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21st-century public health problems



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DIRECTOR OF COMMUNICATIONS

MANAGING EDITOR

Ramona DuBose

EDITOR

Linda Kastleman

ASSOCIATE DEAN FOR

EXTERNAL AFFAIRS

Peggy Dean Glenn

DESIGN AND PRODUCTION

UNC Creative

CONTRIBUTING WRITERS

Ramona DuBose, Whitney L.J.

Howell, Linda Kastleman, Michele

Lynn, Susan Shackelford, JB Shelton,

Angela Spivey, Elizabeth Witherspoon

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UNC

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GLOBAL PUBLIC HEALTH



Dr. Barbara K. Rimer

Since the last issue of *Carolina Public Health*, much has changed – composition of Congress and our state legislature, political uprisings in the Middle East, earthquakes and a tsunami in Japan, and tornadoes and floods in the U.S. The global economy is improving in fits and starts. Revenue is up in North Carolina, but our state allocation for the School will be down. The number of student applications is up, as is the number of jobs our graduates are being offered. ■■■■■■

Events and information move faster, and we must keep up. Speed, innovation, adaptability, flexibility, permeability, sustainability and a lot of other abilities are needed to be effective 21st-century citizens and public health leaders.

The pace of traditional scientific discovery and dissemination is far too slow to solve big public health problems we face in a 21st-century world. Relying on traditional methods of dissemination through scientific journals can result in more than a decade for a proven program or concept to be translated into practice. Congress has made a cornerstone of the Affordable Care Act a mechanism to make cures available faster through changes in the structure of the National Institutes of Health.

We're trying different strategies to accelerate solutions so we can have an impact – faster. The gift from Dennis and Joan Gillings was an important part of that strategy. Gillings Innovation Laboratories are projects with high potential for public health impact through transformative solutions. Our Gillings Visiting Professors who come from non-academic

settings are helping us to think differently about problems. That can be game-changing. (We also are funding other exciting programs through the gift – see www.sph.unc.edu/accelerate.)

This issue of *Carolina Public Health* focuses on faculty, staff and students as they tackle some of the world's biggest problems, such as stopping smoking, getting clean water to people who need it, finding solutions to the obesity epidemic and reducing barriers to delivery of quality health care – in time to make a difference. Health risks and conditions don't exist in isolation from other issues in people's lives. Studying problems in real-world settings is messy and complex but important. The laboratory is the community, and solutions have a greater chance of sticking when they are developed with communities. Sticky ideas have greater sustainability.

We remain committed to undertaking research that has positive impact in North Carolina and around the world, translating that research into practice and policies, and training some of the best students anywhere to solve some of the world's biggest problems. We have faced many challenges over the last few years, but we are optimistic about the future. Thank you for your support of our School.

Sincerely,

A handwritten signature in black ink that reads "Barbara K. Rimer". The signature is fluid and cursive, with a large, sweeping 'B' and a trailing flourish.

The pace of traditional scientific discovery and dissemination is far too slow to solve big public health problems we face in a 21st-century world.

The public's health should not wait *for solutions*

The public's health is too important to be kept waiting. All around us:

- ▣ New diseases emerge and spread throughout the world at sonic speed; old nemeses sometimes re-emerge in stronger, more devastating forms.
- ▣ Natural disasters devastate countries and reverberate around the world, challenging us to clarify our preparedness plans and training.
- ▣ Evidence-based interventions that could save lives too often remain out of the reach of many people who could benefit from them.

That's why our researchers – faculty and staff members, students and alumni – won't wait, either. Public health problems in North Carolina and around the world need effective solutions *now*.

At UNC Gillings School of Global Public Health, we understand the greatest challenges to health throughout the world. We move closer and faster every day to translating research into practice, where our findings can do the most good. The key is *anticipating*

threats and *accelerating* solutions with practical answers. Now, more than ever, time is of the essence.



Dr. Michael Kosorok

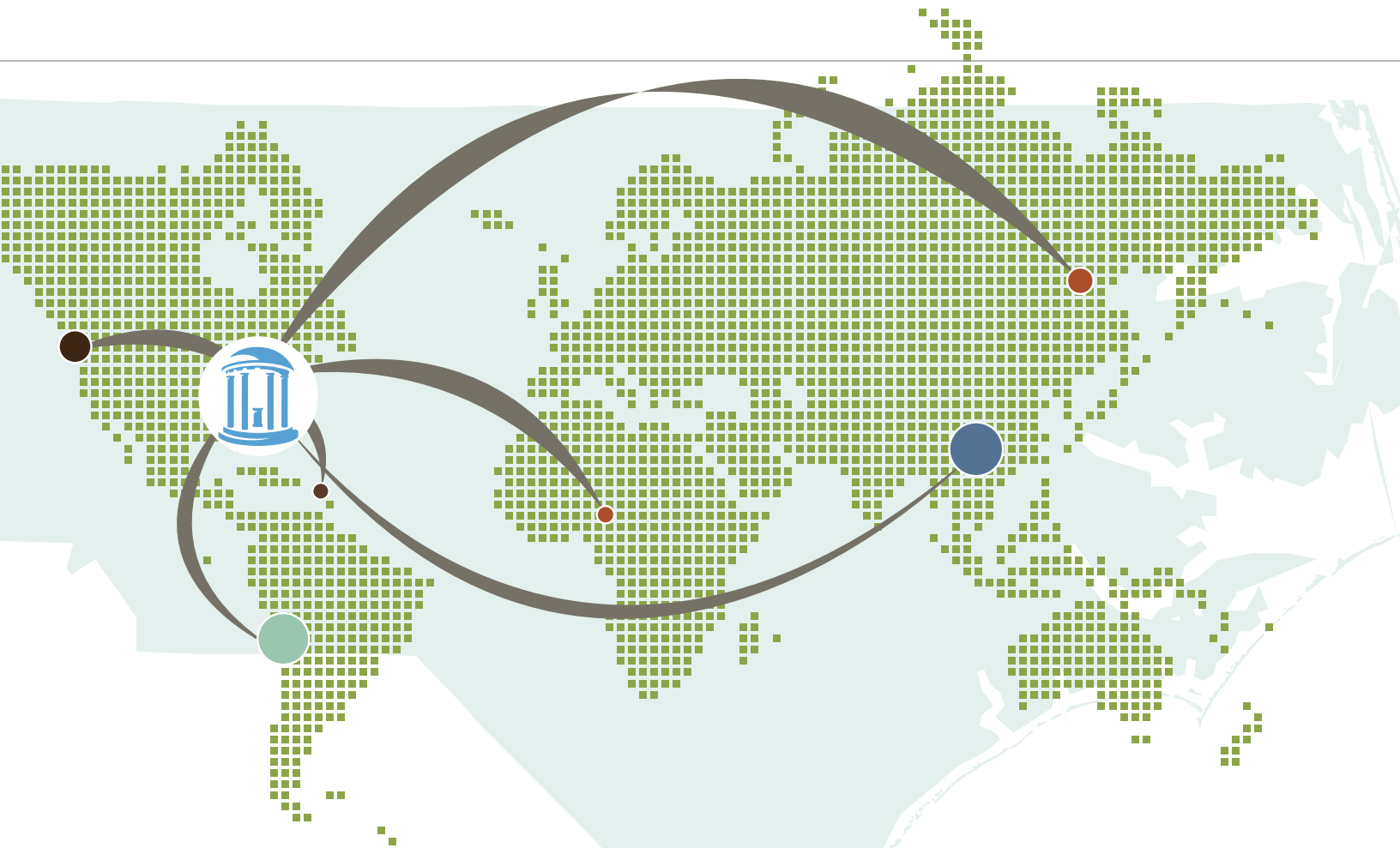
"We are undergoing an unprecedented increase in the rate of new technology and new information. If we are not fast enough in

solving public health problems and implementing solutions, we run the risk of becoming outdated and irrelevant before we have accomplished anything," says Michael Kosorok, PhD, professor and chair of the School's Department of Biostatistics. "On the other hand, if we cut too many corners in the process, we run the risk of obtaining misleading results that can harm the public and delay progress. Striking the right balance is one of the great challenges of contemporary public health research."

Rapid and *reliable* – both are important when seeking answers to complicated, menacing public health questions. Such problems demand complex and collaborative solutions. Given the School's size – and the depth and breadth of its research – we are well positioned to make a difference on many levels, here at home and around the world.

For example:

- ▣ A team reaches out across North Carolina to caregivers for the elderly, teaching them ways to distinguish between symptoms typical of aging and true signs of dementia, and helping them find support for their loved ones and for themselves (see page 17).



- ❑ Researchers develop better ways for medical and emergency workers to recognize symptoms of stroke and start treatment immediately to minimize damage (see page 6).
- ❑ A partnership across the UNC campus – and across the globe – potentially could save hundreds of thousands of lives by bringing clean water to more than 250,000 people who didn’t have it before (see page 28).
- ❑ A professor works with a North Carolina company to prevent tick-borne diseases in the state’s woodlands – and also discovers answers to insect threats in Africa (see page 14).
- ❑ UNC researchers working in South Africa discover that keeping girls in school is the girls’ best defense against contracting HIV (see page 8).



Dr. Herbert Peterson

“We now have an unprecedented window of opportunity to make bold progress in preventing deaths to mothers and their newborns

globally, and we need to make the most of it,” says Herbert Peterson, MD, Kenan Distinguished Professor and chair of the maternal and child health department. While he is encouraged by progress – maternal deaths have dropped by a third worldwide since 1990 – it’s still not enough. Every 90 seconds, he says, a woman dies from complications of pregnancy or childbirth somewhere in the world.

“We’ll work closely with our partners to develop innovative approaches for translating our best science into better outcomes,” he says. “Strong collaborations are being formed

to seize this moment, and together, we have a wonderful chance to make a difference.”

Students are an integral part of realizing these solutions, especially during the summers, when they scatter around the world to put their studies into action. Alumni bring new solutions to problems they encounter in practice. Faculty members and other researchers discover causes and effective solutions.

We won’t keep the public waiting. There’s too much at stake.

– **Ramona DuBose**

If we are not fast enough in solving public health problems and implementing solutions, we run the risk of becoming outdated and irrelevant before we have accomplished anything.

– **Michael Kosorok, PhD**

Treatment and prevention in the ‘buckle’ of the stroke belt

During the last 20 years, North Carolina has edged toward the top of an ignominious list. The state currently has the sixth highest incidence of stroke mortality in the nation. There’s no time to waste in turning this trend around. ■■■■■■■■■■



The map beside Dr. Wayne Rosamond shows flags identifying the locations of participating hospitals in the North Carolina Stroke Care Collaborative.

Annually, 27,000 North Carolinians suffer strokes; one dies every two hours. These statistics led researchers to label certain North Carolina counties as part of the “buckle” of the Stroke Belt, which runs through the southeastern United States. Stroke risk in the region is two to three times greater than the national average.

Recognizing stroke risks and symptoms and providing appropriate and timely treatment are critical to preventing stroke and lessening its long-term impacts. For more than a decade, UNC Gillings School of Global Public Health researchers have dedicated themselves to reducing the impact of the nation’s third highest killer. They identify “best practices” in stroke treatment and prevention, help hospitals implement quality of care improvement programs, and train medical personnel to recognize and respond quickly to stroke symptoms.

“We want to improve patients’ care – wherever they may be – should they have a stroke in North Carolina,” says Wayne Rosamond, PhD, epidemiology professor and principal investigator for the North Carolina Stroke Care Collaborative (NCSCC).

The NCSCC works with 56 of the state’s 102 hospitals, from Henderson County’s Park Ridge Health in the west to Carteret County General Hospital in the east. Participating hospitals range from the 25-bed Transylvania Medical Center to Pitt County Memorial (745 beds, affiliated with East Carolina University’s Brody School of Medicine), Duke University Medical Center (989 beds)

PHOTO BY LINDA KASTLEMAN



PHOTO BY LINDA KASTLEMAN

Dr. Rosamond meets with research team members Emily O'Brien (seated) and Kathryn O'Brien to review the latest data from the stroke registry.

We want to improve patients' care – wherever they may be – should they have a stroke in North Carolina.

– Wayne Rosamond, PhD

and Greensboro-based Moses Cone Health System (529 beds).

With Centers for Disease Control and Prevention funding, the collaborative created an interactive database so that a hospital's stroke care performance can be monitored and compared to similar facilities. Each month, NCSCC hosts webinars for stroke experts to address specific quality improvement topics, and they assist hospitals in giving emergency medical technicians and caregivers advanced education in both identifying and reacting appropriately to a stroke.

NCSCC annually awards up to 12 grants to fund initiatives that meet individual hospital needs. For example, for 2009–2010, Catawba Valley Medical Center received

\$15,000 for a stroke nurse coordinator. NCSCC also collaborates with the Registry of the Canadian Stroke Network. In February, the NCSCC joined with UNC's Department of Emergency Medicine to participate in a seminar, presented at the International Stroke Conference 2011, about integrating a stroke registry into EMS data sources.



