

CAROLINA PUBLIC HEALTH

Gillings School of Global Public Health

The University of North Carolina at Chapel Hill

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UNC Gillings
is leading
*m*Health
innovation

*Dr. Allison Aiello (at right) created an app
that could slow the spread of flu.*

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from
THE DEAN

Greetings!

Our faculty, staff, students, alumni and partners are defining the future by what they are doing today.

They are making the world more accessible through mobile health technologies, empowering people to create through “makerspaces,” enabling big changes in health by scaling effective programs for implementation and helping to assure that healthy aging becomes a global reality. We must continue to fuel and implement solutions to the world’s biggest health threats and challenges – at even faster speed – a point Chancellor Carol Folt stressed in her 2015 University Day address (tinyurl.com/UNC-University-Day-Folt).

This issue highlights Gillings innovators in several areas. Glenn Walters, PhD, director of the Environmental Sciences and Engineering Design Center (sph.unc.edu/ese-design-center), and his team create instruments, devices and prototypes for researchers in the School and across campus. They save money by building solutions here rather than buying them elsewhere – and also create products that never have existed. Now, Glenn helps lead the University’s newest “makerspace” – a workshop where UNC students and members of the faculty and staff move from imagination to tangible products. This is innovation at its finest!



Dean Barbara K. Rimer

Photo by Brian Strickland

We also highlight our cutting-edge work in the growing field of mHealth, which includes research tools and the delivery of health care and interventions to improve health by way of smartphones, tablets and other mobile devices. Epidemiology professor Allison Aiello, PhD, has harnessed mHealth to understand the spread of flu among college students, providing a fascinating picture of their lives in the process. Using mHealth to deliver individually tailored messages and create online communities is emerging as an important tool for HIV/AIDS prevention. In my role as chair for the President's Cancer Panel, I've been immersed in the potential of mHealth to reduce the burden of cancer.

Innovation is a core part of our DNA at the Gillings School. Soon, we will fund another round of Gillings Innovation Laboratories, and recently, we hosted a lunch in our nutrition kitchen for members of the UNC Chancellor's Innovation Summit.

In her 2015 University Day address, Chancellor Folt challenged us to increase the pace of innovation and our embrace of change. In her closing words, she connected to the Gillings School: *From today forward, we will be working with renewed effort to bring the best of Carolina from the Well to the world.*

There's so much more in this issue, too, as befits a truly great School. Thanks to editor Linda Kastleman and all those who contribute to the magazine – and thanks to you, readers, for advice, generous gifts, other kinds of support and your loyalty to the School. I am so grateful to you all.

What an exciting time to be in public health – at the Gillings School and UNC-Chapel Hill!

Warmly,

Barbara K. Rimer

Photos by Linda Kastleman



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Clockwise, from top left: Nutrition faculty members Drs. Kyle Burger and Alice Ammerman meet with the Chancellor's Innovation Council; Dr. Glenn Walters poses at the Hanes Art Center; Chancellor Carol L. Folt speaks at the University Day ceremony.

mHealth

Public health solutions, now without boundaries



UNC Gillings School researchers are harnessing Web-based applications and mobile devices to collect real-time data and deliver interventions to segments of the public – people at risk for diseases, those with high-risk behaviors and patients with particular conditions.

New tools allow them to transcend the usual barriers of time, distance and geography, reaching people in places that formerly were unreachable in ways that never would have been possible.

mHealth – as these mobile health activities are known – enables collection of data and delivery of health-care services by way of smartphones, tablets, computers and other mobile devices.

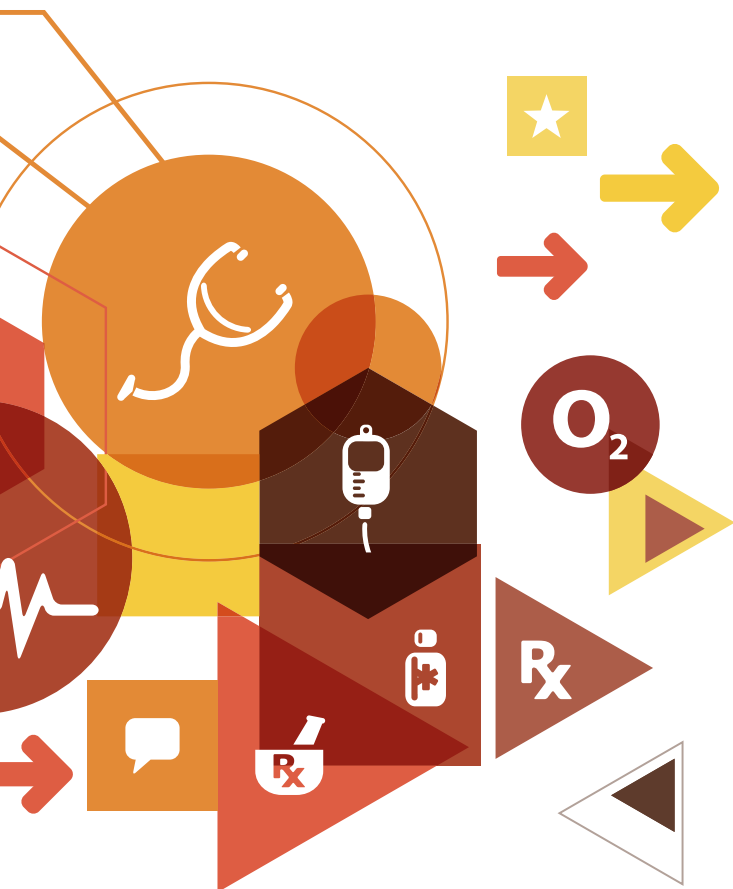
In the U.S., about 64 percent of the population reports having smartphones; of those, according to the Pew Research Center (tinyurl.com/PewCenter-smartphones), nearly two-thirds have used their phones to obtain information about a health condition.

Smartphone penetration also is a global phenomenon. More than five billion people worldwide use mobile phones – that’s about three-fourths of the world’s adults and more than have access to toilets or latrines. The ubiquity of smartphones, in addition to the integration of the Internet into everyday life, has supported public health research and practice to extend further into communities, adapting to the changing lifestyles of individuals throughout the world.

Mobile technologies provide a potentially scalable and cost-effective platform on which to conduct research, collect data, deliver interventions and improve health. Mobile phones already have had a profound influence on human connectivity, commerce, media and finance.

“Gillings School faculty members and students are creating and evaluating interventions that will provide some of the much-needed evidence regarding who benefits, for what issues and from what kinds of interventions,” says Barbara K. Rimer, DrPH, dean and Alumni Distinguished Professor. “They also are developing new methods for collecting critical health-related data, using mobile technologies that enable real-time and geographically-related collection.”

Researchers and practitioners can track the transmission of infections and responses to natural and human-caused disasters, Rimer says. At their best, the new tools permit public health professionals to prevent and mitigate harm.





People aren't waiting for us to come to them. They are seeking information about health because they now have the means to do so. We have huge opportunities to improve health around the world.

Barbara K. Rimer, DrPH
Dean and Alumni Distinguished Professor

Actively and passively collected data from around the world provide essential insights about people and their environments.

"Smartphones and access to the Internet through a host of devices provide global access to people and information," Rimer says. "We must be the people who develop the interventions, apps and methods for analyzing these troves of data. We also must expose students to the many public health applications of digital data, because they will develop new uses that previously were unimaginable."

A number of UNC Gillings School researchers are on the cutting-edge of mHealth use – assessing the benefits of technology-based public health and devising new tools to prevent disease and promote health. A very few of their projects are highlighted in this issue; more are available in the online edition of *Carolina Public Health* (sph.unc.edu/cph).

Also online are descriptions of the Patient-reported Outcomes (PRO) Core (pro.unc.edu), led by UNC Lineberger Comprehensive Cancer Center, and the Communication for Health Applications and Interventions (CHAI) Core (chaicore.com).

HIV / AIDS



Kate Muessig, PhD, assistant professor of health behavior, is using mHealth tools to reduce the risk of HIV in North Carolina and in China and other countries.

Some technological applications that work in U.S. communities are transferable and can be of equal or greater value elsewhere. Muessig also works on the development of a peer-support and mHealth-enabled intervention for men who have sex with men (MSM) in China. The intervention aims to help those who are HIV-positive connect with medical care, including HIV treatment and other supportive services (e.g., substance use treatment or mental health services).

“Young, black MSM bear a disproportionate burden of HIV in the U.S. and are one of the only subgroups who continue to experience an increase in HIV transmission,” says Muessig. “The stigma they face poses added barriers to health-positive behaviors and deters access to health care and services. The

use of Web- and cellphone-based platforms to build stronger social support among these young people offers a highly accessible and familiar medium for intervention. More than 90 percent have access to the Web and/or a smartphone.”

Muessig says that the research aims to reach people where they are, using a technology and mode of interaction (e.g., social networking) with which they are already familiar.

Chen Zhang, master’s student in health behavior, spent a summer practicum working with Muessig and Lisa Hightow-Weidman, MD, UNC associate professor of medicine, on “Epic Allies.” The mobile game was designed to assist young adults with HIV in adhering to their medicine regimens, providing them with social support, education about HIV and rewards for taking medication, all presented by way of an engaging superhero theme.

PAIN CONTROL



Christine Rini, PhD, research associate professor of health behavior, works with collaborators at UNC and Duke on a Web-based skills training program for coping

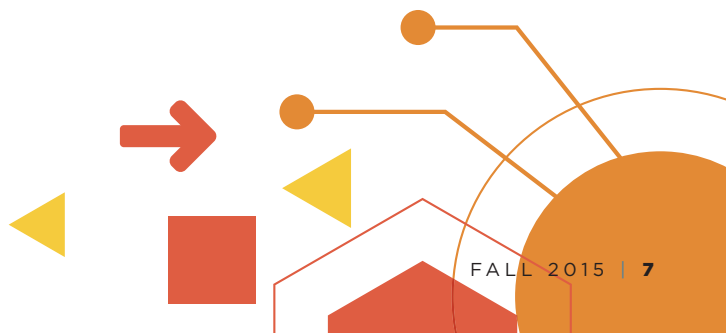
with pain. She and colleagues noted that clinicians underuse evidence-based behavioral treatments that help people manage persistent pain.

“Providing the treatments is resource-intensive, usually requiring multiple in-person meetings with a trained clinician,” Rini says. “Online training expands access to the treatments.”

The expanded access benefit of mHealth interventions makes scale-up possible in a way that could not have occurred previously. This can make a real difference in areas of need such as genetic

counseling, in which the already too-few counselors are not geographically widespread.

To change that, Rini is collaborating with a team of UNC and RTI International researchers to deliver Web-based support for patients to make decisions about whether and how to use genomic sequencing for newborn screening. She also works with others at UNC to provide Web support for genomic screening of people with no apparent health concerns.



SAVING BABIES, SAVING MONEY



Valerie Flax, PhD, research assistant professor of nutrition, and **Margaret (Peggy) Bentley, PhD**, Carla Smith Chamblee Distinguished Professor of Global

Nutrition and associate dean for global health at the UNC Gillings School, conducted a Bill & Melinda Gates Foundation-funded, cluster-randomized, controlled trial in Nigeria to test the efficacy of a breastfeeding promotion intervention integrated into a women's microcredit program. The intervention included three components – monthly breastfeeding learning sessions led by credit officers during regular microcredit meetings, biweekly breastfeeding messages sent to cell phones provided for small groups of microcredit clients, and songs and dramas about breastfeeding created by small-group members.

