

Carolina

PUBLIC HEALTH

GILLINGS SCHOOL of GLOBAL PUBLIC HEALTH
THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL



HEALTHY from HEAD to HEELS

FINDING SOLUTIONS TO THE OBESITY EPIDEMIC

FALL 2010
VOLUME 1 · NUMBER 9

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contents

fall 2010



features & news

3 FROM THE DEAN'S DESK

Let's get moving!

4 FIT AND HEALTHY FOR A LIFETIME

UNC public health faculty, students and alumni discover ways to trim down the obesity epidemic.

6 A HEALTHY START TO LIFE

For 30 years, the number of overweight children has crept higher. Establishing good health habits early can reverse this trend and help children lead healthy lives.

9 NAP SACC – HELPING CHILD CARE CENTERS IMPROVE PRESCHOOLERS' HEALTH

This NIH-funded intervention helps child care centers in North Carolina boost food quality and improve opportunities for physical activity for preschoolers.

10 ADOLESCENCE – A TIME TO GROW UP FIT FOR LIFE

Adolescence is a time of dramatic physical and emotional changes. It's also a time when many young people gain weight as their exercise levels and appetites change.

13 EAT YOUR FRUITS AND VEGETABLES – MANGA COMICS GET THE MESSAGE ACROSS TO KIDS

Alumna May May Leung uses Japanese comic art to promote positive health behaviors in youth.

14 FAT GENES

School researchers identify the genes that affect body weight.

15 LIVING HEALTHY – HOW ADULTS CAN MAINTAIN OR LOSE WEIGHT

As we 'settle down,' adults are at risk for weight gain and illness, including cardiovascular disease and diabetes.

17 IS PERCEIVED RACISM A RISK FACTOR FOR OBESITY?

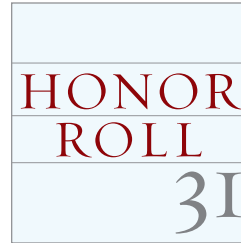
Dr. Anissa Vines suggests that an emotional response to racism is stress, which increases belly fat.

18 FOR WEIGHT LOSS, WORKING TOGETHER IS OFTEN THE BEST APPROACH

Researchers engage churches, community groups and others in programs to improve health and avoid obesity-related illness.

continued ▶▶

fall 2010



contents, continued

gatefold THE WORLD IS FAT

Across North Carolina and around the world, we investigate why obesity rates have ballooned, how the phenomenon affects health and what to do about it.

21 ACTIVE LIVING BY DESIGN

With an initial Robert Wood Johnson Foundation investment in 2001, ALBD began working within communities to solve infrastructure challenges around physical activity and healthy eating.

25 SCHOOL NEWS

28 AWARDS AND RECOGNITIONS

our donors

31 HONOR ROLL

33 ROSENAU SOCIETY

34 DR. MICHAEL KAFRISSAN

37 MATHILE INSTITUTE

38 BILL AND ROSA SMALL

39 MABEL JOHANSSON

41 CHILDFUND INTERNATIONAL

42 ANNUAL FUND SCHOLARS

44 THE COCA-COLA COMPANY

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18,000 copies of this document were printed at a cost of \$17,021.35 or \$0.95 per copy.

Carolina Public Health (ISSN 1938-2790) is published twice yearly by the UNC Gillings School of Global Public Health, 135 Dauer Dr., Campus Box 7400, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7400. Vol. 1, No. 9, Fall 2010.



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PHOTO BY LISA MARIE ALBERT



Dr. Barbara K. Rimer

Let's Get Moving!

Obesity is a major economic and health threat in North Carolina, the U.S. and around the world. The fact that obesity is spreading in an almost epidemic manner means that some countries still could intervene before it is too late – just as some countries woke up to the potential for intervention on tobacco, before high smoking rates had overtaken their populations. We are at an important tipping point on obesity, both in the U.S. and globally.

In 1980, about 15 percent of Americans were obese; today, about 34 percent are, and another third are overweight. Since 1980, the proportion of children ages 2 to 19 who are obese has tripled.

How did we gain all this weight? Our genes did not change that fast! Most experts agree that there are several key reasons: we are eating about 300 more calories every day than we did in 1985, our portion sizes have increased dramatically, we're drinking more sugary drinks, and the majority of us are getting less exercise. Most children no longer have regular gym classes, and they are more likely to be on computers and smart phones after school than outside playing. Many neighborhoods lack safe places to walk. Sixty percent of adults don't get enough exercise to achieve health benefits.

The tab for our extra pounds is at least \$147 billion a year. Obese people spend 43 percent more on health care costs than do healthy-weight people.

As you will read in this issue, faculty members in our Department of Nutrition and across the School have made fundamental contributions to understanding the science of nutrition, determining why some people are more prone to gaining weight than others, explaining the worldwide distribution of obesity and its predictors, and developing, testing and disseminating evidence-based interventions and

policies to reduce obesity and prevent weight gain in a variety of populations in the U.S. and elsewhere. As with other health problems, some minorities and disadvantaged populations bear a disproportionate share of the burden.

Nutrition research must be done in labs, clinics, communities and workplaces, with individuals and in larger units. It is a complex problem with no "magic bullet" solution. As we have learned from the smoking arena, it won't be sufficient to intervene only with individuals. Policies should require physical education in schools and limit sugary drinks. Worksite cafeterias should charge more for less healthy than healthy foods. Health plans should provide incentives for healthy weight and exercise. And that's just a beginning.

At the School, we've taken steps beyond our outstanding research, such as trying to increase the choices of healthier foods in our café, serving healthier foods at events, buying local foods whenever possible and reducing portion sizes.

Ultimately, we're also role models for one another and the larger community. We should more actively encourage our faculty, staff and students to exercise and eat healthily, and reach out to the community around us. We imagine a time when our grounds could be turned into great walking trails with water sculptures and informative trail markers, and we could become not just a center for knowledge discovery and dissemination but a center for activity.

Let's get moving!

Barbara K. Rimer

We are at an important tipping point on obesity, both in the U.S. and globally.

Fit and healthy for a lifetime



UNC public health faculty, students and alumni discover ways to trim down the obesity epidemic

A 10-year-old girl runs into her house in tears. During her first day of fifth grade at a new school, children made fun of her weight. At recess, nobody chose her for their soccer team, saying she ran too slowly to keep up. Some boys called her names. *Mommy, she cries, am I always going to be fat?*

Her mother cringes, hearing echoes of the taunts from her own childhood. She wants to spare her daughter the low energy and poor self-esteem that she endures as an obese adult. Even more, she doesn't want her daughter to face the same high risk of disease.

But her mind races to statistics she's read, compiled by the Robert Wood Johnson Foundation (www.rwjf.org) and the Trust for America's Health (<http://healthyamericans.org>). In 2010, more than 25 percent of adults in 38 states are obese. (Just 10 years ago, no state had an obesity rate above 20 percent.) More than 12 million American children, ages 10 to 17, are obese.

Her crisis – her daughter's crisis – has become epidemic.

These days, many agents – from First Lady Michelle Obama to the Centers for Disease Control and Prevention, from insurance companies to school nutrition counselors – seek ways to control the crisis. Mrs. Obama's initiative, "Let's Move" (www.letsmove.gov),

has the audacious goal of solving the obesity epidemic in one generation. "[Obesity] is a major public health threat right now," she said, announcing the program, "so just imagine what we're going to be facing in 20 or 30 years if we don't get on this issue."

The American Institute for Cancer Research (AICR) reports that excess body fat causes approximately 103,000 cases of cancer in the United States every year.

"Many people are aware of the role of obesity when it comes to increasing the risk of cardiovascular disease and type 2

diabetes," says Kelly B. Browning, AICR executive vice president and member of the School's Public Health Foundation board of directors, "and we at AICR want to make sure people know that excess body

fat also increases the risk for cancer."

For more than three decades, the UNC Gillings School of Global Public Health has been a recognized world leader in discovering evidence-based, creative and sustainable ways to prevent obesity and to help people lose weight. Mrs. Obama cited UNC's NAP SACC program (see page 9), aimed at improving nutrition and increasing exercise in child care centers throughout North Carolina, as an example of a creative, successful intervention.

"We have a world that consumes more saturated fat and more meat and dairy products than we could have imagined 10 to 20 years ago," says Barry Popkin, PhD, Carla Smith Chamblee Distinguished Professor of Global Nutrition at UNC Gillings School of Global Public Health. "Even in developing countries now, there are more obese people than there are hungry people."

Popkin is one of several School researchers advocating for policy changes at local, state, national and international levels that would help modify behavior, including a call for higher taxes on sugar-sweetened beverages to discourage people from drinking them.

Maintaining healthy weight is not only about "looking good." It's about *feeling* good



Kelly Browning



Dr. Barry Popkin



– having energy to enjoy life and minimizing disease risks that strain the health care system and slow productivity.

Faculty members and students in UNC’s renowned nutrition department – based in the public health and medical schools – are finding solutions. For example, nutrition professor Melinda Beck, PhD, uses mouse models to explain the link between obesity and higher mortality rates from influenza. Professor Rosalind Coleman, MD, studies hepatic insulin resistance and inborn errors of carbohydrate and lipid metabolism. Researchers including Kari North, PhD, associate professor of epidemiology, and Daniel Pomp, MD, professor of genetics, nutrition, and cell and molecular physiology, look at genetic factors that may contribute to obesity and related diseases.

Other researchers, including Peggy Bentley, PhD, nutrition professor and the School’s associate dean for global health, Miriam Labbok, MD, Professor of the Practice of maternal and child health and director of the School’s Carolina Global Breastfeeding Institute, and Elizabeth Mayer-Davis, PhD, nutrition professor and vice president of the American Diabetes Association, search for critical information about what and how we feed infants and young children. Nutrition professor Dianne Stanton Ward, EdD, explores ways to increase activity and healthy eating for children in child care settings.

June Stevens, PhD, nutrition chair, and associate professors Penny Gordon-Larsen, PhD, Deborah Tate, PhD, and others, find interventions to help adolescents lose weight or avoid gaining extra pounds. Tate’s creative approaches include text messaging, active video gaming and nutrition counseling to help during this critical period of development. Recent alumna May May Leung, PhD, used manga comics (Japanese comic art) to pro-



Dr. June Stevens

mote positive health behaviors in youth. (See page 13.)

Other approaches are aimed at adults. Tate and associate professor Laura Linnan, ScD, assess the usefulness of workplace-centered weight loss programs. Professors Alice Ammerman, DrPH, and Marci Campbell, PhD, teach communities about the benefits of eating fresh fruits and vegetables. Epidemiology professor Marilee Gammon, PhD, examines the connection between weight and exercise, and the impact both have upon multiple diseases, including cancer, diabetes, heart disease and stroke. Others, including Anissa Vines, PhD, research assistant professor of epidemiology, search for causes of racial disparities in obesity and related diseases.

Their research is conducted across North Carolina in towns such as Kinston, Hillsborough, Clinton and Greensboro. The search for answers extends throughout the world, with research projects in China, India, Mexico, Philippines and the Arctic Circle. This issue of *Carolina Public Health* describes only some of the obesity-related work in which faculty members and students are involved.

“Obesity is a preventable cause of disease and death that has a huge impact on quality of life and health care costs,” says nutrition chair Stevens, AICR/WCRF Distinguished Professor of nutrition and epidemiology. “It is important that we train the next generation of students to build on what we are now discovering about obesity in order to create new solutions. There are so few individuals trained to understand the biologic, behavioral and population sciences needed

to effectively combat the obesity epidemic. The School’s approaches address health and nutrition at all stages of people’s lives.”

To educate doctors about nutrition-related disease, Steve Zeisel, MD, PhD, Kenan Distinguished Professor of nutrition at the School and director of the Nutrition Research Institute in Kannapolis, N.C., has developed a groundbreaking Nutrition in Medicine course for medical students and practicing physicians. (See www.med.unc.edu/nutr/nim.) The online materials, made available free to medical students, are used by more than 100 U.S. medical and osteopathic schools and by more than 50 international institutions. Also available is a new online training program, Nutrition Education for Practicing Physicians (NEPP), funded by the National Cancer Institute.

“We have scientific evidence explaining the role of nutrition in preventing and managing most of the leading causes of death in the U.S.,” says Zeisel. “Physicians are uniquely positioned to emphasize to patients the importance of nutrition in preventing and managing chronic disease. However, physicians must be prepared to give specific advice about nutrition to patients.”



Dr. Steve Zeisel

Maybe one day, when the 10-year-old is grown and has a child of her own, new prevention strategies, combined with better understanding of nutrition, genetics and behavior management, will reduce the chances that she and her child will face the dangers of obesity. With effort, they will be part of a more energetic, healthier world.

–Ramona DuBose

A healthy start to life

For 30 years, the number of overweight children has crept higher and higher. In 2008, the Centers for Disease Control and Prevention reported 10 percent of children ages 2 to 5 had an unhealthy body mass index. Those children have a 70 percent chance of being overweight or obese adults.

Establishing good health habits early can reverse this trend and help children have healthy lives. The UNC Gillings School of Global Public Health leads the fight against the obesity epidemic and promotes healthy behaviors locally, nationally and globally.

“Combating obesity is a key strategic area for the School,” says Peggy Bentley, PhD, nutrition professor and the School’s associate dean for global health. “UNC is playing a major role in obesity research. We have faculty and graduate student expertise from the molecular level through epidemiology, economics, interventions and policy.”

You are what your mother eats

Society’s advice to expectant mothers historically has been to “eat for two.” However, contemporary research shows that eating unhealthy, high-calorie foods during pregnancy can put children at risk for weight struggles and health complications before they are born.

For 15 years, Anna Maria Siega-Riz, PhD, RD, nutrition and epidemiology professor and associate dean for academic affairs at the School, has analyzed prenatal nutrition data to determine which health habits give children the best start in life.

“Pregnancy is a happy moment in life, but it’s also when women are most concerned about the health of their child,” she says. “If they have bad health habits, many women are more likely to modify their behavior, at least in the short term.”

Although most women know to limit weight gain during pregnancy, 60 percent still gain more weight than they should, based on Institute of Medicine recommendations. (Siega-Riz was a member of the prestigious IOM panel that developed those guidelines, available at <http://tinyurl.com/iom-guidelines>.) Fewer than 25 percent receive guidance from their doctors about physical activity. Making and maintaining behavioral changes is difficult unless women have positive, consistent support.



