

**THE QUESTION IS:  
HOW CAN WE CREATE A HEALTHIER WORLD?**



University of Pittsburgh  
*Graduate School of Public Health*

# LETTER FROM THE DEAN



Founded 60 years ago in response to the needs of industrial Pittsburgh, the University of Pittsburgh Graduate School of Public Health (GSPH) is recognized for its contributions to public health on local, national, and international fronts.

Our integrated programs in education, research, and service prepare public health practitioners and help create the evidence-based knowledge that drives effective public health practices and improves the management of health systems. GSPH stands as a partner with elected officials, policy makers, and those in the field of public health practices as they create and manage public health infrastructures.

GSPH is one of the nation's leading schools of public health and has seven outstanding departments, each boasting a diverse faculty that is rich in backgrounds, disciplinary approaches, and research interests. GSPH has collaborative relationships with all of the University's health science schools, community organizations, and the local and state health departments.

GSPH is situated in the heart of Western Pennsylvania's health care corridor, affording easy access to biotechnology firms as well as the University of Pittsburgh Medical Center (UPMC)—one of the country's premier health care systems. This unique environment provides students and faculty with unparalleled opportunities for education, research, and service.

While public health has dramatically advanced during the 20th century, much remains to be done to ensure continued improvements in health worldwide. GSPH is committed to meeting new challenges by preparing the next generation of public health leaders and by working together with our partners who plan, fund, and operate public health systems. In these ways, GSPH continues to build a healthier world.

A handwritten signature in white ink that reads "Donald S. Burke".

Donald S. Burke, MD  
Dean, Graduate School of Public Health  
University of Pittsburgh

## HOW DO WE MAKE LIFE HEALTHIER FOR EVERYONE?

This is the question that scientists at the University of Pittsburgh Graduate School of Public Health (GSPH) face every day. Here, “everyone” is a large and diverse group of people. GSPH studies involve children, women, and men. Minorities, ethnic groups, and the elderly. Lesbian, gay, bisexual, and transgender individuals (LGBT). City dwellers and rural inhabitants.

We study lifestyles, occupations, environments, genetics, and the effects of activities such as Marcellus Shale drilling. We research major diseases from asthma, Alzheimer’s disease, and HIV/AIDS to diabetes, breast cancer, obesity, and cardiovascular disease. We have taken on crippling diseases, such as polio, and, more recently, autism.

At GSPH, we look at how hospitals and other providers deliver care—and the fairness of the American health care system. We study the effects of health laws, Medicare, and Medicaid. And we advise the Commonwealth of Pennsylvania, as well as the U.S. government, on those issues.

As a leading national public health research center and school, GSPH addresses all major public health concerns. Our tradition of translating important findings into groundbreaking public health advances has done more than nearly any other entity to improve the lives of people living in Southwestern Pennsylvania. Our influence on public health extends across the country and around the globe.

In this book, you’ll see a small sample of our contributions. Since our beginning more than 60 years ago, we have performed thousands of studies that have impacted millions of lives. We have been fortunate to attract and cultivate renowned scientists. And we are proud to continue our strong tradition of making a difference through excellence in research and public health education.

## A QUICK STUDY OF GSPH:

- GSPH consistently ranked among the top five public health schools in the United States, measured by National Institutes of Health (NIH) funding.
- It attracted \$1 billion in NIH funding to the Pittsburgh region over the past decade.
- GSPH educated more than 5,000 public health practitioners.
- The school had a 32 percent increase in student enrollment over the past five years, reaching the full capacity of nearly 700 students.
- Since 2008, 30 percent of students have been minorities.
- This research powerhouse supports more than 2,500 jobs in the Pittsburgh region.

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# ABOUT GSPH

**MAKING A DIFFERENCE.  
IMPROVING THE WORLD.**

# ABOUT GSPH

In 1948, Andrew Mellon was concerned about the health implications of an industrialized Pittsburgh. With a gift of \$13.6 million, he endowed the Graduate School of Public Health. Since that time, what kind of people have graced our halls and passed through our doors? People with a passion for helping others, the intelligence to ask the right questions, and the persistence to diligently search for answers. Many of the people who have worked at GSPH have made life-changing contributions here and around the world.

## A ROLE IN THE BEGINNING OF BLUE CROSS

The first dean of GSPH tapped 25-year-old Walt McNerney to start the Health and Policy Management Department. McNerney embraced the responsibility. What he learned here helped him go on to have a major impact on health care in our nation, including a leading role in establishing Blue Cross/Blue Shield and shaping Medicare/Medicaid.



“The grounding I got in epidemiology, biostatistics, occupational health, etc., was of tremendous value to me,” McNerney recalled in an oral history. “I went into the field initially as a person with a community point of view. The School of Public Health reinforced that point of view and gave me some of the tools to deal with it, and some of the rationale for it. I have drawn upon those disciplines a great deal since.”

## A ROLE IN HORMONE REPLACEMENT THERAPY (HRT)

“Anytime you have a widely used drug, you’d better be damned sure that it works.” That was a comment made in regard to HRT by Lewis Kuller, MD, DrPH, distinguished university professor emeritus of public health at GSPH. For 20 years, physicians had been prescribing HRT to treat menopause symptoms, as well as to prevent heart disease and osteoporosis in women. Key studies performed by Kuller and associates as part of GSPH’s Women’s Health Initiative revealed quite the opposite: HRT could actually increase risks of heart disease, breast cancer, stroke, and blood clots in the lungs. These findings have changed the way HRT is prescribed and have translated into lives saved.

## A ROLE IN THE AFFORDABLE HEALTH CARE ACT

Thomas Priselac, president and chief executive officer of Cedars-Sinai Health System, got his foundation in public health at GSPH. Now a key player in national health care and a past president of the American Hospital Association, Priselac was invited to advise President Obama on the health care overhaul that led to the Affordable Health Care Act.

## A ROLE IN EDUCATING PUBLIC HEALTH PROFESSIONALS AROUND THE WORLD

GSPH is home to Supercourse, an Internet-based program of more than 5,000 lectures covering a full array of global health topics. Supercourse provides trustworthy, unbiased information to people who can translate it into action to improve the health of people everywhere. For example, public health professionals relied on Supercourse during the recent disastrous earthquakes in Japan and Haiti. Accessed for discrete information or to create programs for emerging public health practitioners, Supercourse has been identified by *Science* magazine as one of the top Web sites, and it has been rated as one of the top 100 Web sites by *PC Magazine*.

Hosted on the University of Pittsburgh’s server with support from the World Health Organization (WHO) and the Library of Alexandria, Supercourse has access to some of the world’s largest networks and is poised to build the new field of global mobile health, disseminating health information and prompting positive behaviors through the burgeoning use of mobile phones, especially in developing countries.



## AREAS OF EXCELLENCE:

- Monitoring the quality of our air and drinking water
- Advancing policies to improve industrial hygiene and work safety
- Providing expert testimony to policy makers with respect to public health issues
- Addressing health disparities among our minority populations
- Providing scientific information related to the potential health impact of Marcellus Shale gas extraction to policy makers, industry, and environmental groups
- Lowering the incidence of illness in our schools
- Improving the ability of our seniors to live longer and more safely in their own homes
- Limiting and reducing the spread of HIV/AIDS in our community
- Improving standards of care in our nursing homes
- Educating trustees of area health care providers on governance best practices
- Providing practical and effective guidance to our families and schools to combat childhood and adult obesity
- Reporting through national media outlets with respect to research on diabetes, cardiovascular disease, breast and other cancers, behaviors affecting health such as seat belt usage and child abuse, Medicare/Medicaid policies, human genetics, various infectious diseases, osteoporosis, menopause, depression, and a wide array of other health issues

# ENVIRONMENTAL HEALTH



**THERE ARE MORE CONCERNS  
THAN EVER ABOUT OUR ENVIRONMENT.  
WHAT RISKS SURROUND US?**

# ENVIRONMENTAL HEALTH

Since our inception during Pittsburgh's industrial era, GSPH has been a leader in environmental health. Today, we are deep into studies that may have groundbreaking implications for communities, industries, economies, and the health of people around the world.