“I became interested in using mHealth in a community-based health promotion intervention as a way of sustaining dialogue about breastfeeding between monthly learning sessions,” says Flax. “Voicemail and text messages via cellphone can prompt people to discuss a health topic. This can help to shift

local norms related to specific health behaviors and generate social support for group members to carry out the optimal behaviors. It also provides an opportunity for health messages to reach other members of the community, creating a spillover effect.”

Flax says that mHealth does not have to be about the latest technologies or have fancy bells and whistles. “By using basic SMS and voice messages sent to a group phone, we substantially increased exclusive breastfeeding in a part of Nigeria where optimal breastfeeding practices have been declining for decades,” she says. Among microcredit clients who were pregnant at the start of the study, 64 percent of women who received the breastfeeding messages later reported that they exclusively breastfed their infants to age six months, compared with 43 percent of women who did not receive the messages.

Flax's study, co-authored with Bentley, Sheila Leatherman, MSW, research professor of health policy and management, and others, appeared May 8, 2014, in the *Journal of Nutrition*.



Nigerian women in Dr. Valerie Flax's study who received cellphone messages about breastfeeding were more likely to breastfeed exclusively.

Photo courtesy of Partners for Development



Dr. Deborah Tate (foreground) and Randall Teal work together in the Communications for Health Applications and Interventions (CHAI) Core.

Photo courtesy of the American Psychological Association, © 2015

OBESITY PREVENTION



Deborah F. Tate, PhD, professor of health behavior and nutrition, has developed Internet-connected interventions to help people lose weight and maintain their weight

loss since 2001, when her first paper was published in the *Journal of the American Medical Association*.

Tate pioneered use of electronic health (eHealth) interventions for weight loss, and her interventions now pair mobile device-delivered weight-loss tools with high-tech scales and activity trackers to record and send data to the research team. eHealth interventions developed by Tate and her team consistently have produced at least 5 percent weight loss, a level which is beneficial to health.

Doctoral work by **Dori Steinberg, PhD**, then Tate's advisee, found that using only wireless scales and email helped participants, on average, lose more than 13 pounds. Steinberg won a Gillings Dissertation Award for the research, and she and Tate were among co-authors of findings published in *Obesity* in 2013.

Tate, who is conducting two NIH-funded research studies with mHealth interventions and data collection, is developing tools that can help people where they live, work, play and pray – in real time. The rich data trove resulting from the tools provides objective and highly individualized outcome information that can be made into tailored messages.

“Through technologies such as Bluetooth scales, wireless activity trackers and GPS location data, we have opportunities to deliver more relevant messages with less of a burden on our participants,” says Tate. “We can deliver better messaging at the right time. Having the right messages to go with the data is important – the marriage of message and data is critical in addressing big public health problems. A hybrid of mobile technology and hands-on intervention may prove the best way to effect change.”

MANAGING CHRONIC DISEASES

Thanks to a pilot project funded by a Gillings Innovation Lab (sph.unc.edu/gil), researchers are exploring how high-tech and “soft-touch” interventions can be used together to help diabetes patients manage their disease. Led by Edwin B. Fisher, PhD, professor of health behavior, Peers for Progress marries peer support and eHealth. To extend the reach and efficiency of peer support, Fisher will use eHealth systems to monitor status and progress and offer tailored messaging to guide behaviors. Previous research has shown the benefits of peer support in diabetes but not how to scale up these approaches to have significant impact upon the 387 million people with diabetes worldwide.

“eHealth resources enable peer supporters to reach more people while providing extra contact and encouragement to those who may benefit from them,” says Fisher. “High-tech is not antithetical to the ‘soft touch’ of peer-to-peer support but is rather a natural complement to it.”

Patrick Yao Tang (MPH, 2012), program manager with Peers for Progress, agrees.

“Numerous studies have documented the effectiveness, feasibility and wide acceptability of lay health coaching for diabetes self-management in diverse settings and populations,” he says. “On their own, eHealth interventions also have shown promising results for diabetes self-management. This model can improve the health of populations by mobilizing lay health coaches and other health-care resources to target high-need patients while providing a standard of care to the bulk of the population.”

This, in turn, Tang says, has the potential to improve health outcomes, reduce costs and improve population health.

Marisa Domino, PhD, professor of health policy and management, is piloting use of mHealth interventions for people who have diabetes and also have severe mental illness (SMI), e.g., schizophrenia and bipolar disorder.

While mHealth technologies have shown promise in improving diabetes management, individuals with SMI face additional challenges, including their feeling less comfortable with group activities. Domino will audition two mHealth applications by using them in home settings with these individuals. The aim is to improve self-care in a particularly hard-to-serve population.

Domino is director of the Program on Mental Health and Substance Abuse Systems and Services Research at UNC’s Cecil G. Sheps Center for Health Services Research and training program director for the UNC-Duke Training Program in Mental Health Systems and Services.

– Michele Lynn



Photo by Linda Kastleman

Dr. Ed Fisher (right) reviews a Peers for Progress app with student assistant Sarah Kowitt and program manager Patrick Yao Tang.

See descriptions of other mHealth research online at sph.unc.edu/cph.



UNC's MEASURE EVALUATION

*Collecting data and
using it to improve health*

Delivering empirically-based patient and public health interventions online holds considerable promise for increasing people's access to programs. Many exciting mHealth research projects are being led by Gillings School faculty members. One much larger UNC project, encompassing hundreds of activities, is also of note.

UNC's MEASURE Evaluation, based at Carolina Population Center and funded by the U.S. Agency for International Development, has strong connections with UNC's public health school. Jim Thomas, PhD, associate professor of epidemiology, directs the program, and nine public health faculty members are on the staff, sharing the program's focus on education and research that informs and guides public health decision making.

To facilitate good decisions on health policy and service provisions and to track health trends and the effectiveness of interventions, there must be high-quality data. MEASURE Evaluation is a leader in health informatics, a health information system empowered and amplified by technology.

"MEASURE Evaluation strengthens health information systems in developing countries to inform programs about how well they are operating and to improve their impact," says Heidi Reynolds, PhD, MEASURE Evaluation's director for evaluation.

Reynolds says that mHealth is one of a suite of interventions used by MEASURE Evaluation. "Our past work has shown that it's important to strengthen the entire system for mHealth to be effective," she says.

MEASURE Evaluation's impact is significant and global. With project topics ranging from gender-

based violence care and support in Botswana to best practices in mobile technology for monitoring and evaluation and health information systems in low- to middle-income countries, the organization supports public health practitioners throughout the world to make better decisions, leading to better health outcomes for countless individuals globally.

The project has used mobile data collection (tablets and mobile phones) for a variety of studies. For example, a "Priorities for Local AIDS Control Efforts" (PLACE) study in the Dominican Republic used mobile tablets loaded with the Open Data Kit, a mobile data-collection platform, to identify populations at high risk of HIV, common points of transmission and whether HIV services are available in high-risk areas. Mobile tablets also were used to collect data for an organizational network analysis in Homa Bay, Kenya. That study aimed to strengthen the HIV referral network to ensure that patients who test positive will receive appropriate treatment.

Project team members also conduct operational research on South Africa's national MomConnect program, which uses mobile messaging to deliver preventive health messages to pregnant women.

– Michele Lynn

SLOWING *the spread of* FLU? *There's an* APP *for* THAT.



Left to right are researchers Erline Miller, Evette Cordoba and John Easterbrook, with Dr. Allison Aiello.



We know the symptoms...

...sudden onset of chills, fever, sore throat, runny nose, body aches.
It's the misery commonly known as *the flu*, a virus that kills thousands of people
and costs tens of billions of dollars each year in the U.S. alone.

Flu strains contracted during fall and winter are spread primarily through proximal airborne contact – i.e., anyone within six feet of someone who has the flu can become infected with the virus. Because so many are at risk, Allison Aiello, PhD, thought an app to track interactions and monitor transmission of flu might be a useful research tool.

Aiello is professor of epidemiology at UNC's Gillings School of Global Public Health.

"Virtually everyone has a cellphone these days, and so many apps can determine your location and the location of people with identical apps," Aiello says. "Why not use this technology to track interactions and better understand how people get sick? We can use data based on people's interactions with friends and acquaintances to determine how to prevent transmission in their social networks."

The idea is a natural extension of Aiello's general research interests. She has spent much of her career tracking linkages to infection in community settings and examining how to prevent or track outbreaks and disease blooms. She has studied the use of antibacterial soaps – "Avoid them," she says – and has investigated

pandemic preparedness measures among groups of students, whom she calls "an understudied and at-risk population." She has explored the relationship of socio-economic status to infectious diseases that have been linked to chronic disease and has noted a "disproportionate negative impact among the poor." Finding a new way to track and prevent the spread of flu is in keeping with her interests and skills, especially since most students she knows own smartphones.

"Smartphones' GPS, Bluetooth and wireless capabilities made them an ideal tool for our initial study, which was located in university residence halls," she says. "We needed software to help us track participants in our study when they came close enough to each other to become infected with a respiratory virus – that and a good sampling of study subjects who were *likely* to come into close physical proximity to each other."

Smartphone ownership and physical proximity? That's practically a definition of "college students."

Aiello and colleagues knew they didn't have skills to code their own app, but they found one they could adapt with some modifications. They reached out to the



Erline Miller and John Easterbrook compare notes about Dr. Aiello's study.



The Centers for Disease Control and Prevention estimates that between the 1976-1977 and 2006-2007 flu seasons, flu-associated deaths ranged from

a low of about 3,000 to a high of about 49,000.

creators of iEpi and soon had the modifications they needed to conduct an initial study.

“We worked with the iEpi team to optimize the app for what we had in mind,” Aiello says. “Then, we put it to work.”

Her team enlisted 100 college students on a single campus to participate in the study. For 10 weeks during the 2013 flu season, the students were given Google Android smartphones preloaded with iEpi. The app kept a record of people with whom the students came in contact over that period, and the students self-recorded any symptoms of illness.

Students also were asked to note their hand-washing habits, whether or not they had received a flu shot, and whether and when they used tobacco or alcohol. Those who reported any flu symptoms (e.g., coughing, fever, chills, body aches) received nose and throat swab tests to determine whether they had been infected with influenza or other respiratory viruses that cause cold- or flu-like symptoms.

Aiello and her collaborators created a model based on the data and tracked contact and spread of the flu over the 10 weeks. The more data the model received, the better it became at affirming that the virus was spreading through proximal or physical contact. It predicted where outbreaks would occur and which people students should avoid to prevent becoming infected. It also showed that students who smoked or regularly consumed alcohol recovered more slowly from influenza-like illnesses.

“The results were very encouraging,” Aiello says. “The study showed that it is possible to harness the power of collecting real-time data with smart phone apps to measure interactions and behaviors more accurately. Our sample of 100 students was the largest study to date using this type of app to track interactions and influenza, and our results show it is possible to scale up beyond 100 individuals in future work. Collecting these types of data in large-scale populations will help us better understand transmission and risks for many diseases that are driven by social interactions.”

Aiello finds it exciting to collect health information through smartphones and wearable technology. “It is clear that the development of apps that will allow us to better track illnesses in various settings will inform our ability to prevent and treat illness,” she says.



Aiello is working with collaborators to develop and apply wearable sensors that will collect data continuously, including when people cough or sneeze. Obtaining more uninterrupted data over longer periods can help track and potentially prevent epidemics.

Aiello believes these opportunities serve as a window into the future of epidemiological data collection. “This technology has allowed us to better assess the context in which social and behavior practices influence health,” she says. “It’s easy to see how such modeling could track and even restrict infection of certain types of diseases in corporations, child-care centers, hospitals or even large-scale social settings. The more data collected in real time, the more refined and accurate the apps will become in helping to predict and identify disease hotspots.