Dr. Miriam Labbok



Dr. Meghan Stining



Dr. Cindy Bulik



Dr. Anna Maria Siega-Riz



Dr. Margaret Bentley



Dr. Mihai Niculescu

Siega-Riz’s team uses the Internet, podcasts, chat rooms and cell phones to provide health information and online support for pregnant women. One podcast includes a skit in which four women, all at different parenthood stages, advise an expectant mom about choosing nutritious foods.

Women with healthy habits may avoid having a baby who is too large for gestational age (often leading to C-section births), prevent shoulder dystocia for the baby during birth, and limit the child’s risk for developing diabetes and obesity.

“Women who aren’t eating right or exercising need assistance,” Siega-Riz says. “We must help them find balance and give them all the support they require.”

Choosing healthful foods during pregnancy could reduce the burden of chronic diseases later in life, says Mihai Niculescu, MD, PhD, nutrition assistant professor. Whether the “fat gene” exists is debatable (see page 14), but Niculescu’s epigenetic work – research that determines how outside



influences alter our DNA – shows that high-fat diets and maternal obesity in mice alter DNA, shutting down some genes and accelerating others. Developmental brain delays in offspring are the result.

When maternal obesity exists, the neurons in mouse fetal brains at 17 days of pregnancy appear less developed, according to Niculescu's observations. The implications are worrisome, he says, because the effects are evident after three or four generations.

"This may have profound consequences for an offspring's life, including his or her mental development and ability to learn," he says. "A high-fat, less nutritious diet can also create food preferences in unborn offspring that lead them to choose unhealthy foods later in life."

Open the hangar – here comes the airplane!

Parental influence over children's nutrition doesn't end at birth, but little research exists

on what increases obesity risk in children under two. In 2002, Associate Dean Bentley became a pioneer in this area when she launched "Infant Care, Feeding and Risk of

Pregnancy is a happy moment in life,
but it's also when women are most concerned
about the health of their child.
If they have bad health habits, many women
are more likely to modify their behavior,
at least in the short term.

Women who choose healthful foods during pregnancy may reduce their own risk of chronic diseases later in life and improve their children's ability to learn.



Obesity," a study of strategies used by first-time African-American mothers to feed their 3-month to 18-month-old children.

With National Institutes of Health funding, Bentley recruited 217 mother-child pairs in North Carolina through the Women, Infants and Children program and videotaped them at three-month intervals to identify feeding styles. She and her team identified five styles: controlling, laissez-faire, responsive, pressuring and restrictive. Responsive mothers, she says, are "perfect moms" who pay close attention to and correctly interpret child cues of hunger and satiety. They are very engaged during feeding and may provide verbal and physical encouragement and help, when needed. Other styles pressure or even force children to eat when they reject food or overly restrict the quality and quantity of what children eat, often because the mother is concerned about her child becoming fat.

"Many factors play a role in how we feed infants. However, we believe that it is not just what children are fed, but also *how* they are fed that makes a difference in the child's acceptance of food and perhaps in later food preferences and health outcomes," Bentley says. "Understanding the role these styles ▶▶

play in growth and development outcomes is a big part of what drives our childhood obesity study.”

Meghan Slining, PhD, nutrition assistant professor, analyzed data from Bentley’s study while she was a UNC doctoral student. Overweight infants – those who measured greater than the 90th percentile for weight

their conditions during pregnancy, this was not universally the case. In fact, a surprising number of women developed binge eating disorder during pregnancy. Eating disorders during pregnancy expose babies to erratic eating, Bulik says.

“The impact of roller-coaster caloric intake certainly affects growth and development,”

The impact of roller-coaster caloric intake certainly affects growth and development. It could also affect obesity and diabetes risk, as well as the weight trajectory for later in life.

versus length – were nearly twice as likely as normal-weight infants to have delayed motor development, Slining found.

“While baby fat may be cute,” Slining says, “it increases the chance that a child could become an overweight adult. We also have seen more immediate consequences to extra pudginess. These children have lower gross motor development.” (See a video about Slining’s research at http://tinyurl.com/sliding-baby_fat.)

Add a mother with an eating disorder to the mix, and feeding a child becomes even more complex. Jordan Distinguished Professor of Eating Disorders Cynthia Bulik, PhD, used data from the Norwegian Mother and Child Cohort Study, which followed more than 100,000 Norwegian mothers, some of whom had anorexia or bulimia nervosa or binge eating disorder, to determine how they fed their children. Bulik followed the mothers from 17 weeks’ gestation through their children’s eighth birthdays.

Although some mothers with eating disorders experienced a reprieve from

Bulik says. “It could also affect obesity and diabetes risk, as well as the weight trajectory for later in life.”

Mothers with eating disorders also abandoned breastfeeding earlier than did healthy mothers, Bulik says. After giving birth, women with eating disorders often feel they no longer “have a reason to be overweight” and choose not to consume adequate calories to support breastfeeding.

Bulik’s study also shows that, as these

children grow, they are more likely to develop eating problems, such as having stomach aches, vomiting without cause or not enjoying food.

According to Miriam Labbok, MD, Professor of the Practice of maternal and child health and director of the School’s Carolina Global Breastfeeding Institute, a breastfeeding baby will “stop when full,” but bottle feeding can overpower a baby’s ability to recognize satiety. When a parent insists that the baby empty the bottle, the child learns the habit of overeating, Labbok says. Additionally, breastfed babies are exposed to the tastes of foods eaten by their mothers. For a formula-fed child, food flavors are new and strange, which could cause the child to be a picky eater.

Employing research to instill good eating habits early is paramount to changing the course of human health, Bentley says.

“It’s harder to intervene and prevent nutrition problems when a child is older. They have preferences and eating patterns that make changes more complicated and difficult,” she says. “But, with the research ongoing at the School, we know we’re leading a positive trajectory of implementing healthy habits early.”

–Whitney L.J. Howell

Karina Agopian, research assistant at UNC’s Nutrition Research Institute in Kannapolis, works with a toddler to determine what and how much the child has eaten. Research shows that early eating habits influence later food preferences and health outcomes.



PHOTO BY CHAD W. MITCHELL



Dr. Dianne Ward



PHOTO BY LINDA KASTLEMAN

NAP SACC

Helping child care centers improve preschoolers' health

WHAT WOULD HAPPEN IF CHILDREN IN CHILD CARE WERE SERVED GREEN BEANS INSTEAD OF FRENCH FRIES – OR TOOK A NATURE WALK INSTEAD OF SITTING IN A CIRCLE INSIDE?

Then perhaps 26 percent of them wouldn't be overweight, as they are now, reasons UNC Gillings School of Global Public Health nutrition professor Dianne Ward, EdD.

These and other tactics are part of an intervention Ward developed called Nutrition and Physical Activity Self Assessment for Child Care (NAP SACC) to help child care centers in North Carolina boost their food quality, improve physical activities offered and augment staff-child interactions for children ages 2 through 5.

"Child care center resources are often limited, and they



PHOTO BY JENNY SANDUM

TIP

Go outside every day, without exception.

Three-year-old Emily Sandum enjoys a daily visit to the playground.

don't have a lot of leeway to spend time and money on making changes," Ward says. "This intervention is designed to be used by the motivated, savvy child care provider to institute changes."

NAP SACC is a free, five-step intervention funded by the National Institutes of Health. It also has been recognized and recommended by the White House Task Force on Childhood Obesity, led by First Lady Michelle Obama (www.letsmove.gov) and is part of North Carolina's "Eat Smart, Move More" initiative (www.eatsmartmovemorenc.com).

Centers conduct a 15-part self-assessment and select three or four areas for improvement. A NAP SACC consultant conducts workshops to guide the facility staff through changes and is available for follow-up assistance as centers make alterations. A second assessment helps centers determine whether they've been successful and prompts them to choose additional areas for improvement.

To access the NAP SACC intervention online, visit www.napsacc.org.

—Whitney L.J. Howell



Adolescence

A time to grow up fit for life

Adolescence is a time of dramatic physical and emotional upheaval. It's also a time when many young people gain weight as their exercise levels and appetites change.

"It's essential to understand that adolescence is a crucial period for weight gain," says Penny Gordon-Larsen, PhD, UNC

nutrition associate professor. In her wide-ranging research on adolescent obesity, Gordon-Larsen has studied a representative group of Americans, starting in their teens and following them through their early 30s. In 1996, 13.3 percent of adolescents were obese; by 2008, obesity prevalence had increased to 36.1 percent. Ninety percent of the adolescents obese in 1996 remained obese in 2008.

"With the vast majority of obese adolescents staying that way into adulthood, it is critical that we develop programs to prevent the problem in adolescence," says Gordon-Larsen. "If we can interrupt that trajectory, we will save money later in terms of cardiovascular and other health risks, and we

will help these young people have healthier and longer lives."

Gordon-Larsen is one of many UNC Gillings School of Global Public Health faculty members who have long been committed to addressing the youth obesity epidemic. June Stevens, PhD, nutrition professor and department chair, was the principal investigator for "Trial of Activity in Adolescent Girls," a pioneering National Institutes of Health-funded study. Known as TAAG, it explored ways to increase physical activity among sixth-grade girls between 2003 and 2006. The program continues to serve as a model for communities throughout the country.

"Get 60," another innovative program, was a partnership between UNC's public health school and athletics department and The Gatorade Company. Designed to



Dr. Penny
Gordon-Larsen

TIP

Leave
off the TV
during
meals.



It's essential to understand that adolescence is a crucial period for weight gain.

(Right) Adolescents don't have to play the most active games to achieve health benefits – as long as they replace TV time with something more active. (Below) Brothers Isaiah and Joe King select fruit for an afternoon snack. The boys participated in research conducted by Dr. May May Leung (see page 13).



PHOTO BY KRIS HOYT

leverage student athletes' influence as role models, the program brought UNC athletes to local schools to encourage the children to be active 60 minutes each day. The program, now replicated in other parts of the country, provides materials to teachers, parents and student athletes describing how to help young people become more physically active. Nutrition professor Dianne Ward, EdD, led the development of the program.



Quantifying the impact of school physical education (PE) programs on physical activity patterns was a key part of research by Gordon-Larsen, along with Barry Popkin, PhD, and Robert G. McMurray, PhD, both UNC nutrition professors. They found that students participating in daily PE classes were twice as likely to be physically active than students who were not enrolled in any school PE. Their study offered empirical data used to support passage of the national Physical Education for Progress Act. PEP, as it was called, was passed in 2000 to provide expanded physical education programs for

students in kindergarten through grade 12.

As the fight against adolescent obesity continues, UNC researchers turn to newer technologies to help reduce and prevent weight gain. For her doctoral dissertation, Elizabeth Lyons, PhD, and her adviser, Deborah Tate, PhD, associate professor of health behavior and health education and of nutrition, conducted a Robert Wood Johnson Foundation-funded study of video games played by 18- to 35- year olds. The results can be extrapolated to younger teens.

"The study's premise was not only to determine how much energy people can expend playing different

types of video games, but also to consider how much they enjoyed different types of games," says Tate. "The games that use the most energy expenditure may not be the ones that people like playing the most."

"People don't have to be playing the most active games to achieve some benefit in terms of a public health impact," Lyons adds, "if they are replacing their TV time with something that is even *slightly* more active."

School researchers are not focused only on exercise as a means of addressing the issue of weight. Noel Kulik, another doctoral student of Tate's, focuses her dissertation research ►►

This may be the first time ever that the next generation of children will have a shorter life span than their parents, on average, and that change would be driven by obesity.

on adolescent social support for weight loss.

Tate has led a variety of studies with adolescents, including “enerG,” which used the Internet to help adolescent girls lose weight. While the researchers found that adding the Internet was not beneficial to adolescents, they realized that the intensive face-to-face program they developed as a control arm of

the study was very effective.

The SNAP (Study of Novel Approaches to Prevention) program – led by UNC principal investigator Tate and currently recruiting people ages 18 to 35 – aims for weight gain prevention through early adulthood. (See www.snapstudy.org.) Even if young people emerge from adolescence at normal weight,

research shows that the average weight gain for Americans in the years between age 18 and 35 is 30 pounds.

Under the direction of Dr. June Stevens, Dan Taber, PhD, conducted dissertation research at UNC that examined whether adolescent weight gain can be influenced by public policy. Taber studied the association between soda consumption and Body Mass Index (BMI) in adolescents in states that changed their policies to

restrict junk food in schools. He also measured differences across racial and ethnic groups. The study suggests that changes in state policies restricting junk food in schools can reduce soda consumption among adolescents, particularly non-Hispanic blacks, but there was no impact on BMI percentile. Taber says the findings support a need for comprehensive policy change – in and outside of schools. He says additional research is needed to evaluate the impact of comprehensive policy change on obesity.

As Stevens notes, “This may be the first time ever that the next generation of children will have a shorter life span than their parents, on average, and that change would be driven by obesity. Obesity is an extremely important public health problem that should have a simple solution: children need to eat healthier diets and be more active. But it’s actually quite complicated and challenging to make that happen. It needs to happen not just in a few individuals, but in the entire population of children in our country, because while not all children are obese, all children need to eat healthy diets and be physically active.”

–Michele Lynn

BODY MASS INDEX (BMI)

The Body Mass Index (BMI) is a measure that determines percentage of body fat based on a relationship of weight to height. A person is considered “overweight” if his or her BMI is between 25 and 29.9, and “obese” if the BMI is 30 or above.

There are many BMI calculators available online,* but here’s one way to determine it:

- A = Your body weight divided by your height
- B = ‘A’ divided by your height
- BMI = B x 703

Therefore a person who weighs 140 pounds and is 5’5” (65”) tall has a BMI of 23.2:

- $140/65 = 2.15$
- $2.15/65 = 0.033$
- $0.033 \times 703 = 23.199$

A more informal way of calculation suggests that someone is “overweight” if he is 10 percent above healthy weight for his height, and “obese” if 30 percent above healthy weight.

*For example, see <http://tinyurl.com/bmi-at-cdc>.

TIP

Try to eat two meals together at home each day.