## HOW CAN WE PROTECT THE LUNGS OF CHILDREN?

Children breathe more air in proportion to their weight than adults do, so toxins in the air have a greater effect on their growing lungs. Recent studies have shown that students in schools near industrial plants are at higher risk for asthma and poor lung development, which could lead to chronic obstructive pulmonary disease (COPD) later in life.

Armed with one of the largest and longest-running databases related to air quality and asthma, GSPH is conducting lung studies to learn about the effects of particulates on health, as well as the success of measures such as industrial "scrubbers" on coal-powered plants to reduce these dangers.

GSPH is teaming with the University of Pittsburgh Medical Center (UPMC) to understand how the health of children with asthma is impacted by indoor and outdoor air pollution exposure. We are using diverse methods to quantify air pollution concentrations and identify important pollution sources, from vehicles to industries to tobacco smoke. We are also determining how individual factors, such as age, gender, and psychosocial stress, affect air pollution susceptibility.



*GSPH is teaming with the University of Pittsburgh Medical Center (UPMC) to understand how the health of children with asthma is impacted by indoor and outdoor air pollution exposure.*

## HOW CAN WE ADEQUATELY ASSESS THE IMPACT OF MARCELLUS SHALE DRILLING?

The Pittsburgh region is ripe for shale gas drilling, and while the economic and employment prospects have many people excited, the potential risks to the drinking water and natural environment need to be explored.

GSPH is responding with an unbiased scientific approach. Recently, we have sponsored conferences and events, gathering policymakers, researchers, industry representatives, and others and asking them to pinpoint major health issues and discuss specific research questions. It is clear that better communication and more information are needed, especially baseline data that would allow for before-and-after comparisons.



Through the Department of Environmental and Occupational Health, which houses our Center for Healthy Environments and Communities, GSPH is taking the lead. We are performing baseline testing of select waterways and comparison tests of drinking wells in areas with and without Marcellus Shale gas drilling. In addition, we are documenting the experiences of citizens throughout Pennsylvania, New York, Ohio, and West Virginia who have been impacted by Marcellus Shale drilling in order to map the health effects on humans and ecosystems.

# ENVIRONMENTAL HEALTH



## WHAT ARE THE ENVIRONMENTAL RISK FACTORS SURROUNDING AUTISM?

Autism spectrum disorders (ASDs) are developmental disabilities that become evident early in a child's life and cause social, communication, and behavioral challenges. They are poorly understood, but one thing is certain—they affect many lives. The Centers for Disease Control and Prevention (CDC) estimates that approximately 1 in 110 children born in the United States has been diagnosed with an ASD, and the rates in recent years have increased.

What is causing this rise? Scientists at GSPH are conducting a comprehensive multiyear study to help identify environmental and other factors that may put children at risk for developing conditions within the autism spectrum disorders. The Study of Environmental Risk Factors for Childhood Autism will evaluate genetic, environmental, and biological factors—all of which may play a role in the rising rates.

## WHAT CAN WE DO TO STOP A MURDEROUS MOLD FROM INFECTING THE WORLD'S FOOD SUPPLY?

Aflatoxin is a foodborne toxin produced by *Aspergillus* fungi that causes liver cancer. It may also stunt childhood growth and suppress immune systems. Almost 5 billion people worldwide are exposed to aflatoxin through their food. While people in sub-Saharan Africa and Asia are most vulnerable, aflatoxin is a problem that farmers throughout most of the world must contend with.

Felicia Wu, PhD, assistant professor of environmental and occupational health, is estimating the global burden of human disease caused by mycotoxins (fungal toxins) and looking for low-cost ways to reduce exposure to these foodborne toxins. Wu has spent time learning what crops are susceptible to growing the mold, who gets infected, and how it might be controlled. While most moldy crops in the United States are thrown out, Wu found that many poorer regions in the world cannot afford to do so. In her research, she discovered that the hepatitis B vaccine reduces the risk of aflatoxin-related cancer. She also found that genetic modifications to crops can control exposure to certain mycotoxins by 50 to 90 percent. But both of these solutions can be costly or even taboo for many societies.



Felicia Wu, PhD

Wu believes simpler solutions will have the greatest impact. Culturally acceptable practices must be adopted, such as educating farmers about aflatoxin and teaching them better ways to properly dry and store their harvested crops to reduce mold proliferation. In Guinea, measures like this reduced aflatoxin exposure by 60 percent.

Today, Wu and her colleagues are developing a network model to understand patterns of food trade worldwide and to estimate the economic and health impacts of different global aflatoxin standards. Their work has the potential to help set food safety standards worldwide that reduce liver cancer, which is the third-leading cause of cancer deaths.

*Wu has spent time learning what crops are susceptible to growing the mold, who gets infected, and how it might be controlled.*





# WOMEN'S HEALTH

**IN THE PAST, HEALTH RESEARCH  
CENTERED MAINLY ON MEN.  
HOW IS WOMEN-FOCUSED RESEARCH  
MAKING A DIFFERENCE?**

# WOMEN'S HEALTH

GSPH pioneered studies that impact women. Previously, scientists, particularly in heart disease, assumed that what was true for men would translate to women.

*Much of what is known about heart risk factors for women going through menopause can be attributed to Lewis Kuller's work with the Healthy Women Study. Since 1983, this study has led to the evaluation of new imaging techniques, psychosocial factors, hormones, and development of cardiovascular risk from before to after menopause. The study has also identified key determinants for the prevention of heart disease among women.*

Since the 1980s, GSPH faculty has pioneered landmark studies on women's health. Our Women's Health Initiative (WHI) is the first and longest-running study on women's health. Through this and other work, we have offered up groundbreaking research on women and cardiovascular disease, osteoporosis, breast cancer, dementia, and the use of Hormone Replacement Therapy (HRT). By acting on advice based on GSPH results, the lives of countless women across the globe have been spared.

## **CAN WIDELY PRESCRIBED DRUGS ACTUALLY BE HARMING WOMEN MORE THAN HELPING THEM?**

A decade ago, doctors believed HRT drugs were almost a panacea for women's health issues later in life. HRT was freely prescribed not only to treat the symptoms of menopause, but also to prevent heart disease, osteoporosis, and dementia.

"We used to call this the greatest uncontrolled experiment on women in the United States," says Lewis Kuller, MD, DrPH, distinguished university professor emeritus of public health at GSPH. As one of the first researchers ever to focus studies on women, Kuller discovered that the doctors' good intentions with HRT could have quite the opposite effect on their patients.



Lewis Kuller, MD, DrPH

Led by Kuller and other faculty, WHI showed that the side effects of HRT sometimes outweighed its benefits as a treatment for hot flashes, night sweats, and other menopausal symptoms. "Since the 1980s, the medical group here that worked on the Healthy Women Study has argued very strongly that the observational evidence that Hormone Replacement Therapy prevents heart disease was highly suspect," reports Kuller.

