

Carolina

PUBLIC HEALTH

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**RESEARCH
IN PROGRESS—**
*Solutions
on the horizon
at Gillings*

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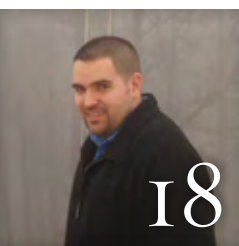
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Research connects past and future



Dr. Barbara K. Rimer

In this spring issue, we focus on research-in-progress, as befits the season. We highlight people who are developing new solutions to public health problems and acknowledge that their successes are built upon a foundation of scholarship and research that connects the past to the future. Excellence, quality, creativity and innovation are hallmarks of the people featured here. I find several lessons in their projects.

- **Taking solutions to scale.** Associate Professor Will Vizuite and colleagues saw that the best way to disseminate their miniaturized air-monitoring device was to commercialize it. BioDeptonix is a vital step in realizing their vision, a success supported by partners including Dr. Don Rose, director of UNC's Carolina KickStart Program, and Don Holzworth, the School's Executive in Residence.
- **Getting support for pilot research.** Pilot data are essential if we're to turn ideas into reality, but support for pilot projects can be hard to find. We are grateful for the gift from Dennis Gillings and Joan Gillings that funded some of the innovations described here.
- **Seeing the relevance of one field to another.** Associate Professor Suzanne Maman saw that microfinance, proven in other domains, could be used to change young men's risky behaviors. Seeing connections between fields can lead to amazing breakthroughs.
- **No public health researcher is an island.** Our research depends on teams, usually from multiple disciplines and perspectives.

- **Working with community partners.** We helped pioneer research that involves working with community partners in a collaborative, community-based manner. Nab Dasgupta's experience saving lives in Wilkes County, N.C., shows the effectiveness of such an approach.
- **Get out from the Ivory Tower.** In 2004, Professor Harvey Jeffries and colleagues constructed a smog chamber on the roof of McGavran-Greenberg Hall, connecting the chamber to a laboratory so researchers could assess the effects of smog particles on lung tissue. The project was ingenious and provided real-world data. Drs. Jason Surratt, Will Vizuite and others continue to employ the chamber in their research.
- **Question the obvious.** While I may look at the sun and see warmth, Drs. Surratt and Vizuite see chemical reactions. Sometimes, the ordinary is extraordinary.
- **Improvise.** Scientific progress rarely proceeds in straight lines. Improvisation in science, as in music, Dr. Vizuite shows, can bring us to the best discoveries.

- **In the end, though, there's an innovation** – an idea, product or program that is a better solution to a public health problem than prior solutions.

Kenan Professor Steve Zeisel could have been talking about any of these projects when he described his work at the Nutrition Research Institute. When one takes new approaches to emerging issues, he says, "the results are exciting—and the promise of the future unlimited." How true.

I hope you enjoy this issue and the special people featured here. Many more great people are connected to the Gillings School of Global Public Health, and we want you to meet them all.

Thanks for reading.

Warmly,

Barbara K. Rimer



PHOTO BY LINDA KASTLEMAN

Research in progress— Solutions on the horizon at the Gillings School

Dr. Will Vizquete's lab

As part of a public university, the Gillings School of Global Public Health is committed to making real and measurable differences in the lives of North Carolinians, who are our neighbors and generous benefactors. As our name reflects—and as the world requires—we also are deeply involved in *global* health challenges. A number of measures help us gauge our impact.

In 2012, our researchers reported their studies in about 850 peer-reviewed publications and were awarded more than \$154 million to advance public health.

Our students continue their education in public health or get jobs in their fields after graduating. We know they develop into dedicated and influential public health leaders. One such leader is this year's Harriett Hylton

Barr Distinguished Alumni Award winner, Wilbur Milhous, PhD. Milhous, professor and associate dean for research at the University of South Florida, is renowned internationally for global health infectious disease research, especially efforts to prevent and treat malaria.

Outstanding faculty members, such as Steven Zeisel, MD, PhD, Kenan Distinguished Professor of nutrition and this year's Bernard

G. Greenberg Alumni Endowment Award winner, are another indicator of impact. Under Zeisel's leadership of the UNC Nutrition Research Institute (www.uncnri.org), in Kannapolis, N.C., Carolina researchers are building on his discoveries about the nutrient choline and exploring the many ways diet and exercise can preserve and protect human health. (See page 12.)

In this issue of *Carolina Public Health*, we explore yet another way of determining the School's "impact factor." The following articles about research in progress illustrate passionate commitment and determination to find solutions to major public health problems. Even as the papers are published and the prizes awarded, academic discoveries have begun to be translated into workable solutions.

- **Suzanne Maman, PhD**, associate professor of health behavior, realized that neither quality nor quantity of education programs alone was changing the violent and/or risky

behaviors of young men in Tanzania. Drawn to the successes of health policy and management research professor Sheila Leatherman, MSW, who has integrated microcredit with health interventions to improve women's lives around the world, Maman adapted the microfinance and health model to help young men reduce partner violence and HIV risk. (See page 5.)

- **Jason Surratt, PhD**, assistant professor of environmental sciences and engineering, read an article about trees in the rainforest contributing to air pollution and wondered if the same phenomenon was contributing to the brown haze seen in cities and even hovering over the Smoky Mountains. Now, he's seeking ways to lessen the impact of chemical reactions, sparked by the sun, between human-made pollutants and nature. (See page 18.)

- **Nabarun Dasgupta**, doctoral candidate in epidemiology, makes medicines – especially prescription pain killers – safer by compiling surveillance data from poison control centers and developing a clearer picture of product misuse. That information can help guide new controls and warnings, and inevitably, save lives. (See page 14.)

Now is a great time in public health research and education. Our faculty members and students are employing the tools of the information age to solve some of the world's biggest problems. We're learning from business and other sectors about incentive behavior change and communications. Our horizon is unbounded by traditional borders, whether of countries or disciplines.

It's exhilarating to look out on a landscape of possibility and know that we have the potential to make the world safer and healthier.

—Ramona DuBose



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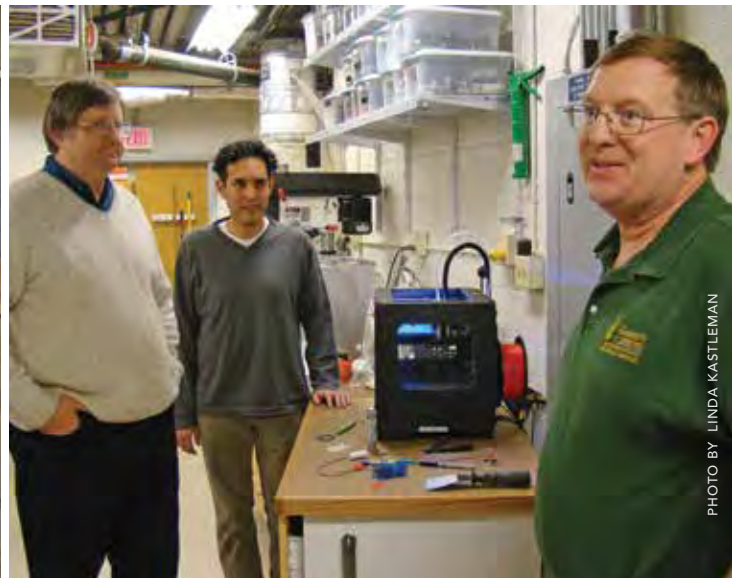


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CLOCKWISE FROM TOP LEFT: Students in Dr. Sue Hobbs' health policy and management class; Nab Dasgupta's overdose prevention kit; Drs. Ken Sexton, Will Vizuite and Glenn Walters (l-r) in the ESE Design Center; staff members on Dr. Suzanne Maman's microfinance project in Tanzania.

Suzanne Maman in Tanzania—

Small loans change health behaviors in at-risk young men

Teens in Dar es Salaam need jobs that provide direction, self-respect and a little cash.

The young men from Dar es Salaam, Tanzania, had heard it all.

They had been educated about safe sex and taught methods to prevent the dramatic spread of HIV ravaging their community. They were encouraged to reduce the ongoing physical and sexual violence against their partners. They had data on the dangers of alcohol abuse. The instruction had come both from professionals and peers—presented in a variety of different ways—and yet the negative behaviors continued. They had heard it all, but nothing made them care enough to change.

What did they want? An opportunity to make money, most of all. Training in business, so that if they got a chance to make money, they would know how to make more. But it takes money to make it, and these men were desperately poor.

So Suzanne Maman decided to give them \$100 loans.

Affecting health-related behavior by providing small business start-up loans, known as microfinancing, was not unprecedented. Maman, associate professor of health behavior at Gillings School of Global Public Health, had heard of it, and she knew that Sheila Leatherman, research professor of health policy and management, had significant expertise in the area.

“I have been working in the nascent field of integrating microfinance and health for about ten years in Asia, Africa and Latin America,” Leatherman says. “Suzanne knew what I was doing as a Gillings Visiting Professor back in 2008 and wondered whether microfinance

might be a possibility in her work with male youth groups in Tanzania.”

However, there was a catch. Most micro-financing in the service of health education had been done with women. If the men of Dar es Salaam were ignoring other health-care interventions, what made Maman think they would respond to this one?

“I sensed an opportunity,” she said. “Virtually all the young men with whom we had



spoken were hungry for access to job opportunities and any type of business training.”

So she proposed to provide exactly that to 19 men. “One hundred dollars each,” Maman says. “They would use it to create their own small businesses, and we would provide counseling on starting a small business. But part of the deal was that the loans also would be combined with health education.”

Maman initially had hoped to target men in the 18- to 24-year-old range, but quickly found that opinions and habits of men that age were so ingrained that incentives likely would not change them. Instead the focus fell on a group of 15- to 19-year-olds. A Gillings Innovation grant (see www.sph.unc.edu/accelerate) and a grant from the National Institutes of Health provided support for a pilot study. The efforts would be centered on a local “camp.”

“Young men in their early teens to mid-20s from this part of Tanzania spend their time in

‘camps,’ which are something between social clubs and gangs,” Maman says. “Most don’t attend school or have access to stable income. Camps provide the men with an identity and a place to socialize with other young men.”

In addition, during research that led to the pilot program, Maman and colleagues found that 47 percent of the young men in the targeted age range said they had two or more sex partners in the past year; 47 percent of those had one or more concurrent sexual partnerships. Twenty-one percent also presented with at least one symptom of a sexually transmitted disease in the preceding four weeks, and 41 percent said they had perpetrated physical or sexual violence against a female partner. Their attitudes and behaviors regarding sex generally were learned from other men.

The pilot program focused on four groups of five young men. Each individual was given a loan of \$100 and was responsible for paying back the money with interest at the end of the loan period.

Each received business skills training that included information about running a small business and managing money. Older men in the community who had been born into poverty – but had managed to establish successful businesses – were brought in as role models. The microfinance was combined with a peer-led HIV- and violence-prevention program. Leaders within the camps were recruited and trained to communicate with peers about behaviors that put themselves and their partners at risk for HIV and other sexually transmitted infections, and about

strategies to resolve conflict with partners that did not involve violence.

The pilot ran in 2009. What kind of businesses did the young men start? Nothing extravagant. Some bought charcoal wholesale and resold it at a profit. Others performed bicycle repair, started a video rental business, sold secondhand clothing or fried fish. All but one repaid the money. Most importantly, the young men responded to the health behavior instruction. They retained a heightened awareness of negative sexual activity and reported a drop in high-risk sexual behaviors.

Maman's study was published in 2010 in the journal *Social Science and Medicine*. (See tinyurl.com/maman-SSM-social-venues.) That work has led to a new \$2.6 million grant from the National Institute of Mental Health to study a much larger sample of men.

"This study will involve about 2,800 young men in more than 50 camps," Maman says. "It will include a baseline survey to assess behaviors, sexual activity and the frequency with which they commit physical or sexual violence against partners. We want to determine whether our combined microfinance and health leadership intervention produces a drop in incidence of sexually transmitted diseases, an increase in condom use, and a reduction of sexual and physical violence against their partners."

The study will be done in collaboration with colleagues at Muhimbili University of Allied Sciences in Dar es Salaam.

Maman says she hopes this approach will provide young men with information and skills that enable them to build successful businesses and allow them to imagine a different kind of future for themselves.

"If men can envision a different way of life," she says, "they may not engage in behaviors that put their futures at risk. Increasing men's knowledge about sexually transmitted diseases and partner violence also will benefit the community's women."

If the larger project proves successful, Maman will have established the foundation for a microfinance-health behavior intervention that can be adapted in similar at-risk communities in other countries.