Dr. June Stevens

However, ensuring that patients receive appropriate services is only part of the stroke-prevention equation, says June Stevens, PhD, nutrition and epidemiology professor and nutrition department

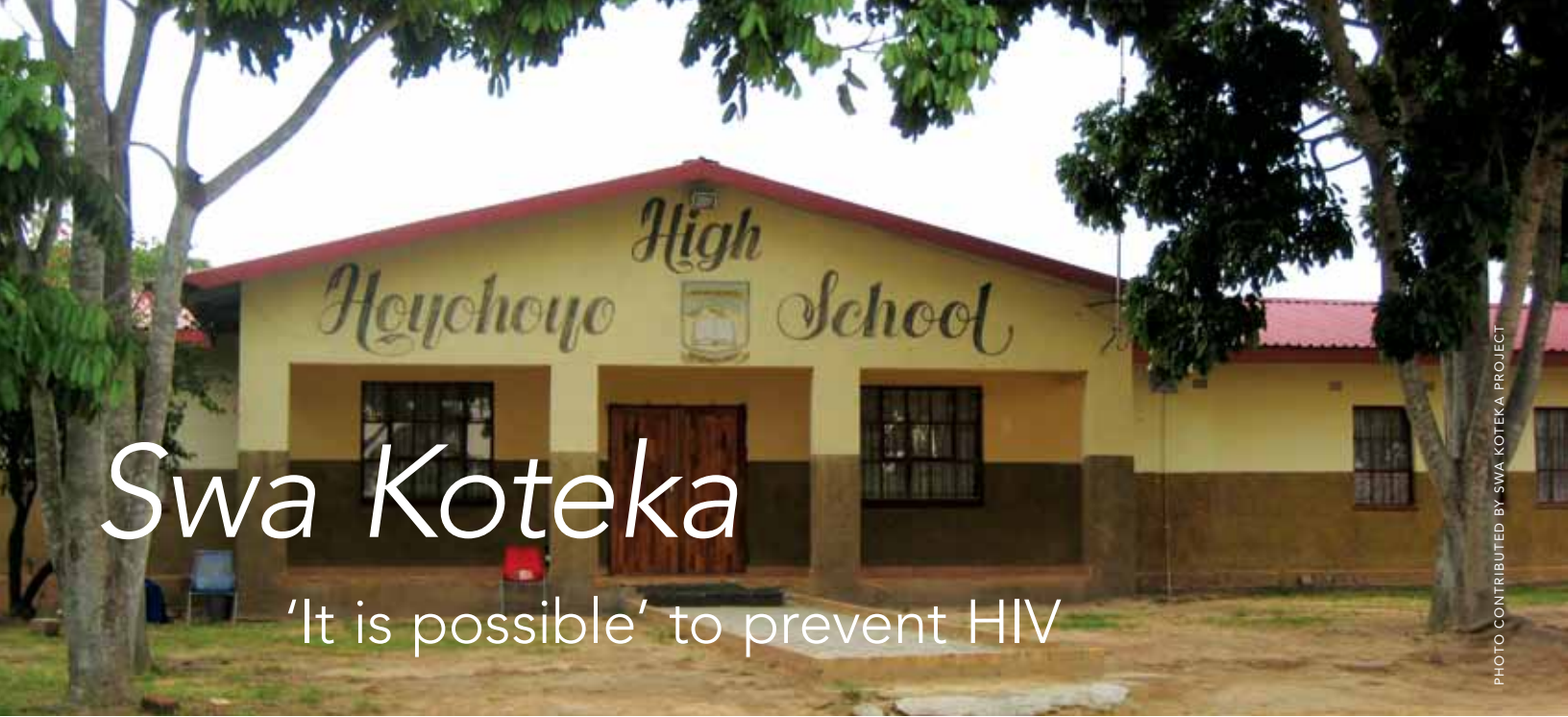
chair. Health care providers also should focus on helping individuals tackle obesity – a substantial, preventable stroke risk factor.

“Obesity increases the risk of stroke, because it raises the likelihood of high blood pressure,” Stevens says. “In fact, we’ve found that if you have a significant weight gain over an extended period of time, your risk is substantially higher than if you maintain your weight.”

In a soon-to-be published study of 15,000 people from North Carolina, Mississippi and Minnesota, Stevens and her colleagues found that a 10- to 30-percent weight gain between age 25 and middle age resulted in a 29 percent increase in stroke risk. Individuals who gained more than 30 percent of their body weight had a 64 percent higher risk. These results were compared to individuals who maintained their weight within 3 percent of the initial measurement.

“People already know obesity isn’t healthy,” Stevens says. “They also need to know about evidence that shows they’re at high risk for stroke – so they can do something about it.”

– Whitney L.J. Howell



Swa Koteka

'It is possible' to prevent HIV

This high school is located in South Africa's Cunnningmore A Village, one of 24 villages in which Swa Koteka will recruit study participants.

Even without engaging in risky behaviors, young girls and women who live in South Africa have a 1-in-3 chance of contracting HIV. ■■■■■■■■■■



Dr. Audrey Pettifor

Audrey Pettifor, PhD, assistant professor of epidemiology at UNC Gillings School of Global Public Health, launched a study in March 2011 to examine the factor known to have the greatest impact on reducing

HIV infection risk – education. Pettifor partners with University of the Witwatersrand researchers Catherine MacPhail, PhD, and Kathleen Kahn, MD, PhD.

“We know young girls who finish high school are four times less likely to become infected with HIV than those who don’t complete school,” Pettifor says. “Condom use and number of partners simply don’t explain the high levels of HIV infection we observe in young South African women.”

To keep girls in school, Pettifor and her team will randomize 2,900 young women and their parents/guardians to receive a monthly cash transfer, based on whether they

attend school 80 percent of the time over the next three years. Then, they will determine whether girls receiving the cash transfers are less likely than girls in the control group to become infected with HIV.

The study, funded by the National Institute of Mental Health and the National Institutes of Health’s (NIH) HIV Prevention Trials Network, also will measure HSV-2 (genital herpes), sexual behavior, mental health, school outcomes, socio-economic status and other key social factors. It is referred to locally as *Swa Koteka*, which means “it is possible” in the native language, Shangaan.

Educating girls is only half the battle, however, Pettifor says. Cultural norms that impinge upon a woman’s right to resist sex or insist on condom use also have to change if young women’s HIV risk is to be decreased. Therefore, half of the young women’s villages also will be randomized to receive an intervention focused on changing negative gender norms and HIV risk among men ages 18 to 35. The team partners with a local non-governmental organization, Sonke Gender

Justice, which aims to challenge and reshape negative gender norms in South Africa.

Pettifor also directs two NIH-funded pilot projects in Lilongwe, Malawi, to help those with acute HIV infection (AHI) lessen the likelihood of transmission. AHI is a highly infectious phase of the disease.

One of Pettifor’s projects, co-led with Amy Corneli, PhD, of FHI,* will compare the effect of four intensive counseling sessions in the first two weeks after AHI diagnosis to standard counseling in reducing transmission risk to partners.

In the second project, co-led with Bill Miller, MD, PhD, UNC associate professor of epidemiology and medicine, Pettifor’s team will compare effects of three interventions – antiretroviral treatment for the first 12 weeks after infection, in combination with intensive counseling sessions; intensive counseling alone; and standard counseling.

“This is a behavior change intervention through which we’re asking people to change behavior for a defined and short period of time,” Pettifor says. “If we get them through this really risky time, then we can talk about a longer-range risk reduction plan.”

**Formerly known as Family Health International*

– Whitney L.J. Howell

Training patients to manage their pain

Coping with chronic pain is possible but challenging. Evidence shows that many patients report uncontrolled pain and that this is a source of distress for patients and their families. An important part of managing pain involves particular skills, including controlling thought patterns and learning to recognize tense muscles and relax them on demand.

Christine Rini, PhD, research assistant professor of health behavior and health education, has helped demonstrate that cognitive behavioral therapy offered via telephone is effective in reducing post-traumatic stress in cancer survivors. (Cognitive behavioral therapy aims to address dysfunctional thoughts, emotions and behaviors in a systematic, goal-oriented way.) Now, Rini leads a team to provide similar training through the Internet – with no therapists required – to help people manage pain.

“Some people would like to receive this type of training but don’t live near a place that offers it, or they prefer to do it in the privacy of their own home,” Rini says. She is developing the initial training program to help osteoarthritis patients. If it is effective, she plans to use it to help cancer survivors, as well.

The training is based on an in-person program devised by collaborator Francis

J. Keefe, PhD, professor of psychology and neuroscience at Duke University. Translating in-person training to the Internet requires a system that can respond to patients' questions, successes and challenges with a library of possible responses. Once code is written, patients can log on to a computer program that provides information and feedback appropriate to individual patients. While the development process can be laborious, such a system ultimately could be deployed for millions of patients, anywhere in the world. Patients in low-resource situations and countries could gain important skills that would help them manage pain.

The project, now in its first year, is funded by the National Institute of Arthritis and Musculoskeletal and Skin Diseases.

– *Angela Spivey*



Dr. Christine Rini uses technology to help people manage pain.



Setting the standard for health departments

North Carolina is the first state to require health departments to provide at least a basic level of service quality for its citizens. To date, 55 of the state's 85 health departments are accredited. The program has become a model for the country; a nationwide program is expected to begin later in 2011. But unless the N.C. General Assembly provides funding, North Carolina's groundbreaking program will end.

"In a time of shrinking resources, it is especially important that health departments demonstrate their value and accountability by assuring that every person in the state has access to a core set of critical services, regardless of where they live," says Leah Devlin, DDS, MPH, Gillings Visiting Professor and former North Carolina State Health Director. "The accreditation process does just that."

The North Carolina Institute for Public Health (NCIPH), part of the UNC Gillings School of Global Public Health, was instrumental in the early development of the program and now administers it.

NCIPH houses and staffs the accreditation board, conducts training for health depart-

ments and coordinates the board's site visits to health departments seeking accreditation. Health departments have been able to sign up voluntarily and then spend a year or more preparing. Before accreditation, a department conducts a community health assessment, develops strategic and quality-improvement plans, documents its capacity for essential services (e.g., responding to disease outbreaks), and verifies its community education and communications efforts.

John Graham, PhD, who oversees consulting services for NCIPH, notes that accreditation preparation is a key part of the overall accreditation exercise. "Many of the participating health directors have indicated



David Stone (left) and Dr. John Graham review accreditation materials for North Carolina health departments.

that accreditation preparation has played an important role in identifying and remediating gaps in policy and procedure in their health departments," Graham says.

North Carolina's program is a successful model, but its future is uncertain. In 2009, budget cuts temporarily suspended the program, and no new accreditations were awarded. In 2010, the program was funded at half its prior level. Staff members resumed site visits and new accreditations but were unable to award the \$25,000 previously allotted to health departments to help prepare for initial accreditation.

It's not clear how the new state budget, to be passed in July 2011, will affect the program, says David Stone, MS, accreditation administrator at the NCIPH.

– Angela Spivey

Reducing risks after head injuries

For years, Steve Marshall, PhD, associate professor of epidemiology, has studied the consequences of sports injuries and how to prevent injuries to athletes and others.

Partly as a result of his efforts, in collaboration with Drs. Kevin Guskiewicz and Jason Mihalik, researchers based in the UNC College of Arts and Sciences' Department of Exercise and Sports Science, 11 states have passed laws requiring special protocols for managing high school athletes who suffer concussions. Pending federal legislation would require concussed high school athletes to be cared for by professional clinicians skilled in concussion care.

Marshall knows the serious and long-term effect head injuries can have on athletes. In 2005, the team's study of retired professional

athletes found that prior concussions are linked with an increased risk of mild cognitive impairment and with earlier onset of Alzheimer's disease. Since then, other studies about athletes' injuries have received a great deal of attention from media and the public.

“A history of concussion is not necessarily a true independent risk factor for neurodegeneration,” Marshall says, “but rather appears to act as an accelerator.”

In a separate study, Guskiewicz and Marshall found a link between concussion and depression, but that link needs further study, he says.

“We’re continuing to follow this cohort of retired professional athletes because they’ve



Dr. Steve Marshall

had a lot more exposure to concussions than the average person. That allows us to see the relationships more clearly," he says.

Marshall and colleagues also examine reliability of athletes' reports of their inju-

ries. Zachary Kerr, first-year epidemiology doctoral student, works at UNC's Matthew Gfeller Sport-Related Traumatic Brain Injury Center (<http://tbicenter.unc.edu>) to study how increased media focus on concussion has affected retired professional athletes' recall of concussions during their careers.

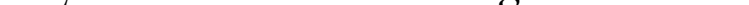
– *Angela Spivey*





Dr. George Pink (left) and Dr. Mark Holmes review the locations of critical-access hospitals in the United States.

Rural communities with thriving hospitals may have the work of George Pink and Mark Holmes to thank.



Pink, Humana Distinguished Professor of Health Policy and Management, and Holmes, health policy and management assistant professor, both in UNC Gillings School of Global Public Health, study effective ways to measure and report hospital financial performance. Their work enables rural and critical-access hospitals (CAH) to be more accountable for the money they spend while also improving quality.

“CAHs are small, rural hospitals, historically at high risk of financial distress because of the small and relatively poor, isolated communities they serve,” says Pink.

“The vulnerability of these hospitals makes measurement of their financial performance key to ensuring their long-term financial survival. Measurement identifies financial problems that require remedial action.”