As these technologies take off, we will need to stay ahead of the curve by addressing issues related to big data collection and the ethical implications of securing individuals’ data and privacy.”

Aiello and her team presented the research in August 2015 at the 21st International Conference on Knowledge Discovery and Data Mining in Sydney, Australia.

As for what’s next, Aiello foresees refinement and expansion of the app’s capabilities and adaptability.

“We want to take these ideas to the next level,” she says. “We are working with engineers to collect more finely measured interaction data through small, wearable sensors. Someday, this will allow us to recognize when a participant coughs or sneezes, and we’ll be able to send these data to smartphones for continuous data collection.”

– David Pesci

Flu-related illness results in an annual burden of about *\$87 billion.*



BE A MAKER

Glenn Walters loves makerspace, even when something flops

“This is a place to enjoy your mistakes.”

That’s how Glenn Walters, PhD, director of the Environmental Sciences and Engineering (ESE) Design Center at UNC’s Gillings School of Global Public Health, summarizes the newly opened makerspace, housed on the lower level of UNC’s Hanes Art Center.

“Perfection doesn’t teach you nearly as much as screwing something up and then fixing it,” he says, as he fits a sheet of acrylic into the workshop’s precision laser cutter.

For more than two years, Walters has taken a leadership role with the Be A Maker (BeAM) initiative on campus. (See uncbeam.org.)

BeAM oversees a growing network of makerspaces, in which UNC students and members of the faculty and staff are given tools and training to turn metal, wood and electronics into solutions for scientific and technical challenges – or into art.

The core philosophy of BeAM’s leadership committee parallels that of “maker culture,” an international movement concerned that hands-on skills are undervalued in today’s digital world. The movement is part of a fast-growing national trend, and some students consider availability of such spaces as a factor in deciding which college to choose.

Walters was invited to join the BeAM committee as an expert adviser for tool and technology selection. He agreed, excited to give students and others an opportunity to build their own creations.

He loves the challenges of his job at the ESE Design Center but says the center mostly serves those who need to have a finished product designed and fabricated to further their research.

“My job there is to take ideas – which often aren’t fully formed – and come up with functional solutions,” Walters explains. “The goal of the makerspaces is for people to be empowered to get hands-on experience and develop solutions for themselves.”

Walters says that having a better grasp of the available tools and processes leads one to think more expansively, which frequently leads to a more elegant and innovative final product.



Top: Dr. Glenn Walters checks the wiring on a makerspace project. Bottom (left to right): Dr. Walters and biomedical engineering student Jewell Brey examine tiles made by the laser cutter; Undergraduate Do Won Cha creates a pair of virtual-reality goggles.

Staff members at the BeAM Hanes Art Center makerspace offer training ranging from basic safety orientations to the use of what Walters calls the “gateway drugs” of making – a high-tech 3D printer and impressive laser and vinyl cutters.

These tools excite the imagination without taking a long time to master. After completing an initial project – e.g., engraving a wooden keychain – most people feel ready to explore the workshop more broadly.

Walters is encouraged by how many people are using the facility. Tours offered in August resulted in more than 160 new names on the BeAM student listserv, which also shares information about the original



What they're saying...

“I believe that in the near future, prospective students on UNC campus tours will clamor to see our makerspaces. The BeAM network and the philosophy of innovation behind it are becoming as integral to UNC’s student life and scholarship as are libraries and classrooms.”

- Glenn Walters, PhD

“Glenn [Walters] has been a phenomenal partner and leader in this work because he has such a broad and deep understanding of making. He’s been at the front and center of BeAM’s efforts. His day-to-day work covers an array of projects, from electronics fabrication to traditional machining.

Glenn really engages people who come to him with design problems. He is deeply committed to teaching and training students, and he’s truly passionate about the wonder and power of making. He wants to engage and empower others with the knowledge that they are makers and can create effective designs themselves.”

- Richard Superfine, PhD
 Director, Center for Computer-integrated Systems for Microscopy and Manipulation (cismm.org), which oversees UNC’s BeAM spaces

makerspace in Kenan Science Library (KSL) and the forthcoming facility in Murray Hall.

Students already use the Hanes workshop and the KSL makerspace to print 3D models of architectural designs, create elaborate Halloween masks and craft virtual reality goggles based on Google Cardboard (google.com/get/cardboard). Many of them are members of MakNet, the UNC student organization that promotes maker culture (maknet.web.unc.edu).

Walters hopes their newfound skills will lead to innovation that reaches far beyond the UNC campus.

– Jennie Saia



The
CHALLENGES
of **HEALTHY**
AGING



lobally, the number of people 60 years old and older is growing exponentially. By 2050, these individuals will constitute nearly one-quarter of the world's population.

Identifying strategies that will allow adults to age safely and with good quality of life, to maintain their abilities and safeguard their independence is vital – and is a high priority at the UNC Gillings School of Global Public Health.

“People are aging – me included – and we need a plan to help them live fully,” says Julie MacMillan, MPH, managing director of the School’s Research and Innovation Solutions office. “At the Gillings School, through strong collaborations, we want to create opportunities for people to live as healthfully and independently as possible.”

School leaders take a three-pronged approach to meeting those needs, including innovation, evaluation and education. Partnerships through the Gillings Global Gateway™ (sph.unc.edu/global-health) offer support.

EVALUATION

Identifying needs is a first step, MacMillan says.

Peggye Dilworth-Anderson, PhD, professor of health policy and management, collaborates with UNC and Cambridge University (U.K.) colleagues to reduce later-life dementia risks. Using community-based participatory research, her team explores relationships between cognitive health, protective factors and modifiable risk factors to help develop cognitive, health-sustaining interventions that can be used with vulnerable groups of older adults in the U.S. and U.K.

Dilworth-Anderson is a venerated national leader in aging issues, having served as a Presidential appointee on the White House Conference on Aging Advisory Committee (2002-2005), president of the

Gerontological Society of America (2009-2010) and appointed member of the Institute of Medicine’s Forum on Aging, Disability and Independence (2012-2014). In October 2015, she was invited by AARP, in partnership with AgeUK (ageuk.org.uk), to serve a two-year term on the governance committee of the new Global Council on Brain Health (aarp.org/gcbh). The committee includes physicians, scientists, policy experts and others who will recommend best practices regarding brain health maintenance.

Funding for some of the UNC-Cambridge initiative was provided by Drs. Dennis and Mireille Gillings. Dennis Gillings, PhD, CBE, appointed by U.K. Prime Minister David Cameron as World Dementia Envoy, leads a global council to raise funds for research toward a cure for Alzheimer’s disease and other dementias.





See a video in which Amanda Holliday teaches her students about dementia at tinyurl.com/unc-dementia.



Top (left and right): Amanda Holliday (in red) instructs students about challenges faced by older adults. *Bottom (left to right):* Julie MacMillan, Heather Altman and Dr. Peggy Dilworth-Anderson review materials related to the new Global Aging and Technology Collaborative.

Wayne Rosamond, PhD, epidemiology professor at the Gillings School and adjunct professor of emergency medicine in the UNC School of Medicine, identifies ways emergency medicine services (EMS) staff can communicate with hospitals while en route. These strategies could ensure immediate availability of emergency department resources, personnel and scanning equipment, of special importance in situations such as stroke, in which a few minutes can make a big difference in prognosis. Steve Marshall, PhD, epidemiology professor and director of the UNC

Injury Prevention Research Center, and Jason Franz, PhD, biomedical engineering assistant professor, study factors that contribute to adult falls.

Epidemiology postdoctoral fellow Vineet Menachery, PhD, is using a recent National Institute on Aging award to support his research on the SARS coronavirus. He is identifying changes in immune response in the context of aging that could modify treatment of older adults who develop respiratory infections, a leading cause of death in that population.

INNOVATION

The Global Aging and Technology Collaborative aims to promote innovation and collaboration with global partners, says Heather Altman, MPH, project manager for the collaborative and doctoral candidate in the School's Executive Doctor of Public Health program. The group leverages the expertise of more than 100 interdisciplinary researchers, practitioners and entrepreneurs to adopt creative, affordable and practical solutions that enhance quality of life and support people's ability to age at home and in their communities. Altman is also Carol Woods Retirement Community's community connections director, a long-held position that inspires and continues to enrich her work in aging at the UNC Gillings School.

With the help of a career development award from the UNC Institute on Aging, Altman is evaluating a tool that will help leaders assess the livability of their communities for older adults.

EDUCATION

Gillings School students also learn about older adults' challenges, including food insecurities, by working with Amanda Holliday, MS, RD, clinical assistant professor of nutrition and licensed dietitian/nutritionist.

"Living older with chronic conditions has a nutritional component," Holliday says. "Independence is intertwined with food. We need to consider how

98% OF ADULTS AGES 40 AND OVER BELIEVE BRAIN HEALTH IS VERY IMPORTANT.

Only
56% ARE DOING THE MOST IMPORTANT ACTIVITIES TO SUPPORT BRAIN HEALTH.

each person will manage his or her own nutrition if s/he wants to stay at home."

Holliday's students investigate older adults' struggles in several ways. They complete daily living activities in a suit that impairs hearing and eyesight. Holliday also connects students with alumni living abroad to learn how other societies care for older adults, and she helps them secure study-abroad opportunities focused on aging, such as with the National Health Service's Universal Malnutrition Screening Initiative, in England.

Overall, MacMillan says, the School prepares students to be leaders in a number of public health arenas. "When our students get excited, they're a powerful force, no matter what challenge they take on," she says. "They always make us think – and make us stronger. I'm particularly proud of our students who seek solutions for the challenges of aging, because they will make a difference in all our lives – and eventually, in their own."