—David Pesci

RESEARCHERS FEATURED IN THIS ARTICLE:

Suzanne Maman, PhD, is associate professor of health behavior.

Sheila Leatherman, MSW, is research professor of health policy and management.

OPPOSITE PAGE: Dr. Suzanne Maman in a classroom at Gillings; a project staffer (right) asks advice.
BELOW: An entrepreneur distributes his wares; a city street reflects its residents' poverty.



TANZANIA PHOTOS CONTRIBUTED BY PROJECT STAFF





The birth of BioDeptronix— *Scientific improvisation puts researchers in good company*

Will Vizuite is a huge fan of jazz. In 2009 and 2010, he was disc jockey for a weekly jazz program on WXYC, the UNC campus station, and he's still a volunteer DJ on occasion. Part of what he loves about jazz is the improvisation, the innovation. A musician may start with a riff and suddenly take it in a completely different direction. Another responds, works off the new riff on the fly, then improvises. Around the ensemble it goes, on beat, off beat, an impressive, dynamic, never predictable journey.

In some ways, jazz is similar to Vizuite's work as a scientist.

This is especially so in the last few years, during which Vizuite joined an ensemble of colleagues and became entrepreneur and co-founder of his own start-up company – a venture that came out of the not-so-thin air. In fact, it was the gritty, smoggy air.

Early in his career, Vizuite knew smog and other air pollutants caused asthma, lung cancer and other respiratory illnesses. But was the

illness related only to the number of pollution particles, he wondered, or were there times of day or particular locations that made people more vulnerable to respiratory problems?

"[Based on the EPA's models], toxicity is determined by how many toxic particles are in the air," Vizuite says. "But if you examine data showing how many people die from lung ailments per cubic meter, you see that more

people die in one area of the country than in another, even when the particulate mass per volume is identical. That means an important factor is being missed in the calculations."

That factor, Vizuite believed, was right overhead – the sun.

"You can take an air sample and expose it to a day's worth of sunlight," he explains. "The sun sparks chemical activity, and the

molecules absorb radiation. By sunset, the toxicity of that same sample has increased by five to 10 times its original levels.”

Vizuete knew this because, as a graduate student at The University of Texas at Austin, he had a chance to conduct research with Harvey Jeffries, PhD, professor emeritus of environmental sciences and engineering at the Gillings School of Global Public Health.

Jeffries built the smog chamber that sits atop the School’s McGavran-Greenberg Hall, the first of its kind. The opportunity to work with Jeffries and see first-hand the data garnered by smog chamber sampling did much to inspire Vizuete’s interest in atmospheric chemistry.

The smog chamber revolutionized analysis of exhaust pollution and allowed researchers to replicate conditions in virtually any locale in the world. It had limitations, however. It was immobile and expensive to build, and shifts in the wind or quickly changing weather situations could render data useless. Vizuete was even more troubled by the analysis that happened after the sampling was done.

“We know that the smaller the particles, the more deadly they are,” he says. “This is especially so when they get below 2.5 micrometers in diameter. But around the world, air sample analyses use a liquid suspension. When the particles are suspended, they agglomerate and form bigger particles. We weren’t analyzing the riskiest pollutants. I kept thinking, ‘We need a better way to do this.’”

Jeffries and Dr. David Leith, retired professor of environmental sciences and engineering at UNC, had the same thought back in 2002. They tried to repurpose a piece of equipment from the mid-1970s, an electrostatic precipitator, to perform smog analysis that didn’t require the liquid suspension. By the time Vizuete met them, Jeffries and Leith had adapted the precipitator, placing the refrigerator-sized unit into an incubator and connecting it via a long, sealed duct from the smog chamber on the roof down to the basement of Rosenau Hall.

The reconfigured precipitator allowed researchers not only to examine samples directly, but also to see the effects when the samples were exposed to cultured lung cells and other tissue.

“But what if we could take the whole thing to Houston, Los Angeles, London, Beijing or wherever?” Vizuete asked. “What if we could set it up in a neighborhood adjacent to a factory or a refinery that was emitting high amounts of pollutants? Or bring it inside a building where some air-based environmental hazard was suspected and do sampling right there, in real time? Our data would be so much better, and we could better establish the risks of being in these cities or near these facilities. We could institute preventive measures.”

Idea, meet improvisation.



Dr. Ken Sexton (left) and Dr. Will Vizuete describe the operation of the smog chamber on top of McGavran-Greenberg Hall.

Vizuete joined the UNC environmental sciences and engineering faculty in 2005 and soon began discussing his idea with Kenneth Sexton, PhD, now a retired research professor from the Gillings School.

By 2007, they decided to see whether they could build a portable electrostatic unit. But where should they start in creating a sophisticated scientific device from scratch?

Why, with Glenn Walters, of course.

Walters is director of the Environmental Sciences and Engineering Design Center, a one-stop fabrication shop. He and his colleagues and students create devices of all sorts, made of metal, plastic and other materials, for researchers at the Gillings School of Global Public Health and across campus (See page 10).

“My primary area of study is wastewater, and I had no direct experience in electrostatics or lung tissue sample analysis,” Walters says. “But my current portfolio is ‘whatever comes along.’ This often means I spend a lot of time discussing with researchers not only what they want but also the science behind it.”

One of the mechanical challenges was to enclose an incubator within the unit rather than the other way around. The sampling process, which involved a series of collection areas, also had to be refined. Each area was dime-sized and included a semipermeable membrane. The thought was to make it larger so as to increase the sensitivity of the readings.

“It’s always a puzzle when you start a new project, even one that has some established principles and components involved,” Walters says. “It’s almost like saying, ‘Let’s write a book.’ There are lots of ways to approach a problem. There are times when you get two or three months into a design and start wondering if you need to scrap or just recast it.”

The three men persisted, obtaining a Gillings Innovation grant in 2008 to help support their efforts. It took “eight or nine iterations,” but by 2009, they had a fully functional prototype with a self-contained incubator and the capability for more sensitivity than the repurposed electrostatic precipitator would have allowed. The device was now the size of a large suitcase. They called it “The Gillings Device,” and its completion mandated the next improvisation: entrepreneurship.

"This was something completely new for me," Vizuite says. "I'd never started a company."

He decided to take a new UNC class for entrepreneurial-minded faculty and staff members and students called "Launching the Venture." There he met Dr. Don Rose, director of Carolina Kick-Start, a program designed to help support UNC faculty members in their entrepreneurial efforts.

"[Vizuite and team] ended up being the first venture we formally supported, and they've quickly become a poster child for the program," Rose says. "They had a great product. We helped them take the steps toward becoming a viable venture, from assisting them with patents, corporate structure and other legal issues to pairing them with a great chief executive officer, Chris Price."

The fledgling company, named BioDeptronix, garnered nearly \$250,000 in support, including \$150,000 from the National Institutes of Health and \$50,000 from the National Science Foundation. The U.S. Environmental Protection Agency has registered strong interest in purchasing the first commercial rendition of the product.

"I'm very happy and grateful that there are people like Dennis Gillings and Joan Gillings who contribute to programs such as the Gillings Innovation Labs, which can support development and translation of science to beneficial products," Sexton says. "I'm also grateful that the School and UNC are supportive of such funding programs."

Rose sees the process as a natural outgrowth of research predicated upon direct response to a pressing societal need.

"This is a great example of researchers looking to solve a problem – which is what public health is all about – and then making that solution available for wider use," Rose says. "[BioDeptronix's] solution is effective. It's cheaper, it's portable, and it's 10 to 100 times more sensitive than what is available now. This is a product that could develop over time and provide many people with better data. That leads, in turn, to better solutions for some pressing public health issues."

From an idea to collaboration to focused effort, with a bit of improvising along the

Glenn Walters— Tinkering his way to an innovative academic career

Dr. Glenn Walters is at home in the ESE Design Center.



As with many budding researchers, Glenn Walters found his calling in the field. In his case, however, "the field" was not a clinical site, a remote corner of the globe or a neighborhood ruined by industrialization. For Walters, inspiration came from a junkyard.

"The junkyard wasn't far from where I grew up in Vermont," Walters says, "and I was always over there looking for old TVs, car parts and things like that. I was always taking things apart, but it drove my father nuts that I did not always get them put back together correctly."

When he was in high school, Walters befriended a local contractor who had a metal-scraping business. One of the man's clients was IBM, which had a research and development plant in nearby Essex Junction.

"I would get switches, conductivity meters, process controllers, scrap wire and switches from him. Anything I could get my hands on. I even got hold of a chip fabricator once," Walters says, with more excitement than you'd expect a chip fabricator to generate. "I used to break parts down, hook other parts up and try to figure out how everything worked."

Walters didn't have the same level of interest for his school work, however.

"I wasn't a very attentive student. In fact, I barely graduated from high school," Walters says. "I had no intention of going to college."

way, Vizuite's career took a turn he hadn't anticipated.

"I never thought in terms of starting a business or creating a deliverable product," he says. "But now we're already thinking about other uses for the device that could include partnering with other companies. We might want to increase the device's sensitivity to account for nanomaterials or develop real-time personal samplers that could be used in homes or businesses. There are a lot of directions we can go from here."

Sexton agrees.

"This instrument ultimately can be deployed and used in homes, as well as other buildings and workplaces."

In some ways, it's a lot like a good jazz riff. So many new ideas are just waiting to waft off the original one. All it takes is talented players, hard work and a good sense of improvisation when the right moments come along.

—David Pesci

RESEARCHERS FEATURED IN THIS ARTICLE:

Harvey Jeffries, PhD, is professor emeritus of environmental sciences and engineering (ESE) at the Gillings School.

David Leith, PhD, is a retired ESE research professor.

Don Rose, PhD, director of Carolina KickStart (tinyurl.com/NCtracs-Carolina-Kickstart), received his bachelor's degree in nutrition from the Gillings School.

Kenneth Sexton, PhD, is a retired research professor of ESE.

Will Vizuite, PhD, is associate professor of ESE.

Glenn Walters, PhD, is director of the ESE Design Center and an ESE research associate.

However, after a year of working odd jobs, including pumping gas during one of the coldest winters on record in Vermont, Walters saw only one way to get ahead—college.

"So I enrolled at a local junior college in the business management program, and it all just clicked," he says. "I was highly motivated, worked hard and quickly became ranked at the top of my class."

After graduation, Walters was hired as membership manager for the Vermont Chamber of Commerce. It was a great job for a young person, traveling around the state, meeting with businesspeople. Still, he wanted to do something more substantive. A battery of aptitude tests and talks with a career counselor pointed toward engineering.

Walters subsequently enrolled at the University of Vermont, earned a Bachelor of Science degree in civil engineering, with an emphasis on environmental systems. He worked for a time at an environmental consulting firm in Alaska, consulted with a Boston-area firm for several years, and then started looking at graduate schools. The search led him to UNC, where he earned his doctorate in environmental sciences and engineering at the Gillings School of Global Public Health.

He also found his way to the ESE Design Center in the basement of Rosenau Hall, where the facility's then-administrator,

Randall Goodman, recognized Walters as both an experienced engineer and skilled craftsman. Before Goodman retired in 2007, he recommended that Walters be brought on as the new director. Because of Walters' advanced degree and training, the position was enhanced to include an academic component, as well.

Walters quickly expanded the operation, developing a more capable facility that could provide services University-wide.

"We do everything from basic design and simple repairs to some very sophisticated work with metals, plastics and other composite materials," Walters says. "We'll take on almost anything."

Along with the Gillings Device (See page 8) and a wide array of other projects for ESE researchers, this "anything" has included membrane filtration cells for RTI International (www.rti.org), special testing chambers for a UNC School of Dentistry pain-control study; an inhalation toxicology for UNC's School of Medicine; and an estuary-sampling instrument for the Department of Marine Sciences.

"We've also been working on a highly sensitive swallowing monitor for premature infants that helps new mothers differentiate various sounds the infants make while feeding," he says.

Crafting these devices requires more than making them functional. Many have to be shrunk down, simplified, expanded or even made to look like something they are not.

"Often they have to be made to look as if they have no apparent value," he says. "Many of the researchers with whom we work travel to parts of the world in which sophisticated-looking things have a way of disappearing."

It's a long way from collecting scrap electronics, but Walters wouldn't have it any other way.

"A lot of what I learned back then informs what I do now," he says with a smile. "I may not have taken the typical path to an academic career, but I love where I am. Every day presents a new challenge, a new thing to build or take apart and put back together in a different way."

—David Pesci

The ESE Design Center serves more than 60 clients at the School, across campus and at other organizations, each year responding to more than 100 work orders of varying complexity.