Holmes, director of the N.C. Rural Health Research and Policy Analysis Center at UNC's Cecil G. Sheps Center for Health Services Research, where Pink is a senior research fellow, says their work helps hospitals to identify financial strengths and weaknesses. This results, Holmes says, in a financially healthier hospital, and thereby, a healthier community. In many rural communities, the


hospital is one of the largest employers, second only to schools.

The researchers' work has impact throughout the country. The U.S. Department of Agriculture, for example, recently asked hospitals applying for rural development loans to provide as part of the loan evaluation process the *CAH Financial Indicators Report* developed by Pink and Holmes.

Their experience with rural hospitals has had implications for other policies and programs as well. As a case in point, Holmes' evaluation of the effect of rural hospital closures on the local economy was cited by Gov. Beverly Perdue as justification for her Rural Hope Initiative. During the first year, the initiative awarded \$6 million to 37 projects across North Carolina.

– Michele Lynn

to improve veterans' health

Department of Veterans Affairs (VA). Thanks to collaborations between the VA and UNC Gillings School of Global Public Health researchers, as many as 300,000 of them may be losing weight and better managing pain. 

Deborah Tate, PhD, associate professor of health behavior and health education and of nutrition, has worked as a national consultant to the VA since 2008. Through MOVE!®, a weight management program developed by the VA's National Center for Health Promotion and Disease Prevention, she focuses on two projects designed to improve patient care.

Kenneth R. Jones, PhD, MOVE's national program director, applauds Tate for helping create the tools for MOVE! TLC (Telephone Lifestyle Coaching). "With that particular project," Jones says, "we had the largest percentage of weight loss yet seen with any version of MOVE! Forty-nine percent of participants who completed the program achieved a 5 percent weight loss, compared to

about 26 percent who achieved similar weight loss with conventional MOVE! programs.”

Tate also is helping develop a national eMOVE! program based on her research in Internet weight management support (see *Carolina Public Health*, fall 2010). “It’s exciting to work with the VA as they bring proven research strategies into the implementation of programs that serve our veterans,” she says.

Morris Weinberger, PhD, Vergil N. Slee Distinguished Professor of Healthcare Quality Management, also helps the VA improve its interventions. Weinberger co-authored two papers published in 2010 in the *Annals of Internal Medicine* on studies conducted at the VA. One examined SeMOA (self-efficacy management in osteoarthritis), a telephone-based self-management support program for patients with hip or knee osteoarthritis, and found that it produced moderate improvements in pain.

The other paper reported on the effectiveness of group visits for veterans being treated for diabetes, showing that patients in group medical clinics had lower blood pressure and lower LDL cholesterol than those in standard VA care. The researchers are consulting with VA clinical leaders, several of whom want to start group medical clinics, to advise about implementing the clinics and analyzing their success. They also want to determine how best to test the group medical clinic model in non-VA settings.

As VA researchers, Weinberger says, “we have to think in advance, *Is this feasible? If this works, will it make a difference?* It’s not hypothetical research; you have to think about what happens afterwards.”

– Michele Lynn



Dr. Morris Weinberger (left) and Dr. Deborah Tate visit the Veterans Affairs Medical Center in Durham, N.C.



Dr. Steve Meshnick explores tick territory – the fields and woods so common in North Carolina.

Clothes make the man
(or woman) less tasty to ticks

Like the flowers and blooming trees that herald spring, an unwelcome pest also reappears after the long winter – the tick. Tick-borne illnesses – including Lyme disease and Rocky Mountain spotted fever – are prevalent in many parts of the U.S. and the world. Steven Meshnick, MD, PhD, professor of epidemiology at UNC’s Gillings School of Global Public Health, is determining whether clothing with built-in insect repellent will reduce the chances that people will contract tick-borne illnesses.

In a manuscript published online in the journal *Vector-Borne and Zoonotic Diseases* on March 11, 2011, Meshnick reports on a pilot study he conducted with epidemiology doctoral student Meagan Vaughn. The open-label pilot study followed workers in the North Carolina Division of Water Quality, some of whom wore their usual clothing and others who wore clothing treated by Insect Shield.[®] (“Open label,” the opposite of “double blind,” means that both researchers and participants knew which group was wearing the treated clothing.)

Based in Greensboro, N.C., Insect Shield LLC has developed clothing that provides protection against many species of insects through 70 launderings. Researchers found that people wearing Insect Shield®-treated

clothing had 93 percent fewer tick bites than those using standard tick bite prevention measures (e.g., repellents applied directly to the skin).

Based on results of that study, Meshnick and Vaughn received a \$1.2 million, four-year grant from the U.S. Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health to fund a double-blind, randomized controlled study, "Preventing Exposure to Ticks and Tick-borne Illness in Outdoor Workers." The study has enrolled more than 120 state forestry and park rangers and wildlife workers who sent their uniforms to Insect Shield LLC but don't know whether they are among the half whose uniforms were treated. Researchers will follow workers to get accurate counts of tick bites and tick-borne disease.

"We think this will work, but we want to prove it," says Meshnick. "We believe this is a fairly cost-effective way to protect people from tick-borne disease because it kills the tick before it can bite in the first place."

Meshnick, who also conducts research in developing countries, says that if this study proves the efficacy of Insect Shield® clothing for preventing tick bites, the next step will be to test whether it works against mosquitoes. "In the long term, we want to see whether [the treated clothing] can prevent other insect-borne diseases, such as malaria, which is found in many developing and poor countries."

– Michele Lynn

Above, North Carolina-based Insect Shield LLC developed clothing that protects against ticks and other insects through 70 launderings.

At right, N.C. Wildlife Resources Commission employees attend a recruitment meeting in March 2011.



PHOTOS BY MEGAN VAUGHN



Internet search data
provide timely, accurate
picture of health behavior

Between half and two-thirds of people use the Internet to find health information, studies show. Quicker and more finely tuned analysis of those searches can provide meaningful information for public health surveillance, policy and delivery of services.

Kurt Ribisl, PhD, and colleagues from Johns Hopkins and Harvard universities, use Google searches as a tool to obtain valuable real-time information about health information-seeking behaviors. Their analysis has implications, not only for the specific health issue which they studied – online searches for e-cigarettes – but also for potential surveillance practices across other issues.

E-cigarettes are battery-operated electronic devices that contain liquid nicotine cartridges. When heated, they emit water vapor rather than smoke.

Rather than wait months to receive data from phone surveys with increasingly limited response rates, they analyzed – unobtrusively, at minimal cost and in real time – individuals’ search behaviors for e-cigarettes, compared to searches for smoking cessation products (e.g., the nicotine patch) and alternative smoking products (e.g., snus, a powdered tobacco used by placing it under

one's lip). This enabled researchers to confirm hypotheses about the impact of strict tobacco control laws on the public's search for cessation products or smoking alternatives. The rapid rise in popularity of e-cigarettes compared to other products over the period also points to the need for greater oversight of these products. The Food and Drug Administration (FDA) tested several e-cigarettes and detected the presence of carcinogens and diethylene glycol, a chemical used in antifreeze that is toxic to humans. However, in April 2011, the agency announced plans to regulate e-cigarettes as tobacco products rather than under stricter rules for drug-delivery devices.

Ribisl, associate professor of health behavior and health education in the Gillings School of Global Public Health, with John W. Ayers, MA, of Johns Hopkins Bloomberg School of Public Health, and John S. Brownstein, PhD, of Harvard University Medical



Dr. Kurt Ribisl

School, published their findings recently in the *American Journal of Preventive Medicine*.

“We think this method could become part of routine surveillance employed by state and federal public health agencies so as to quickly reallocate resources where they are needed most, across a range of emerging public health issues,” Ribisl says.

– Elizabeth Witherspoon



Alzheimer's disease research – Awareness, education and care

One caregiver in an education and training group led by the research team of Peggye Dilworth-Anderson, PhD, thought her mother's memory loss was the result of worrying too much. "We just thought maybe it was the stress of the job and some family issues." ■■■■■■■■■■■■■■■■■■■■■■

Another said of her father, "He's getting older. Maybe it's normal. You know, it happens. You get more absent-minded."

In both cases, aging parents were diagnosed with Alzheimer's disease, a neurodegenerative illness that is very different from normal aging. An estimated 5.4 million people have Alzheimer's, a form of dementia

that is the sixth leading cause of death in the U.S., the only killer in the top 10 for which there is no means to slow or stop its progress.

As great a toll as the disease takes on the people who have it, an equal burden is borne by those who give them care. According to the Alzheimer's Association (www.alz.org), nearly 15 million Alzheimer's and dementia

caregivers provide 17 billion hours of unpaid care, valued at \$202 billion. That level of stress takes its toll on caregivers' health, and caregivers incurred \$7.9 billion in additional health care costs in 2010. Sixty percent of family caregivers report high levels of stress, and 33 percent report being depressed.

Providing help for dementia caregivers is at the heart of Dilworth-Anderson's research and community engagement. Professor of health policy and management at UNC's Gillings School of Global Public Health and interim co-director of the UNC Institute on Aging, Dilworth-Anderson aims to reduce and eliminate health disparities related to Alzheimer's disease. She and her team are discovering ways to integrate research and education to empower North Carolina communities to care for older adults throughout the state, and ►►

for the family members and other volunteers who look after them.

In particular, Dilworth-Anderson and her team focus on the needs of those with limited access to health resources and those whose health literacy (or ability to obtain and understand basic health information and services) is limited. Many live in rural areas, which may result in further barriers to health care.

“Our research team works to understand the challenges of caring for older adults with dementia, the role of culture in shaping the caregiving experience, and what this provision of care actually means to caregivers and their families,” Dilworth-Anderson says. “Three of our recent studies have provided insight into how caregivers perceive dementia, their level of knowledge about the disease, and resources and services available to patients and caregivers.”

Dilworth-Anderson’s “Perceiving and Giving Meaning to Dementia” study surveyed 85 people from 25 racially and ethnically diverse North Carolina families to examine the influence of cultural values upon perceptions about demen-

tia caregiving and health care access. The study found that most caregivers mistook early signs of dementia for normal behavior. Coping also was determined to be a dynamic process, often handled differently according to culture.

In the “Cultural Meanings and Reasons for Dementia Caregiving” study, a telephone survey of 200 caregivers was intended

to uncover cultural and personal reasons why caregivers provide care to their older relatives. The study found that caregivers accepted their role because of family values and community expectations. They reported seeing themselves as being available, responsible and compassionate.

“Train the Trainer: A Dementia Care Project” is aimed not only at understanding

PHOTO BY LINDA KASTLEMAN



Dr. Peggys Dilworth-Anderson (center) poses with her research team (l-r), health policy and management graduate students Elise Lockamy, Diedre Boozer and Tandra Hilliard, and HPM alumna Allyson Banas.

Ten Warning Signs of Alzheimer's

Memory changes that disrupt daily life

What's typical?

Sometimes forgetting names or appointments, but remembering them later

Challenges in planning or solving problems

What's typical?

Making occasional errors when balancing a checkbook

Difficulty completing familiar tasks at home, at work or at leisure

What's typical?

Occasionally needing help to use settings on a microwave or record a television show

Confusion with time or place

What's typical?

Getting confused about the day of the week but figuring it out later

Trouble understanding visual images and spatial relationships

What's typical?

Vision changes related to cataracts

From the UNC Institute on Aging's Alzheimer's Dementia Caregiver Resource Guide (<http://tinyurl.com/UNC-caregivers-guide>)

caregiver dynamics but also at providing caregivers with information and education about dementia and normal aging and introducing available resources and strategies for self-care and stress management. Caregivers, who learned through the training how to recognize signs of dementia, are continuing to share the information within their respective communities.

Among their insights? “I need to try to stay positive – stay in good health so I will have strength and energy to be the caregiver I should be,” one person told Dilworth-Anderson. “I have to laugh more, and be more of the mindset to be in the moment with my mom,” another told her.

To date, 443 caregivers in North Carolina have participated in the project.

Dilworth-Anderson and her team currently are conducting town hall meetings to promote awareness and disseminate dementia care information to further empower rural and medically underserved communities in the state.

About 170,000 North Carolinians had been diagnosed with Alzheimer’s in 2010; by 2025, the number is expected to rise to 210,000. AARP estimates that there are 357,000 unpaid caregivers (family members and friends) for people with Alzheimer’s disease in our state.

Traditions and culture in North Carolina – especially in rural areas and small towns and

Our research team works to understand the challenges of caring for older adults with dementia, the role of culture in shaping the caregiving experience, and what this provision of care actually means to caregivers and their families.

among African-American families – influence people to care for their family members themselves, Dilworth-Anderson said.

“It’s kind of a tradition in our family,” one caregiver told her. “We take care of each other.”

Another explained, “She’s my mother, and I love her and respect her. She raised me, and now it’s my time to give back to her.”

Dilworth-Anderson says it is very rewarding to be able to help older adults and their caregivers cope better with the challenges of dementia.

She will continue to conduct this type of work, she says, “because as a scientist, I know that research findings, when translated, disseminated and applied well, can have a positive influence on older people with dementia, their family caregivers and friends who help care for them.”

Caregiver guides from the project are available on the website of the UNC Institute on Aging (www.aging.unc.edu).