In fact, over the years, research through WHI has shown that women who use HRT are at a much greater risk of stroke, cardiovascular disease, blood clots, breast cancer, and dementia. The findings apply to all women, regardless of age, ethnicity, or prior diseases.

"These results are quite staggering," says Kuller. And they've led to sweeping changes. Today, HRT drugs carry a warning label with their health risks. New therapies have been developed for women who are at risk of breast cancer, osteoporosis, heart disease, and other conditions. And doctors now have the knowledge they need to prescribe HRT more safely and effectively.

## **ARE BRITTLE BONES A NORMAL PART OF AGING?**

Osteoporosis affects 30 million women in the United States. It is a disease that can be debilitating and even life-threatening. "A hip fracture is the most devastating thing for an older woman," states Jane Cauley, DrPH, professor of epidemiology at GSPH. "There is 20 percent mortality in the first year after a fracture. It's associated with loss of independence and a huge reduction in quality of life. Spinal fractures, the most common type in osteoporosis, can be silent and even painless but still result in disability."



Jane Cauley, DrPH

Cauley is spearheading the world's largest and longest prospective study of osteoporosis. This well-funded, world-renowned scientist and her colleagues have discovered most of what we know about osteoporosis today.

In the novel study that began in 1986 and has included more than 10,000 women, Cauley and her team found that "a single bone density measurement accurately predicted the likelihood of who would have a spine fracture within a 15-year period. It was remarkable how well it predicted fractures over such a long period of time."

Cauley's research has been crucial in developing guidelines for the detection, prevention, and treatment of osteoporosis. The importance of bone density testing has been established, and testing is now recommended by doctors for all women aged 65 and older. In the ongoing study, Cauley and colleagues are working on developing a risk model to help doctors better identify women who are more likely to have an osteoporotic fracture and who can benefit from treatment.

"We used to think of osteoporosis as an inevitable consequence of aging, and it's clearly not," Cauley says. "We can have longevity plus quality of life if we take responsibility and make modifications. Through epidemiology, we know what people can do to maintain and improve their health, and we have tools and treatments today. It's possible to have healthy bones at any age."

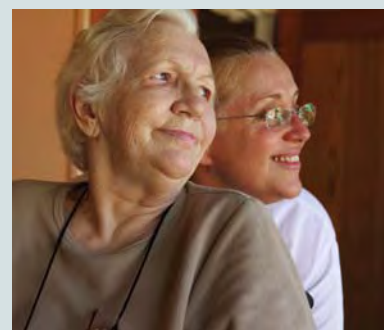
#### HOW CAN WE HELP WOMEN AT RISK FOR BREAST CANCER?

For 35 years, GSPH has provided biostatistical support for breast cancer research for the National Surgical Adjuvant Breast and Bowel Project (NSABP). Today, 95 percent of all breast cancer patients receive some or all of their care based on these studies.

Scientists at GSPH have developed a breast cancer risk assessment model that estimates risk based on a series of factors, including current age, age at first menstruation, age at delivery of first child, number of previous breast biopsies, and number of first-degree relatives with breast cancer.

The model can determine a woman's risk of cancer throughout her lifetime. Today, doctors are using this model to help calculate a patient's risk of developing breast cancer, which is the second leading cause of death in women.

Genetic studies at GSPH are also helping to develop appropriate treatment and preventative measures for a woman based on her genetic profile.



*Cauley's research has been crucial in developing guidelines for the detection, prevention, and treatment of osteoporosis.*

# HEALTHY AGING



**TODAY, PEOPLE LIVE LONGER.  
HOW CAN WE HELP THEM LIVE BETTER?**

# HEALTHY AGING

*Life expectancy has improved over the past century, and more than 80 percent of that improvement is due to public health policies and actions. Now GSPH is focusing on a relatively new imperative: helping older people live healthier lives.*

Recognizing that our nation has an already overburdened health care system and health costs spiraling out of control, GSPH is helping decision makers and other community leaders learn how to contain costs, prevent care rationing, and help older citizens stay healthy for longer.

## WHAT ARE THE KEYS TO HEALTHY AGING?

At our Center for Aging and Population Health (CAPH), funded by the Centers for Disease Control (CDC), GSPH scientists developed the 10 Keys™ to Healthy Aging Program. Created from evidence-based research conducted on people who are 65 and older, these 10 guidelines have been rolled out through employers and community organizations such as local libraries, senior citizen centers, and walking clubs. Updated as guidelines evolve, the 10 Keys are actively helping older adults to reduce, postpone, or eliminate disease and disability.

- Maintain healthy bones, joints, and muscles
- Lower systolic blood pressure
- Be physically active
- Regulate blood glucose
- Stop smoking
- Maintain social contact
- Participate in cancer screenings
- Get immunized regularly
- Lower LDLs
- Combat depression



CAPH is promoting healthy aging by conducting research of international renown. The CDC supports our efforts to develop and implement programs to educate and support senior citizens about healthy life habits. GSPH scientists translate and disseminate research results and evaluate these strategies. We develop and deliver prevention education materials through in-person and Web-based training programs. We train laypeople to spread the word about preventive measures. And we work with patients, providers, researchers, educators, and policy makers to meet our goals.



## WHAT'S THE NEW "OLD"?

According to Anne Newman, MD, MPH, professor of epidemiology and medicine, the definition continues to evolve.

"When I began my career 25 years ago, old age was defined as 60 and older. In 1995, it was 70 and older, and in 2005, we began focusing on age 85 and older." Newman wants to understand what happens biologically as people age. Her work

on body composition and fitness established the negative impact of high body fat on strength and walking performance, as well as the importance of fitness to overall function in aging.

GSPH's research has shifted the paradigm of "healthy aging," helping people live longer, healthier lives.

*With funding from the National Institute on Aging, more than 3,000 older adults living in our region have participated in studies of walking, muscle mass and strength, and brain functioning. These studies have demonstrated the importance of healthy habits and controlling risk factors to maintain the expectancy of an active life.*

## HOW SAFE ARE NURSING HOMES?

As the U.S. population ages, the question of quality in long-term care looms large. Currently, GSPH is examining the practices and policies used by nursing homes to report adverse incidents. To do so, we have queried all 50 state departments of health, and we are collecting online input from nursing homes.

To improve the quality of long-term care, scientists at GSPH have also created a structured interview guide to help nursing home staff ask residents directly about problems they experience and then design interventions to correct them. We are also working to determine the prevalence and use of health information technology in nursing homes.



## CAN HIGH BLOOD PRESSURE LEAD TO DEMENTIA?

According to a study by Lewis Kuller, MD, DrPH, coprincipal investigator at GSPH's Center for Healthy Aging, older women with hypertension have an increased risk of developing brain lesions that cause dementia later in life. Eight years after an initial MRI, many women in the study who had elevated blood pressure underwent a second MRI

that revealed higher amounts of white matter lesions in their brains. Several studies have found that damage to white matter seems to be an independent risk factor for dementia.

"Women should be encouraged to control high blood pressure when they are young or in middle age in order to prevent serious problems later on," says Kuller. "Prevention and control of elevated blood pressure and subsequent vascular disease in the brain may represent the best current preventive therapy for dementia."