“Eat your fruits and vegetables”

Manga comics get the message across to kids

Getting preteens to eat healthy foods and increase their physical activity can be a daunting task in today’s fast-food, multimedia world, but nutrition researcher and School alumna May May Leung, PhD, RD, has developed an innovative strategy to capture their attention – manga comics.

Dominating book sales in China and pumping nearly \$100 million into the U.S. comic book industry, the popular Japanese comic art form known as manga could have potential to promote behavior change in youth, Leung says.

“Often, interventions don’t properly engage or maintain the interest of the intended population,” she says, “so I looked for a model already successful at engaging my target population.”

Leung evaluated manga comics and conducted research with preteens in four North Carolina counties. She asked the youths what they liked about manga and how they felt about specific health concepts. She then collaborated with local artist Kris Hoyt to create and test a manga comic called “Zen Aku: Fight for

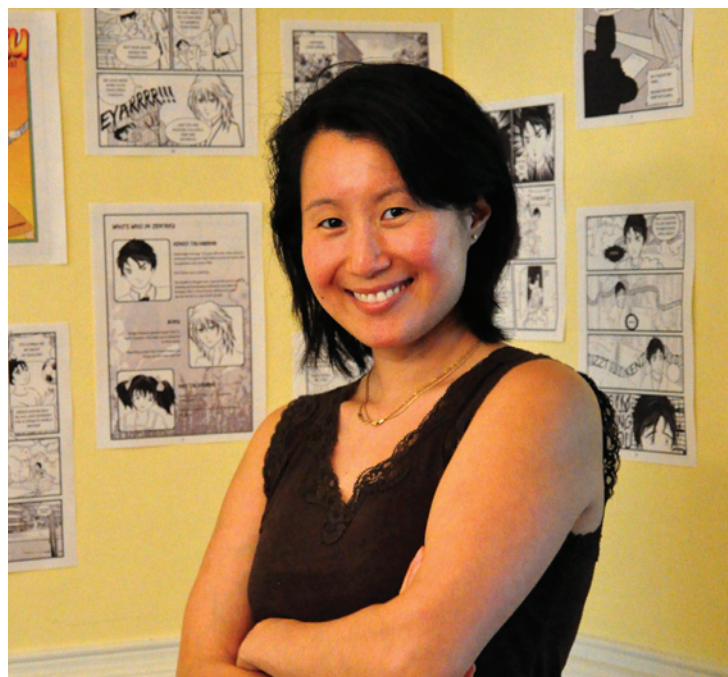


PHOTO BY KRIS HOYT

Dr. May May Leung used manga comics, a popular Japanese comic art form, to encourage preteens to make healthy food choices.

Your Right to Fruit.”

“The characters are drawn in a simplified manner, allowing more people to identify with them, which could create a greater level of audience involvement,” Leung says. “And because manga comics are sold as entertainment, readers may be more likely to be persuaded by the story’s health messages.”

Leung’s research, which has been submitted for publication, showed that young people who read the manga comic significantly increased their beliefs in the importance of fruit intake when compared to a group that was given the same information in a nutrition newsletter.

Alice Ammerman, DrPH, RD, Leung’s adviser, agrees that the results are promising, as increased belief in the importance of fruit intake may result in changing behavior to consume more fruit.

Now a tenure-track assistant professor at The City University of New York School of Public Health at Hunter College, Leung envisions taking that next step with future research and plans to extend her experiment to other populations.

–Chris Perry



ILLUSTRATION BY KRIS HOYT

Fat Genes

Can we blame extra pounds on our genes? Several researchers at UNC Gillings School of Global Public Health are identifying which genes may have an impact on body weight and investigating precisely how that impact occurs.

- **Kari North, PhD**, epidemiology associate professor, studies risk factors for cardiovascular disease – and obesity is a big one. She and colleague Keri Monda, PhD, proposed a potential location for a gene that controls waist circumference. “Then we realized we needed a lot more samples to discover more loci,” North says. Through a project called GIANT, which has 125,000 participants, they have identified 18 new genetic markers associated with obesity-related traits. “It helps us understand on a molecular level how individuals become obese,” North says. Now her team is working on how these genes interact with environmental factors including gender and physical activity.
- **Rosalind Coleman, MD**, nutrition professor, uses “knockout mice,” each of which lacks a specific enzyme and so a specific genetic function, to identify precise roles of enzymes that metabolize fatty acids. People who are obese or insulin resistant frequently have fatty livers, but the team

found that mice lacking one particular enzyme had *less* fat in their livers, even when the mice were obese. Another group of mice that lacked a different enzyme – the one that activates most of the fatty acids in fat tissue – got fatter, not thinner. The surprising discoveries will lead to more nuanced understanding of the role these enzymes play in human obesity, insulin resistance, diabetes and heart disease.

- The more weight a person gains, the more insulin resistant he or she will be. As insulin resistance rises, so does glucose level, which increases the likelihood of diabetes. Insulin normally controls the liver’s glucose production, but the liver of someone with high insulin resistance keeps producing glucose even when it shouldn’t. “We’re asking why the liver is not turning off when glucose is coming in from the gastro-intestinal tract,” says **Terry Combs, PhD**, nutrition assistant professor, whose team recently identified in mice a gene they believe plays a critical role in the

TIP

Eat five servings of fruits and vegetables daily.

process. “What insulin does is turn on the expression of this gene,” he says, explaining that when the gene is on, the liver turns off glucose production. Now Combs’ lab is working to discover whether the same genetic mechanism occurs in people.

- **Daniel Pomp, PhD**, professor of genetics, nutrition, and cell and molecular physiology at Carolina Center for Genome Sciences, wondered why some people run marathons while others lie around on the couch. Using specially bred mice, he and his team are looking for the genes associated with a predisposition to exercise, a trait that can prevent or control obesity. “There is not one single exercise gene or one obesity gene,” he says. “There are maybe 50, each with a relatively small impact.” His lab’s findings may help humans maintain a healthy weight, but it won’t be a magic bullet. “We know how much a person exercises is 30 to 40 percent influenced by genes,” Pomp says. “But we don’t want people to use [their genetic makeup] as an excuse. The information is meant to make you work harder if you’re predisposed not to exercise much.”

–Kathleen Kearns

Dr. Kari North



PHOTOS BY LINDA KASTLEMAN

Dr. Rosalind Coleman



Dr. Terry Combs



Dr. Daniel Pomp





Living Healthy

How adults can maintain or lose weight

Young heterosexual couples who live together double their risk for becoming obese, as compared to their dating peers.

As young people grow up and settle into their adult lives, many are at greater risk for diabetes, heart disease, cancer and other chronic diseases if they become overweight or obese. Researchers at UNC Gillings School of Global Public Health want to know how adults can manage their weight and stay healthy.

Penny Gordon-Larsen, PhD, nutrition associate professor and fellow at UNC's Carolina Population Center, and nutrition doctoral student Natalie The have shown that it's not just older, married adults who are at risk of gaining weight. It's young adults, too, particularly if they are married or living with their romantic partners.

Young heterosexual couples who live together are at more than twice the risk for becoming obese than are their dating peers, their research shows.

Gordon-Larsen and The are the first to study this age group using a national sample. Drawing conclusions from the National Longitudinal Study of Adolescent Health,

nicknamed "Add Health," they released their findings in April 2009 in the journal *Obesity*.

"At baseline, when we started our analysis (during the early- to mid-1990s), study participants were adolescents between 12 and 20 years old," The says. "Then we followed them into adulthood, when they were 18 to 27 years of age." Add Health also recruited the adolescents' romantic partners to participate in the adult phase of study.

The study didn't address *why* obesity risk was higher in this group, but data implications were clear. "When you establish a shared household with a romantic partner, you need to think of ways each partner can support the other to create a healthy

environment – healthier foods in the house, working out together and supporting each other in terms of physical activity in general," Gordon-Larsen says.

A healthy, supportive environment on the job also is important. Laura Linnan, ScD, and Deborah Tate, PhD, associate professors of health behavior and health education, have shown the value of workplace weight-loss programs.

In a "WAY to Health" study with employees at 17 community colleges in North Carolina, nearly 20 percent of the subjects lost five percent or more of their body weight with minimum intervention over 12 months — a significant result.

Most of the individuals who lost five percent of their weight fell into two groups – one that received a Web-based weight-loss program or one that received the Web program and cash incentives for weight loss.

"Losing even five percent of baseline body weight (roughly 10 pounds for the average participant in this study) is important from a public health point of view because the participants begin to experience positive health benefits," Linnan says of the study, which was funded by the Centers for Disease Control and Prevention. ►►



Research assistants with "Way to Health," a workplace weight loss program, interview a study participant.

But the researchers, whose results are slated for publication in late 2010, still recognize that only about a fifth of the participants achieved the five percent loss over a year. "It told us that if people are motivated and get a self-directed program such as this, they can be successful, but the results are modest," Tate says.

Adds Linnan, "The Web-based weight-loss program is an important option we need to make available to those who are interested in it, but there is no magic bullet. We need

other options to support healthy choices. This is not about how motivated people are. It's more than that. It's about creating conditions where motivated people can make good choices and have options that work for them."

Linnan and Tate were surprised that participants who received the Web/cash combination didn't perform much better than those who only received the Web program. "They did a little better, but the results were not statistically significant," Linnan says.

She and Tate hope to shine more light

on the role of cash incentives in 2011 when they release results from a second study, funded by the National Heart, Lung, and Blood Institute, which tests the independent effects of the Web-based program and cash incentives.

Data from the second study come from nearly 1,000 employees at 12 universities and community colleges across North Carolina. One of four study groups received "cash only," based on their percentage of weight loss over an 18-month study. The other three groups received a Web-based program only, the Web program and cash, or "usual care" (the control group).

This study's results are expected to draw national attention as it is the first large study of "cash only" incentives since the 1980s, Tate says.

In other research related to adults and weight, Kimberly Truesdale, PhD, nutrition research assistant professor, has gleaned significant findings from the large longitudinal study known as "ARIC," or Atherosclerosis Risk in Communities. The study focused on four U.S. communities and included both white and African-American respondents. Truesdale found no disparities between the two races in her most recent results, published online in January 2009 in *International Journal of Obesity*.

Looking at adults ages 45 to 64 and how their health is affected by excess weight over time, Truesdale discovered that simply maintaining weight brings benefits. "Weight loss is something a lot of adults can't achieve," she says. "We found that if people maintain



Dr. Deborah Tate



Dr. Laura Linnan



Dr. Kim Truesdale

PHOTO COURTESY OF UNC CENTER FOR HEALTH PROMOTION AND DISEASE PREVENTION

When you establish a shared household with a romantic partner, you need to think of ways each partner can support the other to create a healthy environment — healthier foods in the house, working out together and supporting each other in terms of physical activity in general.



their weight (± 3 percent), they still have some health improvements in total cholesterol, LDL cholesterol and diastolic blood pressure, regardless of weight status.”

Truesdale also found that people who lose a significant amount of weight (≥ 5 percent) reap long-term benefits associated with their lighter physique. “We wondered, if you had been heavier in the past, do you pay the consequences of that for the rest of your life?” she asks. The answer, based on some important criteria, was *no*.

“People who were heavier in the past – their blood pressure, lipids and glucose levels were slightly better or about the same as someone who always had been the lighter weight,” Truesdale says, noting that she didn’t look at hard outcomes like heart attacks.

Carmen Samuel-Hodge, PhD, another nutrition research assistant professor, is testing a weight-loss intervention program targeted to low-income women who, as a group, have the highest rates of being overweight or obese.

The intervention focuses on helping participants gain awareness of how their behavior contributes to weight gain. “Once they know what they are doing, they can start figuring out how to change,” Samuel-Hodge says. “A lot of the sessions were about problem solving.

The participants were the ones who solved their own problems.” (For more on Samuel-Hodge’s study, see page 22.)

— Susan Shackelford



Maintaining a healthy weight throughout middle age may result in lower blood pressure and cholesterol levels.

Is perceived racism a risk factor for obesity?

Does perceived racism contribute to higher rates of obesity among African-Americans? The question is complicated.

“Right now, the literature is not at all consistent on the question of whether exposure to racism increases obesity risk,” says Anissa I.



PHOTO BY LINDA KASTLEMAN

Dr. Anissa Vines

Vines, PhD, epidemiology research assistant professor at UNC Gillings School of Global Public Health.

Vines co-authored a study published in *American Journal of Epidemiology* (March 2008), which found that higher levels of perceived racial discrimination might be protective against hypertension. She also was lead author for a study that found a relationship between a larger waist-to-hip ratio and daily life stress and passive emotional responses to racism but could not support the hypothesis that racism, a chronic stressor, was associated with increased abdominal fat (*American Journal of Public Health*, March 2007). “Other researchers *have* shown a positive association between racism-related

variables and obesity,” Vines says.

Vines continues to explore some of these associations with the help of a questionnaire – the telephone-administered perceived racism scale – which she developed in collaboration with clinical psychologist Maya McNeilly, who designed the original perceived racism scale.

“I am beginning to explore what it really means when an African-American person reports limited or no experiences of racism,” Vines says. “Maybe being able to acknowledge and report racism provides a protective psychological effect.”

Vines also is examining early life exposures to stress and perceived racism.

“We don’t know very much about how perceived racism acts as a stressor,” Vines says. “Multiple stressors can be in play at any given time. How one perceives those stressors, and how those stressors interact with other social and environmental factors, are important to explore.”

—Angela Spivey



PHOTO COURTESY OF ACTIVE LIVING BY DESIGN

The Active Living by Design (ALBD) grantee in Columbia, Mo., has worked hard to mobilize the community to bike more often. Here, several families enjoy a crisp fall morning. Read more about ALBD on page 21.

For weight loss, working together is often the best approach

The prescription for losing excess weight and avoiding heart disease and diabetes sounds simple – eat less in general, eat more fruits and vegetables, and move more. The hard part is helping real people fit those changes into their lives.



Dr. Marci Campbell

Researchers at UNC Gillings School of Global Public Health have found that, for many, community support helps make those behaviors stick. The School has a long history of creating, testing and implementing programs designed to engage

groups of people to work together to improve their health.

