offers unique furniture configurations that promote active learning and team problem-solving activities. Live, off-campus guest speakers can meet virtually with students, and events in one room can be broadcast live to other venues or recorded for later viewing.