## HOW DANGEROUS IS A FALL?

According to Steven Albert, PhD, professor in the Department of Behavioral and Community Health Sciences at GSPH, "Falls are the leading cause of death from injury among older adults, and yet we know little about how prevention programs work in the real world." With a \$1.5 million grant from the CDC, Albert is directing the Preventing Falls study.

The Preventing Falls study is the major CDC study in the United States looking at ways to reduce this number-one cause of health decline among older individuals.

The two-year grant will compare an education-only program and an education-plus-exercise program. Based in Pennsylvania, it will enroll 1,050 seniors who are representative of an aging U.S. population. Through the programs, trained providers will identify people at risk for falling and make referrals for home safety assessments.

## WHAT CAN WE DO ABOUT ALZHEIMER'S?

GSPH is a leader in studies related to the prevention, cause, and diagnosis of Alzheimer's disease. With the goal of developing therapeutic and preventive measures, geneticists at GSPH are working to identify genes that may trigger late-onset Alzheimer's disease and reveal the underlying molecular causes.

GSPH also educates caregivers and the scientific community about the latest findings regarding Alzheimer's disease through the Jay L. Foster Memorial Lecture Series.



**HIV/AIDS IS A GLOBAL ISSUE.  
HOW CAN WE DO MORE TO PREVENT  
THE SPREAD OF THIS DISEASE?**

# HIV/AIDS

Since the discovery of HIV/AIDS in the 1980s, GSPH has been at the forefront of the fight against this infectious disease. Today, thanks to more reliable tests, education, effective treatments, and vaccine trials, HIV/AIDS has transformed into a treatable, if not curable, medical condition. However, the battle is far from over. Around the globe, HIV/AIDS has grown to affect many demographics, most predominantly heterosexual women. Our scientists are working around the world on more effective ways to prevent the spread of HIV/AIDS through awareness, education, microbicides, and behavioral changes. At the same time, our focus on HIV/AIDS has led GSPH to become a leader in lesbian, gay, bisexual, and transgender (LGBT) health studies. With the most innovative LGBT health studies in the United States, GSPH is leading the way in training health care professionals, impacting U.S. health policy, and conducting world-class research to study and improve the health and lives of members of the LGBT community.



*From the beginning, GSPH's expertise in virology and immune deficiency has made us a front-runner in AIDS investigations, including the largest and most extensive study of HIV and AIDS in the United States, leading to improved care of AIDS patients and progress toward prevention and treatment.*

## HOW HAS RESEARCH MADE A DIFFERENCE IN THE LIVES OF GAY MEN?

In 1983, GSPH initiated the Pitt Men's Study. Established by Charles Rinaldo, PhD, now professor and chair of the Department of Infectious Diseases and Microbiology (IDM), the Pitt Men's Study joined with three other universities to form the NIH-funded Multicenter AIDS Cohort Study (MACS), a united effort to determine the genesis and natural history of this new and deadly threat. Recognizing the importance of building trust with LGBT individuals, Anthony Silvestre, coinvestigator of the study and professor of IDM, established the first HIV Community Advisory Board in the nation in 1984. The board continues to meet and has taken leadership in supporting research and health services throughout the Pittsburgh region. A lodestar of HIV research, MACS has supported work that has led to more than 1,000 scientific publications, including the hallmark studies describing the relationship between anal intercourse and HIV transmission, and that the amount of HIV in blood is a critical predictor of risk for development of AIDS.

Today, MACS and the Pitt Men's Study are still at work, focusing on the long-term effectiveness of particular combinations of HIV drugs and the effects of HIV treatment related to race, aging, and ethnicity. With an original group of men still coming in for semiannual visits, GSPH now also has a large database on healthy gay men, which is being analyzed to understand other health issues faced by gay men, such as smoking-related disease, stress, and anal cancer.

## WHO IS HAVING AN EFFECT ON ONE OF THE MOST FAR-REACHING EPIDEMICS OF OUR TIME?

Ron Stall, PhD, MPH, professor and chair of the Department of Behavioral and Community Health Sciences (BCHS), began work on the AIDS epidemic in 1984 with the AIDS Behavioral Research Project, one of the first longitudinal studies of AIDS risk-taking behaviors in the world.

Since then, he has published more than 140 papers on topics including, among others, the interconnections between non-intravenous substance use and AIDS, the epidemiology of AIDS and AIDS risk among older Americans, the first "national" household probability sample of gay men, the first rigorously evaluated AIDS intervention project that yielded evidence of effectiveness for heterosexual adolescent female students, the first population-based study of tobacco use among gay men, and the first study to use empirical data to demonstrate the importance of maintenance of safe sex behaviors. Stall also published the first paper to use empirical data to demonstrate the effects of intersecting epidemics in promoting high-risk sex and HIV infection among gay men.

## HOW CAN WE DELIVER BETTER CARE TO INDIVIDUALS WITH HIV/AIDS?

"Disparities in health care, the stigma of HIV/AIDS, and the need for more timely testing and treatment are still barriers to delivering and improving HIV care," said Linda Frank, PhD, MSN, an associate professor of IDM. Frank is a principal investigator at the Pennsylvania/MidAtlantic AIDS Education and Training Center (AETC), headquartered at GSPH since 1988. The center is a national leader in supporting the training and education of health professionals who care for the thousands of people infected annually with HIV in the United States. A recent grant will allow scientists like Frank to continue to provide critical training to health professionals to reduce barriers to HIV care, increase HIV testing, integrate HIV prevention into primary care, and improve linkages to HIV treatment and expert clinical management of HIV and other comorbid conditions, such as hepatitis, sexually transmitted infections, tuberculosis, and substance use.





## WHAT CAN WE DO TO STOP AIDS FROM SPREADING?

“The HIV/AIDS epidemic remains uncontrolled in many regions in the world,” says Phalguni Gupta, PhD, professor and assistant chair of IDM. “In developing countries, HIV is most often spread through unprotected heterosexual intercourse, creating a great need for new ways to prevent transmission beyond the condom, whose use is often at the discretion of men.”

Gupta is the principal investigator in a five-year NIH grant to develop microbicides against HIV transmission. Topically applied microbicides are designed to prevent or reduce the sexual transmission of HIV. While the microbicide must be safe and effective, it must also be easy to use and acceptable to both sexual partners. “If proven effective, microbicides could have particular impact among women in developing countries, giving them the power to prevent sexually transmitted diseases,” says Gupta.

## HOW DO WE IDENTIFY THE MOST PRESSING HEALTH NEEDS OF LGBT INDIVIDUALS?

The Summer Institute, created and hosted for the past three years by GSPH, brings together LGBT health experts from leading educational institutions and community organizations from across the country. The institute offers a unique forum for discussions, brainstorming, exchanging ideas, and networking. Experts are invited to discuss their work and the work of others in the field, building a consensus about what is currently known, identifying future research issues, and producing a white paper that spawns research in the most critical areas.

## WHY DO WOMEN WITH HIV EXPERIENCE MORE VIOLENCE FROM THEIR PARTNERS?

“Many women, both HIV positive and negative, are abused by their partners, and we need to understand more about those relationships and to develop effective prevention and intervention programs,” says Jessica Griffin Burke, PhD, MHS. In 1998, she began collaborating on Project WAVE (Women, AIDS, and the Violence Epidemic), one of the first studies on the inter-related epidemics of HIV, intimate partner violence, and substance use among women. Since then, Burke and her colleagues have developed and pilot-tested a stage-based intervention for intimate partner violence among HIV-positive women.