Dilworth-Anderson, past president of the Gerontological Society of America and recipient of the Ronald & Nancy Reagan Research Award in Alzheimer’s Research, has received support from the Alzheimer’s Association, GlaxoSmithKline Community Partnership Program, Agency for Health Care Research and Quality, and the National Institute on Aging.

– Ramona DuBose,
Linda Kastleman and Angela Spivey
contributed to this article.

(as compared to “What’s typical?” for normal age-related changes)

New problems with words in speaking or writing

What’s typical?
Sometimes having trouble finding the right word

Misplacing things and losing the ability to retrace steps

What’s typical?
Misplacing things from time to time, such as a pair of glasses or the remote control

Decreased or poor judgment

What’s typical?
Making a bad decision now and then

Withdrawal from work or social activities

What’s typical?
Sometimes feeling weary of work, family and social obligations

Changes in mood and personality

What’s typical?
Developing very specific ways of doing things and becoming irritable when a routine is disrupted



Read more at www.aging.unc.edu or www.alz.org.

Easing the wheezing

Asthma can be managed

When you can't breathe, nothing else matters much. ■■■■■■■■



Just ask any of the 22 million Americans – 7 percent of us – who suffer from the illness, caused by chronic inflammation of the air passages.

For more than a decade, Karin Yeatts, PhD, epidemiology assistant professor at UNC Gillings School of Global Public Health, has studied causes and effects of the disease. Her dissertation examined asthma prevalence among Mecklenburg County (N.C.) middle-school students. She later expanded that work to include 500 middle schools throughout North Carolina. Now, she studies effectiveness of policies and treatments in North Carolina and the impact of indoor and outdoor pollution on health in the rapidly developing United Arab Emirates.



Dr. Karin Yeatts

“Adults and children still die from asthma,” she says. “That’s a travesty – because it’s a manageable disease.”

In her research with middle schoolers across the state, Yeatts found that a large number (6 percent) of students with wheezing symptoms characteristic of asthma were not diagnosed – and therefore not treated. Those were in addition to the 11 percent that had been diagnosed with asthma.

“It takes a while to make a diagnosis,” she says. “People just don’t know what wheezing is.”

Yeatts’ work was included in the N.C. Department of Public Health’s 2006 report, “The Burden of Asthma in North Carolina” (<http://tinyurl.com/NC-asthma-burden>), which identified asthma as a major public health priority in the state.

Her latest research involves youngsters who have been diagnosed and have inhalers to control symptoms. She and researchers from the UNC medical and pharmacy schools found that only one in 10 children with traditional inhalers use them correctly. Newer devices, designed to be easier to use, are used correctly by only one in four. The findings were published in *Pediatrics* online March 28, 2011.

“It takes some coordination to squeeze the inhaler and breathe in at just the right time,” Yeatts says.

Asthma is a significant – and growing – public health challenge, especially in industrialized nations. Yeatts’ work illuminates the difficulties posed by the illness – from the availability and use of health care, to lack of education about symptoms, to the wide-ranging group of triggers that may induce an asthma attack.

Her research also found that North Carolinians with asthma are affected by coarse particles in outdoor air. This particulate matter – from dust to traffic exhaust – causes circulatory inflammation and has a

cumulative effect on raising triglycerides, which can be linked with the development of atherosclerosis.

Yeatts is part of a UNC research team also working in the United Arab Emirates (U.A.E.), where asthma prevalence is comparable to that of U.S. and Europe. One reason? Air pollution, both indoors and outdoors. Yeatts’ study of 628 households across the U.A.E. showed that 43 percent burn incense every day, and 35 percent of men smoke tobacco.

In North Carolina, the medical community and public health departments continue to improve the quality of care, Yeatts says. “North Carolina has certain policy advantages – tobacco use prevention, for instance. But asthma is multifactorial. There are personal environmental decisions (such as cigarette smoking) and air quality issues in the U.A.E. that will be improved with education and regulation.”

The complexity of the challenge intrigues Yeatts. She intends to continue measuring the scope of the problem, identifying susceptible populations and providing evidence for the establishment of air pollution regulations that will result in cleaner air and improved health.

– Linda Kastleman

Effective
public health
research benefits
North Carolina
and the world



Dr. Sandra L. Martin

UNC Gillings School of Global Public Health Office of Research 2009–2010 Annual Report

This has been a very successful year for members of the UNC Gillings School of Global Public Health faculty, despite a weak economy that has resulted in shrinking pools of grant money and greater competition for the funds that are available.

Our faculty received more than \$142 million in research awards in fiscal year 2010, including approximately \$11 million from the American Recovery and Reinvestment Act of 2009. Our faculty continues to conduct innovative research that addresses many challenging health problems, with much of this research being focused on North Carolina. In 2010, more than 50 of our projects provided community services to North Carolina or had a direct economic impact on our state.

As shown by the selected examples of research presented in this report, our work is making a difference right here in North Carolina and around the

world. For more examples, please visit our website, www.sph.unc.edu/research.

Sandra L. Martin

Sandra L. Martin, PhD

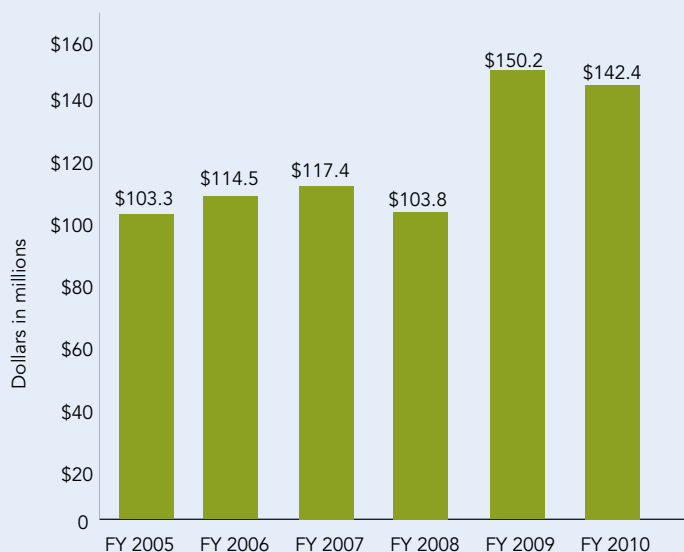
Associate Dean for Research

Professor of Maternal and Child Health

UNC Gillings School of Global Public Health



UNC
GILLINGS SCHOOL OF
GLOBAL PUBLIC HEALTH



Dollars awarded from grants and contracts to principal investigators in UNC Gillings School of Global Public Health (fiscal years ending June 30)

Members of the School's faculty were awarded more than \$142 million for grants and contracts in fiscal year 2010.

Members of our faculty work in North Carolina, the United States and around the world. Following are examples of projects that make a real difference in improving people's lives.

North Carolina Projects

▫ **Marci Campbell, PhD**, nutrition professor, received an award from the National Center on Minority Health and Health Disparities (September 2009 – August 2011) to undertake an innovative intervention to address obesity among low-income minority women in rural North Carolina.



Dr. Marci Campbell

The “HOPE Accounts for Women” project provides matched savings accounts for low-income women while promoting behavior change and financial literacy that will help the women manage their weight and become economically empowered.

Participants may use the funds for micro-enterprise, further education and job skills training. Enhancing financial security and independence among these rural residents is expected to translate into improved health and well-being for the women and their families. (See *Carolina Public Health*, fall 2010, page 18.)

▫ **Gregory Characklis, PhD**, environmental sciences and engineering associate professor, was awarded funds from the Water Resources Research Institute (March 2010 – June 2011) to help ensure reliability of central North Carolina's water supply. Characklis works with communities and utility companies in the Research Triangle (N.C.) area to address the technical and financial challenges associated with the increasing

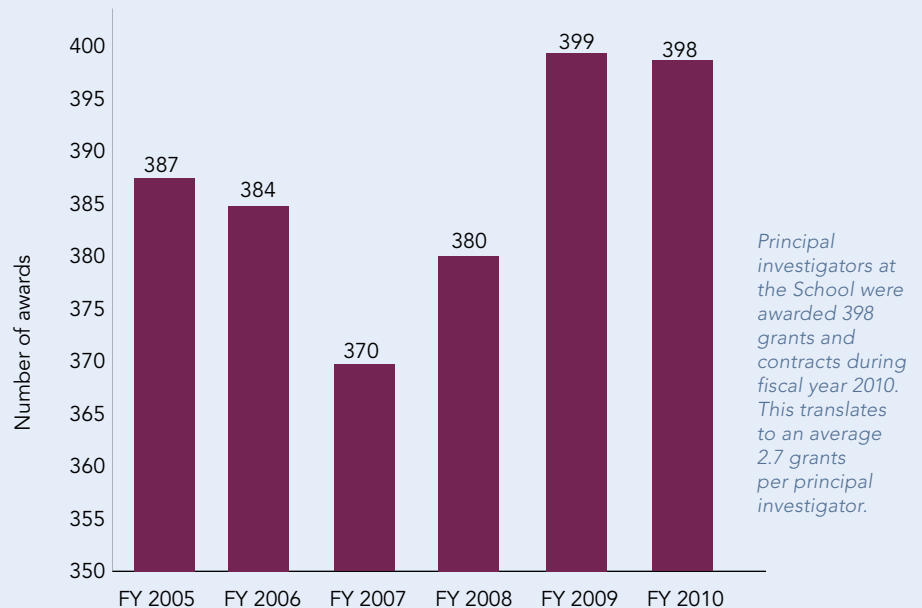


Dr. Gregory Characklis

scarcity of clean water. The project aims to help implement novel, yet cost-effective, water management strategies that recognize both the need for a reliable supply of clean water and the communities' ability to pay for it.

Characklis also is involved in projects related to hydropower generation in the

Catawba and Roanoke river basins of North Carolina. These projects, which have been supported in part with funds from the Duke Energy Foundation and the state of North Carolina, examine effects of hydropower, a renewable and carbon-neutral energy source, on ecosystem health in these basins. Characklis collaborates on these projects with Larry Band, PhD, and Martin Doyle, PhD, in the UNC Department of Geography, and Richard Whisnant, PhD, at UNC's School of Government.



Number of awards for grants and contracts to principal investigators in the School (fiscal years ending June 30)



▫ **Julie Daniels, PhD**, epidemiology and maternal and child health associate professor, in partnership with the North Carolina Department of Health and Human Services,



Dr. Julie Daniels

was awarded funding from the Centers for Disease Control and Prevention (June 2010 – May 2014) to conduct the North Carolina Autism and Developmental Disabilities Monitoring Project. The surveil-

lance system will collect information on more than 37,000 children with autism spectrum disorder and intellectual disability in 11 North Carolina counties. The project enables researchers to better estimate the number of people affected by autism and developmental disability and to better understand factors associated with the development of these problems.

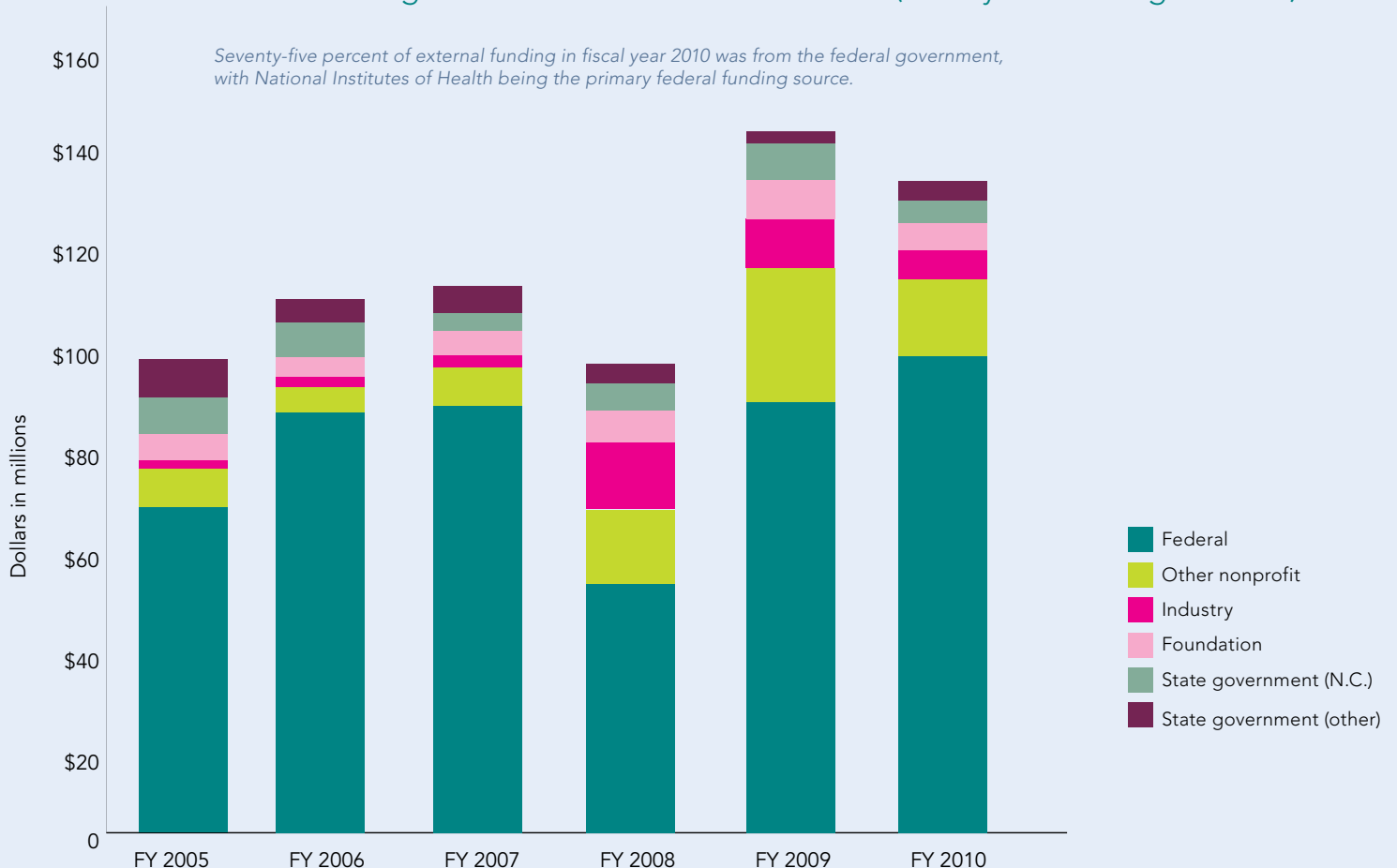
▫ **Sandra Greene, DrPH**, Professor of the Practice of health policy and management, has led management of the North Carolina medication error reporting system



Dr. Sandra Greene

since the N.C. General Assembly mandated this through legislation passed in 2003. Greene recently was awarded funding from the North Carolina Department of Health and Human Services (February 2010 – January 2012) to update online graphic technology for this reporting system, an undertaking focused on increasing the safety of patients in North Carolina nursing homes.