UNC's Nutrition Research Institute

Discovering what every body is craving

PHOTO BY CHAD MITCHELL

Imagine visiting your doctor for a prescription – not for medication, but for a diet perfectly tailored to your body's needs. You would get a precise menu for feeling and looking your best – foods to ward off chronic diseases such as cancer and diabetes, to preserve memory and other brain function, even to increase fertility.

Thanks to research by scientists at the UNC Nutrition Research Institute (NRI), in Kannapolis, N.C., nutrition wellness prescriptions are becoming a reality. Drs. Brian Bennett, Carol Cheatham, Karen Corbin, Amy Johnson and Steven Zeisel study the relationship

of our unique genetic composition with the nutrients that make us function most efficiently. Research into genetics, metabolism, cognitive function – even bacterial content of our gut—provides insight into what each of us needs to be at his or her best.



Brian Bennett, PhD



Carol Cheatham, PhD



Karen Corbin, PhD



Amy Johnson, PhD

Assistant genetics professor Dr. Brian Bennett, for example, explores factors that may increase some people's heart disease risk. His theory? In some people, too much of the nutrient choline might react with common gut bacteria, forming a harmful byproduct of metabolism, or metabolite. Those individuals may want to avoid choline supplements.

In contrast, pregnant women – require abundant choline to support development of the fetal brain and nervous system. Dr. Steven Zeisel, Institute director, and Dr. Carol Cheatham are examining possible benefits of adding choline supplements to the diets of pregnant women in The Gambia to stimulate cognitive development in fetuses (See box on page 13 for details.)

Blueberries may stimulate cognitive function, too—especially in the elderly. They might help people stay sharper and more alert as they age. Through a grant from the U.S. Department of Agriculture, Cheatham is exploring possible benefits of an extract of blueberries to thinking and reasoning in the elderly.

Another NRI researcher, Dr. Karen Corbin, leads a team that discovered a pattern of genes that may cause some people to develop a fatty liver, which could progress to fibrosis and cancer. A genetic test to measure predisposition has been developed but is not ready for public use. When that tool is available, it may be an important way to help genetically predisposed people to avoid obesity so as to avoid more extensive problems.

Diet even could affect fertility – specifically, how well sperm swim. A common gene polymorphism (a “misspelled” gene) may prevent sperm from developing adenosine triphosphate (ATP), a molecule that stores energy. Without energy, sperm are unable to swim, possibly causing infertility. Dr. Amy Johnson, then a postdoctoral research associate at NRI, and her team found that adding the nutrient betaine to the diet solves the problem in mice; they are hoping to show how similar supplements could help men. First recognized

in beets, betaine helps the body metabolize homocysteine, an amino acid.

Projects such as these thrive at NRI, where experts in nutrition, memory, metabolism, genetics and other scientific specialties collaborate. On the N.C. Research Campus in Kannapolis, they connect with researchers from many other disciplines, as well. N.C. State University’s Plants for Human Health Institute is next door and is partnering with Cheatham on her blueberry research.

“You don’t often have collaborative opportunities like that,” Zeisel says.

Researchers on the Kannapolis campus have access to some of the most sophisticated equipment anywhere. NRI has one of 11 metabolic chambers in the U.S., allowing researchers to measure metabolism and energy expenditure over an extended period of time, usually 24 hours. Just down the sidewalk is the David H. Murdock Research Institute, housing advanced biotechnology

equipment, including a molecular genomics laboratory, metabolomics laboratory, a 950 MHz nuclear magnetic resonance superconducting magnet, and a broad array of microscopy technologies and other capabilities.

“Amazing things are happening here,” Zeisel says. “Our approach is different from being on a large, established campus. It’s more of a start-up environment, where researchers, often early in their careers, are taking new approaches to emerging issues. The results are exciting – and the promise of the future unlimited.”



Steve Zeisel, PhD

—Ramona DuBose

Steve Zeisel’s Gates Foundation Grant Enables pregnant women in The Gambia to deliver healthier babies

Would giving choline supplements to pregnant women in The Gambia improve fetal brain development and future cognitive functioning? Dr. Steve Zeisel’s proposal to discover the potential has made him and the UNC Nutrition Research Institute a Grant Challenges Exploration winner. The initiative is funded by The Bill & Melinda Gates Foundation to explore ideas that “break the

mold” in solving global health and development challenges.

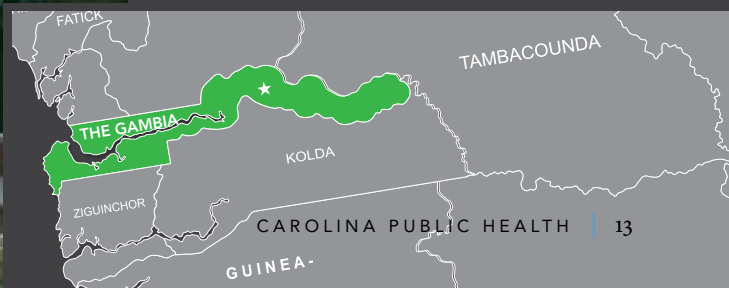
Choline is critical to fetal brain development. Women in developing countries like The Gambia eat one-half to one-third of the recommended amount of choline, and these areas also report suboptimal fetal and child growth. Could providing choline supplements to pregnant women improve their babies’ lives?

“If we show positive results, the program could be expanded throughout sub-Saharan Africa, Jamaica and other low-income countries where diets do not deliver adequate choline. We’re hoping to improve how children perform in school and enhance their lives,” Zeisel says.

In The Gambia, a 4,007-square-mile West African country that knifes through Senegal, 106 of every 1,000 children die before the age of 5 (U.N., 2010).



CONTRIBUTED PHOTO





Nab Dasgupta— *Saving lives while giving back to North Carolina*

PHOTO BY LINDA KASTLEMAN

Nab Dasgupta (right) shows his overdose prevention kit to adviser Dr. Steve Marshall.

Project Lazarus may be a work in progress, but all the progress has been in the right direction. The organization, which aims to educate about and prevent prescription drug overdose, has developed in less than five years from an effort in one rural North Carolina county to a program that now influences overdose prevention efforts in every county in the state.

On the surface, the line of success seems fairly straight; in fact, it was anything *but*. It might not have happened at all except for a series of serendipitous events – sage admonishment from a mentor at a major pharmaceutical company, the chance finding of a roommate on Craigslist, a meeting with a determined Wilkes County chaplain. Partnering with

the county medical examiner, a variety of law enforcement officers and first responders was also pivotal. So were endorsements from the North Carolina Medical Board and The White House.

“Actually it all started with bioterrorism,” says Nabarun “Nab” Dasgupta, an epidemiology doctoral candidate at the Gillings School

of Global Health at the University of North Carolina at Chapel Hill.

That was back in 2002, when ample amounts of federal money suddenly were being dedicated to fighting terrorism. Dasgupta was searching for a summer internship while at Yale University for a master’s degree in public health. Government agents wondered if he’d be interested in joining a team that would prepare for a bioterrorist attack – in Wyoming.

“To be honest, I didn’t think Wyoming was a real target for bioterrorism,” he says. “So I started to look for a place where I could make a more immediate impact.”

Dasgupta was interested particularly in how information from informal sources could be used in conjunction with traditional public health surveillance to develop more robust drug safety treatments and solutions. Pharmaceutical company Purdue Pharma presented him with an intriguing opportunity.

“[Purdue] had learned that their drug OxyContin increasingly was being abused, and they wanted to establish a team that would generate strategies and solutions to address this,” Dasgupta says. “This seemed more like what I was looking for.”

After completing his master’s thesis research – interviewing drug users and dealers in his home state of Maine as part of a Yale research study – he was hired by Purdue Pharma to lead their epidemiology efforts. The work was fascinating. Dasgupta became immersed in studying the effects of OxyContin and other opioid drugs. The group aspired

went to great private schools, but attending a public university involves something different. The people of North Carolina are giving up resources and opportunities just to educate you. Your tuition does not repay that debt. It is your responsibility to find ways to give back to that state.’ To be honest, I never thought of my education in this way, but I really took it to heart, and when I got to Chapel Hill, I was determined to do just that.”

However, before starting the doctoral program, Dasgupta needed a place to live and a roommate in Chapel Hill – which meant a search on Craigslist.

Also looking for a roommate on Craigslist was Rachel Fesperman, an MD/MPH student at UNC. After a brief phone call, she and Dasgupta decided to share a house together. It wasn’t long before Fesperman, who grew up in Wilkesboro, N.C., invited Dasgupta to visit her hometown, meet her family and go to MerleFest, an annual music festival in Wilkes County founded by famed songwriter Doc Watson. Dasgupta was game.

“I wasn’t from around here, and this seemed like a great opportunity to see more of North Carolina and its culture,” Dasgupta says. “Being an epidemiologist, I immediately went



Overdoses involving prescription painkillers are at epidemic levels and now kill more Americans than heroin and cocaine combined. The great majority [perhaps 70 percent or more] are unintentional deaths. States, health insurers, health care providers and individuals have critical roles to play in the national effort to stop this epidemic of overdoses while we protect patients who need prescriptions to control pain.

—Thomas Frieden, MD, MPH
Director, U.S. Centers for Disease
Control and Prevention (CDC)

READ MORE AT
tinyurl.com/cdc-on-overdoses.

to provide improved physician and patient training and information, to combat addiction and remediate overdoses when they did occur. Dasgupta also learned about an antidote that was highly effective in overdose emergencies.

“If administered in time, naloxone [the antidote] reverses the effects of most opioid overdoses,” he says. “It is also relatively safe. For instance, if an overdose is suspected but in reality hasn’t happened, administering naloxone won’t harm the patient.”

The group worked hard for almost four years on the problem. However, soon after the drug went off patent and received generic status, the company decided to disband the group. Looking for that next step in his career, Dasgupta began applying to doctoral programs. When he was accepted at UNC, a senior member of his group, Dr. Curtis Wright, took him aside.

“Dr. Wright had spent much of his career in the Navy and the Food and Drug Administration,” Dasgupta says. “He told me, ‘Nab, you



A community coalition of physicians, clinic managers, epidemiologists, members of the faith community and others meet at the Wilkes County (N.C.) health department to discuss Project Lazarus.

online to see what kind of public health data I could find out about Wilkesboro. What I learned pretty quickly was that Wilkes County had a drug overdose death rate of nearly 47 deaths per 100,000 people. That was extremely high.”

It was actually the highest rate in the state. Dasgupta met Rachel’s father, Dr. Joe Fesperman, a local physician, and asked if the data on overdoses were accurate. Dr. Fesperman confirmed the figures and said that most of the overdoses were linked to prescription drugs.

“‘Unintentional injury and poisoning’ is the number-one source of death in the U.S. for people under 45 years of age, and overdose is the biggest source of death within that very broad group,” says Steve Marshall, PhD, professor of epidemiology at the Gillings School

Substance Abuse Task Force and hospice to try to reverse the trend.

Fresh off an internship through which he wrote opioid addiction treatment guidelines at the World Health Organization, Dasgupta met with Brason and convinced the chaplain this would take a much broader approach. They called their effort “Project Lazarus” and began expanding, quickly joining forces with the Northwest Community Care Network (the local Medicaid authority). They met with Susan Albert, MD, the Wilkes County medical director, as well as the county sheriff, representatives from other first responders and local social workers.

“My previous experience really helped inform the process,” Dasgupta says. “I knew we had to get buy-in from all these groups

and prevent overdose. It was a great solution because it gave everyone in the group ownership of the material. Every page had meaning for them,” Dasgupta says.

The group members also decided to develop their own emergency overdose tool kit, complete with naloxone and directions for treatment and resuscitation. The kit would be accompanied by comprehensive training on how to spot overdose symptoms – they weren’t always apparent – and how to respond and administer naloxone.

“We wanted to give these kits to all first responders and any patients who thought they may have need of one. However, the kits required a doctor’s prescription, and the local physicians were hesitant about our efforts.”

Dasgupta and his colleagues decided to approach the North Carolina Medical Board directly and ask for an official endorsement of their new strategy, something that was widely considered a long shot.

“We were a very new, small community group,” Dasgupta remembers. “I was confident in our methods and our data, but we knew this wasn’t going to be easy. They really grilled us, too. But by the end of our presentation we had completely won them over.”

As a result, the medical board issued a statement of support that read, in part:

The prevention of drug overdoses is consistent with the Board’s statutory mission to protect the people of North Carolina. The Board therefore encourages its licensees to cooperate with programs like Project Lazarus in their efforts to make naloxone available to persons at risk of suffering opioid drug overdose.

After that, Project Lazarus received support from local physicians. Grants from public health and drug policy foundations allowed Project Lazarus to issue a free overdose kit to anyone in Wilkes County.

“There was no procedure for treating overdose with naloxone prior to Project Lazarus,” says medical director Albert, “except as it occurred in the ambulance or emergency department. We now have naloxone in the homes of people who are determined to be at increased risk of overdose.”