Jessica Griffin Burke, PhD, MHS

## HOW CAN WE INCREASE HIV PREVENTION AROUND THE GLOBE?

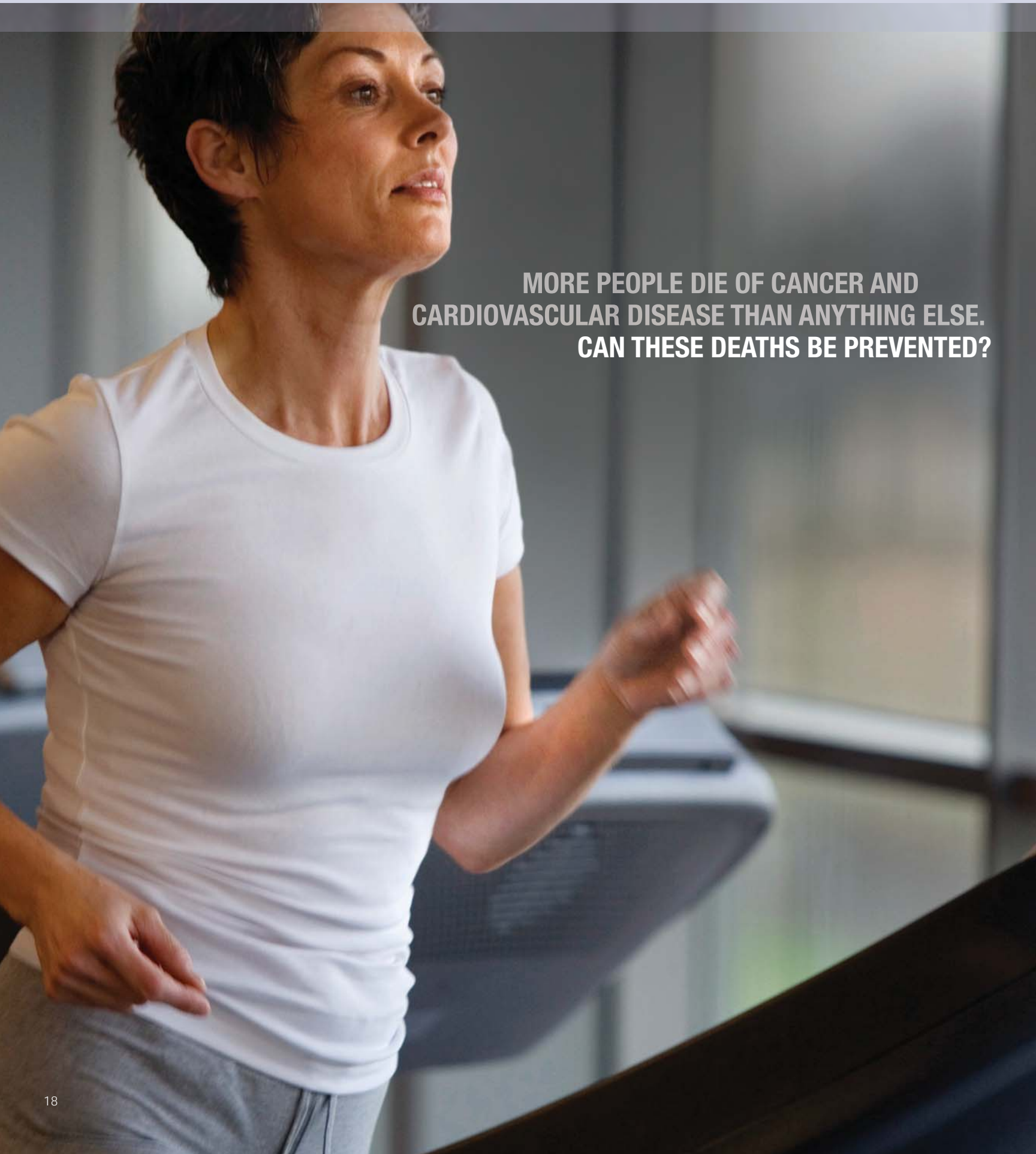
GSPH’s HIV/AIDS efforts extend beyond the United States to projects in several countries. For more than a decade in Thailand and Southeast Asia, Thomas Guadamuz, PhD, MHS, assistant professor of BCHS, has been conducting research to understand and respond to rising HIV epidemics among high-risk men, including piloting behavioral change interventions throughout the country.

In China, Changyi Wei, DrPH, MA, visiting assistant professor of BCHS, is focusing on the epidemiology and prevention of HIV/AIDS among men who have sex with men (MSM), particularly among Asian/Pacific Islander MSM in the United States and Asia. In India and China, Phalguni Gupta has been involved in international studies of HIV-1 infection on a genetic level.



- GSPH has one of the largest bodies of LGBT health research. *The Pitt Men’s Study is the longest-running study at NIH, and one of the longest studies of HIV/AIDS, focusing on how the infection may be contracted, treated, and cured.*
- GSPH has an unequaled group of researchers in LGBT health. *With more than 24 scientists in a vast array of disciplines, GSPH is working to:*
  - Mitigate the effects of HIV on gay men as they age
  - Improve the mental health of LGBT teenagers
  - Prevent physical, sexual, and emotional abuse of LGBT youth
  - Develop interventions to reduce stress and improve nutrition among lesbian women
  - Identify and reduce health risks related to long-term hormone treatments
- GSPH is the only school in the country with a Graduate Certificate in LGBT Individuals’ Health and Wellness.
- GSPH is the first research institution to create a Center for Research on Health and Sexual Orientation.

# CANCER/CARDIOVASCULAR

A woman with short dark hair, wearing a white t-shirt and grey athletic pants, is running on a treadmill in a gym. She is looking off to the side with a focused expression. The background shows other treadmills and large windows.

**MORE PEOPLE DIE OF CANCER AND  
CARDIOVASCULAR DISEASE THAN ANYTHING ELSE.  
CAN THESE DEATHS BE PREVENTED?**

# CANCER/CARDIOVASCULAR

Scientists at GSPH are looking at the many factors that affect how likely someone is to get cancer or cardiovascular disease. By studying everything from genetics, lifestyle, age, and gender to social and economic conditions and the environment, we are pinpointing causes and developing new ways to halt these life-threatening diseases.

## HOW CAN WE USE GENES IN THE BATTLE AGAINST CANCER?

As a leader in human genetics research, GSPH is growing the world's understanding of the role of genetics in treating and preventing diseases like cancer. Recently, GSPH scientists discovered tumor cells with genetic defects making them resistant to radiation therapy and chemotherapy. In the lab, they were able to reverse this resistance to therapy using a new drug. The benefit of this is twofold. Now scientists everywhere can identify patients whose tumors will be resistant to standard therapy, and doctors can add the new targeted therapy to effectively kill the tumor cells. These findings have the potential to help patients with oral, breast, ovarian, prostate, and brain cancer.

## WHAT ARE THE BARRIERS TO STUDYING CANCER IN THE ELDERLY?

To learn more about cancer in the elderly, scientists need to recruit them for clinical trials. In the past, this has proved difficult to do. Searching for effective recruitment strategies, GSPH scientists are talking to elderly cancer patients to understand their range of knowledge, attitudes, beliefs, and motivations regarding cancer treatment and their participation in medical research. They are also talking to caregivers in regard to participation of their loved ones in cancer clinical trials.