Types of funding for grants and contracts awarded to principal investigators in UNC Gillings School of Global Public Health (fiscal years ending June 30)



National and Global Projects

▫ **Michael Kosorok, PhD**, biostatistics professor and chair, received National Cancer Institute funding (April 2010 – March 2015)



Dr. Michael Kosorok

to develop highly innovative methods for cancer clinical trials. The methods will help put into practice effective new therapies. Co-principal investigators are Marie Davidian, PhD,

at N.C. State University, and Stephen George, PhD, at Duke University.

▫ **Suzanne Maman, PhD**, health behavior and health education associate professor, received an award from the National Institute of Mental Health (July 2009 – December 2010), which was used to pilot an intervention to reduce HIV, violence and substance use among networks of young men in Dar es Salaam, Tanzania.



Dr. Suzanne Maman

▫ **Elizabeth Mayer-Davis, PhD**, nutrition professor, is testing the feasibility of an intervention for self-management of type 1 diabetes among low-income, minority adolescents. Funded by the National Institute of Diabetes and Digestive and Kidney Diseases (March 2010 – February 2012), the project combines cell phone communication with known effective behavioral



Dr. Elizabeth Mayer-Davis

strategies to help children better manage their disease.

▫ **Cass T. Miller, PhD, and William G. Gray, PhD**, professors in the environmental sciences and engineering department, were awarded a grant from the National Science Foundation (December 2009 – November 2013) to develop mechanistically based mathematical models of multiphase systems, which have application to public health issues such as water supply, contaminant remediation, energy production and sequestration of the greenhouse gas, carbon dioxide. Miller and Gray collaborate with colleagues in



Dr. Cass T. Miller

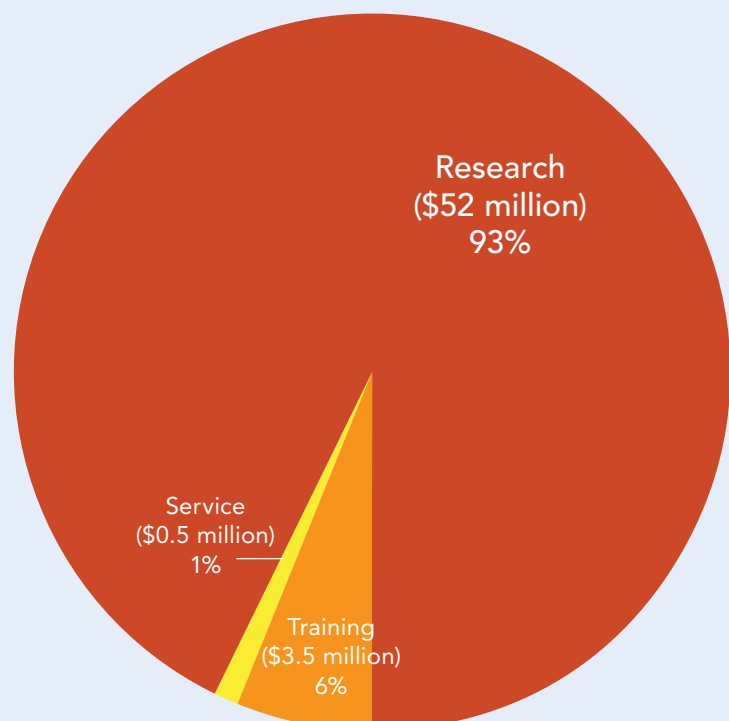


Dr. Bill Gray

UNC's departments of computer science and mathematics and at North Carolina State and Oregon State universities. The most recent application of their work involves collaborators from the UNC School of Medicine and from Texas and Italy, who are working together to model the growth of brain tumors.

Distribution of the School's National Institutes of Health funding, by funding type, in fiscal year 2010

The National Institutes of Health awarded School faculty members \$56 million in fiscal year 2010, with most funds designated for research.



Clues to controlling cancer



Mapping food deserts and tobacco hotspots

School researchers use a geographic information system to map neighborhoods in three counties that lack availability of fresh food and places to exercise, as well as those that have clusters of tobacco retailers. The information can help cities and towns make policies that promote health. ■■■■

“Zoning laws could be used to reduce the number of tobacco retailers in a neighborhood or to restrict outdoor tobacco advertising near schools,” says Kurt Ribisl, PhD, associate professor of health behavior and health education. The project is one of six supported by Health-E-NC, which funds pilot projects from UNC researchers testing new ways to prevent North Carolinians from getting cancer and to help improve diagnosis and care. Sponsored by UNC Lineberger Comprehensive Cancer Center and the University Cancer Research fund, Health-E-NC also has funded other School investigators, including Laura Linnan, ScD, health behavior and health education associate professor; and Stephanie Wheeler, PhD, assistant professor, and Bryan Weiner, PhD, professor, both from the Department of Health Policy and Management.

For more information, visit <http://tinyurl.com/UCRF-awards>.

What makes breast cancer grow?

Melissa Troester, PhD, assistant professor of epidemiology, has found that normal tissue adjacent to breast tumors shows gene expression changes (the turning “on” or “off” of genes) similar to those that happen during wound healing, and that these changes vary greatly from case to case. These variations may explain why some patients with similar

tumors have very different prognoses. “We think that changes in the adjacent normal tissue are providing rich soil for the tumors to grow in. If we can understand the soil conditions better, we can understand how to stop the cancer from growing,” Troester says.

Revealing disparities in cancer care

The Integrated Cancer Surveillance System will link cases from the N.C. Central Cancer Registry to data from hospitals, insurance programs and clinical trials to reveal disparities in cancer treatment, access to care and clinical trial enrollment. Many aspects of the system will be available to researchers statewide. “After we confirm our data security systems and establish our data-use agreements, we look forward to partnering with researchers from other institutions,” says William Carpenter IV, PhD, assistant professor of health policy and management.

– Angela Spivey



Dr. Kurt Ribisl



Dr. Melissa Troester



Dr. William Carpenter IV

The Water Institute at UNC – adapt and thrive

Jamie Bartram, PhD, knows it's important to understand the impacts of droughts, floods and increasingly variable precipitation patterns. But the director of The Water Institute at UNC knows that's not enough.

"We also need to understand how to adapt and cope with such change," he says. "We know the process, to some extent, is going to happen and that certain challenging events and situations will become more common."

Consider, he says, “what happened in New Orleans (with Hurricane Katrina) and what happened recently with the flooding in

Brazil. Australia also suffered catastrophic water-related events. We are not good at managing our water supplies in the face of great rainfall or drought.”

That will change, Bartram hopes, with the impact of the institute, launched in October 2010 as part of the UNC Gillings School of Global Public Health. The launch brought

more than 400 experts from more than 40 countries to Chapel Hill, N.C.

Bartram, professor of environmental sciences and engineering, says the institute will focus upon select "critical challenges" – major issues of concern for health which attract too little attention and require concerted action to achieve real progress. One of the challenges, he says, is adapting drinking water supply and sanitation guidelines to the rapidly emerging reality of water scarcity in both developed and developing nations.

Institute goals include learning how to assess country vulnerability and preparedness for water issues; discovering and reporting how some communities adapt to changes in rainfall; and cooperating with groups in





A group of School faculty members and alumni, many from the environmental sciences and engineering department, gather at the launch of The Water Institute at UNC in October 2010.

developed and developing nations to share experience, pool understanding, and advance science and good practice.

While most of the institute's work involves experts around the world, it also provides opportunities for students.

One student-led project examines how 21 countries might adjust their water supplies and sanitation programs in light of climate changes. Edema Ojomo, master's degree student in environmental sciences and engi-

neering (ESE) and Donald and Jennifer Holzworth Scholar, works with UNICEF to assess programs about availability and quality of water and sanitation. "[Ojomo] is working to deliver practical suggestions for decreasing the vulnerability of water supply and sanitation related to projected impacts of changes in climate," Bartram says.

A second initiative involves the United Nations Environmental Program (UNEP). Mark Elliott, PhD, ESE postdoctoral fellow,

leads the compilation of short articles that offer practical measures countries can take to ensure a constant water supply despite rainfall changes.

Due out in mid-2011, the book will guide policymakers in developing countries. As with other institute projects on this topic, the book, Bartram says, "demystifies how to adapt to climate changes."

– Susan Shackelford

The Water Institute at UNC is fortunate to have many global partners, with more on the way. Among its early collaborators were the:

- ▣ National Institutes of Health's Fogarty International Center
- ▣ International Association of Plumbing and Mechanical Officials (IAPMO) – see page 42
- ▣ International Water Association (IWA)
- ▣ Procter & Gamble Children's Safe Water Fund
- ▣ United Nations Environment Programme Risoe Centre on Energy, Climate and Sustainable Development
- ▣ United Nations Children's Fund (UNICEF)
- ▣ University of Bristol, U.K.
- ▣ WaterAid, a U.K.-based nongovernmental organization
- ▣ World Health Organization (WHO)
- ▣ PLAN USA

Since the institute launch, other organizations have become active collaborators, including the:

- ▣ Drinking Water Inspectorate (England & Wales)
- ▣ United Nations Educational, Scientific and Cultural Organization (UNESCO)
- ▣ World Bank
- ▣ Health Canada (Canada's federal health department)
- ▣ Water and Sanitation Rotarian Action Group (Rotary WASRAG)

Register now!

Water and Health Conference:
*Where Science
Meets Policy*

October 3–7, 2011

Sponsored by

The Water Institute at UNC
& UNC Institute for the Environment

<http://whconference.unc.edu>

"Early-bird" registrations accepted
through July 31.

Bringing clean water to Southeast Asia

To solve public health issues related to dirty water and poor sanitation, would you turn to private enterprise? |||||

Government and private donors traditionally have led such efforts in developing countries including Cambodia, Laos and Vietnam, where health problems related to water and sanitation are critical. “Asia’s Lower Mekong region ranks among the worst in the world in terms of disease, morbidity and premature death due to deficiencies in safe water, sanitation and hygiene,” notes a 2011 newsletter from the U.S. Agency for International Development (USAID).

Thanks to a promising collaboration focused upon this region, private enterprise may offer the best way to tackle these health issues – and raise the region’s overall standard of living.

“The beauty is that there is no subsidy, no outside donor support,” says Mark Sobsey, PhD, principal investigator for WaterSHED, a joint project of USAID, the UNC Gillings School of Global Public Health and the UNC Kenan-Flagler Business School. “This



Dr. Mark Sobsey presents information about his work in Cambodia to members of the UNC Chancellor's Innovation Circle.

PHOTO BY DAN POWELL

is a self-sustaining business proposition that benefits not only public health but the economy. A lot of people view these challenges strictly as a poverty cycle. We think it should turn into a productivity and development cycle.”

Sobsey is Kenan Distinguished Professor of environmental sciences and engineering in the public health school.

Thanks to an \$8.5 million USAID grant, WaterSHED facilitates the production, marketing and sales of proven water purification, sanitation and hygiene products to consumers. The organization conducts consumer research, helps design better products, recruits businesses and entrepreneurs, and helps establish consumer financing to buy products.

PHOTO BY LINDA KASTLEMAN



WaterSHED co-founder Tom Outlaw, MBA (left), provides a USAID staff member with a tour of the hydrologic water filter factory, located on the outskirts of Phnom Penh, Cambodia.

USAID is working with ... the private sector to open a ceramic water filter factory in Cambodia. With ceramic filters, people no longer need to boil water to make it safe to drink, so they don't need to burn as much wood or charcoal, which in turn reduces greenhouse gases.