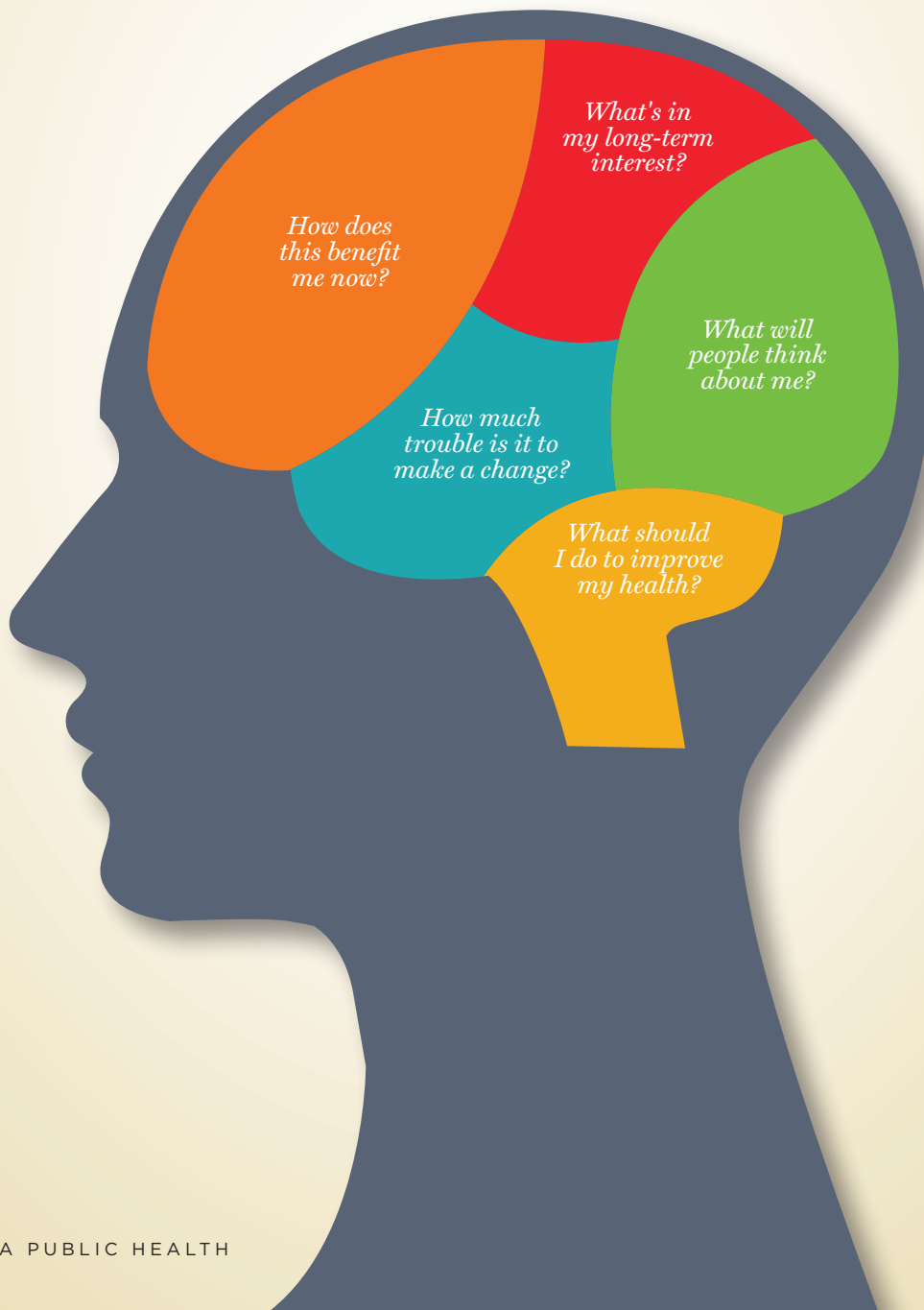
–Whitney L.J. Howell

MORE THAN A DOZEN other Gillings School researchers are working on newly funded projects related to aging, studying topics such as sickle cell trait and chronic kidney disease in aging women, atherosclerosis risk, environmental determinants of cognitive aging, cancer treatment benefits for older adults, risks related to air pollutants and their impact upon cognitive disorders in the elderly, links between psychosocial stress and aging, and pathways to healthy aging for Filipino women.

For a list of researchers and their studies, see *Carolina Public Health* online at sph.unc.edu/cph.

BEHAVIORAL ECONOMICS

Small incentives may lead to big improvements in health



Why do some people choose *not* to take actions that they know would protect or improve their health?

Behavioral economics research provides one of the answers – people tend to focus upon immediate costs and benefits of taking certain actions, rather than on long-term benefits. Research increasingly has shown that relatively small rewards can spur action.

Two UNC Gillings School of Global Public Health researchers are among those using behavioral economics to investigate whether people in sub-Saharan Africa will adopt behaviors that prevent the acquisition or transmission of HIV.

Harsha Thirumurthy, PhD, associate professor of health policy and management, conducted two studies to assess the effect of providing different types of low-cost incentives to Kenyan men who undergo medical male circumcision, a biomedical intervention proven to reduce the men's risk of HIV acquisition. Audrey Pettifor, PhD, associate professor of epidemiology, conducted a six-year study examining the effect of cash transfers, conditional upon high school attendance, on young South African women's risk of HIV acquisition.

There are differences, Thirumurthy explains, between targeted use of small financial and non-financial incentives and cash transfer programs that might seek, for example, to reduce overall poverty in a population. Incentives that seek to promote specific health behaviors can work across socio-economic levels because they reward immediate action – countering the tendency in all of us to delay certain health behaviors, even when we know they can be good for long-term health.

Photo by Linda Kastleman



Drs. Harsha Thirumurthy (left) and Audrey Pettifor

In one study in Kenya, Thirumurthy's team tested different types of incentives by randomizing uncircumcised men into three groups – control, lottery incentives and fixed amount of compensation. The control group was offered a small amount of compensation (about \$0.60) if they elected circumcision within a three-month time frame. The lottery

incentives group could have a chance to win prizes, ranging in value from a \$2.50 food voucher to a bicycle or smartphone, if they chose to be circumcised. The fixed compensation group was offered a food voucher equivalent to approximately \$12.50 if they chose to have the procedure. The study results were striking.

“Only 1.3 percent of those in the control group underwent circumcision within the short three-month follow-up period,” Thirumurthy says. “In contrast, 8.4 percent of those who received fixed compensation underwent the procedure – more than six times as many – as a result of providing a small economic incentive. The fixed compensation helped offset the immediate cost of missing work while undergoing and recovering from the procedure, especially for men in manual labor jobs. It also helped counter the tendency to delay scheduling the circumcision.”

Thirumurthy found that lottery-based incentives, commonly used in the U.S., were not as effective as the provision of fixed compensation. Only 3.3 percent of men in that group underwent circumcision.

Thirumurthy's findings appeared in the November 2015 issue of the *Journal of Acquired Immune Deficiency Syndromes*. He led an earlier study, published in August 2014 in the *Journal of the American Medical Association*, which confirmed the power of small economic interventions (between \$8.75 and \$15 in food vouchers) to achieve higher levels of circumcision uptake.

In South Africa's rural Mpumalanga Province, Pettifor has led the first randomized controlled trial to examine the impact of conditional cash transfers, related to high school attendance, on reducing HIV acquisition in young women.

Young women in sub-Saharan Africa are at incredibly high risk of HIV infection – 5 percent of South African girls have acquired HIV at age 15, and the infection rate climbs to 25 percent by the time the young women are in their early 20s. Ensuring that the girls attend high school regularly – and graduate – is one intervention that consistently reduces risk of HIV infection. However, financial and other barriers prevent many young women from completing high school.

“They can’t afford school fees, school uniforms, and transportation costs,” says Pettifor. “They may be responsible for caring for family members. Many household duties fall to them, so girls may be required to stay home while boys attend school.”



DID YOU KNOW?

In 2002, the Nobel Prize in economic sciences was awarded to a behavioral economist, Daniel Kahneman, PhD, an Israeli psychologist on the Princeton University faculty, “for having integrated insights for psychological research into economic science, especially concerning human judgment and decision-making under uncertainty.”

Schooling is thought to reduce HIV risk for several reasons. Girls who stay in school likely have greater exposure to HIV-prevention messaging and may have greater self-efficacy to act on prevention messages. They are more likely to have social and sexual networks of people who are lower risk, including friends and sexual partners who are closer in age. Pettifor and colleagues also hypothesized that providing money to young women and their families would reduce dependence upon male partners and reliance upon transactional sex to obtain money or goods.

A total of 2,533 young women, ages 13-20, were randomized into either a study group receiving cash transfers conditional on 80 percent school attendance or a control group receiving no cash transfers. Those in the study group received about \$10 per month, and their families received about \$20 per month. The amounts were selected because they are similar to the South African government's Child Support Grant, which provides about \$33 per month per child to poor South African



These girls in South Africa's Mpumalanga Province may be at decreased risk for acquiring HIV if they receive help to stay in school.

families. If the intervention worked, says Pettifor, researchers could make a case for the government to carry on with it – a critical step for sustainability.

The results were surprising. Young women who received cash transfers reported reducing some risk behaviors, such as having unprotected sex or experiencing intimate partner violence, but Pettifor found no difference between the rate of HIV infection in the study and control groups. Perhaps most surprising, 95 percent of the girls in both groups remained in school.

While the cash transfer did not change school attendance, it is likely that participation in the study increased attendance overall. School attendance among 17- and 18-year-olds not in the study was about 80 percent, closer to the national average. As Pettifor and colleagues had hypothesized, staying in school was protective for HIV infection. Young women who attended less than 80 percent of the time were three times more likely to acquire HIV during the study period.

Therefore, while the transfer was not needed in this study to encourage young women to attend school – likely because South Africa supports poor families in schooling their children – school *was* protective, and study findings reinforced the message to keep girls in school.

Pettifor and colleagues are conducting further analysis to determine whether particular subgroups



Dr. Harsha Thirumurthy found that food vouchers (above) could be an incentive for men in Kenya to undergo circumcision, a procedure that reduces risk of acquiring HIV.

benefited from the cash-transfer program and what other interventions might help prevent HIV acquisition.

A growing body of research suggests that small economic incentives can be useful for targeting specific health behaviors. For challenges such as the reduction of HIV risk among adolescent girls, more research may be needed to establish whether incentives to stay in school, in settings where school attendance is not high, can be effective in reducing HIV risk.

– Elizabeth Witherspoon

Thirumurthy and Pettifor credit their African study partners in collaborating to better understand ways that behavior-based economic incentives can move people to act in their own best interests, especially in the area of HIV/AIDS.

Thirumurthy's Bill and Melinda Gates Foundation-funded research included colleagues Drs. Kawango Agot and Eunice Omanga, from Kenya's Impact Research and Development Organization (tinyurl.com/irdo-kenya).

Pettifor's study, HPTN 068, is part of the NIH-funded HIV Prevention Trials Network. Her partners included Dr. Kathleen Kahn, of the MRC/Wits Rural Public Health and Health Transitions Unit in the School of Public Health, and Dr. Catherine MacPhail, of the Wits Reproductive Health and HIV Institute (WRHI), both at the University of the Witwatersrand, in Johannesburg, South Africa.

A video about Pettifor's work can be seen at tinyurl.com/pettifor-HIV-SouthAfrica.



with

Chen-Yu Yen

In August 2015, Crystal Hinson Miller, MA, CFRE, associate dean for advancement at the UNC Gillings School, sat down to chat with Chen-Yu Yen, PhD, and his wife, Ray-Whay. Dr. Yen, a 1983 alumnus and current member of the School's Public Health Foundation board, and his wife have made a significant gift to the School to support international students – the Chen-Yu and Ray-Whay Yen Expendable Graduate Fellowship.



Contributed photo

Chen-Yu (left) and Ray-Whay Yen in Raleigh, N.C., in the 1970s.

CRYSTAL HINSON MILLER:

Tell us about your experiences as international students.

CHEN-YU YEN:

The opportunity to get a top-notch education was the most important reason that we came from Taiwan to the U.S. in the 1970s. UNC-Chapel Hill was renowned in the fields we had chosen to study. The UNC Department of Chemistry gave me a teaching assistantship, without which I would not have been able to attend graduate school abroad, and we were lucky that the N.C. State University Department of Genetics offered Ray-Whay a position so that she could join me. Without financial assistance, we would not be here today. This is part of the reason we set up a fellowship for international students at the Gillings School.

Starting a life in a foreign country was a challenge on multiple fronts, including language, transportation, diet and having to live in different cities (Chapel Hill and Raleigh). Language was definitely a challenge. I thought I knew English well until I was confronted with the southern drawl! We could not get anywhere without a car, and neither of us had driven before. Friends

supported us every step of the way, helping us buy a car and get licenses, and teaching us to drive.

When our son was born in 1979, people again stepped up to help. Friends helped us enroll in the Women, Infants and Children (WIC) program. We were thoroughly educated about good nutrition and steered to eat the right kinds of food. We used WIC coupons to sample foods (e.g., cheese) that we otherwise would not have been able to afford.

We spent almost eight years in North Carolina. There were many fond memories. We enjoyed tremendous hospitality, and a lot of people helped us. For that, we're grateful.

MILLER:

How did financial support make a difference in your UNC public health studies?