One long-running effort based at the UNC Center for Health Promotion and Disease Prevention and led by a School researcher – HOPE (Health, Opportunities, Partnerships, Empowerment) Works – brought together low-income women in several rural counties in eastern North Carolina to form “Hope Circles” to support each other in healthier habits. Researchers reported that women who

participated in the circles for six months lost an average of 4.5 pounds and also increased their physical activity significantly. Women in control groups didn’t lose weight.

UNC nutrition professor Marci Campbell, PhD, who led the effort, now studies the same intervention over a longer time period. Campbell’s project, Seeds of HOPE, centers the support circles around churches or other formal groups, as her initial study found these settings more effective than informal meetings in private homes. Findings by Campbell and colleagues appear in *Journal of Women’s Health* (October 2007).

Feedback from the communities involved in HOPE Works has led researchers to focus on improving economic as well as physical health.

“People were saying you can’t tackle obesity if women don’t have jobs or education,



because they don't have hope for the future. People will improve their health as part of an effort to improve their lives," Campbell says.

She and colleagues helped launch a model business, Threads of HOPE NC Inc., in Salemburg, a small town in Sampson County, N.C. The business provides women with management experience and draws on the sewing skills some had developed when the textile industry was vital in the eastern part of the state. Participants make custom tote bags from organic cotton and have filled orders for clients including the 2009 National Conference on Chronic Disease Prevention and Control.

Input from HOPE Works participants also led to HOPE Accounts, which combines HOPE circles with a matched savings program to help women meet a goal such as going back to school or starting a small business. That project is funded by a grant from the American Recovery and Reinvestment Act.

Listening to people in communities we serve is crucial if we are to solve complex health problems such as obesity, says Leah Devlin, DDS, MPH, former North Carolina state health director and a Gillings Visiting Professor of health policy and management at the School.

"The problems we face in North Carolina are complex and multifactorial, and they require creative solutions that engage all types of expertise that we have in the public health school. But those solutions also must include the will and desires of the community," Devlin says. "We have to

listen to communities to understand what they see as priorities and what ideas they have for solutions that will help us be more successful together."

Campbell and Marlyn Allicock, PhD, research assistant professor of nutrition, also are applying strategies proven to help people eat more fruits and vegetables to an intervention



Dr. Marlyn Allicock

The problems we face in North Carolina are complex and multifactorial, and they require creative solutions that engage all types of expertise that we have in the public health school. But those solutions also must include the will and desires of the community.

in which military veterans are trained to counsel each other. They use motivational interviewing, which focuses on reflective listening and positive affirmations rather than on persuasion or advice giving. Those strategies were shown to help veterans eat more fruits and vegetables than did the standard Veterans Affairs weight-management program, in a pilot study published in the May-June 2010 issue of *Preventive Medicine*.

"We found that, due to other clinical responsibilities and time constraints, nurses are not necessarily the best people

to do the counseling," Allicock says. So she, Campbell and colleagues developed manuals and DVDs that train veterans to conduct the motivational interviewing for other veterans. The researchers currently are evaluating that intervention.

Production manager Mae Tuggle assembles a Threads of Hope tote bag. The organic cotton bags were sold last year at The Regulator Bookshop in Durham, N.C.



The School also collaborates with towns and communities to develop programs for healthy living.

Active Living by Design (ALBD), founded in 2001 by the Robert Wood Johnson Foundation, works with communities to build environments for active living and healthy eating. *(The program is featured on page 21.)*

ALBD staff members provide technical assistance to towns that have received grants from “Fit Community,” an initiative of the N.C. Health and Wellness Trust Fund.

“Our role is to help communities identify those resources that are going to help make their project successful, not just over the course of the grant period, but beyond,” says Joanne Lee, a program officer with Active Living by Design.

For example, Lee worked with a community in Black Mountain, N.C., which planted

gardens connected by walking trails. “They were able to get a permanent position established that included in its duties managing the gardens,” Lee says. “We also worked with the community to help establish a nonprofit coalition to generate funding.”

Another community intervention is led by Carmen Samuel-Hodge, PhD, research assistant professor of nutrition. Samuel-Hodge is testing a modified group weight-loss intervention to determine whether it is effective for low-income women when administered by county health department staff members rather than research team staff members. For example, to accommodate some women’s low literacy skills, she had them break into groups and choose a designated person to do any required writing. A preliminary analysis of her ongoing study in six North Carolina counties found that 40 percent of the women lost 5 percent or more of their body weight, a clinically significant amount.

“This was a better result

than other studies targeting low-income populations have gotten,” Samuel-Hodge says. “A key element was the women helping each other,” she says. “A lot of the sessions were about problem solving, and the women solved their own problems. These were not teaching sessions. If the interventionist did more than 50 percent of the talking in a session, it was considered ineffective. The goal is for interventionists to guide the discussion. A lot of times the women are learning from each other. One person will come in and say, ‘I had a wonderful week, and here’s what I did.’”

Finding ways that people in communities can work together to get healthy is becoming ever more important as public health officials try to fight obesity with fewer resources. For example, Samuel-Hodge points out that in July 2011, the North Carolina State Health Plan, through its Comprehensive Wellness Initiative, will begin requiring members with a body mass index above 40 to enroll in weight-loss programs or pay higher insurance co-pays. But how many state employees can afford the hundreds of dollars that private weight-loss programs may cost? Can communities provide other options that cost less but are still effective?

“We are finding that they can,” Samuel-Hodge says.

—Angela Spivey

Websites for further information:

Threads of HOPE NC Inc.
www.threadsofhopenc.org

Seeds of HOPE
<http://tinyurl.com/hpdp-seeds-of-hope>

Weight Wise Works at Health Departments
<http://tinyurl.com/hpdp-weightwise>

Active Living by Design
www.activelivingbydesign.org

In Santa Ana, Calif., the Healthy Eating by Design program provides opportunities for healthier eating to families in an urban Latino neighborhood. Here, a child hones his skills in the community garden.

PHOTO COURTESY OF ACTIVE LIVING BY DESIGN





PHOTO COURTESY OF ACTIVE LIVING BY DESIGN

Active Living By Design

Active Living by Design partners in Louisville, Ky., transformed a once-barren patch of land into a safe and fertile garden space. The garden became a community gathering place, where children learn about growing and eating healthy foods.

In the mid-2000s, Lynda Kinnane – and others in the beautiful mountain town of Burnsville, N.C. – had a major concern. “We were seeing a lot of children who were overweight,” Kinnane recalls.

But now, thanks to a Fit Community grant administered by UNC Gillings School of Global Public Health’s Active Living By Design (ALBD), the Yancey County community is turning the tide.

Using the \$60,000 grant as seed money, the community partnership, known as “Healthy Yancey,” renovated a previously closed gymnasium, bought park playground equipment for young children, added a sidewalk to connect a local swimming pool to Ray-Cort Park and hired a director to oversee the projects.

The technical assistance Healthy Yancey received from ALBD was as critical as the seed money.

“The five Ps they stress – Preparation, Promotion, Programs, Policy and Physical Projects – helped us tremendously,” says Kinnane, who wrote the grant application. “They make you think things through. Because of that, I feel like we’ve been successful.”

Although there is no hard data yet on youth weight loss or maintenance, it appears

Healthy Yancey is making a difference. “Changes like this take a long time; the problem is so multifactorial,” says Kinnane, director of the Toe River Health District, which covers Yancey, Avery and Mitchell counties.

“I believe our community is more fit. Our gym is busy all the time; the park is busy, too. All of these things are helping.”

Funded by the North Carolina Health and Wellness Trust Fund, Fit Community is one of many grant programs administered by ALBD, an organization based in the School’s North Carolina Institute for Public Health.

What all ALBD programs have in common is a focus on supporting community partnerships to create environments that foster good health. “We are taking public health to the streets,” says ALBD



Sarah Strunk

director of communications Mark Dessauer.

ALBD was one of the first organizations in the country to zero in on the importance of the built environment and its potential impact on health. “Our relationship with the Robert Wood Johnson Foundation and the focus of our first initiative together was innovative,” says ALBD director Sarah Strunk, MHA. “We were early adopters that helped communities translate a growing area of research into practice. We looked at how ►►

“We wanted neighborhood groups to determine what their communities needed and to work with others to make it happen. ... With a small amount of money, these partnerships can accomplish something significant.”

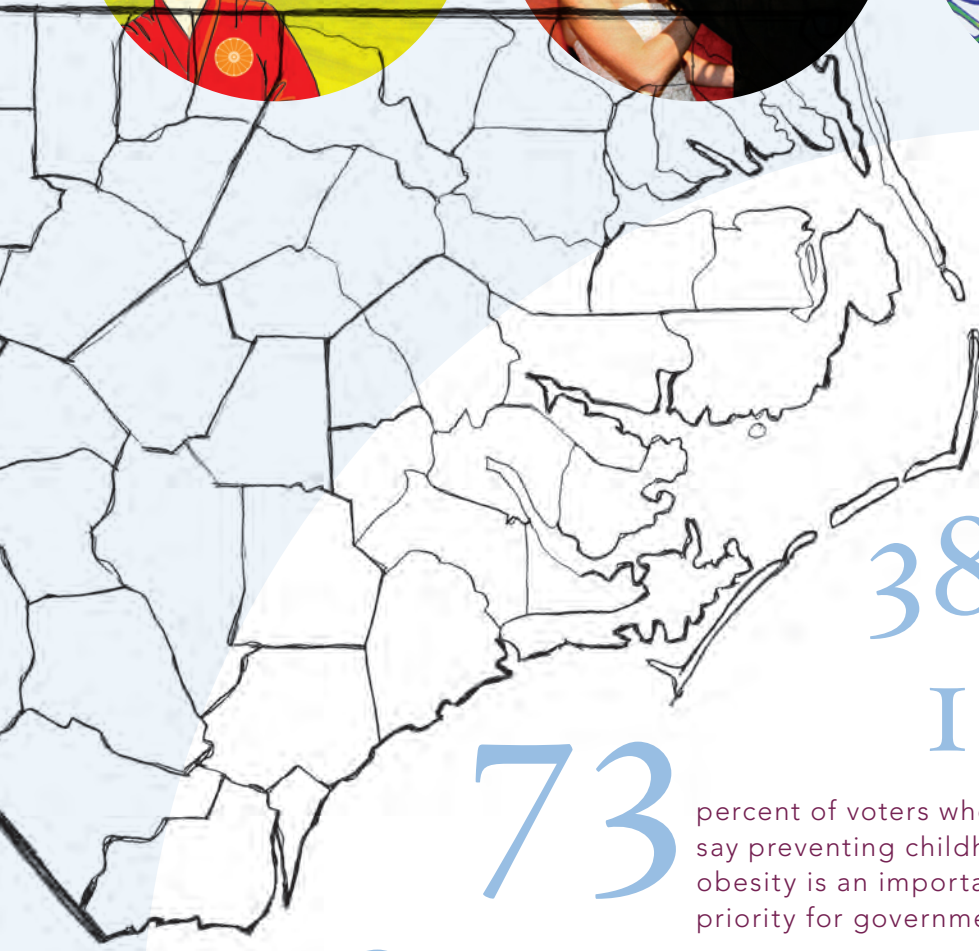
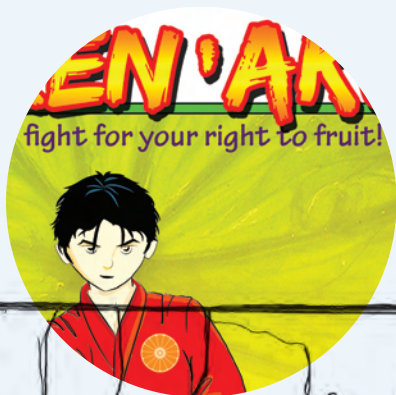


The World is Fat^{*}

Research synopses reported by Kathleen Kearns

Across North Carolina and around the world, researchers from UNC Gillings School of Global Public Health are investigating why obesity rates have ballooned, how this phenomenon affects health and what to do about it.

*Our article uses the title of a popular treatise by Dr. Barry Popkin, *The World is Fat: The Fads, Trends, Policies and Products That Are Fattening the Human Race* (New York, Penguin Books, 2008). For more information, see <http://tinyurl.com/theworldisfat>.



29.4

percentage of North Carolina adults who are obese

0 states with adult obesity rate above 20 percent in 1991

38 states in the U.S. with adult obesity rates above 25 percent in 2010

12 million obese children in the U.S.

73 percent of voters who say preventing childhood obesity is an important priority for government

20 states with nutritional standards for school meals (N.C. is among them.)

8 states with obesity rates above 20 percent among 10- to 17-year-olds (N.C. is not among them.)

10 of 11 states with highest rates of diabetes and hypertension are in the South

56 percent of voters who think preventing childhood obesity will save taxpayers money in the long run

41.1 percentage of African-Americans in North Carolina who are obese

The School conducts research, provides public service and participates in engaged scholarship in all 100 North Carolina counties.

NATIONAL CHAIR FOR THE SEARCH FOR DIABETES IN YOUTH STUDY, NUTRITION PROFESSOR ELIZABETH MAYER-DAVIS, PHD, LEADS THE FIRST LONG-TERM EVALUATION TO TRACK TRENDS AND INCIDENCE RATES FOR ALL TYPES OF DIABETES AMONG YOUNG PEOPLE FROM MAJOR RACIAL AND ETHNIC GROUPS IN THE U.S. The large, multicenter study collects information about who gets diabetes and what kind, what care they receive and how the disease and its complications affect their daily lives. Among the study questions: Why is type 2 diabetes rising so rapidly among adolescents, particularly minority adolescents? And does obesity – not previously linked with type 1 diabetes – accelerate that form of the disease?



WHILE THOSE IN THE U.S. WHO IDENTIFY THEMSELVES AS HISPANIC DIE LESS OFTEN FROM HEART DISEASE THAN NON-HISPANICS, THEY HAVE HIGHER RATES OF OBESITY AND DIABETES. LISA LAVANGE, PHD, BIostatistics PROFESSOR OF THE PRACTICE, LEADS THE HISPANIC COMMUNITY HEALTH STUDY, a comprehensive, nationwide assessment of how adapting to the U.S. environment and culture affects the health of 16,000 Hispanic adults with family roots in Mexico, Cuba, Puerto Rico, the Dominican Republic, Central America and South America.