– U.S. Secretary of State Hillary Clinton, on World Water Day, March 22, 2011, in reference to WaterSHED

It also partners with a wide range of groups and individuals, from public officials and entrepreneurs in Southeast Asia to non-governmental organizations, foundations and other aid groups.

The project began in 2007 as one of the School's first Gillings Innovation Labs, developing into WaterSHED in 2009. Since then, the organization estimates 250,000 to 300,000 lives have been improved through

the use of ceramic water purification filters (more than 250,000 people) and latrines (more than 50,000).

Tom Outlaw, MBA, WaterSHED's chief of party in Southeast Asia until March 2011, envisioned the project while he was a master's student at UNC's business school a few years ago. Intrigued by the ceramic filter's simplicity, the former USAID employee recalls, "I realized that if we could sell locally made water filters, using local materials and local labor, we'd have a great social enterprise business model."

Now, WaterSHED is proving it.

– Susan Shackelford

Exploring cause and effect of climate change

Dr. Rose Cory collects water samples at her field site in the Arctic.

UNC Gillings School of Global Public Health researchers aren't just holding their breath when it comes to protecting our atmosphere. ■■■■

Jason West, PhD, assistant professor of environmental sciences and engineering (ESE), studies how methane, nitrogen oxide (NO_x), carbon monoxide and black carbon – particulates formed through the incomplete combustion of fossil fuels – affect air pollution and climate change.

"We would like to be able to lay out a menu of options for policymakers," West says, noting that simply decreasing the quantity of these elements won't improve air and climate automatically. "For example, methane

reduction is good for both, but NO_x reduction, while good for air quality, may be bad for climate change."

The Arctic is the focal point for Rose Cory, PhD, another ESE assistant professor, and Collin Ward, an ESE doctoral student working with her.

"The Arctic is warming faster than much of the rest of the earth due to climate change," Cory explains. "This warming is causing thawing of permafrost. In those frozen soils, there is a lot of naturally occurring organic

carbon that, in a sense, has been locked up in a freezer. Thawing is releasing this organic carbon to the warmth and sunlight at the earth's surface."

Based on her preliminary results, exposing this organic carbon to sunlight is accelerating the development of carbon dioxide, a greenhouse gas that contributes to "global warming." That's because microorganisms, which eat organic carbon and release carbon dioxide through respiration, now have more carbon at their disposal.

Cory is early in a multi-year project to further understand this phenomenon. She plans to conduct research in the Arctic for the next three summers.

– Susan Shackelford

Disease mapping

to pinpoint, predict and prevent epidemics

Marc Serre, PhD, associate professor of environmental sciences and engineering at UNC Gillings School of Global Public Health and director of the UNC-BME (Bayesian Maximum Entropy) lab, was captivated by the Black Death pandemic that killed half of the people in Europe during the Middle Ages. To learn from history, he applied 21st-century geostatistical technology to analyze the disease's chilling, killing impact across space and over time.

Serre applies the same research methods in medical geography to study reasons for the prevalence of two major health concerns in North Carolina – chronic asthma in children and STDs and HIV/AIDS in males. According to state health statistics, an astounding 10 percent of North Carolina’s children are living with asthma, struggling to breathe, awakening with chest tightness, and coughing through the night. In 2009, according to the U.S. Centers for Disease Control and Prevention, North Carolina had the ninth highest number of diagnosed AIDS cases in the country.

Serre's urban and rural area disease mapping provides clear, concise graphic analyses to document those at risk by pinpointing high rates of outbreaks in counties, even by zip codes, up to a year before epidemics may take hold. He consults with the N.C. Department of Health and Human Services about disease surveillance strategies for essential interventions and resource allocations based on his high-risk predictions.

“My students,” Serre says, “share a passion for exploring environment-related public health issues, choosing careers to benefit our residents’ well-being.”

– JB Shelton

Serre's disease-mapping successes share a common thread with the work of Steven R. Meshnick, MD, PhD, who is featured in "Tracking Tropical Disease," *Carolina Public Health* (spring 2010), page 20.



Dr. Marc Serre (seated, left) consults about a disease-mapping project with fellow researchers (l-r) Jeannette Reyes, doctoral student; Dr. Yasuyuki Akita, postdoctoral fellow; Lani Clough, master's student; and Prahlad Jat (foreground) and Kyle Messier, doctoral students. All work or study in the environmental sciences and engineering department.

UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH SCHOOL NEWS

OCTOBER 2010 – MARCH 2011

For more information on these topics and other news, please see www.sph.unc.edu/news_events.

Faculty members, alumna appointed to national advisory groups

NUTRITION PROFESSOR ELIZABETH MAYER-DAVIS, PHD, was appointed by President Obama to the Advisory Group on Prevention, Health Promotion and Integrative and Public Health. Sharon Van Horn, MD, MPH, an alumna of the School's epidemiology department, also was appointed. Group members will develop policy recommendations and advise the National Prevention, Health Promotion and Public Health Council on lifestyle-based chronic disease prevention, integrative health care practices, and health promotion.



Dr. Elizabeth Mayer-Davis



Dr. Thomas Ricketts

Thomas Ricketts, PhD, professor of health policy and management and Gillings Visiting Professor, was appointed to the new National Health Care Workforce Commission. The Commission is an independent body that advises Congress and the administration on health workforce policy.



Dr. Steven Meshnick

Meshnick awarded Gates Foundation grant

STEVEN MESHNICK, MD, PHD, epidemiology professor, has received a Grand Challenges Explorations Grant from the Bill & Melinda Gates Foundation. The \$100,000 award will support an innovative global health research project titled, "Development and Evaluation of the Synthetic Lymph Node." Meshnick will collaborate with co-principal investigator Carla Hand, MD, PhD, epidemiology research assistant professor, to try to improve vaccine efficacy.

Infants perceived as 'fussy' are more likely to receive solid foods too early

A STUDY LED BY HEATHER WASSER, MPH, RD, nutrition doctoral candidate, offers reasons why some mothers feed their infants complementary foods (juice, solids) before the infants are four months old, including the mothers' perception that the infants are "fussy" and would be soothed by the introduction of complementary food. Infants perceived

to be fussy were nearly twice as likely to be fed solid food before age 4 months. Obese mothers were even likelier to feed their young infants solid foods.

The study was published online Jan. 10, 2011, in the journal *Pediatrics*.



Heather Wasser



Dr. Anna Maria Siega-Riz

Siega-Riz named associate dean

ANNA MARIA SIEGA-RIZ, PHD, professor of nutrition and of epidemiology, was named the School's new associate dean for academic affairs, effective Dec. 1, 2010. Siega-Riz succeeds Peggy Leatt, PhD.

A UNC nutrition alumna, Siega-Riz has been a member of the UNC public health faculty since 1995. She served on three National Academy of Sciences/Institute of Medicine committees, which were charged to provide guidance about the federal Women, Infants and Children (WIC) program, determine guidelines for weight gain during pregnancy, and set standards for systematic reviews used in clinical guidelines.

UNC epidemiologists participate in oil spill health study

A NEW FEDERAL STUDY will look at possible health effects of the Gulf of Mexico's Deepwater Horizon oil spill upon 55,000 cleanup workers and volunteers across the United States, particularly in Louisiana, Mississippi, Alabama and Florida. Epidemiology faculty members are working with the National Institute of Environmental Health Sciences (NIEHS) on the study, expected to last up to 10 years.

The Gulf Long-term Follow-up Study, the largest health study of its kind ever conducted among cleanup workers and volunteers, is

one component of a comprehensive federal response to the Deepwater Horizon oil spill. Many agencies, researchers and community members have provided input as to how the study should be conducted.

Dale Sandler, PhD, chief of the NIEHS epidemiology branch and adjunct professor of epidemiology at the School, is principal investigator. Other researchers include Lawrence Engel, PhD, associate professor of epidemiology and associate scientist in NIEHS's epidemiology branch, and Richard Kwok, PhD, a three-time alumnus of the School's epidemiology department (BSPH '97, MSPH '99, PhD '03).



Dr. Dale Sandler



Dr. Lawrence Engel



Dr. Richard Kwok

Save these dates in 2012!

Feb. 24 – Minority Health Conference
April 17 – Foard Lecture

Schenck leads NC Institute for Public Health



Dr. Anna Schenck

ANNA P. SCHENCK, PHD, became director of the N.C. Institute for Public Health (NCIPH) and associate dean for public health practice at the School, effective March 1, 2011. Schenck also leads the School's Public Health Leadership Program (PHLP). She succeeds Edward Baker Jr., MD, MPH, research professor of health policy and management.

"Anna's leadership provides an important opportunity to strengthen ties between research, teaching and practice at the School," says Dean Barbara K. Rimer. "By leading the NCIPH and PHLP, she will increase connections between academics and practice, not just with these programs but across the School and out to communities across North Carolina."

School leads development of America's Health Rankings

ANNA SCHENCK, PHD, associate dean for public health practice, leads the scientific advisory committee for United Healthcare Foundation's (UHF) rankings of health by state. The state rankings, used by policymakers and others to assess the need for health care improvements in various areas of the country, have been compiled annually since 2002. UHF, in concert with the American Public Health Association and Partnership for Prevention, commissioned UNC's public health school to undertake an ongoing review of America's Health Rankings.

In addition to Schenck, other members of the 22-member panel include Jamie

Bartram, PhD, professor of environmental sciences and engineering and director of The Water Institute at UNC, part of the Gillings School of Global Public Health; Leah Devlin, DDS, MPH, and Sheila Leatherman, MSW, both Gillings Visiting Professors (GVP) in health policy and management at the School; Thomas C. Ricketts, PhD, GVP and professor of health policy and management and social medicine; and Barbara K. Rimer, DrPH, dean and Alumni Distinguished Professor of health behavior and health education at the public health school. Ricketts previously led the committee for eight years.

UNC's 32nd annual Minority Health Conference addresses the promise of health equity

ABOUT 500 PEOPLE attended the 32nd annual Minority Health Conference in Chapel Hill on Feb. 25, 2011, and at least 700 more participated through remote technologies and sites in Ghana, Canada, Japan and multiple locations in the U.S.

The conference's William T. Small Jr. Keynote Lecture was presented by Bonnie M. Duran,



Dr. Bonnie Duran



Kristin Black and Paul Gilbert, event co-chairs

DrPH, associate professor of health services at the University of Washington-Seattle. Duran spoke about "The Promise of Health Equity: Advancing the Discussion to Eliminate Disparities in the 21st Century."

UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH AWARDS & RECOGNITIONS

OCTOBER 2010 – APRIL 2011

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

SCHOOL

First in our hearts, second in the nation

IN ITS 2012 “best graduate schools” issue, *U.S. News and World Report* ranked the Gillings School of Global Public Health the top public school of public health and second in the nation among all schools of public health.

In additional rankings, the School’s health policy and management department was rated #3 for its master’s degree program in health care management, and the environmental sciences and engineering department tied for #11 for environment/environmental health. The Public Health Leadership Program’s community/public health clinical nurse specialty was ranked #3, and its public health nursing program tied for #11.

Gillings honored with Davie Award

IN NOVEMBER 2010, UNC-Chapel Hill’s board of trustees honored Dennis Gillings, PhD, CBE, as one of four recipients of the William Richardson Davie Award, the board’s highest honor.

Established by the trustees in 1984, the Davie Award is named for the Revolutionary War hero who is considered the father of the University. It recognizes extraordinary service to the University or society.

In 2007, Dennis and Joan Gillings made the largest single commitment from an individual in University history – \$50 million to the School of Public Health, which was renamed the Gillings School of Global Public Health in their honor.

FACULTY

Fry honored for outstanding research

REBECCA FRY, PHD, assistant professor of environmental sciences and engineering, was selected for two prestigious awards recognizing her potential to advance science.

Fry received the Outstanding New Environmental Scientist (ONES) Award from the National Institute of Environmental Health Sciences (NIEHS) of the National Institutes of Health, which includes a \$2.2 million grant to study health effects of prenatal arsenic exposure in Mexico. She also was named a PopTech Science and Public Leadership Fellow.

PopTech, an interdisciplinary group of cutting-edge leaders, each year trains as many as 20 scientists to become articulate spokespersons for public health issues.



Dr. Rebecca Fry

Greczyn named GVP

ROBERT J. GRECZYN JR., retired chief executive officer of Blue Cross and Blue Shield of North Carolina, was named a Gillings Visiting Professor, effective Oct. 1, 2010.



Robert Greczyn Jr.

Zeisel receives NIEHS award

STEVEN ZEISEL, MD, PHD, director of the University of North Carolina’s Nutrition Research Institute in Kannapolis and Kenan Distinguished Professor of nutrition, has received the National Institute of Environmental Health Sciences’ Falk Award.

Zeisel received the award Oct. 4, 2010, at an event in Research Triangle Park, N.C., where he presented the Hans L. Falk Memorial Lecture, “Nutrigenomics, Estrogen and Environmental Chemicals Influence the Dietary Requirement for Choline.”



Dr. Steven Zeisel

Mayer-Davis selected for ADA post

ELIZABETH MAYER-DAVIS, PHD, was named president of health care and education for the American Diabetes Association in January 2011. Mayer-Davis’ research has focused upon diabetes prevention and management and diabetes among minority and underserved populations.