YEN:

In my second year as a UNC chemistry doctoral student, I took a course in modeling of natural systems, taught by Professor Charlie O'Melia. It was fascinating, and Charlie was a great teacher who made complicated material much easier to understand. I wrote my term paper about a study on the greenhouse effect, claiming that the authors made a slight mathematical error, and their projections likely overestimated the warming effect. Risking my credibility

was daring, but I got an H [high pass] in the course.

More importantly, I was hooked. I switched my major to environmental sciences and engineering [ESE], an area in which I believed I could make a difference.

I talked with the ESE department chair and thought I had secured a research assistantship, but an administrative error caused that not to happen. Given my financial situation and status as an international student, I could not legally work without being a full-time registered student. I told Professor O'Melia my situation. He kindly introduced me to Professor Phil Singer [now distinguished professor emeritus]. At the time, Phil had a large Department of Energy grant. With his help, I squeezed in as the last member of his team. I am forever grateful to both Charlie and Phil. They were terrific models for young aspiring students, and they served as unselfish, caring mentors for all of us.

MILLER:

What led you to establish a fellowship in ESE?

YEN:

Personally, we had so much to be thankful for during our years in N.C. – and having financial support along the way provided us with many opportunities.

In general, we should support graduate studies in environmental sciences and engineering. Even the best



Sarah Long

First Yen Fellowship awarded to Sarah Long

Sarah Long, first-year master's student in environmental sciences and engineering, is working to become a researcher and consultant for the global water, sanitation and hygiene (WaSH) sector, focusing on underserved communities in the U.S. and abroad. After earning an undergraduate degree in civil and environmental engineering at Cornell University, she took part in water development projects in rural communities in Honduras and India and co-founded a company dedicated to disseminating sustainable drinking water treatment technology.

Long is the inaugural recipient of the Chen-Yu and Ray-Whay C. Yen Expendable Graduate Fellowship.

of our researchers will not earn the lucrative salaries of someone in business, medicine or law. We need to prevent these students from being saddled with student loans so they can focus on their studies and work to make our world cleaner and greener.

MILLER:

What inspires you to give?

YEN:

Some might blame our happy brain chemicals! Seriously, the only times you truly can appreciate the joy of giving are when you are giving or receiving. My theory is that people who have experienced being the beneficiaries of help tend to be willing to give it. It was our fortune to be on the receiving end in our early lives. I believe we should give back when we have the resources to do so.

MILLER:

You mentioned that you were mentoring at least one young alumnus in philanthropy. What motivated you to do this?

YEN:

I believe people make charitable gifts based on their ability to ‘replenish the coffer,’ that is, to keep themselves comfortable while sharing their wealth. We began a nonprofit, *InvestWithYen.org*, founded on the notion that charitable people should be better educated in investing. In this way, they assure their own financial security and are able to donate portions of their profits to causes they believe in.

Through a process of training-by-doing, individuals graduate and ‘spread the gospel’ about charitable giving. In this way, our nonprofit not only helps create individual wealth; we also help develop social awareness and action in those who will make the world a better place.

What motivated us to do this? Why else do we live this precious life? We only live once, and we cannot take any wealth with us.

MILLER:

What impact do you want your giving to have upon your legacy?

YEN:

We envision a world in which talented, educated people can become better stewards for our planet. We were born and reared by loving parents; guided by caring and inspiring mentors; and educated in well-established institutions such as UNC’s Gillings School. The world faces many challenges. We need bright, highly educated and socially conscientious people to help us overcome these challenges. We are only doing our small part, but we hope to inspire others to do the same.



Photo by Crystal Hinson Miller

Ray-Whay (left) and Dr. Chen-Yu Yen

We envision a world in which talented, educated people can become better stewards for our planet.

– Dr. Chen-Yu Yen

Financial support benefits all students, both local and global.

Photo by Linda Kastleman



Chien-Hsiu Weng (left) and Alma Beciragic

As Gillings School alumnus Chen-Yu Yen, PhD, describes on page 26, life as an international student in the U.S. can be challenging – *and expensive*.

Below are profiles of two doctoral students whose financial support was instrumental in their coming to the Gillings School. Both study in Yen's field – environmental sciences and engineering – and both received support from the B.B. Parker Environmental Science and Engineering Fund, established to honor the late Bill Ben Parker, UNC alumnus and former president and chief operational officer of Duke Energy Progress.

Alma Beciragic was born in Zagreb, Croatia. In 1994, she and her family came to Charlotte, N.C., as refugees from Bosnia and Herzegovina. Two decades later, she completed an undergraduate degree in environmental science and chemistry at Queens University in Charlotte.

At the Gillings School, she works in the lab of Associate Professor Howard Weinberg, PhD, conducting research about the safety of membrane processes for water reuse and purification.

"My undergraduate work sparked my interest in water quality research and safeguarding public health," says Beciragic. "Those experiences – and ones that are continuing here at UNC – have helped me see how complex the field of water quality is."

Beciragic hopes to teach at a university after earning her doctorate.

"The B.B. Parker Award has facilitated my pursuit of graduate education," she says. "Without it, the financial burden would have been too great, and I could not have come to the Gillings School. The award has opened so many doors for me, and I will always be grateful for that."

Chien-Hsiu Weng earned a bachelor's degree in chemistry and public health, with a minor in political sciences, at National Taiwan University in Taiwan and a master's degree in public health at Tulane University.

He works in the Gillings School lab of Associate Professor Jacqueline MacDonald Gibson, PhD, studying risks related to antibiotic-resistant bacteria.

Chien-Hsiu's interest in the environment is tied to his native land.

"Taiwan is a populous island with few regulations and policies for managing land use," he says. "Natural resources are precious and essential for maintaining the balance of Earth's ecosystems. I love experiencing nature, so I value keeping those resources intact."

Chien-Hsiu says he's appreciative of the School's financial aid. "The award is an affirmation of my work that encourages me along the path of academics," he says.

– L.K.

FOOD FOR THOUGHT

*Ammerman helps spearhead
UNC's 'Food for All' theme*

Dr. Alice Ammerman

he paradoxes are many. About one-third of available food in the U.S. is wasted, yet millions go hungry. Even in North Carolina, where a long growing season produces an abundance of fruits and vegetables, many have too little nutritious food to eat.

Especially during holidays, we think of food as binding families and communities together – but access to healthful foods also divides us along racial and socio-economic lines.

Leaders at The University of North Carolina at Chapel Hill don't shy away from challenges such as these. With the launch of UNC's two-year, campus-wide academic theme, "Food for All: Local and Global Perspectives," UNC students and members of the faculty and staff aim to transform the food landscape.

Co-chairs of the theme committee are Marcie Cohen Ferris, PhD,* professor of American studies, and Alice Ammerman, DrPH, professor of nutrition at the UNC Gillings School for Global Public Health and director of the UNC Center for Health Promotion and Disease Prevention.

Ammerman says UNC's focus on food is – pardon the pun – *organic* to the campus. "We don't see this as something that we're imposing on anyone," she says. "Rather, it's people on campus becoming inspired by the theme and each other's work in the areas of food – and their crossing disciplines to work side-by-side with communities."

Ammerman says the food theme is relevant to all 70 majors offered on campus. "The whole campus seems to be integrating the theme," she says, "and it's making for really interesting connections."



*Dr. Marcie Cohen Ferris is author of *The Edible South: The Power of Food and the Making of an American Region* (UNC Press, 2014). Read more about her at magazine.college.unc.edu/2015/09/ferris.

Photo by Kate Medley

If the myriad projects generated in response to the theme are any indication, Ammerman is right. UNC radiologists are helping a nutrition researcher use MRIs to learn how consumption of sugar-sweetened beverages affects the brain. Biologists are conducting research about the genetics of seafood and the pervasive problem of fish being mislabeled and sold under false pretenses. Historians marked the 100th anniversary of World War I by studying the victory gardens planted to increase food production during wartime – and noted their resurgence in popularity in the 21st century.

Campus discussions about food have inspired students to act locally. One campus group plans to transform ornamental planters located atop the Rosemary Street parking deck into gardens to help low-income youth in Chapel Hill experience gardening and learn about food production. One student was awarded a social venture grant to help people start home gardens.

“I’m so excited about the social entrepreneurship that’s happening around this theme,” says Ammerman. “These projects are about sustainability, social justice and solving real-world problems.”

Even as Ammerman fields inquiries from the Carolina community about food-related projects, she also is pursuing her own “Food for All” project. Along with several colleagues, she aims to bring together representatives from big agriculture and small farms to find common ground around issues of sustainability and access to high-quality food. “These two groups have

been in different camps for too long, and we believe there’s some middle ground,” she says.

The food theme is grounded in five initiatives – UNC’s role as a food systems innovator; teaching and learning about food; the contribution of food to health promotion and disease prevention; food access and food justice; and the documentation of food cultures and history.

The two-year theme was announced last April, so there are many more projects yet to come. “We can barely keep up with all the inquiries, ideas and suggestions from our students, faculty and staff,” Ammerman says. “I can’t wait to see what they come up with next.”

– Amy Strong



Dr. Alice Ammerman (left) serves home-prepared vegetable dishes at an event held at UNC’s Community Garden.

“Food for All” is UNC’s second two-year, cross-campus theme. The first, in academic years 2012-2014, focused on “Water in our World,” and was co-led by Jamie Bartram, PhD, Don and Jennifer Holzworth Distinguished Professor of environmental sciences and engineering and director of The Water Institute at UNC.

More than 275 students in UNC’s social entrepreneurship minor degree program, which now includes a public health concentration, are focused on food theme projects.

FOOD  **ALL**

To learn more about projects and events associated with the 2015-2017 “Food for All” theme, visit foodforall.web.unc.edu.

May - November 2015

SCHOOL NEWS

Read more at sph.unc.edu/news.

Selected Publications

Student-led publications are marked with ★.

CANCER AND CANCER-RELATED HEALTH DISPARITIES

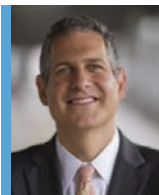
Two recent study reports from Gillings School co-authors shed light on the reasons for some cancer-related health disparities. The first, from co-author **Andrew Olshan, PhD**, Barbara Sorenson Hulka Distinguished Professor of Cancer Epidemiology and chair of EPI, in the June 17 issue of the *Journal of the National Cancer Institute*, found that early age of first menstrual cycle (before age 11), could play a role in the disproportionate incidence of estrogen receptor (ER)-negative breast cancers diagnosed and higher breast cancer mortality

among African-American women. Age at menarche has declined in recent years, particularly for African-American girls.

★ In another study, published July 6 in the *Journal of Clinical Oncology*, **Caitlin Murphy, MPH**, predoctoral fellow in EPI, showed that among patients diagnosed with stage III colon cancer, there were significant differences between whites and blacks in whether they chose to have chemotherapy, likely a reflection of ability to pay. Not having treatment may contribute to health disparities and partly explain the higher mortality rate from colon cancer among African-Americans.

Research has shown that physicians tend to under-report patients' side effects while in cancer clinical trials compared to what patients report.