## DO WE NEED DIFFERENT STRATEGIES TO ENCOURAGE CANCER SCREENING IN MINORITIES?

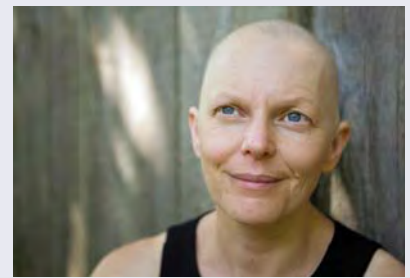
To reduce health disparities, GSPH scientists at the Center for Minority Health are developing creative programs like Health Advocates in Reach. This group trains barbers to deliver information about prostate cancer to African American men in a setting that's comfortable and familiar. Prostate cancer is the second-leading cause of death in African American men, higher than any other racial or ethnic group. With the assistance of oncology nurses, public health professionals, and prostate cancer survivors, the barbers have helped men get information, and, as needed, encouraged them to get prostate cancer screenings.

## WHAT ARE THE BEST WAYS TO TREAT CANCER?

Since 1974, the GSPH Biostatistics Department has directed the National Surgical Adjuvant Breast and Bowel Cancer Project (NSABP). With more than 110,000 people enrolled in treatment and prevention trials, this project has led to groundbreaking findings on breast-conserving surgery and the benefits of adjuvant chemotherapy and hormonal therapy. It has also focused on the use of drugs like tamoxifen and raloxifene to prevent breast cancer, as well as the benefits of genetically targeted breast cancer therapies like herceptin.

## DOES OUR ENVIRONMENT AFFECT OUR CHANCES OF GETTING CARDIOVASCULAR DISEASE?

According to GSPH studies, the environmental contaminant of arsenic is detrimental to cardiovascular health as well as brain development. It is also associated with cancers and other chronic diseases. A national leader in demonstrating the negative effects of arsenic, GSPH has conducted studies that could lead to strategies that would modify people's susceptibility to this dangerous contaminant and, thereby, help prevent arsenic-related cardiovascular disease.



*Since 1974, the GSPH Biostatistics Department has directed the National Surgical Adjuvant Breast and Bowel Cancer Project (NSABP). With more than 110,000 people enrolled in treatment and prevention trials, this project has led to groundbreaking findings on breast-conserving surgery and the benefits of adjuvant chemotherapy and hormonal therapy.*

# DIABETES

*Diabetes can be a debilitating, deadly disease. What more can we do to treat it or, better yet, prevent it? Nearly 25 million Americans have diabetes today. Millions more are undiagnosed or at high risk. GSPH is at the forefront of research to find out more about diabetes, including new and better ways to treat and prevent it.*



Trevor Orchard, MD

## **CAN WE HELP PEOPLE WITH DIABETES LIVE LONGER?**

In the 1950s, people who were born with diabetes had a life expectancy of just 53.4 years. By the 1980s, due to improved diabetes care, that life expectancy had jumped to 68.8 years—just 3.6 years lower than the general population. Those were the results of a landmark study by Trevor Orchard, MD, professor of epidemiology, medicine, and pediatrics at GSPH. Orchard found that between 1965 and 1980, life expectancy for people with type 1 diabetes had improved by 15 years. In the same time period, life expectancy for the general population only improved by one year.

“What we’re seeing now is incredibly encouraging, but it’s not necessarily the full story yet,” says Orchard, who noted that improvements in diabetes care should continue to lower mortality rates in people with type 1 diabetes. “We’ll see further improvements in life expectancy compared to the general population,” he remarks. Orchard’s work has added greatly to our understanding of the factors that lead to the complications of type 1 diabetes and how to avoid them.

## **HOW CAN WE HELP PEOPLE WHO HAVE BOTH DIABETES AND HEART DISEASE?**

Many people who develop type 2 diabetes also develop heart disease, often due to obesity. In fact, at least 65 percent of people with diabetes die of heart disease or stroke. A revealing study by GSPH called BARI 2D was the first major trial to focus exclusively on patients with both diseases.

Working with 2,368 participants at 49 sites in six countries, BARI 2D compared various treatment strategies to prevent early death, heart attack, and stroke. These strategies included intensive medical therapy to control cholesterol and blood pressure, counseling for smoking cessation and weight loss, bypass surgery, and angioplasty with stents. The study also looked at two diabetes treatments to determine which provides better outcomes—one that increases the amount of insulin or one that makes the insulin work better.

## **WHAT MORE CAN WE DO TO PREVENT THIS DISEASE?**

Diabetes is on the rise in our country, and to help curb the disease, GSPH developed the Diabetes Prevention Support Center. The center helps bring proven diabetes prevention courses to primary-care practices, worksites, community settings, and the military. These highly successful programs have been shown to prevent and delay type 2 diabetes by 58 percent over three years.

## **HOW CAN WE PREVENT DIABETES IN BLACK FAMILIES?**

The 2002 Behavioral Risk Factor Surveillance Survey, conducted for Pennsylvania with the help of GSPH, identified racial disparities in risk factors for diabetes and heart disease. The survey found that higher percentages of African American adults and children were overweight—a known risk factor for developing diabetes. In 2004, GSPH Center for Minority Health launched the Healthy Black Family Project (HBFP) to prevent diabetes and hypertension in Pittsburgh’s African American neighborhoods. Focusing on lifestyle behavioral changes shown to prevent diabetes, HBFP recruits black families to participate in a multiyear effort to improve diet, increase exercise, and reduce stress.

### **HOW CAN WE HELP CHILDREN WITH DIABETES?**

GSPH participates in the Juvenile Onset Diabetes Project at Children’s Hospital of Pittsburgh of UPMC. This 30-plus-year project is providing a better understanding of the risk factors contributing to the increase in childhood diabetes.

Legislators and public health officials can use the findings to make better choices in developing public health policies and practices to protect those who are most vulnerable. Knowing what approaches might show the most promise can help to better allocate scarce research dollars.

# PUBLIC HEALTH RESEARCH

A photograph of two scientists in a laboratory. A woman in the foreground, wearing a white lab coat and safety goggles, is seated at a desk and typing on a keyboard. A man in the background, also in a white lab coat and safety goggles, is holding a glass flask containing a red liquid. The scene is brightly lit, suggesting a window in the background.

THE HEALTH OF THE PUBLIC CAN BE  
THREATENED AT ANY TIME.  
WHAT CAN WE DO TO PREPARE  
FOR THE WORST?

# PUBLIC HEALTH RESEARCH

When communities, countries, and governments want to know the “what ifs” in case of a disaster, they often rely on the powerful expertise available at GSPH. With unique and unmatched computing capabilities, our faculty can devise different scenarios and design effective public health strategies to deal with everything from epidemics to homeland defense to natural disasters. Armed with one of the largest data centers in the world, we’re also helping the health care community make better decisions for patients every day.



## HOW CAN DOCTORS CHOOSE WHICH TREATMENT WILL WORK BETTER FOR A PATIENT?

Sometimes physicians are faced with choosing from multiple drugs or therapies to treat a patient. How do they decide which one will work best? To take out the guesswork, researchers at our Epidemiology Data Center (EDC) are advocating a bold change: moving away from traditional clinical trials to comparative effectiveness research (CER).

While standard clinical trials focus on the efficacy of a particular drug or therapy, CER compares the effectiveness of two or more known quantities. This gives doctors the evidence they need to decide which treatment will work better for a given patient.

Sally Morton, professor in the Department of Biostatistics, talks about the importance of shifting to CER. “There are studies that show that many medical decisions that are made in clinical practice today are actually not based on evidence. One study estimates that up to 50 percent of decisions are not based on evidence.” Using CER has the potential to reduce health care costs and provide better patient care.