Within two years, the overdose death rate in Wilkes County dropped from 46.6 per



Nab Dasgupta (left) assembles overdose prevention kits in Wilkes County, N.C.

and director of the UNC Injury Prevention Research Center. “Prescribing of opiate-based medicines has skyrocketed, and with it, the number of deaths from overdose. Some of this is chronic abuse, such as people who take pills to get high and take too much. But a lot of it is people with chronic pain who become addicted to painkillers, or even just kids who experiment with other people’s medicines when no one is watching.”

When Dasgupta asked if there were any efforts underway to stem the problem, Dr. Fesperman said that a local hospice chaplain, Fred Brason, had been working with a

and the medical community, and I knew we had to find the reasons current efforts were falling short.”

Dr. Albert says the project was a medical intervention from the beginning. “Nab introduced Project Lazarus, and it really expanded our focus on the community.”

It quickly became clear that most of the participants who try to identify and treat these drug overdoses found the available literature on overdose prevention and treatment too clinical and generic.

“So we worked with them to create their own guide on how to manage chronic pain

100,000 (2009) to 29.0 per 100,000 (2011). Project Lazarus also worked with representatives at Fort Bragg, N.C., to set up a similar project, called Operation OpioidSafe. The success of Project Lazarus has drawn the interest of community health organizations and educators throughout the state.

“Community Care of North Carolina has picked up our program. The blueprint has gone to the public health officials in every county in the state,” Dasgupta says. “While each county presents unique challenges, the process can be adapted to meet their needs.”

The staff of Project Lazarus has helped set up similar programs in California, Maine, Ohio, Oklahoma and New Mexico. Last August, The White House called, asking if Gil Kerlikowske, director of the Office of National Drug Control Policy (also known as the Obama administration’s “drug czar”), could visit Project Lazarus.

During his trip to Wilkes County, Kerlikowske told a packed room, “Project Lazarus is an exceptional organization – not only because it saves lives in Wilkes County, but also because it sets a pioneering example in community-based public health for the rest of the country.”

“There is a new wave of epidemiology,” says Marshall, who is also chair of Dasgupta’s dissertation committee. “I call it ‘intervention epidemiology’ – in which the epidemiologist is not someone who simply quantifies risk factors and then moves onto the next disease, but



PHOTO BY LINDA KASTLEMAN

Dasgupta presents the Project Lazarus “Naloxone Rescue Kit,” which he hopes will save lives.

rather is someone who is actively engaged with developing and testing innovative solutions to the health problems of our age. This new scholar has broad skills. She can talk health behavior theory and interrupted time series analysis in the same sentence, and in language that anyone can understand. He doesn’t just study health problems; he studies solutions. In fact, the scholar is *part* of the solution. Nab personifies the type of epidemiologist that is desperately needed in the 21st century.”

Dasgupta is slated to defend his dissertation in summer 2013. Once he earns the doctorate, he’d like to pursue other interests

in epidemiology, but he says he will remain involved in Project Lazarus. As for whether he has honored Dr. Curtis Wright’s plea to give back to the people of North Carolina, Dasgupta is philosophical.

“I think Dr. Wright’s words helped me to see the history and sacrifice behind UNC as an institution, that so many folks over generations in North Carolina have put their taxes and physical selves into making this a great school, of which I am the beneficiary,” Dasgupta says. “The best I can do is use what I have learned here to help repay that debt to them and their descendants.”

—David Pesci



More information


CAN BE FOUND AT
{ www.projectlazarus.org }

A 20-minute video describes the work of the Project Lazarus team. (See <http://tinyurl.com/lazarus-video>.)



NOTE: On April 9, the Good Samaritan and Naloxone bill (SB20) was signed into law in North Carolina. The public health bill to prevent overdose deaths, which passed with nearly unanimous support, cited Project Lazarus as a model. Read more at projectlazarusnc.tumblr.com.

In the Christian Bible, St. Lazarus was resurrected by Jesus Christ after having been dead for four days. The name Lazarus means “God is my help.”

A photograph of a man with short dark hair and a beard, wearing a dark jacket over a blue shirt and jeans, standing in a forest. He is looking towards the camera with a slight smile. The background is a dense forest with tall trees and green foliage.

Jason Surratt—

Exploring the dark side of the forest

CONTRIBUTED PHOTO

Trees are likely responsible for the misty haze that gave name to the Smoky Mountains—and for much of the smog that hangs over cities. Wait! Aren't trees the world's best air fresheners, producers of oxygen that make our atmosphere healthier? Yes and no.

The fragrance of evergreens and less-noticeable odors from hardwoods stem from hydrocarbons called terpenes, which are emitted by all trees. These natural chemicals mix with nitrogen oxide and sulfur dioxide, pollutants from automobile exhausts and coal-burning power plants. Sunlight combines with the mixture to cause a chemical reaction in the atmosphere, producing fine particulates that may reduce visibility in many national parks and – more significantly – may lead to or

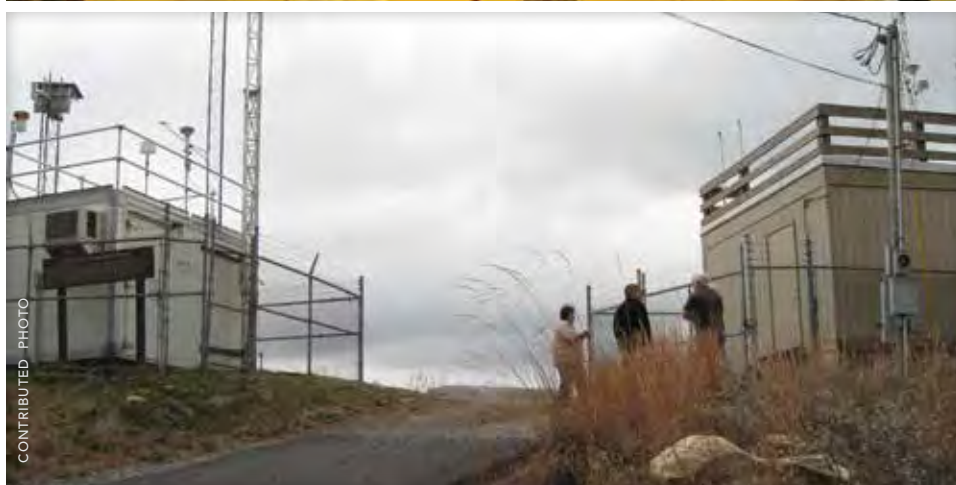
worsen cardiopulmonary disease, asthma and other serious health problems.

“Man-made pollutants perturb the natural chemistry of our atmosphere,” Dr. Jason Surratt says. “Sunlight sparks a reaction that creates the brown smog that hangs over cities and is likely more harmful than original pollutants on their own.”

Surratt and colleagues conduct atmospheric research at Look Rock Mountain, near the city of Knoxville and several Tennessee Valley

Authority coal-fired power plants. The study is supported by the Electric Power Research Institute and the Environmental Protection Agency (EPA). Surratt received an early-career grant from EPA, as well as the Walter A. Rosenblith New Investigator Award from the Health Effects Institute, to fund further research on the impact of human-caused pollutants and isoprene, the most abundantly emitted terpene.

Surratt examines these pollutants in air chambers at UNC-Chapel Hill – one on the roof of McGavran-Greenberg Hall and the other in Pittsboro, N.C., south of Chapel Hill. The team also examines them in Surratt's Michael Hooker Research Center laboratory. Fine particulates generated from the chambers are examined using a device developed by Dr. William Vizuite. The device exposes living lung tissue to pollutants to determine potential human health effects (See page 8.)



Dr. Jason Surratt is assisted in his UNC laboratory by Dr. Ying-Hsuan Lin, ESE postdoctoral fellow (top), and ESE doctoral student Sri Hapsari Budisulistiorini (bottom). His team also conducts research at Look Rock Mountain, near Knoxville, Tenn. (center).

In the past, it was not possible to test individual components involved in the formation of aerosols. Subsequent interactions with human populations have not been possible because the relevant compounds were not available. Collaboration between Surratt's laboratory, which specializes in atmospheric chemistry, and the laboratory of Surratt's mentor, Dr. Avram Gold, who has expertise in synthesis, could yield important insights into both the atmospheric reactions leading to aerosol formation and the human health effects resulting from exposure to aerosol. Ultimately, the research could lead to development of rational strategies to control atmospheric aerosol formation and minimize adverse health effects.

Surratt compares the importance of making this link between natural and human-made particles in the air with the discovery of the threat to the ozone layer from chlorofluorocarbons (CFCs) used as coolants in refrigerators and air conditioners and as aerosols in many household products.

"In the 1980s, there was public outcry about how CFCs were destroying the ozone layer that protects us from harmful effects of the sun," Surratt said. "The result was a ban on CFCs."

Surratt's research may inspire similar widespread control measures to reduce health threats related to the compounding of tree emissions, human-made pollutants and sunshine. "However," – he quickly points out, laughing – "banning trees won't be the solution!"

—Ramona DuBose

RESEARCHERS FEATURED IN THIS ARTICLE:

Avram Gold, PhD, is professor of environmental sciences and engineering (ESE).

Jason Surratt, PhD, is assistant professor of ESE.

William Vizuite, PhD, is associate professor of ESE.



PHOTO BY LINDA KASTLEMAN

Embracing technology to teach millennials

Dr. Jim Porto (standing, left) visits a class taught by Dr. Sue Hobbs (right).

Most students in Dr. John Paul's large lecture class have smartphones, and they all have laptops. To boost student engagement, Paul puts the ubiquity of the devices to good advantage. He intersperses lectures with brief polls, and his students respond with text messages that lead to lively discussions.

Dr. James Porto Jr. has developed a sophisticated simulated state entity, complete with tornados, chemical spills and health systems facing financial crises. His simulation game, called FranklinStateSim, lets students in the executive master's program make team decisions and instantly see the results.

New pedagogies such as "flipping the classroom" facilitate engagement, she says. "Instead of the teacher's providing all the information, the teacher becomes the facilitator of information. Students research the topic and exchange information they acquire online and from other sources. Then the teacher can facilitate discussion of what they've learned."

"Moving toward more collaborative teaching and learning changes the demands on physical classroom space," notes Rob Kark, management engineer. In response, the School's learning spaces are being updated.

Now in progress are two large projects – the establishment of a large multimedia classroom and the conversion of existing space into a collaborative classroom with docking stations, multimedia screens and Web-conferencing stations. On the drawing board is renovation of an open study room to promote collaboration. Two additional classrooms already have

It's important to meet students where they are.
—John Paul, PhD

Dr. Suzanne Hobbs brings together a cohort of far-flung doctoral students in health leadership for weekly online classes. Although they live all over the U.S., in Europe, Africa and even Papua New Guinea, her students can glimpse each other's lives and interact face to face – and they say they feel more connected than they ever did in a conventional classroom.

In these and other ways, members of the School's faculty have adopted new technologies in the classroom.

"The old ways of teaching and learning may not apply to the new type of student we're seeing," says Dr. Anna Maria Siega-Riz, associate dean for academic affairs. "They have grown up with technology that allows them to have information at their fingertips."

been equipped with whiteboards, projectors and moveable chairs.

School leaders hope eventually to provide cutting-edge technology in additional spaces, including the Fred Mayes Center, the Design Center (see page 10) and Rosenau Auditorium. Small “hotspots” around the School, such as the one already installed in Michael Hooker Research Center’s Armfield Atrium, will facilitate student teamwork. An updated conference room will enable the dean and others to videoconference with peers around the world, solving public health problems in real time.

Creating technology-rich spaces is “definitely not cheap,” Kark observes. “The technology is as costly as the construction of the space itself.”

Still, the investment is no longer optional. Students must be provided with the technologies they will be expected to master in their professional lives.

Siega-Riz says technology-equipped spaces can facilitate ways of teaching that have advantages over traditional methods. “We have technology that allows students to review the material repeatedly until they master it. We’ve encouraged flipping the classroom because we believe if we make students responsible for their own education, it’s more effective.”

When students view taped lectures before they come to class, for example, class time can be used for teamwork, group discussion and

In Dr. Hobbs’ class, students work in groups to master information quickly. Left to right are Madison Lackey, Caroline Crews and Michael Edwards.