Ethan Basch, MD, associate professor of HPM, and **Bryce B. Reeve, PhD**, HPM professor, known for their work on patient-reported outcomes, tested the reliability and validity of patients' self-reporting of side effects, using measures Basch and others previously developed. In a study published Aug. 13 in the *Journal of the American Medical Association (JAMA) Oncology*, they concluded that the measures permit reliable reporting by patients. This is an important advance. Advocates have noted the discrepancy



Dr. Ethan Basch



Dr. Edwin Fisher



Dr. Valerie Flax



Dr. E. Mayer-Davis



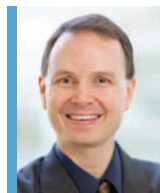
Caitlin Murphy



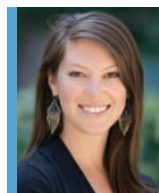
Dr. Andrew Olshan



Dr. Barry Popkin



Dr. Bryce Reeve



Dr. S. Wheeler



Dr. Karin Yeatts

KEY TO DEPARTMENTS

- BIOS** Biostatistics
- EPI** Epidemiology
- ESE** Environmental Sciences and Engineering
- HB** Health Behavior
- HPM** Health Policy and Management
- MCH** Maternal and Child Health
- NUTR** Nutrition
- PHLP** Public Health Leadership Program



Dr. Noel Brewer



Brystana Kaufman



Dr. Ashley Kranz



Dr. Leslie Lytle



Julia Naman



Dr. Jessica Pepper



Dr. Til Stürmer

when patients provide their own responses to questions about side effects, compared to data reported by others.

DIABETES, OTHER CHRONIC DISEASES

Edwin B. Fisher, PhD, professor of HB and global director of Peers for Progress, has worked with more than 60 collaborating groups on peer-support projects worldwide. On Aug. 24, *Annals of Family Medicine* published a special supplement on Peers for Progress, featuring 11 articles showing not only effectiveness in varied settings, but also the global feasibility, reach and adoption of peer support for people with diabetes and other health challenges.

Elizabeth Mayer-Davis, PhD, Cary C. Boshamer Distinguished Professor and chair of NUTR, was co-lead author of a key paper documenting the increasing prevalence of both Type 1 and Type 2 diabetes in youth. The work was published May 7 by the *Journal of the American Medical Association*.

★ **Daniel Erim, MD**, doctoral student, and **Stephanie Wheeler**,

PhD, assistant professor, both in HPM, co-authored a paper published May 18 in the *Journal of Crohn's and Colitis* which found the drug vedolizumab could improve quality of life for people with Crohn's disease, an inflammatory bowel disease.

Karin Yeatts, PhD, research assistant professor of EPI, co-authored a study in the Aug. 18 *Journal of Asthma* that found a multi-level intervention program for low-income, underserved children with asthma in N.C. resulted in improved lung function and fewer emergency department visits, hospitalizations and school absences.

GENETICS

In a study co-authored by **Andrew Nobel, PhD**, professor of BIOS, researchers described the Genotype-Tissue Expression (GTEx) project, which reveals precise ways in which genetic variation affects gene expression and disease development. The NIH-funded study was published May 8 in *Science*. Nobel said the research was analogous to deciphering genetic “recipes.”

HIV/AIDS

Valerie L. Flax, PhD, research assistant professor of NUTR, led a study that highlights the negative impact of antiretroviral therapy (ART) upon HIV-positive breastfeeding women in Malawi. The study, which found that ART diminishes the benefits of iron and folate supplements taken by the mothers, was published July 8 in the *Journal of Nutrition*.

★ Clinicians recommend that high-risk men, especially those who are HIV-positive and who have sex with men, be screened for anal cancer, but those who need it most likely avoid screening because of stigma. A study published June 16 in the *Journal of Lower Genital Tract Diseases*, led by alumnus **Joshua Thompson, MD, MPH**, and **Noel T. Brewer, PhD**, associate professor of HB, found that a majority of at-risk men surveyed said they would conduct a self-collected test at home but would not visit a doctor for screening.

NUTRITION, DIET AND OBESITY

★ NUTR alumnus **Christopher Ford, PhD**, and colleagues **Shu Wen Ng, PhD**, research assistant professor, and **Barry M. Popkin, PhD**, W.R. Kenan Jr. Distinguished Professor, both in NUTR, found that financial incentives to avoid sugar-sweetened beverages (soda taxes) may persuade families to purchase fewer high-fat, high-sugar beverages. Their research findings were published online June 10 in the *Journal of Nutrition*.

Leslie Lytle, PhD, professor of HB and NUTR and chair of HB, and co-authors offered new evidence for interventions that can help people of low socio-economic status provide more healthful food for their families. Published July 27 in the *International Journal of Behavioral Nutrition and Physical Activity*, the authors found that changing mealtime culture (e.g., turning off the television) and avoiding unhealthful food choices (including restaurant food) can empower families to improve eating habits.

ORAL HEALTH

★ Oral health services, delivered by primary care clinicians and designed to prevent dental caries in young children, can improve the oral health of kindergartners enrolled in Medicaid, found **Ashley Kranz, PhD**, 2013

alumna, and **Gary Rozier, DDS**, research professor of HPM. Their research was published June 29 in *Pediatrics*.

RURAL HEALTH

★ A study led by **Brystana Kaufman, MSPH**, HPM alumna, determined that critical-access rural hospitals in N.C. that closed in 2009 tended to have lower levels of profitability, liquidity, equity, patient volume and staffing at the time of closure. Published July 14 in the *Journal of Rural Health*, the study was co-authored by **George Pink, PhD**, Humana Distinguished Professor, and **Mark Holmes, PhD**, associate professor, both in HPM.

TOBACCO AND E-CIGARETTES

★ HB alumnus **Joseph G.L. Lee, PhD**, now assistant professor at East Carolina University, led a team that reviewed published articles associating tobacco marketing with the demographics of given neighborhoods. Lee found excess marketing in neighborhoods with more low-income and more African-American residents. Findings were published July 16 in the *American Journal of Public Health*.

Jessica K. Pepper, PhD, postdoctoral fellow at UNC's Lineberger Comprehensive Cancer Center and 2014 HB alumna, and **Noel T. Brewer, PhD**, associate professor of HB and UNC

Lineberger member, co-authored the first national study to examine how pediatricians and other physicians interact with teenage patients regarding e-cigarettes. The study was published Aug. 19 in the *Journal of Adolescent Health*.

WATER AND ENVIRONMENT

★ **Julia Marie Naman, MSPH**, 2014 ESE alumna, and **Jacqueline MacDonald Gibson, PhD**, ESE associate professor, examined disparities in access to municipal water and sewer services in N.C. Published Aug. 13 in the *American Journal of Public Health*, the study found that understanding costs and benefits of water access – and integrating findings into local decision-making – may address disparities and improve service quality.

WOMEN'S AND CHILDREN'S HEALTH

A study co-authored by **Til Stürmer, MD, PhD**, professor of EPI, found that women without psychiatric diagnoses who were treated with serotonin reuptake inhibitors (SSRIs) for menopausal symptoms were at higher risk for bone fractures. The findings, published June 25 in *Injury Prevention*, have implications for the growing population of women at risk for osteoporosis.

BOOKS

Barbara K. Rimer, DrPH, dean and Alumni Distinguished Professor, is co-editor of the 5th edition of *Health Behavior: Theory, Research and Practice* (Jossey-Bass). Co-editors are Karen Glanz, PhD, George A. Weiss University Professor of

epidemiology and nursing at the University of Pennsylvania, and K. Viswanath, PhD, professor of health communication at Harvard T.H. Chan School of Public Health. Gillings School contributors include Noel Brewer, PhD, associate professor; Edwin Fisher, PhD, professor, and Laura Linnan, ScD, professor, all in HB.

Arnold Kaluzny, PhD, professor emeritus of HPM, is co-author of *Managing Disruptive Change in Healthcare: Lessons from a Public-Private Partnership to Advance Cancer Care and Research* (Oxford University Press). Donna M. O'Brien, MHA, president of Strategic Visions in Healthcare (N.Y.), is co-author.

in MEMORIAM

Julius Atashili, PhD, 2005 and 2009 EPI alumnus, died Oct. 24, in Cameroon. He was 38.

Amit Bhaskar, first-year student in the Gillings School's Master of Science in Clinical Research program and fellow in the UNC medical school's gastroenterology and hepatology program, died Sept. 1. He was 35.

Timothy R.L. Black, MD, MPH, CBE, School alumnus and visionary international advocate for women's reproductive rights and family planning services, died Dec. 11, 2014, in Sussex, England, at age 77.

Heather Waterman Huneycutt, DVM, recent alumna of NCSU School of Veterinary Medicine and first-year PHLP student, died Aug. 23 from injuries sustained in a motorcycle crash. At 26, she was a prize-winning runner and dedicated captain in the U.S. Army Veterinary Corps.

C. Arden Miller, MD, national leader and expert in child health, died July 26 in Chapel Hill, N.C., at age 90. Miller served as president of the American Public Health Association (1974-1975), vice chancellor of health sciences at UNC-Chapel Hill (1966-1972), and

chair (1977-1987) and professor of MCH at the UNC Gillings School.

Michael O'Malley, PhD, associate director of the UNC Lineberger Comprehensive Cancer Center and adjunct associate professor of HPM at the Gillings School, died unexpectedly on June 24 at his home in Chapel Hill. He was 64. A tribute website is at michael.web.unc.edu.

Norman Fred Weatherly, PhD, professor emeritus of parasitology, died July 13 in Durham, N.C. He was 83.

Selected Grants

Clare Barrington, PhD, associate professor of HB, was awarded a five-year, \$15 million grant as the only U.S. university collaborator on HIV disparities research in Central America. Funded by the CDC and PEPFAR, Barrington will work with the Universidad del Valle de Guatemala to develop and evaluate interventions that protect transgender women and men who have sex with men, two groups in Guatemala most affected by HIV.

Michael R. Kosorok, PhD, W.R. Kenan Jr. Distinguished Professor and chair of BIOS, was awarded a five-year, \$10.4 million National Cancer Institute grant to continue finding ways to design more powerful cancer clinical trials, effectively delivering better and more personalized new therapies to cancer patients sooner. The grant originally was funded in 2010. Partners include

Duke University and North Carolina State University.

Kosorok also co-directs the Big Data to Knowledge (BD2K) Training Program, which provides integrated training for graduate students in biomedical science, informatics and statistics. The program was made possible by a training grant award from the NIH's BD2K Initiative.

The SEARCH for Diabetes in Youth project has won \$1.9 million in CDC support for another five years' surveillance of the incidence, prevalence and complications of childhood diabetes in the U.S.

Elizabeth Mayer-Davis, PhD, Cary C. Boshamer Distinguished Professor and chair of NUTR, is principal investigator for the UNC site, one of five national SEARCH centers, and national co-chair for the project, which she has helped oversee for the last 15 years.

Vineet Menachery, PhD, postdoctoral fellow in EPI, was selected for a five-year Pathway to Independence Award from the National Institute on Aging. The award provides career transition support and funding for his research project on aging pathogenesis.

Steven Meshnick, MD, PhD, EPI professor, and co-principal investigator Thomas Mather, PhD, of University of Rhode Island at Kingston, were awarded a four-year grant of more than \$2 million to study Lyme disease prevention and exposure among outdoor workers in Rhode Island.

Kavita Singh Ongechi, PhD, research assistant professor, and **Ilene Speizer, PhD**, research professor, both in MCH; **Clare Barrington, PhD**, associate professor of HB; and **Bruce Fried, PhD**, associate professor of HPM, will collaborate with others on a \$500,000 Gates Foundation grant to evaluate maternal and newborn interventions in Ethiopia.

Bryan Weiner, PhD, HPM professor, is co-investigator for a \$15 million Agency for Healthcare Research and Quality grant that will help primary-care practices use the latest scientific evidence to improve the heart health of millions of Americans.



Dr. Clare Barrington



Dr. Bruce Fried



Dr. Michael Kosorok



Dr. V. Menachery



Dr. Steve Meshnick



Dr. Kavita Ongechi



Dr. Ilene Speizer



Dr. Bryan Weiner

May - November 2015

AWARDS & RECOGNITIONS

Read more at sph.unc.edu/news.