Reeve to lead ISOQOL

BRYCE REEVE, PHD, associate professor of health policy and management, was elected president of the International Society for Quality of Life Research for a two-year term.



Dr. Bryce Reeve

The Society aims to advance the scientific study of patient-centered outcomes to identify effective interventions and enhance quality of health care.

Bartram elected to international council

JAMIE BARTRAM, PHD, was elected to serve on NSF International's Council of Public Health Consultants, which advises NSF on the development of public health and environmental health initiatives.

Bartram, professor of environmental sciences and engineering and director of The Water Institute at UNC, has 28 years' environmental and water sanitation experience working in more than 50 countries. Read more about Bartram on page 26.



Dr. Jamie Bartram

Peterson honored by UK's RCOG

HERBERT PETERSON, MD, Kenan Distinguished Professor and chair of the maternal and child health department, was selected as an honorary fellow of the Royal College of Obstetricians and Gynaecologists' (RCOG) Faculty of Sexual and Reproductive Healthcare. He accepted the fellowship in London on Nov. 18, 2010.



Dr. Herbert Peterson

Peterson chairs the American Congress of Obstetricians and Gynecologists' (ACOG) Global Women's Health Committee. ACOG, RCOG's American counterpart, awarded Peterson its Distinguished Service Award in 2004.

Gray selected for AGU's Langbein Lecture

WILLIAM G. GRAY, PHD, professor of environmental sciences and engineering,

presented the 2010 Langbein Lecture at the American Geophysical Union's fall meeting in San Francisco on Dec. 14, 2010.



Dr. William Gray

The Walter B. Langbein Lectureship is awarded for lifetime contributions to the basic science of hydrology and/or unselfish service promoting cooperation in hydrologic research.

Gray's lecture described "Opportunities for Impacting the Trajectory of Hydrologic Model Development."

Paul wins UNC teaching award

JOHN E. PAUL, PHD, clinical associate professor of health policy and management, was recognized with UNC's distinguished teaching award for post-baccalaureate instruction.

The award, first given in 1995 to acknowledge the importance of graduate-level teaching, includes a cash stipend and framed citation. Paul's citation praises his strong commitment as an educator, "evident in his innovative use of technology in the classroom, his continual efforts to adapt and improve his teaching, and his active advising and ongoing mentoring of students."



Dr. John Paul

Characklis receives Leopold fellowship

GREG CHARACKLIS, PHD, associate professor of environmental sciences and engineering, was named one of 20 Leopold Leadership Fellows for 2011.



Dr. Greg Characklis

Based at Stanford University's Woods Institute for the Environment, the Leopold Leadership Program

annually selects 20 mid-career academic environmental researchers as fellows. Awardees receive intensive leadership and communications training to help them engage effectively with policymakers, journalists, business leaders and communities confronting complex decisions about sustainability and the environment.

Linnan selected for UNC's Bryan Award

LAURA LINNAN, SCD, associate professor of health behavior and health education, was awarded the 2011 Robert E. Bryan Public Service Award in April 2011.



Dr. Laura Linnan

A graduate of Harvard University, Linnan has been on the faculty of the UNC public health school and a member of UNC Lineberger Comprehensive Cancer Center since 1999.

Her 25-year career in public health has focused on the promotion of health in the workplace, including programs that help low-income workers lose weight and become healthier and that address health disparities among African-Americans and Latinos.

Zelman wins School's Greenberg Award

PROFESSOR WILLIAM ZELMAN, PHD, was honored with the School's Bernard G. Greenberg Alumni Endowment Award, presented March 31, 2011, at the School's Fred T. Foard Jr. Memorial Lecture. A

member of the health policy and management faculty since 1978, Zelman was recognized for excellence in teaching, research and service.



Dr. William Zelman

Ammerman receives Brooks Award

ALICE AMMERMAN, DRPH, nutrition professor and director of the UNC Center for Health Promotion and Disease Prevention, received the 2011



Dr. Alice Ammerman

Ned Brooks Award for Public Service. A public health faculty member since 1991, Ammerman was honored for creating lasting and collaborative relationships that result in broad service to the community.

According to nominators, she “embodies excellence in public service through her sustained dedication to ensuring improved health for all North Carolinians.”

STUDENTS

Gillings Merit Scholarships awarded

TEN GRADUATE STUDENTS have received the inaugural Gillings Student Merit Scholarships. They are Pratyaydipta Rudra (biostatistics); Maura C. Allaire (environmental sciences and engineering); Kapuaola Gellert (epidemiology); Jennifer Moore Moss (health behavior and health education); Sarah B. Lesesne and Vann R. Newkirk (health policy and management); Alane Murdock Kasrawi (maternal and child health); Eva Erber (nutrition); and Heidi A. Harkins and Fiona A. Hahn (Public Health Leadership Program).

Student chosen as Phillips Ambassador

WILLIAM K. “KEITH” FUNKHOUSER III, a double major in biology and biostatistics at the School, is one of eight UNC undergraduates who studied in Asia as Phillips Ambassadors in spring 2011.

Funkhouser was based at the National University of Singapore with the Honors-University Scholars Exchange Program.



Yu Zhou

Zhou wins Projects for Peace award

YU ZHOU, a UNC sophomore accepted into the School’s Bachelor of Science in Public Health (BSPH) program next fall, was named

a winner in the 2011 Davis Projects for Peace initiative.

Zhou, who will study biostatistics, developed Young Scholars International, a program that will allow UNC undergraduates studying abroad to enrich their experience by leading high school seminars in the countries they visit. Shuaiqing Liu, admitted into the BSPH program next fall in health policy and management, will work with Zhou.

Five win UNC’s Impact Awards

FIVE PUBLIC HEALTH STUDENTS received the UNC Graduate School’s Impact Award, established to recognize student research that improves the lives of North Carolinians. The students are Heather Beil, PhD (health policy and management), for “Effects of Early Preventive Dental Care on Treatment Use, Expenditures and Dental Disease”; Zulfiya Chariyeva (health behavior and health education), for “Safer Sex Counseling and Risky Sexual Behavior Among People Living with HIV in North Carolina”; Ruchika Goel (epidemiology), for “Studying Moms’ Medical Radiation Exposure and Possible Links to Disease”; Virginia Guidry (epidemiology), for “Student Respiratory Health in Schools Near Industrial Hog Operations”; and Alison Sanders (environmental sciences and engineering), for “Raising Awareness of Contaminated Well Water in North Carolina.”

STAFF

Stevens receives Levine service award

RACHEL H. STEVENS, EDD, RN, received the Ronald H. Levine Legacy Award on Jan. 28, 2011, at the annual N.C. State Health Director’s Conference in Raleigh, N.C. Stevens, former clinical professor and senior adviser to the director of the School’s North Carolina Institute for Public Health, retired in 2008 after 20 years of service.



Dr. Rachel Stevens

Place receives Ervin service award

JANET PLACE, MPH, director of the N.C. Institute for Public Health’s Southeast Public Health Training Center, received the Theodore R. Ervin Award for Outstanding Service at the American Public Health Association’s annual meeting in Denver on Nov. 9, 2011. The award, presented by the national Public Health Foundation, recognizes creative vision, commitment and leadership in public health practice.

ALUMNI

Orelie rated top entrepreneur

JEAN ORELIE, DRPH, president and chief executive officer of SciMetrika LLC in Durham, N.C., and UNC biostatistics alumnus, has been selected as one of 2010’s “Top 10 Black Entrepreneurs” by *Inc.* magazine.



Dr. Jean Orelie

The magazine delivers advice, tools and services to help business owners start, run and grow their businesses more successfully.

Orelie founded SciMetrika in 2001 to support projects that improve public health.

Inc. magazine also featured Orelie for philanthropic efforts in his native Haiti in its September 2010 issue.

Kolsky receives Barr Award

PETER J. KOLSKY, PHD, senior water and sanitation specialist with the World Bank, received the Harriet Hylton Barr Distinguished Alumni Award for leadership, collaboration and innovation in public health, impact in practice and outstanding service.

The award was announced at the School’s Fred T. Foard Jr. Memorial Lecture on March 31, 2011.



Dr. Peter Kolsky

OUR DONORS

A Carolina Annuity

■■■■■■■■■■ *benefits you and the School*

Consider this: a charitable gift that provides income to the donor(s) for life, an immediate tax deduction, and support for the Gillings School of Global Public Health's top priorities.

Does it sound too good to be true? It's exactly what Sandy Moulton, JD, MPH, and Tom Wong, PhD, MPH, achieved with their recent Carolina Annuity.

"In this time of low interest rates, a Carolina Annuity made tremendous sense to us," says Wong, who is vice president of the Meganium Corporation, in Durham, N.C. "We locked in a rate far higher than we could achieve with a money market account or CD *and* qualified for an immediate tax deduction. Some of the income Sandy and I will receive for life is even tax-free. This is an unbeatable opportunity to support a cause we believe in while planning prudently for our futures."

"We consider this a win-win for everyone," Moulton says.

Moulton and Wong were graduate students in the School's Department of Health Policy and Management following a law degree (for her) and Doctor of Philosophy (for him). Both have served on the board of the Public Health Foundation, and Moulton served two years as Foundation president. "Sandy and Tom are among



PHOTO BY LYNN WRIGHT

Tom Wong and Sandy Moulton

the School's most generous, informed and savvy friends," says Peggy Dean Glenn, associate dean for external affairs. "They know public health, and they know financial planning, as this gift attests."

This is not the couple's first gift. They established the School's first diversity scholarship, named a classroom in Rosenau Hall and have been faithful members of the Rosenau and Gerrard Societies.

GUARANTEED ANNUAL INCOME

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MAKE A DIFFERENCE

The Kerr L. White and Edward H. Wagner Scholarship in Health Care Research

The Kerr L. White and Edward H. Wagner Scholarship in Health Care Research was established by David J. Ballard, MD, PhD, and his wife, Michela Caruso, MD, to honor Ballard's mentors, Kerr White and Edward Wagner.

Dr. White is an internationally recognized pioneer in the fields of health services research and primary care medicine. His benchmark paper, "The Ecology of Medical Care," co-authored with Drs. Bernard G. Greenberg and T. Franklin Williams when they were faculty members at UNC, was published in *The New England Journal of Medicine* in 1961.

After serving as professor in the UNC departments of epidemiology and medicine, Dr. Wagner founded the MacColl Institute for Healthcare Innovation and developed the acclaimed Chronic Care model (see <http://tinyurl.com/chronic-care-model>). He is the 2011 recipient of the prestigious William B. Graham Prize, the highest honor for health services research. Funded by the Baxter International Foundation, the prize is managed by the Association of University Programs in Health Administration (AUPHA).

Both White's ecology of medical care model and Wagner's chronic care model were informed by research they conducted in several North Carolina communities as UNC faculty members.

"Drs. White and Wagner mentored countless students who have made landmark contributions to medicine and public

health," Ballard says. "This scholarship endeavors to cultivate new generations of scholars who will bridge medicine and public health to generate innovative solutions to health care delivery challenges across North Carolina, the U.S. and the world."

The White-Wagner Scholarship will be awarded annually to a UNC medical student with interests in health care research who is also pursuing a public health degree at UNC. "It's appropriate that the recipient will be mentored by the director of UNC's Cecil G. Sheps Center for Health Services Research," Ballard says. "Dr. Sheps was a faculty colleague and research collaborator with Drs. White and Wagner and played a major role as UNC vice chancellor for health affairs in advancing collaboration between the UNC schools of medicine and public health."



Edward H. Wagner, MD, MPH



Kerr L. White, MD

(Photo courtesy of Historical Collections and Services, Claude Moore Health Sciences Library, University of Virginia)

Thanks to the generosity of our donors, eight new scholarships are now available for those studying at UNC Gillings School of Global Public Health.

Scholarship briefs compiled by Peggy Glenn and Linda Kastleman

The Lansky Family Endowed Scholarship



Dr. Amy Lansky

Amy Lansky (MPH, 1991; PhD, 1996), deputy director for surveillance, epidemiology and lab science at the Centers for Disease Control and Prevention, has established The Lansky Family Endowed Scholarship for doctoral students in health behavior and health education.

“It’s a wonderful thing when our HBHE grads help support the next generation of scholars and practitioners,” says department chair Jo Anne Earp, ScD.

The Lansky Family Endowed Scholarship honors Amy’s parents, Drs. Shirley B. and Lester L. Lansky. “I’m so happy to have been able to set up this scholarship to help support students in HBHE as well as recognize and honor my parents,” Amy Lansky says. “They made their careers in academic



Drs. Lester and Shirley Lansky

medicine and instilled in their children the importance of education and ensuring opportunities for students to pursue graduate education.”



The Jean Tower Lassiter Scholarship

The Jean Tower Lassiter Scholarship was established by Gail L. Young and CL Lassiter in memory of their mother – a public health nurse, captain in the Army Air Corps and pioneering environmentalist. Mrs. Lassiter was president of the North Carolina Public Health Association, an active member of the North Carolina Nurses Association, and a public health consultant throughout the state. She was also a beloved mentor, advising Future Nurses of America chapters and helping young people achieve their health care ambitions. A tireless advocate and champion for clean water, maternal and child health, and aid to migrant workers, she is remembered for the clinics she established to serve migrant workers and their children.