Morton summarizes, “We’re really rethinking the paradigm of decision-making. We can’t do this research without changing the way we do things. The big question is, How can we best determine what is the appropriate evidence for the decisions we’re trying to make?”

*Our Epidemiology  
Data Center is one of  
the largest health data  
centers in the world.  
Researchers from all  
over the globe access  
this data regularly,  
advancing public  
health worldwide.*

## HOW DO YOU DEAL WITH AN INFECTIOUS DISEASE THAT THREATENS AN ENTIRE POPULATION?

You consult with the experts at our Public Health Dynamics Laboratory (PHDL). Founded in 2009, this lab is on the leading edge of advancing knowledge about how to best address local and worldwide epidemics.

With unmatched expertise and powerful computational modeling, PHDL devises outbreak scenarios and designs effective public health strategies to fight the spread of infectious disease.

For instance, when the H1N1 influenza pandemic threatened our population in 2009, the U.S. Department of Health and Human Services called on us to help. Bruce Lee, MD, MBA, assistant professor of medicine, epidemiology, and bioinformatics worked with a team at PHDL to develop and run citywide, regional, and national computer simulations to forecast and better understand the effects of various response scenarios.

Lee has also worked with the CDC, World Health Organization, Department of Homeland Security, and public health officials in Africa and Asia to develop computer models to plan and implement vaccine distribution and administration strategies.

# PUBLIC HEALTH RESEARCH

## ABOUT THE EPIDEMIOLOGY DATA CENTER

Since 1980, our Epidemiology Data Center (EDC) has used the combined tools of biology and statistics to explore and answer complex health questions. Collaborating with clinical researchers, our faculty works to design, conduct, and analyze clinical trials and epidemiologic studies.

Founded by Katherine M. Detre, MD, DrPH, and under the codirection of Sheryl F. Kelsey, PhD, Steven H. Belle, PhD, and Stephen R. Wisniewski, PhD, EDC is currently researching 30 projects on everything from aging, cardiovascular disease, and mental health to women's health, infectious diseases, diabetes, and more.

We're contributing to the development of new knowledge by developing and refining data collection, data management, computing, and statistical methods, with the ultimate goal of advancing treatment and preventing disease.

## ABOUT THE PUBLIC HEALTH DYNAMICS LABORATORY

With unmatched expertise and computer modeling capabilities, the Public Health Dynamics Laboratory (PHDL) at GSPH has the power to tackle multivariable investigations such as predicting how well control strategies like vaccines or social distancing will work to control infectious disease outbreaks.

By creating these virtual labs, our researchers simulate population movements and the effects of interventions such as school and business closings, the availability of treatments and vaccines, and the influence of individual health care decisions.

Led by John Grefenstette, PhD, professor of biostatistics, PHDL shares its resources and techniques to jumpstart projects in epidemiology, behavioral health, community health, virology, public health preparedness, and health policy.

For instance, PHDL helps poor and developing countries model vaccine delivery to give the neediest people better access. Our modeling is also used to determine the effectiveness of intervention strategies for behavioral health issues such as smoking, obesity, and drug use. And our expertise has been used in everything from emergency response planning for natural disasters and homeland defense to testing the effects of public health awareness campaigns.

This high-tech approach to global health offers the world a unique and effective way to make better decisions when faced with population-threatening diseases, disasters, and situations.



*"GSPH takes an active role as it studies and helps the world around us," says Donald Burke, MD, GSPH dean. "We conduct research to address real-world questions and help decision makers solve tough public health problems."*

# PUBLIC POLICY

**PUBLIC POLICY CAN IMPROVE HEALTH OUTCOMES.  
HOW ARE WE LEADING THE WAY TO IMPROVE  
AND PROTECT LIVES?**



Public policy shapes how societies deal with a wide range of health and safety issues, including everything from prescription drug coverage, seat belt usage, obesity, and organ transplants to disease outbreaks, bioterrorism, natural disasters, and more. At GSPH, we're collaborating with business, government, and nonprofit organizations to boost our impact on public health policy and practice. We're speeding improvements and innovations in the management and delivery of public services at the local, state, and national levels.



## HOW CAN WE IMPROVE POLICIES AND DECISIONS THAT INFLUENCE HEALTH IN THE PITTSBURGH REGION?

In 1980, GSPH collaborated with the University of Pittsburgh School of Medicine and six Pittsburgh-based foundations to create the Healthy Policy Institute (HPI). Over the years, HPI has provided free, high-quality programs to inform public policy makers, and local health care executives and board members.

Recently, Everette James, JD, MBA, associate vice chancellor for health policy and planning at the University of Pittsburgh, became the director of HPI. As a former Pennsylvania secretary of health, James oversaw the regulation of all hospitals, nursing homes, and managed-care plans in Pennsylvania, as well as the implementation of sweeping state and federal health reforms. James' deep understanding of health policy and planning will strengthen and build upon HPI's existing relationships with health policy groups and governmental agencies.

## HOW DOES THE PRESCRIPTION DRUG PROGRAM, MEDICARE PART D, AFFECT OVERALL MEDICAL SPENDING BY SENIORS?

In a study examining the impact of Medicare Part D on overall medical spending, Yuting Zhang, PhD, assistant professor of health economics at GSPH, found that seniors who previously had limited or no drug coverage spent more on prescriptions and less on other medical care services, such as hospitalizations and visits to the doctor's office, after enrolling in Medicare Part D.

"The offset in spending by seniors with limited or no prior drug benefits could be due to improved adherence to medication, especially for those with chronic conditions," says Zhang. "Improved access to prescription drugs provided by Part D may enable this population to better control symptoms and cut down on visits to the physician's office or emergency room."

At the same time, the study found that Part D enrollees with relatively good prior prescription coverage spent more on prescriptions, as well as other medical services. Zhang noted that the lack of a similar spending offset in the good-coverage group could indicate an overuse of some medications and services by this population.

In the first study to evaluate how much the nation could save from a wide use of discounted generic medication programs available at retail pharmacies, Zhang found that if all eligible patients filled their prescriptions through a \$4 generic drug program, the savings to society could amount to nearly \$6 billion.

"Although just half of the potential users of the \$4 programs would have saved more than \$22 a year in out-of-pocket expenses, the societal savings are great," remarks Zhang. "This suggests the majority of savings comes from a small portion of individuals."

*"The offset in spending by seniors with limited or no prior drug benefits could be due to improved adherence to medication, especially for those with chronic conditions," says Zhang.*



Zhang and her colleagues examined a nationally representative sample of nearly 31,000 people and identified patients who could have saved money had they filled their medications through a discount generic drug program. “We are not promoting any specific pharmacy or any retail store’s discount generic medication program,” says Zhang. “However, if policy makers and clinicians direct patients to low-cost generic programs, patients and taxpayers could save tremendously.”

### **ARE THERE DISPARITIES IN HOW PATIENTS ARE CHOSEN TO RECEIVE LIVER TRANSPLANTS?**

In a University of Pittsburgh study led by Cindy L. Bryce, PhD, associate professor of health policy and management at GSPH, it was found that women, blacks, and patients with Medicare who are in end-stage liver disease are less likely to be referred and evaluated for liver transplantation.

“Ours is the first major study to look at whether everyone with liver-related conditions has a fair shot of being considered for transplantation, and points out that many patients are being excluded from this process,” remarks Bryce.