Selected Awards and Recognitions

Linda S. Adair, PhD, NUTR professor, was appointed for a two-year term as chair of the Social Sciences and Population Studies 'A' Study Section in the National Institutes of Health's Center for Scientific Review. Adair has served on the committee since 2013.

Margaret (Peggy) Bentley, PhD, Carla Smith Chamblee Distinguished Professor of Global Nutrition and the School's associate dean for global health, was named one of two new faculty directors at the Duke-UNC Rotary Peace Center.

Effective July 1, **Jianwen Cai, PhD**, professor and vice chair of BIOS, and **Elizabeth Mayer-Davis, PhD**, professor and chair of NUTR, were designated as Cary C. Boshamer Distinguished Professors.

Greg Characklis, PhD, ESE professor, was installed in June as president of the Association of Environmental Engineering and Science Professors (AEESP), an international organization of

academicians who are educators in the sciences and technologies of environmental protection.

Stephen Cole, PhD, EPI professor, is the 2015 recipient of the American College of Epidemiology (ACE) Award for Outstanding Contributions to Epidemiology.

Peggye Dilworth-Anderson, PhD, professor of HPM, was invited to serve a two-year term on the governance committee for the new Global Council on Brain Health (aarp.org/gcbh), convened by AARP and AgeUK, the United Kingdom's largest charity dedicated to making the most of later life.

Anita Farel, DrPH, alumna, clinical professor and associate chair of MCH, received the N. C. Pediatric Society's Good for Kids Award. Two other alumnae, **Julie Story Byerley, MD** (MPH, 1997), and **Elizabeth Cuervo Tilson, MD** (MPH, 1999), also were among the seven winners of the society's 2015 awards for excellence in improving health of children and families.

Dean L. Fixsen, PhD, and **Herbert B. Peterson, MD**, were selected as president and treasurer, respectively, of the board of directors of the Global Implementation Initiative (globalimplementation.org). Fixsen is research professor of MCH, and Peterson is Kenan Distinguished Professor and former MCH chair.

Rebecca Fry, PhD, associate professor of ESE, was named director of the UNC Superfund Research Program. The program, based in the UNC Gillings School and supported by a \$14 million grant from the National Institute of Environmental Health Sciences (NIEHS), brings together a diverse group of scientists, engineers, science communicators and

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HPM	Health Policy and Management
MCH	Maternal and Child Health
NUTR	Nutrition
PHLP	Public Health Leadership Program



Dr. Linda Adair



Dr. Margaret Bentley



Dr. Jianwen Cai



Dr. Greg Characklis



Dr. Stephen Cole



Dr. Rebecca Fry



Dr. Carolyn Halpern

trainees to study human health and environmental risks associated with exposure to toxic chemicals found at hazardous waste sites.

Carolyn Halpern, PhD, professor and chair of MCH, is now associate editor for public health and policy for the *Journal of Adolescent Health*.

Kristen Hassmiller Lich, PhD, research assistant professor of HPM, was selected in June as an inaugural participant in AcademyHealth's Systems Science Scholars Program, designed to attract advanced systems methodologists.

Michael Hudgens, PhD, associate professor of BIOS, and **Jennifer Smith, PhD**, associate professor of EPI, were presented with two of the School's most prestigious faculty awards during the School's May 9 commencement. Hudgens received the McGavran Award for Excellence in Teaching, and Smith accepted the John E. Larsh Jr. Award for Mentorship.

Michael R. Kosorok, PhD, W.R. Kenan Jr. Distinguished Professor and chair of BIOS,

and **Danyu Lin, PhD**, Dennis Gillings Distinguished Professor of BIOS, were honored at the Joint Statistical Meetings in Seattle in August. Kosorok delivered the Institute of Mathematical Statistics Medallion Lecture, and Lin accepted the biannual George W. Sendecor Award, which recognizes contributions to statistical theory on biometry.

Kosorok also was reappointed for a third term as BIOS chair.

Shoou-Yih (Daniel) Lee, PhD, was appointed in July as the new chair of HPM. Lee, who most recently was a professor in the University of Michigan's School of Public Health, served on the UNC Gillings School faculty from 2001 to 2010. A medical sociologist and expert in health services research, his expertise lies in organizational change, structure and performance. He is well-versed in large-scale data management and advanced statistical methods.

Richard Luettich, ScD, professor of ESE, has been named principal investigator at the Department

of Homeland Security's new Coastal Resilience Center (CRC) of Excellence, in Chapel Hill. The CRC conducts research and develops education programs to solve key challenges related to increasing the safety and resilience of N.C.'s coastal communities. Luettich also is Sewell Family Term Professor of Marine Sciences and director of UNC's Institute of Marine Sciences in Morehead City, N.C.

Wizdom Powell, PhD, associate professor of HB, and **Jason Surratt, PhD**, ESE associate professor, were awarded UNC's Phillip and Ruth Hettleman Prize for Artistic and Scholarly Achievement by Young Faculty. Powell and Surratt, two of four UNC faculty members selected, will be asked to present a Hettleman Lecture during the academic year and will receive monetary stipends.

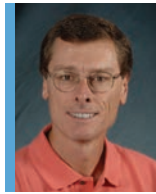
Jonathan Oberlander, PhD, professor of HPM in the Gillings School and of social medicine in the UNC School of Medicine, was selected in July to serve as chair of the Department of Social Medicine.



Dr. Michael Hudgens



Dr. Shouou-Yih Lee



Dr. Richard Luetlich



Dr. Herbert Peterson



Dr. Wisdom Powell



Dr. Alison Stuebe



Dr. Jason Surratt



Dr. Daniel Westreich

Oberlander has been on the medical school faculty since 1997 and the public health faculty since 2006. He is a knowledgeable and articulate spokesperson about the profound transformation occurring in U.S. health care.

UNC-Chapel Hill was named as a partner by the World Health Organization to help coordinate research needed to implement a bold new strategy aimed at saving the lives of millions of women, children and adolescents by 2030. The Gillings School's WHO Collaborating Center, led by **Herbert Peterson, MD**, professor of MCH, will be the academic hub and lead partner for implementation science related to the initiative, which aims to reduce global maternal mortality by at least two-thirds from the 2010 levels.

Barry Popkin, PhD, W.R. Kenan Jr. Distinguished Professor of NUTR, was presented in spring 2015 with the Chinese

government's inaugural award for significant foreign contributions to nutrition. The award honored Popkin's long-term dedication to research and policy in nutrition and noncommunicable diseases in China.

Barbara K. Rimer, DrPH, dean and Alumni Distinguished Professor of HB, was selected by President Obama to serve a third term as chair of the President's Cancer Panel. Rimer, first appointed in 2011, led the writing of "Accelerating HPV Vaccine Uptake: Urgency for Action to Prevent Cancer," a report that calls for efforts to maximize the vaccine's potential to save lives and prevent avoidable cancers and HPV-related conditions.

Alison Stuebe, MD, associate professor of MCH and of obstetrics and gynecology in the UNC School of Medicine, has been named Distinguished Scholar of Infant

and Young Child Feeding at UNC. Stuebe will work with the School's Carolina Global Breastfeeding Institute and the medical school's Lactation Services program.

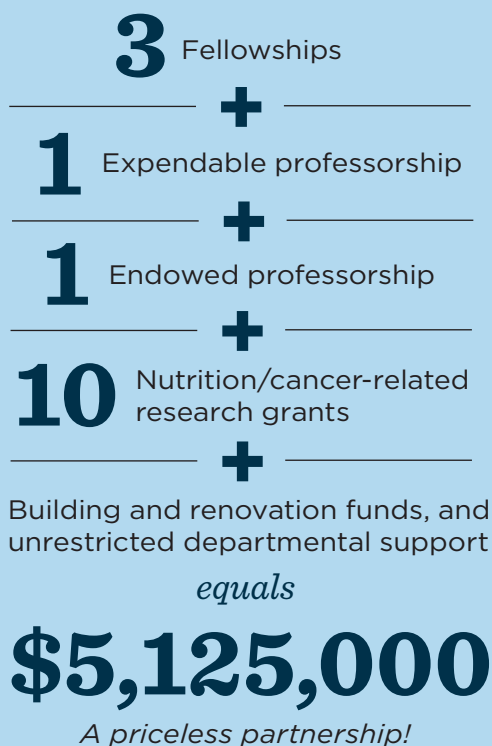
Jason Surratt, PhD, associate professor of ESE, received the 2016 James J. Morgan ES&T Early Career Award, which recognizes early-career researchers who lead the field in new directions through creative ideas. Surratt will accept the award in March 2016 at the 251st annual American Chemical Society National Meeting and Exposition, where he also will give an invited talk.

Daniel Westreich, PhD, assistant professor of EPI, was appointed to the editorial board of the journal *Epidemiology* and invited to serve as section editor in methods for *Current Epidemiology Reports*. He also serves as associate editor for the *American Journal of Epidemiology*.



Dr. June Stevens

AICR provides longstanding support for innovative nutrition and cancer research



“The UNC Gillings School depends so much upon organizations and individuals who provide continuing support for the School’s mission,” says Crystal Hinson Miller, MA, CFRE, associate dean for advancement at the School. “Longstanding and broad-based support has made a huge difference in what we’re able to accomplish – helping us to engage in cutting-edge research, translate our academic research into solutions for local and global communities, and educate tomorrow’s public health leaders.”

Since 1997, the American Institute for Cancer Research (AICR) and its executive vice president Kelly B. Browning, emeritus Public Health Foundation board member, have provided that type of invaluable support, primarily through the School’s Department of Nutrition. AICR has funded fellowships, professorships, research grants, and other building/renovation and departmental support.



AICR has touched every angle of our School's mission – from funding for fellowships to supporting renowned faculty and ensuring that state-of-the art labs are available, spurring research efforts and flexibly funding our most pressing needs. We are grateful for AICR's multi-faceted support.

– Dean Barbara K. Rimer



The leaders at AICR are so proud of our nearly-20-year partnerships with the Gillings School and its nutrition department. The nexus of cancer research and nutrition has been and continues to be a crucial area of inquiry, and faculty and student research at the School continues to be first-rate, providing innovative solutions for the world's most pressing problems related to nutrition and health. Together, I believe AICR and the Gillings School have made a difference.

– Kelly B. Browning
Executive Vice President, AICR

“The department is engaged in exciting, innovative research about cancer and nutrition,” says Elizabeth Mayer-Davis, PhD, professor and department chair. “We are deeply grateful for the AICR's continuing and vital support of our faculty's work.”

To date, AICR's gifts and pledges for fellowship support alone have reached almost \$1.8 million, largely through the Marilyn Gentry Fellowship in Nutrition and Cancer. The support has been expendable, i.e., the gifts are distributed in full to the recipients. This type of award allows the department to be more flexible and responsive in trying to recruit the most promising candidates.

Faculty support –\$358,000 to date – has included the AICR/World Cancer Research Fund International (WCRF) Distinguished Professorship in Cancer Prevention, as well as a one-time gift in support of the Carla Smith Chamblee Distinguished Professorship.

June Stevens, PhD, professor and former chair of nutrition, has held the AICR/WCRF professorship since 2006.

“The professorship has allowed me to pursue my passion and enhance the field of obesity and cancer research,” says Stevens. “Not only has it supported my research; it also allowed me to mentor new professionals who will continue to expand our knowledge at the intersection of nutrition and cancer. It's a great honor to hold this professorship, and I really treasure my personal relationships with the dedicated team at AICR.”

– L. K.