PENNY GORDON-LARSEN, PHD, NUTRITION ASSOCIATE PROFESSOR, AND KARI NORTH, PHD, EPIDEMIOLOGY ASSOCIATE PROFESSOR, ARE WORKING TOGETHER TO UNDERSTAND HOW GENETIC AND ENVIRONMENTAL RISK FACTORS INTERACT TO INFLUENCE WEIGHT GAIN AS TEENS BECOME YOUNG ADULTS. They have shown that this developmental period is one of particular risk for weight gain. Understanding how genes and environment interact can better inform obesity prevention and treatment by tailoring such interventions to individuals who might benefit most.

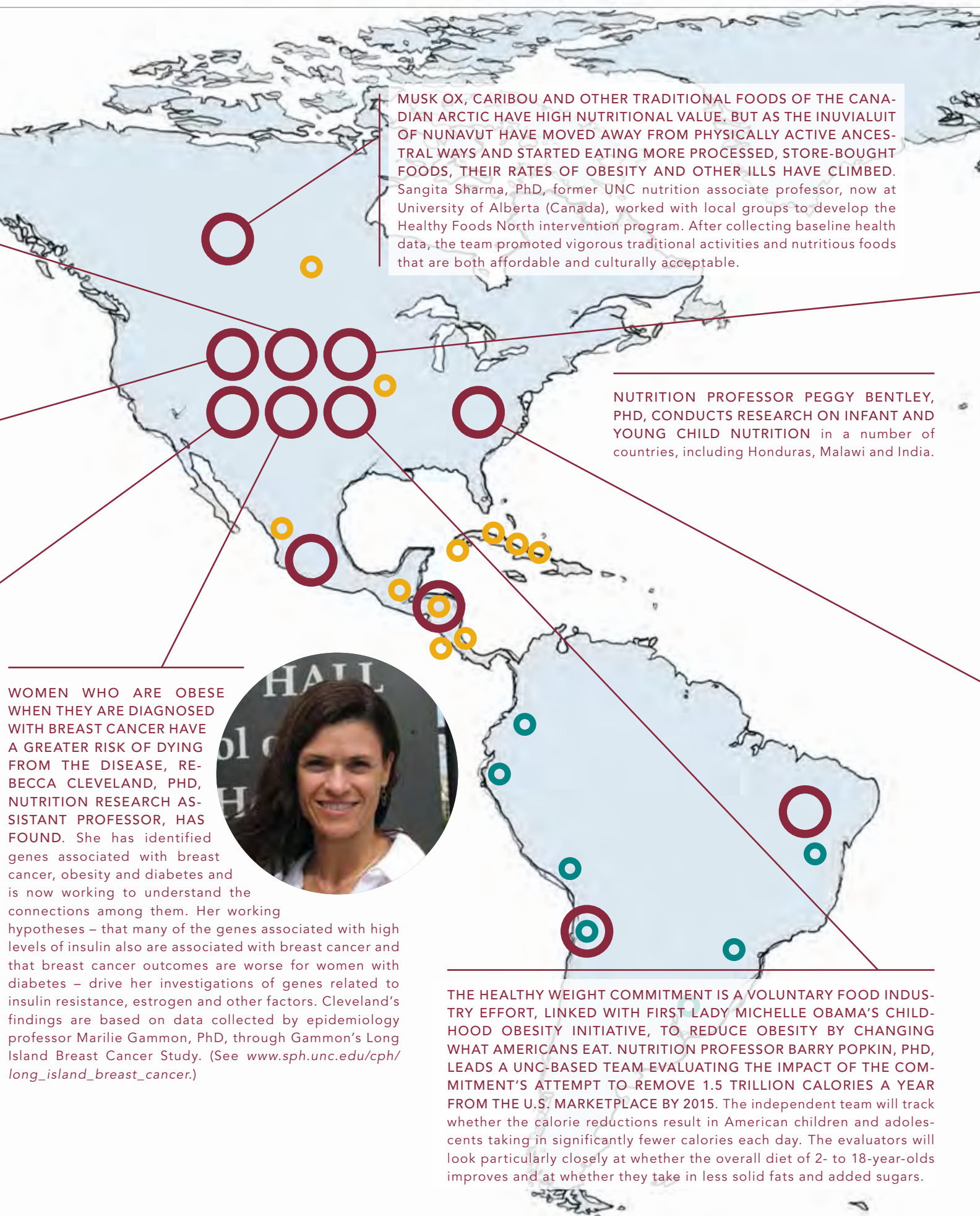
BARRY POPKIN, PHD, CARLA SMITH CHAMBLEE DISTINGUISHED PROFESSOR OF GLOBAL NUTRITION, HAS SERVED ON THE MEXICAN MINISTRY OF HEALTH'S NATIONAL BEVERAGE PANEL AND HAS WRITTEN THREE PAPERS WITH THE INSTITUTO NACIONAL DE SALUD PUBLICO RELATED TO BEVERAGE INTAKE AMONG MEXICAN CHILDREN. He conducts studies in China, Russia, Brazil, Mexico and the United Arab Emirates to examine factors underlying dietary and physical activity patterns and their effects on health.

In Egypt, Iran, Mexico, Brazil, South Africa, Thailand, China, Chile, India and Indonesia, Popkin studies the relationship of massive shifts in diet, activity and obesity to noncommunicable diseases.



For a more comprehensive look at where in the world we are making a difference, see our interactive map at www.sph.unc.edu/globalhealth.

To see this entire gatefold as one unit, open our "Gatefold" PDF at <http://www.sph.unc.edu/cph>.




MUSK OX, CARIBOU AND OTHER TRADITIONAL FOODS OF THE CANADIAN ARCTIC HAVE HIGH NUTRITIONAL VALUE. BUT AS THE INUVIUIT OF NUNAVUT HAVE MOVED AWAY FROM PHYSICALLY ACTIVE ANCESTRAL WAYS AND STARTED EATING MORE PROCESSED, STORE-BOUGHT FOODS, THEIR RATES OF OBESITY AND OTHER ILLS HAVE CLIMBED. Sangita Sharma, PhD, former UNC nutrition associate professor, now at University of Alberta (Canada), worked with local groups to develop the Healthy Foods North intervention program. After collecting baseline health data, the team promoted vigorous traditional activities and nutritious foods that are both affordable and culturally acceptable.

NUTRITION PROFESSOR PEGGY BENTLEY, PHD, CONDUCTS RESEARCH ON INFANT AND YOUNG CHILD NUTRITION in a number of countries, including Honduras, Malawi and India.



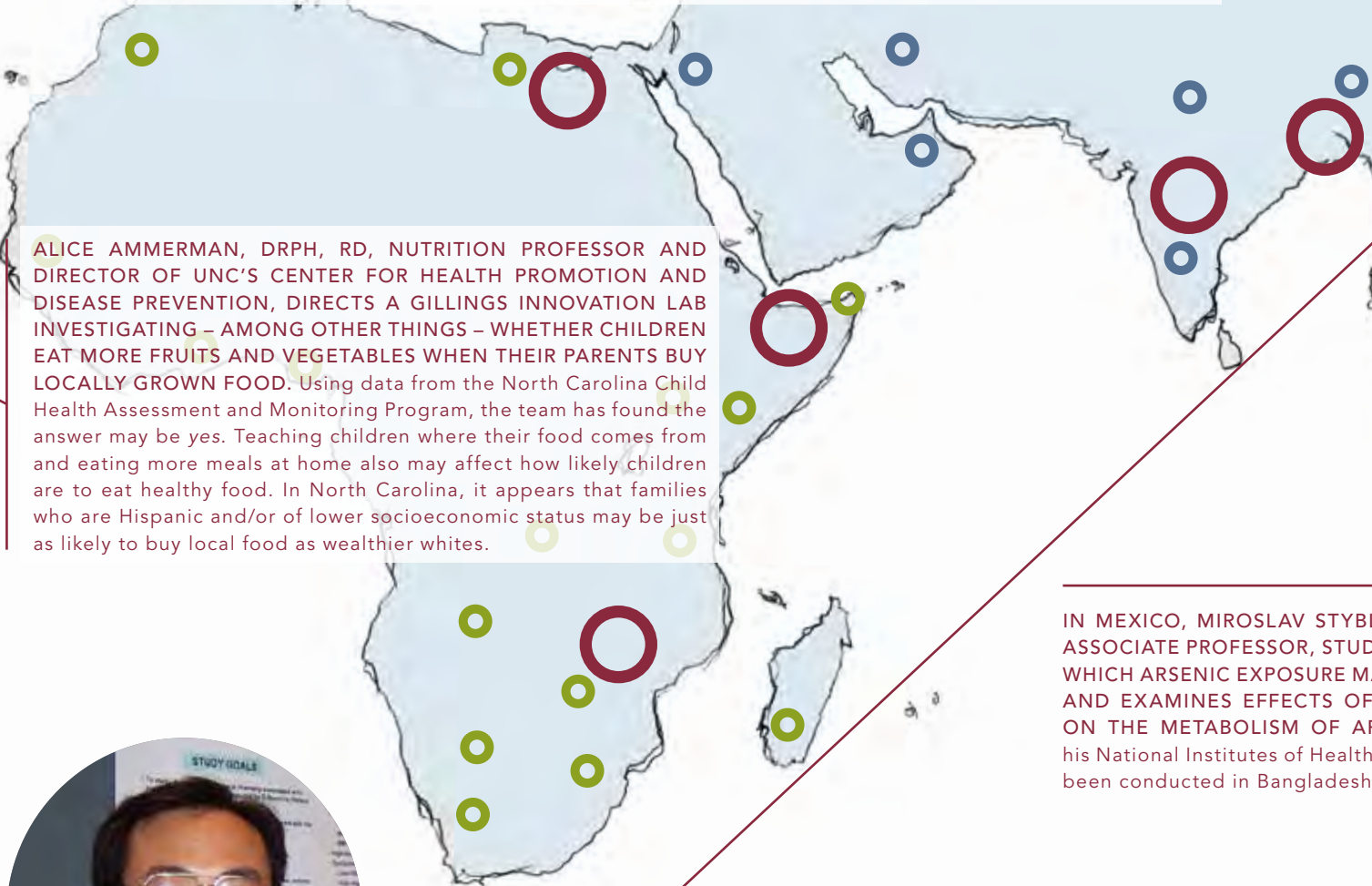
WOMEN WHO ARE OBESE WHEN THEY ARE DIAGNOSED WITH BREAST CANCER HAVE A GREATER RISK OF DYING FROM THE DISEASE, REBECCA CLEVELAND, PHD, NUTRITION RESEARCH ASSISTANT PROFESSOR, HAS FOUND. She has identified genes associated with breast cancer, obesity and diabetes and is now working to understand the connections among them. Her working hypotheses – that many of the genes associated with high levels of insulin also are associated with breast cancer and that breast cancer outcomes are worse for women with diabetes – drive her investigations of genes related to insulin resistance, estrogen and other factors. Cleveland's findings are based on data collected by epidemiology professor Marilie Gammon, PhD, through Gammon's Long Island Breast Cancer Study. (See www.sph.unc.edu/cph/long_island_breast_cancer.)

THE HEALTHY WEIGHT COMMITMENT IS A VOLUNTARY FOOD INDUSTRY EFFORT, LINKED WITH FIRST LADY MICHELLE OBAMA'S CHILDHOOD OBESITY INITIATIVE, TO REDUCE OBESITY BY CHANGING WHAT AMERICANS EAT. NUTRITION PROFESSOR BARRY POPKIN, PHD, LEADS A UNC-BASED TEAM EVALUATING THE IMPACT OF THE COMMITMENT'S ATTEMPT TO REMOVE 1.5 TRILLION CALORIES A YEAR FROM THE U.S. MARKETPLACE BY 2015. The independent team will track whether the calorie reductions result in American children and adolescents taking in significantly fewer calories each day. The evaluators will look particularly closely at whether the overall diet of 2- to 18-year-olds improves and at whether they take in less solid fats and added sugars.



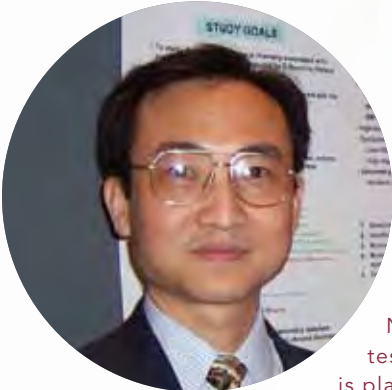
HAVING LED TWO LARGE NATIONAL TRIALS EXAMINING OBESITY AND PHYSICAL ACTIVITY IN CHILDREN AND ADOLESCENTS, JUNE STEVENS, PHD, PROFESSOR AND CHAIR OF THE NUTRITION DEPARTMENT, CONTINUES HER RESEARCH ON OBESITY IN DIFFERENT POPULATIONS. She has found links between mental exhaustion, obesity and heart attacks among African-American and white men and women. Other studies showed that the effects of obesity on the risk of diabetes and hypertension in Chinese may be even greater than in blacks and whites. Recent work by Stevens and Kimberly Truesdale, PhD, nutrition research assistant professor, showed that after losing weight, previously obese individuals enjoy a lowered risk of heart disease similar to those who were never obese. Their innovative studies are the first to show that, similar to the lowered risk of lung cancer in people who quit smoking, the effects of obesity on heart disease appear to be reversed by weight loss and maintenance of a healthy weight. Adults who lose weight and become normal weight have about the same risk of heart disease as people who were never obese.

Stevens also conducts research comparing body mass index and rates of diabetes and other conditions among African-Americans, whites and Chinese. That project is supported by a supplement to the UNC Nutrition and Obesity Research Center, one of 12 national centers of research funded by the National Institutes of Health. Steven Zeisel, MD, PhD, Kenan Distinguished Professor of nutrition and director of the N.C. Nutrition Research Institute, is the Center's principal investigator.



ALICE AMMERMAN, DRPH, RD, NUTRITION PROFESSOR AND DIRECTOR OF UNC'S CENTER FOR HEALTH PROMOTION AND DISEASE PREVENTION, DIRECTS A GILLINGS INNOVATION LAB INVESTIGATING – AMONG OTHER THINGS – WHETHER CHILDREN EAT MORE FRUITS AND VEGETABLES WHEN THEIR PARENTS BUY LOCALLY GROWN FOOD. Using data from the North Carolina Child Health Assessment and Monitoring Program, the team has found the answer may be yes. Teaching children where their food comes from and eating more meals at home also may affect how likely children are to eat healthy food. In North Carolina, it appears that families who are Hispanic and/or of lower socioeconomic status may be just as likely to buy local food as wealthier whites.