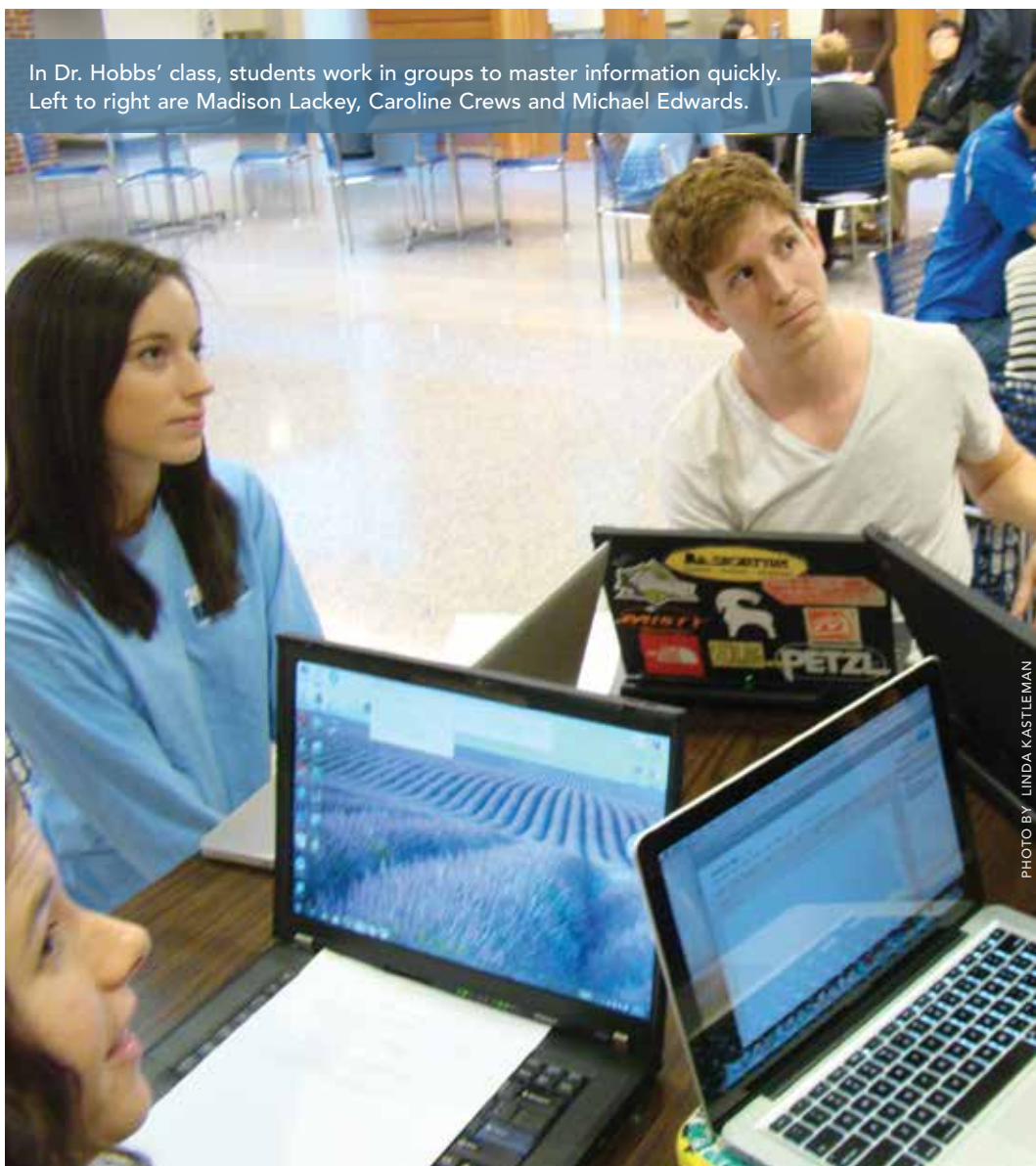


PHOTO BY LINDA KASTLEMAN

Dr. John Paul uses new technologies to boost student engagement.



CONTRIBUTED PHOTO

individual presentations. “That allows you to focus more on critical thinking skills and on the essence of the content,” Siega-Riz says.

Using the simulation Porto has developed allows students to practice high-stakes decision making with no risk to a real community.

“I’m an old helicopter pilot,” Porto notes. “We practiced flying by using simulators, which can really reduce the time to expertise.”

Other technological and pedagogical advances make it possible to extend the School’s reach through established online programs. Currently, the online program Hobbs directs helps build public health leadership capacity in the countries that need it most, since participants earn a doctorate while

continuing to work full-time in their communities. Hobbs also is working with UNC's Center for Faculty Excellence to develop the University's first hybrid course, one that will coordinate online and residential sections so that students can move between the two.

Soon, the first massive open online courses (MOOCs) will be offered at the School. Paul, who serves on the provost's task force on MOOCs, says the new approach certainly will affect how residential classes are run. "Studying the techniques and approaches they use definitely will affect how I teach. I find it very exciting."

All these developments depend on constantly updated infrastructure – and on constant innovation by faculty members.

"It's important," Paul says, "to meet students where they are."

—Kathleen Kearns

Room 2308 McGavran-Greenberg Hall is undergoing changes to make it a more technologically versatile and learning-friendly classroom. Seating and wiring will allow students to work in different configurations, and a glass wall will introduce natural light. **RIGHT:** Rob Kark, Dr. John Paul and Dr. Jim Porto (l-r) discuss the changes. **BELOW:** A drawing of the empty room as it will appear from the hallway.

RESEARCHERS FEATURED IN THIS ARTICLE:

Suzanne Hobbs, DrPH, is clinical associate professor of nutrition and of health policy and management.

John Paul, PhD, is clinical associate professor of health policy and management.

James Porto, PhD, is clinical assistant professor of health policy and management.

Anna Maria Siega-Riz, PhD, is professor of epidemiology and of nutrition and is the School's associate dean for academic affairs.

The old ways of teaching and learning may not apply to the new type of student we're seeing.

—Dr. Anna Maria Siega-Riz



PHOTO BY LINDA KASTLEMAN



Alumnus viewpoint

North Carolina's decision about Medicaid expansion affects everyone

Some political decisions affect a small group; others impact us all. On February 5, North Carolina senators passed Senate Bill 4; the equivalent bill in the House—16—was passed February 26. Both mandate that the state will opt out of Medicaid expansion. This is the case, despite the fact that the Affordable Care Act pays for Medicaid expansion for the next three years, after which the federal government will never pay less than 90 percent of the state's costs.

Regional Economic Models Inc., an economic modeling firm, highlighted benefits of Medicaid expansion for our state's struggling economy. The expansion could result in 23,000 more jobs, \$1.4 billion higher gross domestic product (GDP) and a rise in annual disposable personal income to \$1 billion.

Without Medicaid expansion, North Carolinians will bear the burden of paying for the

sick seeking health care in emergency rooms and safety-net clinics. My organization, Triad Adult and Pediatric Medicine, is among the groups that will bear that burden.

We are medical home to 54,000 adults and children, all with annual incomes at or below 200 percent of the federal poverty level. Seventy percent of those adults and five percent of the children are uninsured. In 2012, we

In February, Dr. Brian Ellerby celebrated the opening of a pediatric pharmacy at his organization's practice. The service helps families better understand and comply with their children's medical prescriptions.

provided 90,000 patient visits, of which 30,814 were for the uninsured.

Our cost per visit is \$176, as compared to a non-urgent emergency room visit costing an average \$800 in our area. If we were not here, the uninsured would seek care at emergency rooms. This could cost the community \$24,651,200 – a total greater than Triad Adult and Pediatric Medicine's entire annual budget of \$16.2 million. It is estimated that \$500 of employer-sponsored health insurance premiums are attributable to cost-shifting, i.e., hospitals moving costs of providing care to the uninsured onto the insured.

It is important to expand Medicaid, while at the same time holding accountable providers, insurers and recipients of care. Only then will we achieve both clinical and financial outcomes that will sustain our health-care system.

—Brian Ellerby



Brian Ellerby, MSPH, a 1988 health policy and management alumnus (then health policy and administration), is chief executive officer of Triad Adult and Pediatric Medicine in Greensboro, N.C., an organization with a mission to provide family health care that is comprehensive, holistic and delivered with a spirit of compassion and respect.

UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH SCHOOL NEWS

OCTOBER 2012 — APRIL 2013

Read more at www.sph.unc.edu/news.

Selected Publications

John J.B. Anderson, PhD, nutrition professor emeritus, led a study assessing benefits of calcium on bone mineral density and determined that older adults would be better served by taking in calcium from foods. The study was published online Oct. 15, 2012, in *The Journal of Clinical Endocrinology & Metabolism*.

Ralph Baric, PhD, epidemiology professor, and **Mark Denison, MD**, professor of microbiology and immunology at Vanderbilt University School of Medicine, collaborated on a study that may show how to cripple the ability of the SARS coronavirus to cause disease by using the virus' rapid mutation abilities against itself. Epidemiology postdoctoral fellow **Rachel Graham, PhD**, led the study, published Nov. 12, 2012, in *Nature Medicine*.

Margaret Bentley, PhD, Carla Smith Chamblee Distinguished Professor of nutrition and associate dean for global health, has studied the interplay of maternal and infant risk factors that lead to TV watching in infants. The research, which appears in the Jan. 7 issue of *Pediatrics*, found that mothers who were obese, who watched a lot of TV and whose children were fussy were most likely to put their infants in front of the TV.

Jianwen Cai, PhD, biostatistics professor, found that heart disease risk factors are widespread among Hispanic/Latino adults in the U.S. The largest ever of its kind, Cai's study was published in the Nov. 7, 2012, issue of the *Journal of the American Medical Association*. It found that 80 percent of Hispanic/Latino

men and 71 percent of women had at least one cardiovascular disease risk factor.

A study by **Rose Cory, PhD**, suggests that arctic warming is an even bigger global problem than previously thought. Cory measured the effect of sunlight on the carbon long locked away in the frozen soils. Conversion of the organic carbon to carbon dioxide gas has potential to double the amount of greenhouse gas in the earth's atmosphere. Cory's results were reported online Feb. 11 in the *Proceedings of the National Academy of Sciences*.

A study led by **Susan Ennett, PhD**, professor of health behavior, found that 22 percent of surveyed mothers believed that children who taste alcohol at home are better at resisting alcohol-related peer pressure. The findings, published in *JAMA Pediatrics* in November 2012, are troubling, given that early exposure to alcohol is a primary risk factor for problem drinking during adolescence.

Myles Faith, PhD, associate professor of nutrition, co-authored an October 2012 study published in the *Journal of Consumer Research* revealing a strong association between masculinity and eating meat. The findings suggest that what men choose to consume may be shaped by metaphors and beliefs about what certain foods might say about them. Faith also published a study March 20 in *Obesity* finding genetic causes for children's picky eating.

Alumna **Abigail Haydon, PhD**, and faculty members **Amy Herring, ScD**, and **Carolyn**



Dr. John Anderson



Dr. Ralph Baric



Dr. Margaret Bentley



Dr. Jianwen Cai



Dr. Susan Ennett



Dr. Myles Faith



Dr. Amy Herring



Dr. Carolyn Halpern



Dr. M. Herman-Giddens



Zachary Kerr



Dr. Sandra Martin



Dr. Beth Mayer-Davis



Dr. Andy Olshan



Dr. Barry Popkin



Dr. Ivan Rusyn



Dr. C. Samuel-Hodge

Halpern, PhD, co-authored a study examining a range of sexual behaviors in adolescence and how those behaviors relate to reproductive health and sexual risk-taking later. The study was published online Oct. 3, 2012, in *Perspectives on Sexual and Reproductive Health*.

Marcia Herman-Giddens, DrPH, adjunct professor of maternal and child health, found that boys in the U.S. appear to be entering puberty much earlier than in the past, a trend that may have important medical, psychosocial, public health and environmental implications. Her study was published online Oct. 20, 2012 in *Pediatrics*.

Zachary Kerr, epidemiology doctoral student, analyzed causes of exertional heat illness and death among high school athletes in a study published in the November issue of the *American Journal of Preventive Medicine*. **Stephen Marshall, PhD**, epidemiology professor, was co-author.

Health behavior doctoral student **Joseph G.L. Lee, MPH**, co-authored a September 2012 *American Journal of Public Health* article showing that an Institute of Medicine report on lesbian, gay, bisexual and transgender (LGBT) health underestimates evidence of tobacco use by the LGBT population, compared to heterosexuals. Such underreporting is problematic because IOM's findings are used by federal agencies and funding entities to set public health policy and priorities.

Amy Lowman, MPH, research associate, and **Steve Wing, PhD**, associate professor of epidemiology, found that solids from sewage treatment (sludge) used as fertilizer on farm lands cause health problems among people who live near the affected areas. Their study appeared in the March 11 *Environmental Health Perspectives*.

Sandra Martin, PhD, professor of maternal and child health and associate dean for research, and **Angela Parcesepe**, maternal and child health doctoral candidate, are authors of a chapter in the new book *Violence Against Women and Mental Health*, edited by A. Riecher-Rossler and N. Sartorius and published Feb. 7.