Sketch by Bryan Norris © 2015

Dorothy Dunn

She gave back to a School where opportunities and support helped her thrive

Dorothy Dunn's Bachelor of Science degree from the University of Illinois led her to a number of job opportunities in the U.S. Department of Agriculture. However, after a former sociology professor praised the dynamic environment at UNC's public health school, Dunn sought a stipend from the U.S. Public Health Service and was accepted as a Master of Science in Public Health student at UNC.

She studied epidemiology with founding dean Milton Rosenau, MD, and was mentored by Lucy Morgan, PhD, founding chair of the health education department. Morgan and faculty member Eunice "Picky" Tyler were instrumental in encouraging Dunn to pursue a doctoral degree.

"I later earned my PhD from another university," she told an interviewer in 2000. "[But] I can say definitively that I got more out of my energy and efforts at the UNC School of Public Health than at any other school I attended."

Before Dr. Dunn (MSPH, 1946) passed away in 2007 at age 96, it was clear that she recalled the vitality of the learning environment at what is now the UNC Gillings School of Global Public Health. She provided in her will for a much-needed scholarship for incoming doctoral students in health behavior.

"Dorothy prized her education at the School and the deep ties she had with us," said Jo Anne Earp, ScD, professor and former chair of health behavior at the School. "She gave back in so many ways – including mentoring our students and alumni well into her 90s. Her bequest speaks to the value of Dorothy's education here at the School – it's an education that doesn't stop with the degree. I think she wanted to recognize the opportunities and support she received here by making opportunities available to others."

– L. K.

“

At the Gillings School, financial support for students means empowering researchers who will do so much tangible good work in communities around the world. I'm excited to work on public health challenges I will see solved within my lifetime.

– Hannah Lerner

”



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Hannah Lerner

Dunn Scholar uses mHealth to reach new populations

Hannah Lerner doesn't want to *treat* health problems. She wants to prevent them.

As an undergraduate, Hannah studied biology with the aim of going to medical school, but after learning more about public health, she changed her mind.

"I realized public health was a field in which I could have an impact before illness happens," says Lerner. "As a physician, I could help people feel better, but I'm even more motivated to eliminate behaviors that cause illness in the first place."

Lerner, a first-year doctoral student in the UNC Gillings School's Department of Health Behavior, is supported financially by an award from the Dorothy Fay Dunn Scholarship Fund.

"The award is the reason I'm here," Lerner says. "I knew I wanted to study at the Gillings School, but I would not have been able to attend without this aid."

Through the generosity of Ms. Dunn, whose estate plans established the scholarship fund (see page 42),


Lerner works as a research assistant in the laboratory of Deborah Tate, PhD, associate professor of health behavior and nutrition.

"Dr. Tate introduced me to the incredible potential of mHealth," says Lerner. "After studying how mobile applications can support self-directed weight-loss initiatives, I understood that this kind of technology-based outreach is the future of public health interventions."


Lerner also assists in the lab of Christine Rini, PhD, research associate professor of health behavior, studying ways cancer patients can use mHealth apps to manage pain and stress.

"Not everyone who needs regular care can afford frequent visits to a doctor," Lerner says. "mHealth tools can support patients who are trying to lose weight, manage pain or accomplish other health goals. The possibilities are endless."

— Jennie Saia



HONOR ROLL *of* DONORS



Passion comes in every shape and size, driving the decisions we make and the ways we plan for the future. To those whose passion led them to support the Gillings School, we say *Thank you!* Your gifts of every shape and size, in cash and pledge, allow us to excel.

To acknowledge more accurately the different shapes your gifts can take, our honor roll has changed. In this printed listing, you will recognize the **Rosenau Society** section, which includes those who gave \$1,000 or more to unrestricted school or department funds. For those who have committed to future gifts, you may be familiar with UNC-Chapel Hill's **Gerrard Legacy Society**; in these pages, we gratefully recognize those Gerrard members who have directed their gifts to the Gillings School. The new **Solutions Society** recognizes those who have specified targeted intentions for their gifts. These donors support named scholarship, fellowship or professorship funds; student travel or activity awards; centers or institutes; or a particular research program or project. We have listed these donors at the \$1,000-and-higher level.

A Solid Foundation for Excellence

Solutions Society + Rosenau Society + Gerrard Legacy Society = Growth

Special thanks to the following donors who are members of all three giving societies. Their gifts help us grow in specific ways, provide unrestricted funding so that School administrators can say *Yes!* when great ideas and opportunities arise, and help us plan in ways that will allow the School to succeed well into the future.

- Marcia Ann Angle & Mark Trustin
- Priscilla Guild
- Jill & Michael Edwin Kafrissen
- Gary G. & Carolyn J. Koch
- Barbara K. Rimer & Bernard Glassman
- Russell Barner Toal

Dual Society Members

The following individuals have demonstrated loyalty and support for the Gillings School by making multiple types of gift and thus appear in more than one recognition society list.

Marcia Ann Angle & Mark Trustin
Anonymous (3)
H. Michael & Barbara Arrighi
Jo Anne & Shelley Earp
Dennis & Mireille Gillings
Joan H. Gillings
Joan Cornoni Huntley

Mark H. & Terese S. Merrill
Mona Marie Moon
Alan Coningsby Moore
Sarah Taylor Morrow
Susanne Glen Moulton &
Thomas K. Wong
Andrew F. Olshan & Linda C. Levitch

Barry Michael Popkin & Cay Stratton
Barbara K. Rimer & Bernard Glassman
Ruth Ann Shults & Charles T. Bradley
Ilene C. Siegler & Charles Edelman
Paula B. & Gregory W. Stafford
Mary S. Thompson
Russell Barner Toal

“

We make *a living* by what we get.
We make *a life* by what we give.

– Winston S. Churchill

”

Solutions Society

(Restricted gifts, \$1,000 and above)

\$10,000,000 and above

Dennis & Mireille Gillings

\$1,000,000 to \$9,999,999

Anonymous (3)

Robert Wood Johnson Foundation

\$500,000 to \$999,999

Connecticut Children's Medical Center

John Rex Endowment

University of Alabama at Birmingham

\$250,000 to \$499,999

American Academy of Family Physicians

American Heart Association

Amgen Inc.

AstraZeneca Pharmaceuticals LP U.S.

Baylor University College of Medicine

Bill and Melinda Gates Foundation

Dana-Farber Cancer Institute

Joan H. Gillings

Joan H. Gillings Foundation

Sunovion Pharmaceuticals Inc.

University of Wisconsin at Madison

Vanderbilt University Medical Center

W.K. Kellogg Foundation

World Vision

\$100,000 to \$249,999

Alfred P. Sloan Foundation

Avon Foundation

Boston Children's Hospital

Breast Cancer Research Foundation

Bristol-Myers Squibb - Houston

Case Western Reserve University

Center for Child and Family Health

Chester W. & Joy A. Douglass

Duke University Egg Nutrition Center

FHI 360

Johns Hopkins University

Merck & Company

North Carolina State University

Pharmaceutical Research and

Manufacturers of America Foundation

Barry Michael Popkin & Cay Stratton

Sanofi U.S. Services Inc.

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Unilever U.K. Central Resources Limited

University of California at San Francisco

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The Gerrard Legacy Society

The Gerrard Legacy Society honors those who make a documented commitment to the future of The University of North Carolina at Chapel Hill. We especially recognize and thank those who have designated their legacy gifts to the UNC Gillings School of Global Public Health. These gifts form the springboard that propels students, faculty members and programs toward future success.

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Matching Gifts

More than 1,000 corporations and businesses now have programs to match their employees' gifts of cash, doubling and sometimes tripling a gift. Many companies also match gifts by retirees and employees' spouses.

In fiscal year 2015, the Gillings School received **\$80,200** in matching gifts!

Use UNC's online database at matchinggifts.com/unc to discover whether your company will match your gift, and if so, how to apply for matching funds.

Tribute Gifts

Gifts were made by those whose names appear below in *italics* to honor or memorialize those listed in **bold**.

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Faculty and Staff Donors

Gillings School faculty and staff members give of their time and talents throughout the school year. We are deeply grateful to those who also supported the School financially last year. Below are listed faculty and staff members who made gifts of \$100 or more between July 1, 2014, and June 30, 2015.

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In fiscal year 2015, the following new funds and awards were established by gifts of \$25,000 or more. Expendable funds can be used to address a pressing need or make an immediate impact. Endowments structure a gift to provide continual support for many years to come. We acknowledge with gratitude the individuals and organizations who established these funds.

Expendable:

- Chen-Yu and Ray-Whay C. Yen Expendable Fellowship
- Marilyn Gentry Fellowship in Nutrition and Cancer, Continued Support #2
- Signe Hanson Water Institute Fund
- Pro Mujer Microfinance Health Research

Endowed:

- Chen-Yu and Ray-Whay C. Yen Endowed Fellowship
- Health Policy and Management Teaching and Learning Endowment
- Carrie McDonald-Girman Scholarship Fund
- Lynas Sisters Endowed Scholarship
- Robert A. Mah and Adeline Yen Mah Student Support Endowment Fund
- The Nancy A. Dreyer Distinguished Professorship Fund
- The Popkin Distinguished Professorship in Public Health Nutrition #4 Endowment Fund
- Bert and Ellen Kaplan Travel Fund in Epidemiology



Make a lifetime or estate gift from your retirement plan

As Priscilla Guild, MSPH, found (see facing page), donating part of an IRA or other tax-deferred plan is an excellent way to make a gift to the UNC Gillings School while providing tax relief to yourself and your heirs.

The process is simple. Your retirement plan custodian can provide you with appropriate forms. If you are of an age that requires you to make a minimum withdrawal from an account and would like to donate the cash distributions to the School, your plan administrator can offer you a distribution form. For estate gifts, you may obtain a beneficiary designation form, separate from your will, which will allow your retirement assets to be bequeathed to the School at the time of your passing.

Members of our advancement office will be happy to talk with you about the details of these

retirement plan gifts. As you look through this issue of *Carolina Public Health*, you will learn about student accomplishments and faculty research that would not have been possible without gifts such as yours. Your sound investment in the Gillings School will allow us to continue our mission – *to improve public health, promote individual well-being and eliminate health inequities across North Carolina and around the world.*

We appreciate your letting us know if you plan to remember the School in your will. We want to thank and recognize you for your gift.

Contact us today at (919) 966-0198 or sph_advancement@unc.edu – or visit us at sph.unc.edu/legacy to learn more.



Priscilla Guild

Meeting Gillings School students today, preparing the School for tomorrow

My parents believed in higher education. They were proud to have earned university degrees, and they made a point of giving back to the schools that made them who they were. During most years of their lives – and even as part of their estate plans – they made sure that other students would have the opportunities that good fortune gave to them.

They were great role models.

Since I attribute much of my success in life to my graduate education, I have been gratified to support my alma mater, the UNC Gillings School of Global Public Health, every year since I graduated in 1971.

I've made gifts in a number of different ways, both in time and financial resources.

One way I've done this is to designate the Gillings School of Global Public Health as beneficiary on several of my tax-deferred investment funds.

Last year, when I turned 70½, I was required to take a minimum payout from some of these funds. Since I'm fortunate not to need that income right

now, I've allotted the next five years of that income to a scholarship at the School. I hope to be able to continue this practice for the rest of my life.

I have an opportunity to accomplish more of what I want while I'm still alive and can enjoy it, as well as knowing that my planned gift will create a permanent legacy.

It will give me pleasure to get to know the students who are beneficiaries of this aid and to feel appreciated for making a difference in their lives. Knowing I can help someone directly in this way means a lot to me.

– Priscilla Guild

We thank Priscilla Guild for her extensive support of the Gillings School, including the Priscilla Alden Guild Scholarship in Public Health and her many years of service on the School's alumni and Public Health Foundation boards.



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