IN MEXICO, MIROSLAV STYBLO, ASSOCIATE PROFESSOR, STUDIES WHICH ARSENIC EXPOSURE MAY I AND EXAMINES EFFECTS OF DI ON THE METABOLISM OF ARSE his National Institutes of Health-funded been conducted in Bangladesh and



A 40-YEAR-OLD JOURNAL ARTICLE ON CHINESE RESTAURANT SYNDROME GRABBED THE ATTENTION OF NUTRITION ASSOCIATE PROFESSOR KA HE, MD, SCD, WHEN HE READ THAT STUDY ANIMALS GIVEN MONOSODIUM GLUTAMATE (MSG) WEIGHED MORE THAN THE CONTROL GROUP. Intrigued, He examined data from both a small study and the large China Health and Nutrition Survey and discovered that humans' MSG intake also is related to weight gain. Now, he is testing his theory that MSG causes resistance to leptin, the hormone that regulates energy balance. He is planning an intervention study to determine whether MSG intake can cause obesity.



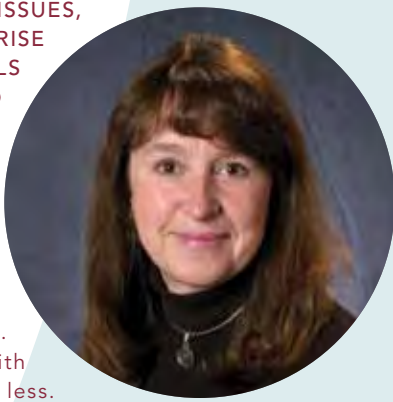
SPURRED BY THE WORLD HEALTH ORGANIZATION, FOOD COMPANIES WORLDWIDE ARE PLACING A UNIVERSAL LOGO ON FOOD AND BEVERAGE PACKAGES TO HELP CONSUMERS MAKE HEALTHIER CHOICES. Barry Popkin, PhD, Carla Smith Chamblee Distinguished Professor of Global Nutrition, works with an international board of scientists to ensure the logo goes on products that really *do* promote health. The Choices International Foundation Programme aims to reduce diseases related to obesity by raising consumer awareness and by encouraging companies to market products that meet evidence-based benchmarks for trans fats, saturated fats, salt, sugar and – in most locations – fiber and energy intake.



FOR MORE THAN 20 YEARS, THE CHINA HEALTH AND NUTRITION SURVEY HAS MONITORED THE DIET AND BODY COMPOSITION OF 19,000 PEOPLE IN NINE CHINESE PROVINCES. During that time, economic and social changes have altered what Chinese people eat and how much they move. Obesity in China has risen dramatically. Numerous School faculty researchers – among them Linda Adair, PhD; Margaret E. Bentley, PhD; **Shufa Du, MD, PhD**; Penny Gordon-Larsen, PhD, and study principal investigator Barry Popkin, PhD – track the changes. The information they gather helps Chinese officials identify and respond to the public health challenges that result.

PHD, NUTRITION MECHANISMS BY INDUCE DIABETES ET AND OBESITY NIC. Research for nded work also has d Taiwan.

SINCE 1983, THE CEBU [PHILIPPINES] LONGITUDINAL HEALTH AND NUTRITION SURVEY HAS FOLLOWED A COHORT OF 3,000 WOMEN AND THEIR CHILDREN. ORIGINALLY FOCUSED ON MATERNAL AND INFANT HEALTH, THE STUDY – NOW LED BY NUTRITION PROFESSOR LINDA ADAIR, PHD – TRACKS A RANGE OF MATERNAL AND CHILD HEALTH ISSUES, INCLUDING A SIGNIFICANT RISE IN OBESITY THAT PARALLELS CEBU'S RAPID GROWTH AND ECONOMIC DEVELOPMENT. "There's a clear trend from underweight to overweight and to hypertension and diabetes," says Adair. Unlike in the United States, women from Cebu's wealthier families tend to gain more weight. Poorer women and those with physically demanding jobs gain less.



To truly reverse the epidemic of childhood obesity, we need to address policies, environments and systems, not just individual behavior.

we could increase physical activity through community design.”

With an initial foundation investment of \$15.5 million in 2001, ALBD selected partnerships of key players within communities to solve infrastructure challenges around physical activity and, later, healthy eating.

“We wanted neighborhood and grassroots groups determining what their communities needed and working with others, including local government entities such as public health, transportation, and parks and recreation, to make it happen,” Dessauer says. The approach struck a chord. “We expected 300 to 350 to apply, but we had 966. The response broke all foundation records,” he says.

The first 25 community grantees received technical assistance and \$40,000 annually for five years. The money seeded partnerships that leveraged nearly \$260 million in additional community investments.

“The lesson we learned was that with a small amount of money, these partnerships can accomplish something significant,” Dessauer says. “It gave them an opportunity to pause and think about community health and how they could work together.”

With such success, the N.C. Health and Wellness Trust Fund, Kellogg Foundation, Blue Cross Blue Shield of Minnesota and other groups soon engaged ALBD to work with their grants programs.

In 2008, the Robert Wood Johnson Foundation made an even bigger commitment to ALBD, asking it to lead the new \$33 million Healthy Kids, Healthy Communities program – the foundation’s largest investment in community-based change related to childhood obesity, Dessauer says.

Among the 50 Healthy Kids, Healthy Communities grants made so far, one for \$400,000 in Baldwin Park, Calif., continues

to fuel a childhood obesity fight launched more than a decade ago.

The largely Latino suburb of Los Angeles has seen children lose weight and increase test scores as the community has instituted salad bars and mandatory physical education levels in schools, increased fresh produce in stores, banned drive-through windows at



PHOTOS COURTESY OF ACTIVE LIVING BY DESIGN

Active Living by Design fosters community-led change by working with local and national partners to build a culture of active living and healthy eating. Above, elementary students in Seattle enjoy a snack provided by the local Healthy Eating by Design program. Below, South Bronx (N.Y.) youth celebrate their borough’s newest park. The ALBD grantee engaged local young people to clean up trash in the park and make landscaping changes.

new fast-food restaurants and launched a website called www.werefedup.com, created by and targeted to young people.

The grant is helping the partnership implement “People on the Move,” focused on decreasing unhealthy food marketing and advertising, increasing access to healthy foods in corner groceries near schools and boosting “walkability” and green space in the downtown area.

In Somerville, Mass., ALBD also is advancing a longtime initiative. Since the early 2000s, “Shape up Somerville” has spurred new parks, walking paths, recreational

facilities, community gardens, low-fat menu options at restaurants and education of parents about healthy eating.

A \$400,000 Healthy Kids, Healthy Communities’ commitment is helping the town make changes in public policy to sustain health over time – a major ALBD emphasis.

“To truly reverse the epidemic of childhood obesity, we need to address policies, environments and systems, not just individual behavior,” says ALBD director Strunk. “This means working to create community-level changes that can be sustained for generations to come.”

–Susan Shackelford

UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH SCHOOL NEWS

MARCH — SEPTEMBER 2010

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

School sponsors oil spill forum

ALTHOUGH APRIL'S BP OIL SPILL in the Gulf of Mexico did not affect the North Carolina coast, it provided opportunity to evaluate local, state and federal readiness. More than 130 participants at the School's July 29 "One Health" forum interacted with state and federal partners who described how to train and use volunteers and identified areas requiring additional planning. Bill Gentry, director of health policy and management certificate programs, arranged and led the forum. Read more at www.sph.unc.edu/oilspill.

Foshee receives award to study prevention of dating violence

VANGIE A. FOSHEE, PHD, professor of health behavior and health education, has received a grant of nearly \$1.2 million from the U.S. Centers for Disease Control and Prevention to evaluate a program aiming to prevent psychological, physical and sexual dating abuse by adolescents who have been exposed to domestic violence.

"Moms and Teens for Safe Dates" was developed by Foshee and health behavior and health education colleagues, Professor Susan Ennett, PhD, and Beth Moracco, PhD, and James Michael Bowling, PhD, both research

associate professors, with funding from the National Institute of Justice. Mothers who have left an abusive partner obtain prevention information through the program and participate in interactive activities with their 12- to 15-year-old adolescents who were exposed to the abuse. Adolescents exposed to domestic violence are at increased risk for being abused by and abusing the people they date.



Dr. Vangie Foshee

Ricketts named to national Health Care Workforce Commission

THOMAS RICKETTS, PHD, professor of health policy and management, is one of 15 national experts appointed to the new National Health Care Workforce Commission. The Commission is an independent body that advises Congress and the administration on health workforce policy.

"This commission gives us the opportunity to develop new ways to modernize our workforce to meet the challenges of increasing access and quality of health care while we control costs," Ricketts said. "We need to examine how we prepare and deploy our doctors, nurses, dentists, pharmacists and the many other health care practitioners to meet the nation's future health care needs. In many ways, we have been trying to run a system for the 21st century with 20th century approaches."

Ricketts also serves as deputy director for policy analysis at UNC's Cecil G. Sheps Center for Health Services Research and is co-director of American College of Surgeons Health Policy Research Institute. He is a Gillings Visiting Professor with Ecole des Hautes Etudes en Sante Publique in France.



Dr. Thomas Ricketts

School reaccredited by CEPH for maximum period, seven years

THE UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH was reaccredited in June by the Council on Education for Public Health (CEPH) for seven years, the maximum period of renewal.

Leading the school's accreditation team were Peggy Leatt, PhD, associate dean for academic affairs and chair of the Department of Health Policy and Management; Anita Farel, DrPH, associate chair for graduate studies in the Department of Maternal and Child Health; Laurel Files, PhD, associate chair of the Department of Health Policy and Management; Felicia Mebane, PhD, assistant dean for students; and Dave Potenziani, PhD, former senior associate dean.

Water Institute at UNC launched in October

THE WATER INSTITUTE AT UNC (<http://waterinstitute.unc.edu>), housed in UNC Gillings School of Global Public Health, was launched Oct. 25 during UNC's conference, "Water and Health: Where Science Meets Policy." The conference, co-sponsored by the new institute and the UNC Institute



Dr. Jamie Bartram

for the Environment, attracted more than 350 attendees. Experts from more than 50 countries provided a wide range of perspectives on drinking water, sanitation, hygiene and water resources.

UNC has longstanding expertise in the areas of water, policy and health, with many faculty members engaged in associated research and recognized as international leaders. The Water Institute was established by the School to leverage this broad, interdisciplinary experience.

"The Water Institute at UNC brings together individuals and institutions from diverse disciplines and empowers them to work together to tackle critical global issues in water and health," says Jamie Bartram, PhD, Institute director and professor of environmental sciences and engineering.



Dr. Rebecca Fry

ESE's Fry honored as 'outstanding young researcher'

REBECCA FRY, PHD, assistant professor of environmental sciences and engineering, has received two prestigious awards recognizing her potential to make substantial contributions throughout her career. The honors include the Outstanding New Environmental Scientist (ONES) Award, presented by the National Institutes of Health's National Institute of Environmental Health Sciences (NIEHS), and selection as a PopTech Science and Public Leadership Fellow. Fry's ONES award includes a \$2.2 million grant to study health effects of prenatal arsenic exposure in newborns in Gomez Palacio, Mexico.

PopTech, a global community of interdisciplinary leaders, each year selects young scientists who work in critical public health areas and provides them with advanced leadership and communications training. Fry also has received support from the University Cancer Research Fund and a Gillings Innovation Lab (see page 28).

Maternal and Child Health offers online degree

THE SCHOOL'S maternal and child health department will offer an online master's degree program in spring 2011 to complement its established residential training programs. The degree will increase working professionals' access to graduate education focused on improving the health of women, children and families.

Developed with support from the U.S. Health Resources and Services Administration's Bureau of Maternal and Child Health, the new curriculum builds upon an online certificate (MCH Ole!) introduced earlier this year.

Munroe-Blum speaks at University Day event



Dr. Munroe-Blum

HEATHER MUNROE-BLUM, PHD, principal and vice-chancellor of McGill University in Montreal, gave the keynote address at UNC's University Day celebration Oct. 12. The text of the presentation is

available at <http://tinyurl.com/munroe-blum>. Munroe-Blum received a doctorate with distinction in epidemiology from UNC in 1983.



Dr. Melissa Troester (left), Dr. Liza Makowski

PHOTO BY DIANNE SHAW

Researchers to study pregnancy, obesity, breast cancer disparities

TWO SCHOOL RESEARCHERS received a five-year, \$2.2 million grant to study how pregnancy and obesity may promote susceptibility to an aggressive subtype of breast cancer more prevalent in young, African-American women.

Melissa Troester, PhD, assistant professor of epidemiology, and Liza Makowski, PhD, assistant professor of nutrition, are principal investigators for the National Institute of Environmental Health Sciences' Breast Cancer and Environmental Research Program.

Browning, Vinroot elected to UNC Board of Visitors

KELLY B. BROWNING, member and former president of the School's Public Health Foundation board, and alumnus Richard Vinroot Jr., MD, MPH, will serve four-year terms on the 160-member UNC Board of Visitors, which assists the Chancellor and trustees in activities that help advance the University.



Kelly Browning



Dr. Rich Vinroot Jr.

UNC study helps explain why black patients with lung cancer have surgery less often than whites

A NEW UNC STUDY that follows patients with lung cancer is one of the first to suggest why patients choose not to have life-preserving lung surgery and why such surgery is sought less often by blacks.

Samuel Cykert, MD, associate professor in the UNC School of Medicine, is lead author of the American Cancer Society-funded study, published in the June 16 issue of the *Journal of the American Medical Association*.

Study authors from UNC Gillings School

of Global Public Health include Peggye Dilworth-Anderson, PhD, professor of health policy and management, and Lloyd J. Edwards, PhD, associate professor of biostatistics.

Cykert says explanations for differences in surgical rates for blacks may include black patients' perception of poor doctor-patient communication. Black patients also were less likely to have primary care providers who could help them reconsider a decision about surgery.