Elizabeth Mayer-Davis, PhD, nutrition professor, contributed research to a study finding that the number of American youths with Type 2 diabetes could increase by almost 50 percent by mid-century. The study, led by the U.S. Centers for Disease Control and Prevention and the National Institutes of Health, was published in the December 2012 issue of *Diabetes Care*.

Andy Olshan, PhD, professor and chair of epidemiology, and **Kimon Divaris, PhD**, epidemiology alumnus and research assistant

professor of dentistry at UNC, conducted research showing that genes responsible for nervous system development and immune function also play a role in chronic periodontitis, a gum disease. Findings were published March 4 in *Human Molecular Genetics*. **Olshan** also co-authored a study in the March 7 *Genetics in Medicine* asserting that progress in DNA sequencing offers opportunity to identify preventable rare diseases through screening.

Drs. Barry Popkin, Meghan Slining and Shu Wen Ng, nutrition faculty members, led an independent evaluation of the Healthy Weight Commitment Foundation's pledge to reduce one trillion calories from the marketplace by 2012 and 1.5 trillion by 2015. Findings were published Jan. 17 in *The American Journal of Preventive Medicine*. **Popkin**, W.R. Kenan Distinguished Professor of nutrition, also worked with **Carmen Piernas**, nutrition doctoral student, and colleagues to find that while sugary, higher-calorie beverages are still enjoyed too much by American consumers, low-calorie drinks are closing the gap in households with and without children. Published March 25 in *Pediatric Obesity*, the study spanned 10 years and found a trend toward increased intake of lower-calorie beverages and decreased intake of higher-calorie sweet drinks.

Ivan Rusyn, MD, PhD, environmental sciences and engineering professor, was one of 18 international scientists who helped reclassify trichloroethylene (TCE), a chemical formerly used as a degreaser and in dry cleaning, from a cancer "hazard" to "carcinogenic to humans." The scientists' assessments were published as volume 106 of the *IARC Monographs*. A summary of the evaluations was published Oct. 26, 2012, in *Lancet Oncology*.

Carmen Samuel-Hodge, PhD, research assistant professor of nutrition, examined interactions between African-American adults living with diabetes and their non-diabetic family members. The article, published in the March issue of the *Journal of General Internal Medicine*, found unresolved family conflict, role confusion and concerns about not knowing



Dr. Rebecca Fry



Dr. Vijaya Hogan



Dr. Philip May



Dr. Anthony Viera

what to say to family members living with diabetes. **Samuel-Hodge** and colleagues also implemented a proven weight-loss program in the “real world,” through select N.C. health departments. Findings, published Feb. 14 in the journal *Obesity*, demonstrated that local staff members trained in an evidence-based program can facilitate clinically meaningful weight loss by program participants.

Anthony Viera, MD, has determined that people take nutrition information most seriously when it is presented in terms of how long it would take to burn the calories in any given food through exercising. His study was published March 1 in the journal *Appetite*.

Daisy Zamora, PhD, postdoctoral researcher in the UNC medical school and 2010 alumna

of the Gillings School, analyzed data missing from a prior study and cast doubt on current dietary advice about vegetable fats and heart health. The clinical trial, published online Feb. 5 in the *British Journal of Medicine*, shows that replacing saturated animal fats with a common omega-6 polyunsaturated vegetable fat is linked to an increased risk of death among patients with heart disease.

The Active Living by Design grant program, led by Sarah Strunk, MHA, and funded from 2003 to 2009 by the Robert Wood Johnson Foundation, is featured in the November 2012 supplement of the *American Journal of Preventive Medicine*.

Selected Grants

Amy Herring, ScD, Rebecca Fry, PhD, and Marilie Gammon, PhD, leaders in the School’s Biostatistics for Research in Environmental Health grant, were delighted to learn that the research and training program was renewed for another five-year period by The National Institute of Environmental Health Sciences. The grant has been awarded continuously to the Gillings School since 1971, when it was won by Bernard Greenberg, PhD, then-chair of the biostatistics department, making it the longest continuing training program at the School. The grant supports 23 doctoral and five postdoctoral scholars in biostatistics, epidemiology, and environmental sciences and engineering.

Vijaya K. Hogan, DrPH, clinical associate professor of maternal and child health, leads First Foods, W.K. Kellogg Foundation’s national breastfeeding initiative. Hogan received a \$900,000 grant to give children a healthy start by ensuring more babies receive breast milk as their first food experience.

Cheryll Lesneski, DrPH, and Rohit Ramaswamy, PhD, faculty members in the Public Health Leadership Program, were awarded

a \$99,917 grant from Pfizer to design and execute smoking cessation programs at three inpatient Alcohol and Drug Treatment Centers in North Carolina. The project is timely, given that the state is establishing regulations for mental health facilities to become smoke-free campuses in 2013.

Philip May, PhD, research professor of nutrition and Nutrition Research Institute scientist, received a \$5.3 million grant from the National Institute on Alcohol Abuse and Alcoholism, one of the National Institutes of Health, to conduct research on fetal alcohol spectrum disorders in South Africa.

Jacqueline MacDonald Gibson, PhD, assistant professor of environmental sciences and engineering, has received one of this year’s four Health Systems and Services Research Mentored Research Scientist Development Awards, presented by the Robert Wood Johnson Foundation (RWJF) to emerging researchers who examine the effects of public health services on population health. MacDonald Gibson will focus upon the historically African-American Rogers Road/Eubanks neighborhood in Chapel Hill, N.C.

WE’RE TURNING

75

in June 2015!



Watch for events in the coming year that celebrate the Gillings School.

Other News



Jo Anne Earp, ScD (right), former chair and professor of the health behavior department, was honored with a day-long symposium and retirement dinner on April 12. Earp, who joined the Gillings School faculty in 1974, has been friend, mentor and educator for multiple generations of public health leaders. Earp is pictured here with current HB chair, Dr. Leslie Lytle. Read more about “Earpfest” at www.sph.unc.edu/news.

In memoriam: Brian Montgomery Sumner, MD, Master of Public Health student in the Public Health Leadership Program (PHLP), died in an accident in Costa Rica on Jan. 4. He was 51.

The 2012 Water and Health Conference: Science, Policy and Innovation explored critical global issues in water and health during the third annual event, held Oct. 29-Nov. 2, 2012. About 500 people attended the international gathering, co-sponsored by The Water Institute at UNC and the UNC Institute for the Environment. Jamie Bartram, PhD, directs The Water Institute. During the conference, The Water Institute received a \$75,000 grant from Wells Fargo & Company.

Anna Schenck, PhD, associate dean for public health practice at the School, chaired this year’s American’s Health Rankings® Scientific

Advisory Committee. Gillings School faculty members have been instrumental advisers in the development and review of the rankings since the process was established in 1990. The rankings analyze and report on the nation’s health on a state-by-state basis.

Myron S. Cohen, MD, acclaimed physician and HIV/AIDS researcher, was the keynote speaker at UNC’s December commencement. He offered graduates his recipe for success: *timing, taking chances, trust and tenacity*.

Josh Nesbit, executive director and co-founder of Medic Mobile, a nongovernmental organization that employs mobile technologies to improve health care in challenging settings, was scheduled at press time to present the keynote address at the Gillings School’s spring 2013 commencement, held Saturday, May 11, at 1 p.m. in the Carmichael Arena on the UNC-Chapel Hill campus.



Dr. Jamie Bartram



Dr. Myron Cohen



Josh Nesbit



Dr. Anna Schenck

The University of Cambridge (U.K.) and the Gillings School of Global Public Health are pioneering collaborative research in dementia, obesity, tobacco and alcohol, and disease progression and treatment. Among UNC public health faculty involved in the collaboration are **Drs. Peggye Dilworth Anderson, Michael Kosorok, Barbara K. Rimer, Kurt Ribisl and June Stevens**. For more information about the partnership, contact Barbara Wallace at bobbi_wallace@unc.edu.

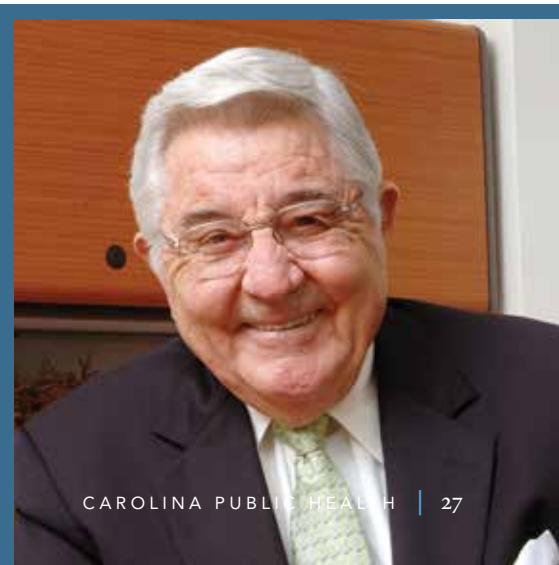
Jonathan LaPook, MD, was the keynote speaker at the 45th annual Fred T. Foard Jr. Memorial Lecture on April 11. LaPook, chief medical correspondent for *CBS Evening News with Scott Pelley*, spoke on “Public Health at the Intersection of Medicine and Media.”

In Memoriam

WILLIAM CLYDE FRIDAY, JD (1920 - 2012)

Mr. Friday, who served as president of the University of North Carolina from 1956 to 1986, died on UNC’s University Day, Oct. 12. He was 92. So many will miss his loyalty to the state and University he loved, as well as his wit, compassion and unwavering sense of justice.

Read about his special relationship with the Gillings School of Global Public Health at www.sph.unc.edu/billfriday.



UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH AWARDS & RECOGNITIONS

OCTOBER 2012 – APRIL 2013

Read more at www.sph.unc.edu/recognitions_and_awards.

Greg Allgood, PhD, alumnus and director of Procter and Gamble's Children's Safe Drinking Water Program, was one of 17 celebrities and clean water advocates who climbed Mt. Kilimanjaro in January to draw attention to the nearly one billion people in the world without access to clean drinking water.

Gregory Characklis, PhD, professor of environmental sciences and engineering and director of the UNC Institute for the Environment's Center for Watershed Science and Management, was elected to the Association of Environmental Engineering and Science Professors (AEESP) board of directors.

Myron S. Cohen, MD, J. Herbert Bate Distinguished Professor of medicine, microbiology and immunology in the School of Medicine and professor of epidemiology at the Gillings School, was elected to the Institute of Medicine (IOM), one of the highest honors in the fields of health and medicine. **Cohen** also was named "Tar Heel of the Year" by the Raleigh (N.C.) *News and Observer*, for his extensive research in AIDS prevention and treatment.

Leah Devlin, DDS, MPH, was elected to the board of directors of the National Foundation for the Centers for Disease Control and Prevention. Devlin is Professor of the Practice of health policy and management and former N.C. State Health Director.

The Environmental Sciences and Engineering Student Organization (ENVRSO) and A Drink for Tomorrow are the 2013 winners of the Gillings Student Organization

Service Project Award. Each group received \$1,500 to help its members reach program goals. ENVRSO aims to improve N.C. middle school education in science and technology; Drink for Tomorrow works internationally to promote sustainable clean drinking water projects.

Rebecca Fry, PhD, assistant professor of environmental sciences and engineering, will serve a three-year term on the National Research Council's committee on inorganic arsenic, providing expert guidance to the U.S. Environmental Protection Agency.

Shelley Golden, MPH, and **Jo Anne Earp, ScD**, lecturer and professor, respectively, in health behavior, co-wrote an article that received the Lawrence W. Green Paper of the Year award at the annual meeting of the Society for Public Health Education, held Oct. 25-27, 2012, in San Francisco. The article was published in the June 2012 issue of *Health Education and Behavior*.

Sandra B. Greene, DrPH, Professor of the Practice in health policy and management (HPM) was reappointed in December 2012 for a two-year term on the N.C. State Health



Dr. Greg Allgood



Dr. Gregory Characklis



Dr. Leah Devlin



Shelley Golden



Yang Chen, Camille McGirt and Reena Gupta (l-r) claimed second prize at Carolina Challenge.

PHOTO BY PATRICK VERNON

Coordinating Council in Raleigh. **Greene** also was appointed interim chair of HPM in April.

Denise Hallfors, PhD, adjunct professor of maternal and child health (MCH) and senior research scientist at Pacific Institute for Research and Evaluation, and **Carolyn Halpern, PhD**, MCH professor, co-authored a paper that won the *American Journal of Public Health's* (AJPH) 2012 "Paper of the Year" award. The study, published in the June 2011 AJPH, examined the support of adolescent orphan girls in Zimbabwe to stay in school as a way to decrease HIV risk.