For many years, CL Lassiter was director of student services in the School’s Department of Environmental Sciences and Engineering. His sister, Gail Young, taught for thirty years before becoming an avid volunteer for the Neuse Riverkeeper Foundation.

“Baba did so much for CL and me,” Young says. “Since she always gave so much of herself, we felt this was something we could do in partial repayment for her being such a great mother.”

The Lassiter scholarship will be awarded annually to a public health nurse with a special interest in maternal and child health and/or the environment. »

Jean Tower Lassiter



Suprateek Kundu, Abhinav Komandur and Nate Kelly (l-r) pose with Jessie Satia's sister, At, and At's husband, the Rev. Darin Ford.

The Dr. Jessie A. Satia Scholarship Fund

When Jessie Satia, PhD, died at age 39 in February 2010, all those who knew and loved her mourned. Satia, who was associate professor of nutrition and epidemiology and assistant to the dean for diversity, was a dedicated teacher and researcher who loved students. That's why she had established an expendable scholarship fund in the

name of her parents, Drs. Benjamin and Philomena Satia. This year, Nate Kelly, nutrition master's student, and Suprateek Kundu, biostatistics doctoral student, received scholarships from that fund. In 2010, Satia's family established The Dr. Jessie A. Satia Scholarship Fund to memorialize her dedication and

commitment. Abhinav Komandur, a Bachelor of Science in Public Health student in environmental sciences and engineering, was the inaugural recipient of the memorial scholarship. Satia's sister, At Satia Ford, says, "Even in her death, she can continue to touch many lives through these scholarships."

The Mary Rose Tully Training Initiative in Maternal and Child Health

The Mary Rose Tully Training Initiative in Maternal and Child Health was established by her husband, Douglas B. Tully, and son, Chris Tully, in memory of Ms. Tully, who died Jan. 20, 2010. An alumna and adjunct associate professor at the School, Tully was senior clinical associate at the School's Carolina Global Breastfeeding Institute, adjunct clinical instructor in pediatrics at UNC's School of Medicine, and director of the Department of Lactation Services at the UNC Women's Hospital. In the 1970s, she founded the Piedmont Milk Bank, later known as the WakeMed Mother's Milk Bank and Lactation Center, in Raleigh, N.C. She led several breastfeeding organizations, co-authored a wealth of material on the subject, and is remembered for her direct impact on breastfeeding mothers, infants and families. The scholarship will be awarded to a maternal and child health student with demonstrated interest in practicing clinical breastfeeding support in a public health context.



Mary Rose Tully, MPH



James A. Merchant Family Scholarship

Jim Merchant, MD, DrPH, Gillings Visiting Professor at the School in 2008–2009, has established the James A. Merchant Family Scholarship. A professor of occupational and environmental health at University of Iowa's College of Public Health and former dean of the College, Merchant funded the scholarship to cover tuition and expenses for an epidemiology student at UNC. "The reasons for

endowing this scholarship are many," he says, "but primarily it's because my UNC Doctor of Public Health (DrPH) degree provided training in environmental epidemiology research that greatly influenced the rest of my career in public health. Secondly, UNC honored me twice, with a Distinguished Alumni Award and as the first Gillings Visiting Professor, both of which allowed me to recon-

nect with UNC, the School, and the epidemiology department. It is our hope that this scholarship will be used to support an outstanding environmental epidemiology student in the years ahead."



Dr. Jim Merchant

The Laurel E. Zaks Master of Public Health Scholarship in Global Public Health Nutrition



Laurel Zaks, MPH (right), laughs with a young woman who received services at a pediatric infectious disease clinic in Kompala, Uganda, in 2007.



Shelley Beth Marcus

The Laurel E. Zaks Master of Public Health Scholarship in Global Public Health Nutrition was established by Zaks' family in 2009 to memorialize her dedication to improving the health of impoverished communities around the world. Since then, many who knew and admired Zaks or her mission have contributed to the fund, which this year has lent support to its third nutrition scholar, Shelley Beth Marcus. Zaks, who died in 2008, lives on in those being trained at the School to carry out the work she loved. Read more at www.sph.unc.edu/nutr/zaks.

Your gift can give deserving students the public health education that will help them make a difference.
 >> >> See www.sph.unc.edu/giving, complete the enclosed envelope, or call (919) 966-0198.

New Innovation Lab aims to ensure safer drinking water

Warnings from municipalities around the world to “boil water before using” are not uncommon, especially as water distribution systems get older. In some countries, safe water collected from community sources becomes unfit for drinking during transport to homes or becomes contaminated within a building due to inadequate internal plumbing.

In March 2011, the International Association of Plumbing and Mechanical Officials (IAPMO) partnered with The Water Institute at UNC, based in UNC Gillings School of Global Public Health, to address these concerns and reduce potential for recontamination of drinking water.

IAPMO supports a new Innovation Lab through the School called “The Last Mile of Safe Drinking Water Delivery.” The School’s Innovation Labs bring together interdisciplinary experts to accelerate solutions to some of the world’s most pressing public health problems.

Jamie Bartram, PhD, professor of environmental sciences and engineering and director of The Water Institute at UNC, leads the lab. “The idea is to better understand how, why and when drinking water gets contaminated during transport from a nearby source of safe water to the point of use,” Bartram says. “Water lines may become contaminated because of broken

pipes, bacterial buildup, a loss of pressure or other reasons. This Innovation Lab will concentrate on finding ways to reduce recontamination through policy, technology, education, codes and regulation.”

GP Russ Chaney, IAPMO’s chief executive officer, told Dean Barbara K. Rimer that his organization is impressed with the way the School focuses attention and resources on global water and sanitation issues, despite difficult economic times. “What you are doing has put UNC a couple of steps ahead of any other university in the world in our future-oriented approach to water, health and development,” he said. “We’re proud to partner with you.”

Chaney and other IAPMO officials talked to Bartram about water contamination in North Carolina, the United States and throughout the world. “Even though the U.S. has some of the safest drinking water, contamination often does occur after treatment and in the ‘last mile’ of delivery,” Chaney said.

“With our aging infrastructure, this problem is just going to get more and more common,” Bartram says.

In addition to financial support, IAPMO will lend the services of Stuart Asay, PhD, one of the foremost experts on plumbing systems and the protection of potable water from contamination sources.

**– Ramona DuBose
and Linda Kastleman**

IAPMO officials met in March 2011 with Dean Barbara K. Rimer and Dr. Jamie Bartram. Left to right are Dr. Stu Asay, GP Russ Chaney (CEO), Rimer, Bartram and Pete DeMarco.



PHOTO BY RAMONA DUBOSE

For more information on The Water Institute at UNC, visit: www.waterinstitute.unc.edu.

To learn how your organization can support other Innovation Labs similar to this one, contact Bobbi Wallace at (919) 966-0613 or bobbi_wallace@unc.edu.

PHOTO BY TOM FULDNER



Lucy Siegel, MPH, Lupe Huitron and Gladys Siegel (l-r) visit at the 2010 World of Difference dinner.

WHY NAME A DINNER *‘World of Difference’?*

We chose the name to show how support for the School’s people and programs makes a “World of Difference” in many ways – scholarships that allow promising students to complete professional degrees, professorships that undergird valuable research and teaching by our faculty members, and operational funds that allow us to undertake special projects and meet pressing needs.

The School’s 2010 World of Difference dinner was held Nov. 4 to thank donors and friends – and to celebrate the professors, students and programs supported by their gifts. The annual gala evening recognizes members of the Rosenau Society, who provide unrestricted annual support of \$1,000 or more, as well as benefactors who have named rooms, scholarships, professorships or specialty funds.

Beginning in 2009, a portion of the Annual Fund campaign was set aside to provide scholarships, one for each of the School’s eight academic units. In 2010, the money allocated for scholarships doubled, and 16 Annual Fund Scholars were honored at the 2010 dinner. Two of them, Angel Davalos and Corey Kalbaugh, spoke at the event.

Joan H. Gillings, the School’s chair of advancement, introduced D.G. Martin – host of UNC-TV’s “Bookwatch,” newspaper columnist and WCHL radio interviewer – who moderated the evening.

George Pink, PhD, was recognized at the event as the inaugural Humana Distinguished Professor of Health Policy and Management. The professorship was established with a \$333,000 gift from The Humana Foundation and \$166,000 in matching funds from the state.

“In an era of reduced government funding, the financial support provided by companies such as Humana is critical to sustaining the research of many faculty members in the School,” Pink says. »

Being at UNC is the incarnation of the prosperity my grandfather envisioned for my family when he immigrated from Mexico. He passed away just before I came to school, but I know he’s proud of what I’m trying to do here.

– Angel Davalos, Annual Fund Scholar



Dr. George Pink

PHOTO BY TOM FULDNER

"I am very grateful that Humana's funding will enable me to continue research that benefits small, rural and primarily not-for-profit hospitals, most of which struggle to provide health care to rural Americans."

A number of donors and the students they support were able to reunite or meet for the first time at the dinner. Among these were Gladys Siegel, widow of maternal and child health faculty member and department chair Earl Siegel, MD, MPH, and their daughter Lucy Siegel, MPH, who visited

with Lupe Huitron, the 2010 recipient of a scholarship from the Earl and Gladys Siegel Student Support Fund (see photo page 43).

You, too, can make a world of difference to the UNC Gillings School of Global Public Health. Please visit our website at www.sph.unc.edu/giving, consider mailing a gift in the enclosed envelope, or call our external affairs office at (919) 966-0198. Join us for dinner on Nov. 10, 2011!

– Linda Kastleman

Singer honored as namesake of endowed professorship

The Philip C. Singer Distinguished Professorship of Environmental Sciences and Engineering honors Phil Singer, PhD, and his extraordinary career in research, teaching and service. It also serves as a tribute to the critical contributions Singer has made to the field of drinking-water quality and treatment.

An international expert on drinking water quality, Singer was the Daniel A. Okun Distinguished Professor of Environmental Engineering from 2002 to 2011. Despite numerous career accolades, he values teaching as his greatest achievement. A hands-on mentor and adviser, he continues

to collaborate with former students who are now influential researchers and scholars themselves.

As Singer retired, many colleagues stepped forward to contribute to the fund, which will help attract and support a promising faculty member in environmental sciences and engineering. More than \$337,000 has been pledged to date; additional pledges and gifts are welcomed.

For more information about the Singer Professorship, contact Lyne Gamble, director of major and planned gifts at UNC Gillings School of Global Public Health, at (919) 966-8368 or lyne_gamble@unc.edu. ■



Dr. Philip Singer

PHOTO BY DAN SEARS

Alumni, friends, current students, faculty and staff members!

Have you checked out our Alumni Online Community?

It's a searchable database of our more than 16,000 public health alumni and friends. Register at www.alumniconnections.com/sph.unc.edu. For easier registration, leave the "preferred class year" field blank. For more information, contact Jerry Salak, director of alumni and donor relations, at (919) 843-0661 or jerry.salak@unc.edu.

Giving Back

David Ballard and Michela Caruso

We recognize that UNC is uniquely positioned to cultivate future health care leaders — those who can generate innovative solutions to globally escalating health care costs and issues of health care quality and equity.

David J. Ballard, MD, PhD, and his wife Michela Caruso, MD, are longtime supporters of UNC Gillings School of Global Public Health. They are regular contributors to the Annual Fund and Building Fund and are founding benefactors of the Student Health Action Coalition Endowment Fund. Ballard currently serves as director of the School's Public Health Foundation. Now, the couple has endowed the Kerr L. White and Edward H. Wagner Scholarship in Health Care Research (see page 38).

Ballard, a four-time UNC alumnus, was a Morehead (now Morehead-Cain) Scholar as an undergraduate. In 1983, he received Doctor of Medicine and Master of Science in Public Health degrees from the University's schools of medicine and public health, respectively, and received a Doctor of Philosophy in epidemiology in 1990. The medical school presented him with its Distinguished Service Award in 2008. A 1995 recipient of AcademyHealth's Alice S. Hersh New Investigator Award (see <http://tinyurl.com/academyhealth-awards>), Ballard currently is senior vice president and chief quality officer at the Baylor Health Care System in Dallas.

Caruso, a native of Rome, is a graduate with honors from the Università degli Studi di Roma "La Sapienza" and, along with Ballard, of the Mayo School of Graduate Medical Education in Rochester, Minn. She is a radiation oncologist, partner and former board member at Texas Oncology, the nation's largest oncology group practice.

Why are they such ardent supporters of the School?

"We recognize," Caruso says, "that UNC is uniquely positioned to cultivate future health care leaders who can generate innovative solutions to globally escalating health care costs and issues of health care quality and equity."

"We hope other individuals and organizations that have benefited from Dr. White's and Dr. Wagner's more than half-century of scholarly leadership will join us in adding to this endowment over time," Ballard adds.



PHOTO BY DEBRA SHORE



Collin Ward, environmental sciences and engineering (ESE) doctoral student, collects water samples on the Cotton Glacier, in Dry Valleys, Antarctica, while working as a research assistant in 2009. Ward now studies with Dr. Rose Cory, ESE assistant professor, to examine the effects of climate change upon dissolved organic matter in the Arctic. Read about Dr. Cory's project on page 30.



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