Nutrition's Stevens coordinates national study of ways to prevent, treat childhood obesity

UNC-CHAPEL HILL HAS BEEN NAMED coordinating center for a National Institutes of Health-funded study to examine ways to curtail the nation's childhood obesity epidemic.

June Stevens, PhD, AICR/ WCRF Distinguished Professor of nutrition and epidemiology and chair of the nutrition department, is principal investigator for the center.



Dr. June Stevens

The NIH's \$49.5 million Childhood Obesity Prevention and Treatment Research (COPTR) program is among the first long-term obesity prevention and treatment research studies in children. COPTR will test methods for preventing excessive weight gain in non-overweight and moderately overweight youth, and methods for reducing weight in obese and severely obese youth.

Stevens also was a featured speaker at the 2010 American Institute of Cancer Research (AICR) Conference on Food, Nutrition, Physical Activity and Cancer, Oct. 21-22, in Washington, D.C.

Physicians can improve children's oral health

SCHOOL RESEARCHERS HAVE provided the first national data on the effectiveness of dental referrals by physicians.

Heather Beil, MPH, doctoral student, and Gary Rozier, DDS, MPH, professor, both in the School's Department of Health Policy and Management, co-authored the study, published in the August issue of the journal *Pediatrics*.



Dr. Gary Rozier

Researchers sampled children to determine whether a medical health care provider had recommended that a child be seen by a dentist and whether the child actually had a dental visit. The most significant finding was in the group of two- to five-year-olds. Of the 47 percent of the group advised to have a dental check-up, 39 percent did.

Coming soon!

Feb. 18 – Lecture by Isabel Wilkerson, author of *The Warmth of Other Suns: The Epic Story of America's Great Migration*

Feb. 24 – Minority Student Caucus Alumni Reception

Feb. 25 – Minority Health Conference

(www.minority.unc.edu)

March 31 – Foard Lecture

(www.sph.unc.edu/foard)

Speaker: Richard A. Vinroot Jr., MD, MPH

For more information about these and other events, contact Jerry Salak at (919) 843-0661 or jerry.salak@unc.edu.

AWARDS & RECOGNITIONS

MARCH – SEPTEMBER 2010

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

FACULTY

Sobsey invited to NASA's first LAUNCH event

Mark Sobsey, PhD, Kenan Distinguished Professor of environmental sciences and engineering, was one of 10 innovators chosen to participate in NASA's inaugural LAUNCH event, held March 16–18, at the Kennedy Space Center in Florida.

Sobsey presented his proposal for simple, accessible and affordable tests to assess water quality and safety.



Dr. Mark Sobsey

Sen selected for prestigious Wilks Medal

Pranab K. Sen, PhD, Cary C. Boshamer Distinguished Professor of biostatistics, was selected as the 2010 recipient of the

American Statistical Association's S.S. Wilks Medal, one of the most prestigious awards in the field. His research, published over the course of 50 years, has influenced generations of statisticians. Sen, a member of the UNC biostatistics faculty since 1967, is the first from the department to receive the medal.



Dr. Pranab Sen

Gillings Innovation Labs awarded



Dr. Eric Donaldson



Dr. Rebecca Fry



Dr. Suzanne Maman



Dr. Jill Stewart

The School funded four new Gillings Innovation Laboratories last spring.

Awardees, all assistant professors, include:

- Eric Donaldson, PhD, epidemiology;
- Rebecca Fry, PhD, environmental sciences and engineering;
- Suzanne Maman, PhD, health behavior and health education; and
- Jill Stewart, PhD, environmental sciences and engineering.

Read more about the Gillings Innovation Lab Awards at www.sph.unc.edu/accelerate.

Randolph reappointed to national board

Susan Randolph, MSN, RN, was reappointed to the National Advisory Committee on Occupational Safety and Health (NACOSH).

Randolph is clinical assistant professor in the Public Health Leadership Program.



Susan Randolph

Swenberg honored with Greenberg Award

James A. Swenberg, DVM, PhD, Kenan Distinguished Professor of environmental sciences and engineering, received the School's Bernard G. Greenberg Alumni Endowment Award for excellence in teaching, research and service. Director of the UNC Curriculum in Toxicology, Swenberg studies

the mechanisms of carcinogenesis, with an emphasis on the role of DNA damage and repair. He has mentored more than 40 graduate students during his two decades at UNC. The award was presented at the School's 2010 Foard Lecture in April.



Dr. James Swenberg (left), Dr. Mike Aitken



Dr. Lisa LaVange

LaVange reappointed to health commission

Lisa M. LaVange, PhD, was reappointed to the N.C. Health and Wellness Trust Fund Commission. LaVange is Professor of the Practice of biostatistics and director of the Collaborative Studies Coordinating Center. The commission works to improve North Carolinians' health by establishing partnerships to address access, prevention, education and research issues.

LaVange is Professor of the Practice of biostatistics and director of the Collaborative Studies Coordinating Center. The commission works to improve North Carolinians' health by establishing partnerships to address access, prevention, education and research issues.

Herring, Preisser, Zhou elected as ASA fellows

Three UNC biostatistics faculty members have been elected as fellows of the American Statistical Association. They are Amy



Dr. Amy Herring



Dr. John Preisser



Dr. Halbo Zhou

Herring, ScD, associate professor; John Preisser Jr., PhD, research professor; and Haibo Zhou, PhD, professor.

Popkin awarded honor by Britain's Nutrition Society

Barry Popkin, PhD, Carla Smith Chamblee Distinguished Professor of Global Nutrition,



Dr. Barry Popkin

is the 2010 recipient of the United Kingdom Nutrition Society's Rank Prize, the society's highest honor. He accepted the award in June 2010 in Edinburgh, Scotland. Popkin's Nutrition Society Lecture was

titled, "Contemporary Nutritional Transition: Determinants of Diet and its Impact on Body Composition."

Zelman, Herring honored for teaching, mentoring

Two prestigious faculty awards were presented at the School's 70th commencement ceremony last spring. William Zelman, PhD, professor of health policy and management, received the John E. Larsh Jr. Award for Mentorship, and Amy Herring, ScD, associate professor of biostatistics, received the McGavran Award for Excellence in Teaching.



Dr. William Zelman

Gentry awarded Moldova medal

Bill Gentry, lecturer in health policy and management and director of the Community Preparedness and Disaster Management program, received Moldova's "Honorary Rescuer" medal in May 2010. Gentry has a long history of emergency preparedness and response efforts in the country.



Bill Gentry



Dr. Penny Gordon-Larsen

Gordon-Larsen receives Obesity Society award

Penny Gordon-Larsen, PhD, associate professor of nutrition, has won The Obesity Society's 2010 Lilly Scientific Achievement Award. Gordon-Larsen accepted the award, funded by the Eli Lilly Pharmaceutical Co., at the Society's October conference in San Diego.

Peterson presented with prestigious Allan Rosenfield Award

Herbert B. Peterson, MD, Kenan Distinguished Professor and chair of the Department of Maternal and Child Health, received the 2010 Allan Rosenfield Award for Lifetime Contributions to International Family Planning. The award is presented annually by the Society of Family Planning (SFP).

Peterson, also professor of obstetrics and gynecology in the UNC School of Medicine, is known internationally for his work in women's reproductive health, epidemiology, health policy and evidence-based decision-making.



Dr. Herbert Peterson

PHOTO BY TOM FULDNER

Halpern honored for leadership, teaching

Carolyn Halpern, PhD, associate professor of maternal and child health, received the national Association of Teachers of Maternal and Child Health's 2010 Loretta P. Lacey Maternal and Child Health Academic Leadership Award.



Dr. Carolyn Halpern

STAFF

Cilenti leads NC Healthy Start, receives women's health award



Dr. Dorothy Cilenti

Dorothy Cilenti, DrPH, deputy director of the School's N.C. Institute for Public Health, was appointed chair of the N.C. Healthy Start Foundation's board of directors in July. She has served on the

Healthy Start board since 2007.

Cilenti also received a \$305,000 grant from the U.S. Health Resources and Services Administration's Maternal and Child Health Bureau. The project, Women's Integrated Systems for Health (WISH) Distance Learning Initiative, will address the need to better integrate public health and mental health systems to improve women's health.

Stevens honored for local health efforts

Rachel Stevens, EdD, RN, received the 2010 President's Award from the National Association of Local Boards of Health (NALBOH) in August in recognition of her service. Stevens was



Dr. Rachel Stevens

deputy director of the School's N.C. Institute for Public Health and clinical instructor of public health nursing before retiring in 2003.

Perry receives Staff Excellence Award

Chris Perry, assistant director of School communications, was selected for the School's 2010 Staff Excellence Award, which



Chris Perry

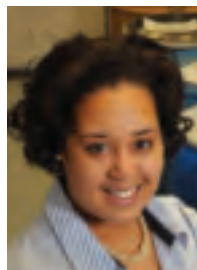
acknowledges excellent attitude, leadership and initiative. Perry is credited with "beyond-the-call" efforts on the School's website content, including a recent major redesign of the site.

STUDENTS

Public health students recognized for work benefiting North Carolina

UNC Gillings School of Global Public Health students won four of 16 Impact Awards, presented by UNC's Graduate School in spring 2010 to recognize student research that benefits North Carolina citizens. The awards, sponsored by the Graduate Education Advancement Board, were given last spring to:

- Jennifer Gierisch, PhD, health behavior and health education alumna;
 - Maiysha D. Jones, environmental sciences and engineering doctoral student;
 - Kathryn Remmes Martin, PhD, health behavior and health education alumna; and
 - Stephen Richardson, environmental sciences and engineering doctoral student.
- Read more at <http://tinyurl.com/nc-impact>.



Maiysha Jones

Two inaugural Gillings Dissertation Awards presented

Stephen Richardson (environmental sciences and engineering) and Natalie The (nutrition) received Gillings Awards in spring 2010 for their research, respectively, on solutions to soil contamination and the associations among weight, diabetes and physical activity across race and ethnicity in the United States.



Stephen Richardson



Natalie The

Three students win Fulbright awards

Jacqueline S. Knee, MSPH, and Bachelor of Science in Public Health alumnae Melissa Asmar and Erin Shigekawa were selected to receive Fulbright public health scholarships. Knee is examining sanitary conditions of stored rainwater in Thailand; Asmar conducts research on nutritional changes in the national diet in Germany; and Shigekawa studies chronic kidney disease in Taiwan.

ALUMNI

Brostrom selected for Barr Award

Richard Brostrom, MD, MSPH, received the 2010 Harriet Hylton Barr Distinguished Alumnus Award for his achievements and contributions to the field of public health. Brostrom, medical director of the Division of Public Health for the U.S. Commonwealth of the Northern Mariana Islands, is also medical director of the commonwealth's programs in tuberculosis control, public health bioterrorism preparedness and tobacco control. His award was announced at the School's 2010 Foard Lecture.

“YOUR GIFTS ARE INVESTMENTS, AND WE THANK YOU FOR EVERY ONE OF THEM. The return on your investment is far more than the gratitude of public health researchers, teachers and students, though you have that in abundance. Your return is your gift’s impact – discoveries made, students trained, faculty recruited and retained, publications made possible, clinics supported, lives touched and the public’s health transformed. Your gift – your investment – has made a difference in the protection of the world’s health and America’s future. We are grateful to you and all our partners as we work together to engineer clean water, prevent obesity, cancer and other diseases, eliminate health disparities, and lower health care costs.”

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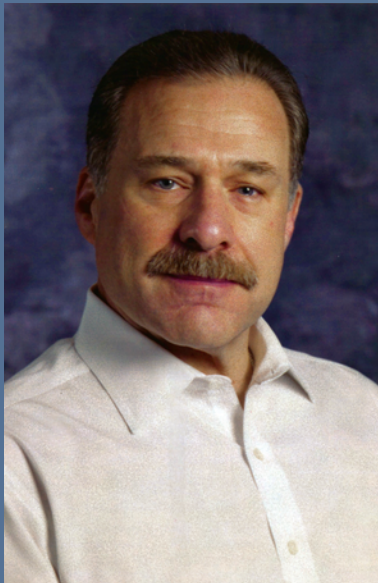
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Dr. Michael Kafrissen

Michael Kafrissen, MD: *Giving back to support a cause I believe in*

Mike Kafrissen and Bert Peterson have been friends and colleagues for more than a quarter-century. As obstetrics and gynecology physicians, members of the U.S. Centers for Disease Control and Prevention's Epidemic Intelligence Service and faculty members at UNC Gillings School of Global Public Health, they have worked in concert to improve the health of women and children around the world.

Kafrissen, School alumnus, research scientist at Massachusetts Institute of Technology, Chief Scientific Officer for Johnson & Johnson's North American Pharmaceutical Company, and adjunct professor of maternal

and child health at UNC, says UNC-Chapel Hill has been instrumental in his career path.

"During a recent visit to the campus, I felt led to increase my involvement with our school," Kafrissen says. "I was moved by my conversations with Bert [Herbert Peterson, MD, Kenan Distinguished Professor and chair of the School's Department of Maternal and Child Health] and his passion for and optimism about the current effort to reduce maternal mortality."

As a result of those conversations – and subsequent ones with Dean Barbara K. Rimer and UNC Chancellor Holden Thorp – Kafrissen presented the School with a generous gift, which was matched 2-to-1 by his former employer, Johnson & Johnson.

The funding helps support Peterson's efforts as director of the UNC-based World Health Organization (WHO) Collaborating Center for Research Evidence in Sexual and Reproductive Health. The Center helps WHO and other leading United Nations health agencies as they develop and implement science-driven solutions for preventing maternal deaths in the 25 countries in which most such deaths occur.

"Mike has helped us immensely," Peterson says. "His wisdom and expertise have been absolutely invaluable, and his generous gift is key in getting this important work off the ground."

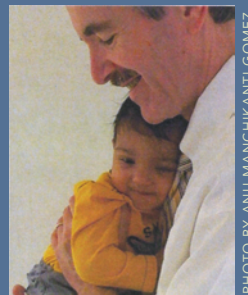
Dr. Bert Peterson
holding Nikhil Gomez

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Mathile Institute: *Partnering for global health*

The *Mathile Institute – UNC Global Nutrition Scholars Program* currently supports Yanire Estrada, a UNC-trained master's student from Puerto Rico, in her doctoral work at UNC.