Health policy and management students took first prize at three national case competitions this academic year. Health-care strategists include **Jordan McInerney** and **Marissa Noles** (Humana Case Competition), and **Jessica Johnson**, **LeVelton Thomas** and **Christina Lomax** (National Association of Health Services Executives' Everett V. Fox competition), who won events last October, and **Kelley Lamb**, **Cayla Wigfall** and **Eric Ransom**, who won University of Alabama at Birmingham's annual case competition on Feb. 28.

Amy Herring, ScD, professor of biostatistics,

health policy and management graduate, was selected by The American Academy of Hospice and Palliative Medicine (AAHPM) to receive the organization's Young Investigator Award. He presented his paper at AAHPM's annual assembly on March 16 in New Orleans.

Richard A. Luetlich Jr., ScD, professor of environmental sciences and engineering, received the U.S. Department of Homeland

management major, was one of 17 college students across the state to receive the N.C. Campus Compact's Community Impact Award last fall. The award recognizes college students who make significant, innovative efforts to address local community needs. **McGirt**, founder of "Healthy Girls Save the World" (healthygirlssavetheworld.org), a program that educates girls about nutrition and physical activity, also received the 2013



At the case competition (l-r): Eric Ransom, Kelly Lamb, UAB representative and Cayla Wigfall



Dr. Sandra Greene



Dr. Mark Holmes



Dr. Dio Kavalieratos



Dr. Richard Luetlich



Sherry Rhodes

received the prestigious Mortimer Spiegelman Award from the American Public Health Association's (APHA) statistics section. Herring was recognized Oct. 30, 2012, at APHA's 140th annual meeting and exposition in San Francisco.

Mark Holmes, PhD, assistant professor of health policy and management, was elected chair of the editorial board of *The Journal of Rural Health*. He began his one-year term on Jan. 1.

Dio Kavalieratos, PhD, December 2012

Security's Impact Award for his work in predicting water heights and flooding in coastal areas during Hurricane Irene in 2011.

Elizabeth Mayer-Davis, PhD, nutrition professor, was appointed interim department chair, effective June 1. She succeeds June Stevens, PhD, distinguished professor and chair since 2006.

Camille McGirt, senior health policy and

University Award for the Advancement of Women and placed second at the 2013 Carolina Challenge.

Sherry Rhodes, director of student services, received the School's 2012

Staff Excellence Award, which recognizes an employee whose work demonstrates impact and a focus on the core values of the School. Rhodes has worked at the School since 1993.

Sanitation Creations, an entrepreneurial venture founded and led by Gillings School alumna **Liz Morris, MS**, was second runner-up in the inaugural UNC Social Business Conference, held Sept. 27, 2012, at N.C. A&T State University in Greensboro, N.C., and alumni-track winner of UNC's Carolina

Challenge in April. Sanitation Creations developed the Dungaroo, an environmentally friendly portable toilet.

Pranab Kumar Sen, PhD, Cary C. Boshamer Distinguished Professor of biostatistics, was the featured speaker at the 23rd Pfizer Colloquium Series at the University of Connecticut-Storrs Nov. 1-2, 2012.

Anna Maria Siega-Riz, PhD, professor of epidemiology and nutrition and associate dean for academic affairs, was named for a three-year term as member of the advisory

council for the National Heart, Lung and Blood Institute.

Jason Surratt, PhD, ESE assistant professor, received the Walter A. Rosenblith New Investigator Award from the Health Effects Institute. (See more about Surratt on page 18.)

School leaders presented **Teaching Innovation Awards** last fall to develop or improve classes in 2013 and 2014. Awardees included **Alice Ammerman, Daniel Pomp, Timothy Jay Carney, Shelley Golden, Sue Hobbs, Deborah Tate, Kurt Ribisl, Anita Farel, Rohit**

Ramaswamy, James Porto Jr., Jay S. Levy, and Kathy Roggenkamp.

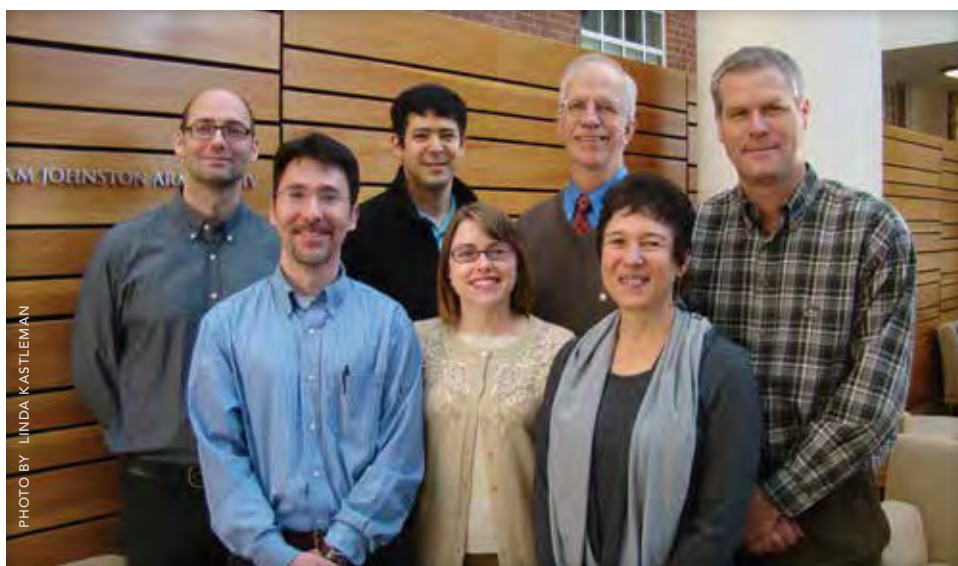
David Richardson, Anthony Viera, Orlando Coronell, John Paul, Kurt Ribisl, Amy Herring, Marcia Roth and Amanda Holliday received Teaching Innovation Awards on Jan. 29. Their students voted for faculty members who “improve the learning environment by integrating new technologies, engaging students in interactive activities, and introducing and incorporating progressive curriculum ideas into the classroom.”

Carmina Valle, PhD, a December 2012 nutrition alumna, received the Society of Behavioral Medicine Outstanding Dissertation Award for 2013. Valle is now a postdoctoral fellow in the cancer health disparities training program at the Gillings School.

Anthony Viera, MD, MPH, 2006 School alumnus, has received the inaugural Charles Baynes Wilkerson Distinguished Professorship in Family Medicine in UNC’s School of Medicine. Viera directs the Health Care and Prevention Master of Public Health degree program in the Public Health Leadership Program and is associate professor of family medicine in UNC’s medical school.

John Wiesman, DrPH, health policy and management alumnus, was appointed to serve as Washington State’s Secretary of Health, effective March 12.

Steven Zeisel, MD, PhD, and **Wilbur Milhous, PhD**, respectively, received the Bernard G. Greenberg Alumni Endowment Award and Harriet Hylton Barr Distinguished Alumni Award. Zeisel, Kenan Distinguished Professor of nutrition and director of the Nutrition Research Institute in Kannapolis, N.C., and Milhous, professor and associate dean for research at the University of South Florida’s College of Public Health, accepted their awards at the 45th annual Fred T. Foard Jr. Memorial Lecture on April 11.



Teaching Innovation awardees (l-r): D. Richardson, A. Viera, O. Coronell, A. Holliday, J. Paul, M. Roth and K. Ribisl.



Dr. Wilbur Milhous



Dr. P.K. Sen



Dr. A.M. Siega-Riz



Dr. Carmina Valle



Dr. John Wiesman



Dr. Steven Zeisel

OUR DONORS



Melinda, with her mother Eunice



Eunice Brock—

Honoring a beloved daughter through a scholarship gift

Melinda's life was grounded in honesty, integrity and love. So recalls Eunice Brock, Melinda's mother and the person who established in her memory The Melinda Kellner Brock Maternal and Child Health Scholarship at the Gillings School of Global Public Health.

The endowed scholarship will assist a public health student who demonstrates a passion for maternal and child health.

"Destined to be a nurse," as one colleague observed, Melinda began her career in the mother-baby unit at WakeMed Hospitals in Raleigh, N.C., and then worked for 15 years in family planning at the Durham County (N.C.) health department. Her too-early death in March 2010 left her family and friends grief-stricken and the world deprived of a talented and compassionate caregiver.

In remembering Melinda, her former WakeMed supervisor recalls that their nursing unit included people from both ends of the socioeconomic spectrum. "Melinda's passion was to be assigned to those less fortunate," says Sarah Caviness, RN. "She easily established rapport with the patient and all the family members [and] especially enjoyed the time she spent with new mothers. Her personality—and her mature understanding of grief—made her a [great support] for women who had lost their infants."

Her openness also extended to colleagues, Caviness says, and they often benefited from Melinda's understanding and support.

"Melinda was a natural at the health department," says former co-worker Robin Godwin, RN. "As a public health nurse, she quickly realized she would also serve as a social worker. Our clients need so much that it's hard to try to meet their needs. But that was never a problem for Melinda. She found services for her patients and often would follow up to see their progress."

Like the clients in Durham County, Godwin says she is a better person for having known Melinda Brock.

"Melinda was an extraordinary public health nurse," her mother says, "and it seems fitting to establish a scholarship in her memory both at the UNC School of Nursing and at the Gillings School of Global Public Health. Who knows? Perhaps one day, a talented nurse-in-training will be awarded both."

Eunice Brock says she hopes that the scholarship's recipients "will live lives dedicated, as Melinda's was, to people in need – and that they will give to others in a spirit of kindness and compassion."

In the early 1980s, Eunice Brock, always ahead of her time, was the first woman in Chapel Hill to own her own real estate agency. Later, hers was the first residential real estate agency in the U.S. to have its own website. In 2011, she was designated a "Town Treasure" by the Chapel Hill (N.C.) Historical Society.

—Linda Kastleman

To explore ways your gift might memorialize a loved one, contact the School's Office of External Affairs at (919) 966-0198, or visit giving.unc.edu/gift/sph.



CONTRIBUTED PHOTO

Parents establish dissertation award to honor Cynthia Cassell

Gail H. Cassell, PhD, DSc (Hon.), and Ralph H. Cassell, MBA, are very proud of their daughter, Cynthia.

In 2007, Cynthia Cassell received a Doctor of Philosophy in maternal and child health, with a minor in epidemiology, from what is now the Gillings School of Global Public Health.

Cynthia now works with the Centers for Disease Control and Prevention's National Center on Birth Defects and Developmental Disabilities. She is a health services researcher and focuses on health service use, costs, access to care and outcomes of children with birth defects. Recently, she won the American Public Health Association Maternal and Child Health Section's 2012 Young Professional Award for her combination of professional and personal skills, experiences, accomplishments and future impact in the maternal and child health field. She currently serves as an adviser and supporter on the School's Public Health Foundation Board.

Before Cynthia joined the CDC, the Cassells established the Cynthia H. Cassell Doctoral Dissertation Award in Maternal and Child Health to honor their daughter's many accomplishments and help support other students pursuing doctoral degrees in maternal and child health.

Through their gift, they wanted particularly to honor the mentorship offered to their daughter by Anita Farel, DrPH, clinical professor, and Robert Meyer, PhD, adjunct professor, both in the Department of Maternal and Child Health. Cynthia previously worked under Meyer's supervision with the North Carolina Birth Defects Monitoring Program, part of the N.C. State Center for Health Statistics within the N.C. Division of Public Health.

"We are pleased to provide this award at such an excellent institution," the Cassells say, "and hope in some small way that the gift will provide other maternal and child health doctoral students with opportunities they might not otherwise have had."

The Cassell family (left to right, Gail, Ralph and Cynthia) visited with children at Socios En Salud and Caryabeyllo Cultural Center, in Lima, Peru, in April 2012. In 2005, the family helped establish the Center to address medical and social issues related to drug-resistant tuberculosis, which is common in the Caryabeyllo district of Lima.

Eli Lilly and Company, from which Gail recently retired after 13 years, matched the Cassells' gift to double the impact of the couple's generosity.

Cynthia says she is proud to call herself a Carolina public health school alumna. "Many rewarding opportunities were provided by my parents and outstanding mentors at Carolina, including Drs. Anita Farel, Robert Meyer, Bert Peterson, Jonathan Kotch and Ron Strauss," she says. "I was uplifted by their wisdom and continuous generosity. They are inspiring role models in public health, especially maternal and child health. With this award, we hope that other students will be as fortunate as I was to learn from these outstanding faculty members."

—Linda Kastleman

To explore ways your gift might meet a student's long-term or immediate need, contact the School's Office of External Affairs at (919) 966-0198, or visit giving.unc.edu/gift/sph.



PHOTO BY LINDA KASTLEMAN



Jamie (center) with her mom and dad

CONTRIBUTED PHOTOS



Ron and Jan Kimble— Creating a legacy for Jamie

The virtues appended to various gifts in her memory offer clues about who she was – a Jamie Kimble *Character* Scholarship for young women who otherwise might not be able to afford college; a Jamie Kimble *Spirit* Award; and her parents' most recent gift, and likely not the last one – The Jamie Kimble Scholarship for *Courage* at the Gillings School of Global Public Health.

Growing up in Greenville, N.C., Jamie seemed to have drawn all aces – head, heart, hands and hope. Many who knew her well called her an inspiration, “the best friend you could have.” She was the first to call on birthdays or send handwritten thank-you notes; she was everyone’s problem-solver. She ran marathons, was a “health nut,” disciplined herself in gymnastics and dance. When her parents returned home after leaving their only child to start college at Carolina, they found Jamie’s note under their pillows: *I love you so much and appreciate all you have done for me.*

In 2002, Jamie, a bright and dedicated scholar, earned a Bachelor of Science in Public Health in nutrition from the Gillings School and won the department’s Joseph Edozien Outstanding Undergraduate Award. Along the way, she began a sales career she loved and recently was awarded a promotion. Last year, she looked forward to moving from Anna Maria Island, Fla., to Dallas.

His name isn’t important. They had dated several years – much of it rocky and riddled with verbal and emotional abuse. Her parents knew

there was no physical abuse – Jamie had told them she would never tolerate that from anyone—but her limitless compassion made her vulnerable and caused her to stay too long.

“We were so proud that she had the courage to leave and had begun to live a happier life,” her parents recall.

Since last fall, Ron and Jan Kimble have armed themselves with statistics. **One in four** women is a victim of domestic violence during her lifetime. **Four people** in the U.S. die every day because of it. **Seventy percent** of the violence occurs after the victim has ended the relationship. The problem affects everyone, without regard to income, ethnicity or social status, but **85 percent** of the victims are women.

In September 2012, three months after the breakup, the man returned, this time with a gun. He killed Jamie, then killed himself.

In an extraordinary show of grace, the Kimbles want to focus on Jamie’s legacy rather than their own terrible grief. They plan to develop a network of ways to address and end the violence – from educational programs to changes in the judicial system that will identify and punish perpetrators to the establishment and support of women’s shelters to political action nationwide.

Their name for the gift to Jamie’s alma mater reflects their pride in her for having the courage to leave. Now, they want to help others leave and live.

—Linda Kastleman

The Jamie Kimble Scholarship for Courage will be awarded annually to a nutrition or other UNC public health student, preferably one whose life has been affected by domestic violence or who is committed to preventing it. Learn more at giving.unc.edu/gift/sph.



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We have made every effort to ensure the accuracy of this list, which was compiled on March 29. To report an error or omission, please contact Susie Smith at susies@email.unc.edu.



CONTRIBUTED PHOTO

Ronald and Ann Wooten— *A public health crisis too close to home*

Recently, Ronald and Ann Wooten were in the audience when an administrator at The University of North Carolina at Chapel Hill reported some startling news. About 97 percent of the university's violent crime, student-on-student assaults and rapes are connected to alcohol and drug abuse.

The Wootens already were familiar with World Health Organization data showing alcohol to be associated with four percent of the global disease burden, a factor in more than 60 diseases, and in mental disorders, car crashes, high-risk behaviors, and economic and educational failures. But as UNC alumni, they didn't like a major public health crisis being so close to home.

"We know that the Gillings School of Global Public Health is a leader in tackling health challenges such as these," Ann Wooten says. "UNC public health students travel around the world, developing solutions wherever they go. We wanted to call upon these young leaders to educate and motivate people here on campus to help put a stop to unhealthy patterns of alcohol abuse."

The Wootens met with Kurt Ribisl, PhD, professor of health behavior at the Gillings School. Ribisl has stood in staunch opposition to tobacco and alcohol abuse, especially among minors. Together, they devised a program through which students would lead the charge against alcohol abuse on campus.

Jessica Boten, master's student in health behavior and one of the students who received funding for the project, believes the work of Ribisl's team is important.

"My efforts have focused on town policies and interventions such as better enforcement at bars and increased server training," Boten says. "I feel confident that our research will give town and campus leaders the information they need to develop effective policy changes."

"The Gillings School of Global Public Health is one of the most influential educational environments in the world," Ronald Wooten says. "We're confident that Dr. Ribisl and others at the School can help UNC students reach their highest

potential and develop healthy habits needed for a lifetime of success."

Ann Wooten agrees. "Ronald and I have always been passionate supporters of the Gillings School. It has been a tremendous honor knowing that our university's public health school maintains a superior reputation around the world. We are happy to be part of the School's mission."

—Linda Kastleman



PHOTO BY LINDA KASTLEMAN

Dr. Kurt Ribisl (left) and Jessica Boten

For more information about how your gift can help address a public health challenge, visit giving.unc.edu/gift/sph or call the School's External Affairs office at (919) 966-0198.



Making a world of difference—

Annual donor dinner celebrates campus water theme

PHOTO BY TOM FULDNER

There was no question about the choice of décor at the annual World of Difference dinner last fall. After all, the event, held Nov. 29, 2012, to celebrate donors who give \$1,000 or more annually to the School or its academic units, was held during the first year of the University's two-year, campus-wide "water" theme. It was also the year in which Don and Jennifer Holzworth, intent upon strengthening the efficacy of The Water Institute at UNC, endowed a professorship awarded to the Institute's director, Dr. Jamie Bartram.

In a *mise en scène* engineered by event planner Jerry Salak, white hydrangeas and sparkling beads that appeared to be water droplets graced the round, teal-draped tables. A light show designed by Maestro Productions featured images of water rivulets on the white columns in the atrium. The program cover included a photograph by Dan Sears, in which the Old Well is reflected in a series of raindrops. Even the menu spoke to the theme – a Tuscan vegetable soup called *acquacotta* ("cooked water"), salmon and poached pear.

Dean Barbara K. Rimer officially recognized Bartram as Holzworth Distinguished Professor at the dinner, and he and his benefactors were presented with University chairs.

Bartram also co-directs the campus-wide water theme program (watertheme.unc.edu), along with Dr. Terry Rhodes, professor of

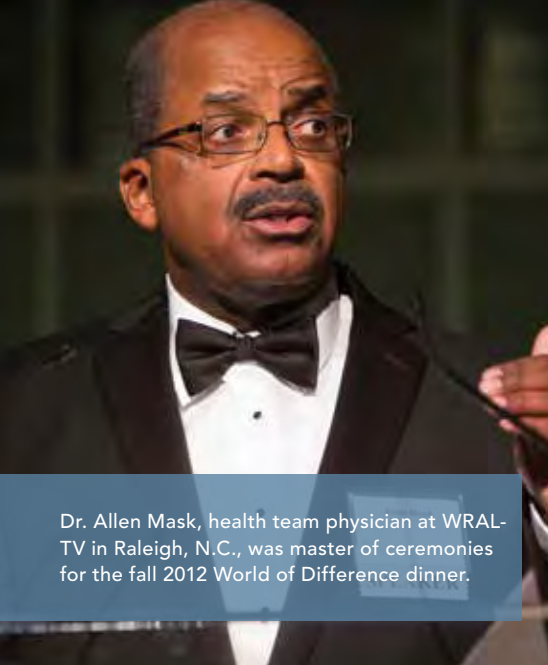
music and senior associate dean for fine arts and humanities.

Dr. Allen Mask, health team physician at WRAL-TV in Raleigh, N.C., served as master of ceremonies for the evening. He introduced talks by students who were beneficiaries of generous support by donors, including Rachel Nethery (John and Diane Fryer Fellow), Melissa Sanchez, RN (Jean Tower Lassiter Scholar and John and Sallie Shuping Russell Scholar), and Tyrone Hall (Class of 2012 Annual Fund Scholar).

Among the attendees were members of the School's Rosenau Society (who give an annual \$1,000 or more in unrestricted funds), Cornerstone Society (who give \$25,000 or more to the building fund, naming rooms and spaces), and those alumni and friends who have established endowed professorships, fellowships, scholarships and specialty funds.



Dr. Jamie Bartram, Don Holzworth, Dean Barbara Rimer and Jennifer Holzworth (l-r) celebrate the Holzworths' gift and Dr. Bartram's distinguished professorship.



Dr. Allen Mask, health team physician at WRAL-TV in Raleigh, N.C., was master of ceremonies for the fall 2012 World of Difference dinner.

Please be in touch to discover how you can celebrate with us!

Call (919) 966-0198, or visit giving.unc.edu/gift/sph.

SAVE THE DATE FOR THESE UPCOMING EVENTS

2013 World of Difference Dinner

Thursday, November 21
Hope to see you there!

2014 Fred T. Foard Jr. Memorial Lecture

Thursday, April 10, 2014

The Foard speaker will be alumnus
GREGORY ALLGOOD, PHD
Director, Children's Safe Drinking Water Program
Procter & Gamble

We made quite an impact!

Gillings School students won 13 of this year's 41 Impact Awards. Presented annually by UNC's Graduate School, the awards are given for graduate student research deemed to be of "exceptional benefit to the people of North Carolina."



J. Crosswell



A. Doernberg



S. Ellis



A. Gorzalski



Z. Kerr



A. Kranz



L. Leone



M. Lewis



K. Messier



J. Moss



M. Nadimpalli



A. Richardson



A. Sanders

Making a Difference in North Carolina are:

Joey Crosswell, Environmental Sciences and Engineering, *Greenhouse Gas Emissions from Coastal Waters and Implications for a Stormier Future*

Alison Doernberg, Maternal and Child Health and Social Work, *Supporting North Carolina Families Facing Cancer*

Shellie Ellis, Health Policy and Management, *Prostate Cancer Care Quality Not Affected by Race*

Alexander Gorzalski, Environmental Sciences and Engineering, *Treating Groundwaters From the Castle Hayne and Pee Dee Aquifers*

Zachary Kerr, Epidemiology, *Municipal Pedestrian and Bicycle Planning to Support Safety*

Ashley Kranz, Health Policy and Management, *Comparing the Effect of Delivery Models for Preventing Dental Caries in Young Children*

Lucia Leone, Nutrition, *Increase Access to Fresh Fruits and Vegetables in Lower-Income Neighborhoods*

Meghan Lewis, Public Health Leadership, *Evaluating the Utilization of the Community Health Assessment*

Kyle Messier, Environmental Sciences and Engineering, *Integrating Multiple GIS Methods for Estimation of Tetrachloroethylene*

Jennifer Moss, Health Behavior, *Improving Uptake of Human Papillomavirus (HPV) Vaccine to Improve Cervical Cancer Outcomes*

Maya Nadimpalli, Environmental Sciences and Engineering, *Carriage of Antibiotic-Resistant Staphylococcus aureus by Livestock Workers and Household Members*

Andrea Richardson, Nutrition, *Dynamic Environments and Obesity: Risky Genes?*

Alison Sanders, Environmental Sciences and Engineering, *Assessing Arsenic, Cadmium, Mercury and Lead Levels in Pregnant Women*



Stephanie Baker, doctoral candidate in health behavior, received the coveted Boka W. Hadzija Award for Distinguished Service and was recognized along with the Impact awardees at a reception on April 10.

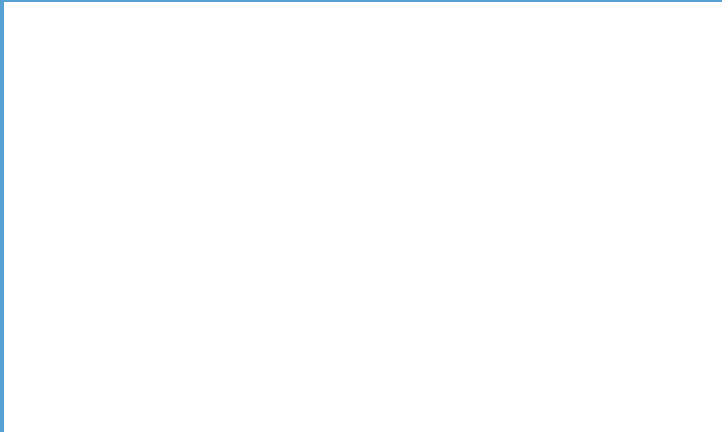
Read more about these outstanding students at gradschool.unc.edu.



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ON THE COVER:

Dr. Will Vizuite examines components of a portable device that allows him to study the toxicity of air pollution particles. **READ MORE ON PAGE 9.**

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