Estrada's scholarship is an outgrowth of research conducted in Intibucá, Honduras, by Peggy Bentley, PhD, nutrition professor and associate dean for global health at UNC Gillings School of Global Public Health, and Anna-Maria Siega-Riz, PhD, epidemiology and nutrition professor at the School. The Mathile Institute supported a UNC-affiliated nonprofit organization, *Shoulder to Shoulder*, to work with Bentley and Siega-Riz to test a ready-to-eat, complementary food for its efficacy in improving infants' and toddlers' growth and development. Estrada, as the team's project coordinator, lived in a remote, rural area of Honduras for 18 months. Her doctoral dissertation will report the project's research findings and implications for child nutrition and development.

Bentley is delighted with the Mathile Institute's support. "Our Department of Nutrition attracts the most outstanding students in the world, and applications are increasing dramatically. International students are attracted by the cutting-edge work of our faculty, the excellence of our graduate programs and alumni, and the fact that we are truly a global academic center."

Unfortunately, Bentley says, limited funding and the high costs of sponsoring international students severely restrict the School's ability to offer training to many brilliant and enthusiastic researchers from around the world.

"The Mathile Institute is a visionary organization that supports nutrition research worldwide," Bentley says. "This scholarship enables a bright, hard-working international student to obtain a doctorate from a top-ranked nutrition department and become a leader in her country's health system in the future."

"We are very pleased to be working with UNC Gillings School of Global Public Health and its exceptional faculty and students," says Greg Reinhart, PhD, vice president of nutrition and research for the Institute. "Yanire Estrada, Drs. Bentley and Siega-Riz, and the *Shoulder to Shoulder* organization did a remarkable job conducting this study in a very remote and mountainous region of Honduras. Young children and the international community will benefit from the findings."

"I am very excited to receive this scholarship and continue working with Drs. Bentley and Siega-Riz," Estrada says. "Mathile has allowed me to fulfill my dream of working with Central American and Caribbean countries to improve their nutritional health outcomes."

– Bobbi Wallace



(Left to right) Doctoral student Yanire Estrada, with Drs. Peggy Bentley and Greg Reinhart, in Honduras

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(www.mathileinstitute.org)
is partnering with UNC
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Bill and Rosa Small

Bill Small: A lifetime of commitment to UNC public health

Nearly 40 years ago, William T. Small Jr., MSPH, was a recent alumnus of the UNC master's program in environmental sciences and engineering. He was working for the North Carolina State Board of Health when an exciting career opportunity arose.

Black students in the UNC public health school were expressing concerns about the lack of diversity in the classroom, and Dean Fred Mayes wanted to find a full-time minority recruiter who could help increase minority student enrollment. It was Small, a native of Wilmington, N.C., who proved to be a perfect fit for the job.

Within a year of his taking the position, the number of minority students increased from 20 to 49.

During the 28 years in which Small served the School in various capacities, he received numerous service awards, including eight from the School's Minority Student Caucus, whose activities he championed. Upon Small's retirement in 1999 as associate dean and senior adviser for multicultural affairs, Dean William Roper named the Caucus' Keynote Lecture in his honor. (See <http://minority.unc.edu/sph/minconf>.)

Small has never stopped believing in and working for public health initiatives, diversity and educational opportunities for minority students at UNC. To that end, he and his wife recently have endowed The William Thomas Small Jr. and Rosa Williamson Small Scholarship.

Small doubts his career experiences would have been as fulfilling had it not been for financial assistance he received as a graduate student at the School more than 40 years ago.

"Rosa and I are pleased to share in efforts to expand scholarship support and increase student diversity in the UNC Gillings School of Global Public Health," Small says. "We recognize the importance of instituting a strong financial base as vital to the School's program to attract and train talented minority students. Moreover, a solid, well-defined student financial assistance program is crucial to the School's ability to compete for the best and brightest students."

– Linda Kastleman

We are excited about the potential benefits of this effort and encourage others of like enthusiasm to join with us in continued support of diversity-enhancing initiatives at UNC Gillings School of Global Public Health.

– Bill and Rosa Small

Find out how your commitment to public health education can benefit the next generation of public health students. Contact Stephen Couch, associate director of development at the School, at (919) 966-0219 or stephen_couch@unc.edu.

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Mabel Johansson

We're glad we had a chance to say THANK YOU

Alumna Mabel Smith Johansson passed away on Nov. 13, 2009. She is missed by all who knew her gentle spirit.

Johansson, who received her Master of Public Health in public health nursing here in 1961, made annual gifts to the School and established a charitable gift annuity toward a scholarship she created. More than a decade ago, she also decided that the UNC public health school should receive a gift from her estate. She was passionate about public health nursing, and she liked the idea of giving a new generation the opportunity to study at the School as she had.

Fortunately, Johansson met on a number of occasions with Lyne Gamble, the School's director of planned giving, and others, to tailor the gift in a way that fit her wishes. Most importantly, by working with the School's external affairs office over time, we were able to say "Thank You" for her generosity and thoughtful planning.

"It was a privilege to have gotten to know Mabel Johansson," Gamble says. "She had a wonderful combination of charm and seriousness of purpose. Throughout her life, Mabel was a great advocate for public health. It meant a lot to her to know she would have a positive effect on future generations of public health students."

— Linda Kastleman

Planned gifts are of great importance to the School. If you make us part of your estate plan, please let us know. In doing so, you will be designated as a member of the Gerrard Society, which recognizes those who help ensure our long-term stability and financial health. Now, more than ever, the School's future depends upon gifts made by alumni and friends today to benefit the students of tomorrow.

For more information, contact Lyne S. Gamble Jr., Director of Major and Planned Gifts, UNC Gillings School of Global Public Health, 135 Dauer Dr., Chapel Hill, N.C. 27599-7407, (919) 966-8368, lyne_gamble@unc.edu.

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Dr. Peggy Bentley (right) has conducted research on infant and young child nutrition in several countries in which ChildFund's programs improve children's growth and development. In July 2010, Bentley visited a sustainable agriculture site in Malawi, Africa. With her is UNC alumna Kari Riggie (center), daughter of nutrition professor Linda Adair, PhD.



UNC-ChildFund Commissioned Innovation Lab *to improve lives of vulnerable infants*

ChildFund International, a 72-year-old charity based in Virginia, has forged a partnership with UNC Gillings School of Global Public Health to improve the lives and health of vulnerable, excluded and deprived children from birth to age two.

The Commissioned Innovation Lab will develop and test an evidence-based program in two countries, which can be scaled up globally across ChildFund's projects in 31 countries, where the organization reaches more than 15 million children.

Peggy Bentley, PhD, nutrition professor and associate dean for global health at the School, will lead the program, and Cyril Engmann, MD, neonatologist in UNC School of Medicine's Department of Pediatrics and adjunct assistant professor of maternal and child health at the public health school, is co-principal investigator. A number of other faculty with expertise in safe water and sanitation, child development, injury and violence prevention, implementation science, curriculum development, breastfeeding and weaning, and monitoring and evaluation will contribute as the work develops.

"We are tremendously

excited about this opportunity to build a partnership and a program that makes a huge impact on children's lives during their most critical period of growth and development," Bentley says.

"The partnership provides a unique opportunity for Carolina faculty members and students to partner with ChildFund to transform the lives of millions of mothers and children, utilizing rigorous, evidence-based methods," Engmann added.

Anne Goddard, president and chief executive officer of ChildFund and alumna of the School (health behavior and health education, 1983), believes the UNC-ChildFund partnership will add tremendous value to both organizations.

"Our collaboration with Carolina links ChildFund's unique assets and approaches with cutting-edge practice, helping us achieve our core intent to improve the lives of children worldwide," Goddard says. "Our work together will advance the state of the art in child development, addressing gaps in knowledge and practice for global impact beyond the reach of either institution. This supports our goal of promoting societies that value, protect and advance the rights of children."

— Bobbi Wallace

ChildFund
International

ANNUAL FUND provides support for 16 rising stars

In 2009, UNC Gillings School of Global Public Health for the first time earmarked money from its Annual Fund to provide scholarship assistance to eight of its most outstanding students. This year, thanks to generous donors and friends, the number of scholarship recipients doubled to 16 students, two from each department. Each of the scholars received \$5,000.

This year's Annual Fund scholars are Rachel Bland, Angel Davalos, Christopher Ford, Tyrone Hall, Corey Kalbaugh, Zachary Kerr, Yoon Hie Kim, My-Linh Luong, Eliot Meyer, Sadiya Abdul Muqueeth, Alexander Nance, Mary Paul, Pourab Roy, Nicholas Sullivan, Nicole Taylor and Collin Ward.

The Annual Fund traditionally has been one of the most popular ways to support the School and its public health initiatives. To learn more about how to make a difference in students' lives, visit www.sph.unc.edu/giving or contact Jerry Salak at jerry.salak@unc.edu or (919) 966-0198.



Rachel Bland



Angel Davalos



Christopher Ford



Tyrone Hall



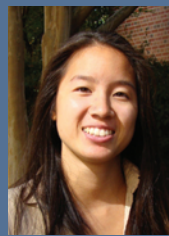
Corey Kalbaugh



Zachary Kerr



Yoon Hie Kim



My-Linh Luong



Eliot Meyer



Sadiya Muqueeth



Alexander Nance



Mary Paul



Pourab Roy



Nicholas Sullivan



Nicole Taylor



Collin Ward

Rachel Bland

Master's student,
maternal and
child health

Angel de Jesus Davalos

Doctoral student,
biostatistics

Christopher Ford

Doctoral student,
nutrition

Tyrone Hall

Master's student,
nutrition

Corey Kalbaugh

Doctoral student,
epidemiology

Zachary Kerr

Doctoral student,
epidemiology

Yoon Hie Kim

Master's student,
Public Health
Leadership Program

My-Linh Luong

MSPH-PhD student,
health behavior
and health education

Eliot Meyer

Master's student,
environmental sciences
and engineering

Sadiya Abdul Muqueeth

Master's student,
health behavior
and health education

Alexander Nance

Master's student, health
policy and management

Mary Paul

Master's student,
maternal and child health

Pourab Roy

Doctoral student,
biostatistics

Nicholas Sullivan

Master's student, health
policy and management

Nicole Taylor

Master's student,
Public Health
Leadership Program

Collin Ward

Doctoral student,
environmental sciences
and engineering

- Katherine McLaurin Lewis
Susan Park Lewis
Melvin Dale Lightner
Frances Estes Likis
Alice Strozik Linyear
Karen Klein Lipman
John Llewellyn Lobdell
John Kelly Lockhart
Gregory & Rhonda Locklear
Samantha Ruth Logan
Denise Heath Londergan
Jeremy & Amy Long
Suzanne Elizabeth Long
Charmaine P. Lowe-Hoyte
Edward William Lusk
Patricia Ann Lusk
Pauline Rabon Lyna
Kirkland Alexander Lynch
Stacy Racine Lynch
Rebecca Leigh Mabe
Pia MacDonald
in memory of
Ian MacDonald
Krista Giersch Maddigan
Whitney Mansfield Madine
Michelle Alisa Mahoney
Ann Marie Malarcher
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Doran Webster Stegura
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Seth Michael Steinberg

Coca-Cola and UNC: *A history of partnership*

The relationship between The Coca-Cola Company and UNC Gillings School of Global Public Health stretches back more than fifteen years. Beginning in 1994, ten years of support from the company enabled James Swenberg, DVM, PhD, Kenan Distinguished Professor of environmental sciences and engineering, to greatly advance his work on DNA damage and repair.

"Our unrestricted grants from Coca-Cola permitted my laboratory to conduct pilot projects on new research ideas," recalls Swenberg, who also directs the School's Center for Environmental Health and Susceptibility.

More recently, The Coca-Cola Company supported another School priority, safe water, through projects in Mexican schools and in Cambodia, led by Mark Sobsey, PhD, Kenan Distinguished Professor of environmental sciences and engineering. The company also has participated in UNC's Global Obesity Business Forum, led by Barry Popkin, PhD, Carla Smith Chamblee Professor of Global Nutrition. The forum brought together food industry leaders and researchers to find solutions to the obesity crisis.

"Obesity is a serious and complex global health problem that requires the collective efforts of everyone – individuals, governments, academia, health professionals, communities and businesses – to work in partnership to develop workable solutions," says Rhona Applebaum, PhD, vice president and chief scientific and regulatory officer of The Coca-Cola Company.

"Partnerships with institutions like UNC, efforts to educate and inform consumers on proper nutrition, energy balance and programs that support physical activity are some of the many ways we are developing workable solutions for obesity," Applebaum says.

For example, Coca-Cola partners with the Boys & Girls Clubs of America in support of Triple Play, a national after-school program that promotes healthy and active lifestyle choices among youth. The first youth-focused program of its kind developed in collaboration with the U.S. Department of Health and Human Services, Triple Play reaches more than four million children every year.

Globally, The Coca-Cola Company supports more than 100 physical activity and nutrition education programs in more than 150 countries.

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Woodhall Stopford
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Jean Crane Sykes
Dharmi Bhupendra Tailor
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Sheron Garris Tyndall
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Mary Bradshaw Zizzi
Marianne Elizabeth Zotti
Bin Zou
Julia Wit Zupko

*Every gift to UNC Gillings School of Global Public Health is vitally important and deeply appreciated.
We have made every effort to ensure the accuracy of our Honor Roll lists and regret any errors or omissions.*

To report an error, contact Lauren Thie at (919) 966-3722 or l.thie@unc.edu.

Sharing a Vision for a healthy future



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acknowledges, with appreciation, support from

Coca-Cola

TO HELP US TRANSLATE INTO PRACTICE OUR PUBLIC HEALTH NUTRITION AND HEALTH BEHAVIOR RESEARCH. COCA-COLA:

- Has supported research within our School for more than 15 years (see page 44);
- Was a founding member of the School-sponsored Obesity Business Forum;
- Provided generous funding for this issue of *Carolina Public Health*; and
- Has numerous other initiatives to encourage active, healthy living, to reduce waste through reducing, reusing and recycling packaging, and to improve water quality and availability throughout the world.



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