Following 144,507 patients hospitalized in Pennsylvania with liver-related conditions, the study sought to determine whether any potential barriers exist at the referral and listing steps in the transplantation process. Bryce and her colleagues found that patients were less likely to undergo evaluation, wait-listing, and eventual transplantation if they were women, black, or covered by Medicare.

“While our study was not designed to identify causes for these disparities, current practices for identifying and referring liver disease patients for transplantation should be made more transparent,” says Bryce. “Although we face a worsening gap in the supply and demand for organs for liver transplantation, race, gender, and insurance status should not be factors that preclude patients from being evaluated for transplantation.”

### **HOW SHOULD PUBLIC HEALTH SYSTEMS RESPOND TO EMERGENCIES?**

In any given emergency, there are multiple factors and scenarios for communities, schools, organizations, and governments to consider. At GSPH, with the establishment of Public Health Adaptive Systems Studies (PHASYS), we can study and improve how public health systems respond to disasters and/or emergencies.

One of nine Preparedness and Emergency Response Research Centers (PERRC) across the nation, PHASYS develops methods to evaluate emergency response plans and establish best practices during public health emergencies caused by the spread of infectious diseases, defective water and sewage systems, natural disasters, or intentional acts.

Overall, PHASYS conducts research and develops resources to enhance emergency preparedness, response, and recovery capabilities of the public health system. It operates on the idea that one of the keys to a successful and effective public health system is the ability to adapt from routine functioning during a disaster and/or emergency.

*At GSPH, with the establishment of Public Health Adaptive Systems Studies (PHASYS), we can study and improve how public health systems respond to disasters and/or emergencies.*



## HOW CAN SOCIETIES BE BETTER PREPARED TO FACE DISASTERS?

In the event of bioterrorism, infectious disease outbreaks, and other public health threats and emergencies, GSPH created the University of Pittsburgh Center for Public Health Preparedness (UPCPHP)—a leading-edge way to prepare and train public health professionals, leaders, teachers, health care workers, first and second responders, and townspeople.

UPCPHP's Web portal provides frontline workers with access to national and local preparedness and response information and public health competency-based training resources.

## HOW EFFECTIVE ARE HELMET LAWS IN PROTECTING MOTORCYCLISTS?

In 2003, Pennsylvania's universal helmet law was repealed. After analyzing data from the state's Department of Health and Department of Transportation, scientists at GSPH determined that the repeal had a severe impact.

"Helmet use has gone down, while head injuries from motorcycle crashes have gone up," says Kristen Mertz, MD, MPH, assistant professor, Department of Epidemiology. "The relatively large increase in head injury deaths and hospitalizations after the repeal suggests that the law was protecting riders."

These findings signify that stronger helmet laws would not only do more to protect riders, but also lower the costs associated with caring for their head injuries. Until the law is reinstated, the study authors concluded that Pennsylvania needs effective strategies to increase the voluntary use of helmets.

## WHAT CAN WE DO TO ENCOURAGE COMMUNITIES TO WALK?

Walking helps control weight, improve mood, reduce stress, strengthen bones and muscles, delay the development of Alzheimer's disease, and reduce the risk of diabetes, heart disease, and stroke. For all these reasons, the GSPH Center for Public Health Practice partnered with the Pennsylvania Department of Health to create an innovative program called WalkWorks.

Designed for people of all ages and abilities, WalkWorks helps local communities identify and promote safe walking routes, establish guided walking groups, promote local policies to increase access to safe walking routes, and help schools develop walk-to-school programs.



"Ultimately, the goal is to promote change in local policies to encourage more people to walk," says WalkWorks advisor George Huber, JD, associate dean for public policy, GSPH. "We are building momentum and looking at policies at the local level that can be modified to support pedestrian transportation."

## TO IMPROVE PUBLIC HEALTH POLICY, GSPH IS:

- Positioning ourselves as the "go-to" organization for Pennsylvania lawmakers by advising them on various public health issues
- Contributing to the shaping of laws and public policy directing public health, hospital and elder care practices, emergency preparedness, ethics, and care delivery
- Generating crucial data through lifestyle studies and occupational health studies
- Reporting through national media outlets about research on diabetes, cardiovascular disease, breast and other cancers, behaviors affecting health such as seat belt usage and child abuse, Medicare/Medicaid policies, human genetics, and more

**HOW DO WE ATTRACT  
THE BEST AND THE BRIGHTEST?**



**UNIVERSITY OF PITTSBURGH**  
FOUNDED 1787

GSPH is a top-ranked, world-renowned institution, recognized for our contributions to public health practices and medical care in Pittsburgh and around the world. With a distinguished faculty, innovative projects, and more than 5,000 alumni, GSPH is preparing the next generation of public health leaders and constantly addressing the world's most critical public health issues. Admissions are competitive, and some of the nation's best students vie for our 650 slots across seven different departments.

## WHAT IS PUBLIC HEALTH?

Public health is aimed at protecting and improving the health of a population through preventive medicine, health education, the control of communicable diseases, the application of sanitary measures, and the monitoring of environmental hazards. The population may be a handful of people or the inhabitants of several continents. Some common examples of public health include the promotion of hand washing and breastfeeding, the delivery of vaccinations, and the distribution of condoms to control the spread of sexually transmitted diseases. In public health, multidisciplinary teams work together to prevent disease, prolong life, and improve quality of life by promoting health through organized efforts and informed choices of societies, public and private organizations, communities, and individuals.

## BEHAVIORAL AND COMMUNITY HEALTH SCIENCES

Behavioral and Community Health Sciences prepares students to develop programs that prevent illness and promote health by applying theories, concepts, and methods developed within various social and behavioral science disciplines. This department collaborates extensively with other departments and centers in GSPH and throughout the University to carry out the teaching, research, and service mission. Among its many accomplishments is the completion of the first Behavioral Risk Factor Surveillance Survey for the Allegheny County Health Department.

### Degrees, Areas of Concentration:

- Master in Public Health (MPH)
- Joint Degrees in Social Work
  - MPH/MSW
  - MPH/PhD Social Work
- Joint Degree in Anthropology
  - MPH/PhD Anthropology
- Joint Degrees with International Affairs
  - MPH/MID
  - MPH/MPA
- Peace Corps Master's International Track
- Doctoral Program

### Certificates:

- Community-Based Participatory Research and Practice
- Evaluation of Public Health Promotion and Health Education Programs
- Minority Health and Health Disparities
- Public Health Preparedness and Disaster Response
- Lesbian, Gay, Bisexual, and Transgender Individuals' Health and Wellness

### Concentration:

- Public Health and Aging

Recent graduates from Behavioral and Community Health Sciences hold positions such as senior health care policy analyst, health educator in an office for health promotion and education, and deputy director of the Center for HIV/AIDS Prevention.



## BIostatISTICS

Students and faculty in the Department of Biostatistics study the theory and methodology for collecting, analyzing, and interpreting data relevant to public health and medicine to determine health risks and effective interventions. For example, GSPH biostatisticians are advocating a greater national emphasis on nontraditional clinical trials that focus on comparative effectiveness research.

Degrees, Areas of Concentration:  
MS, MPH, PhD, DrPH

*The Department of Biostatistics was one of the original departments of public health when it was founded in 1949. Today, biostatistics students come from a wide range of academic backgrounds and, upon graduation, work to identify potential health risks in working and living environments for industry, government, insurance companies, and medical entities.*

## ENVIRONMENTAL AND OCCUPATIONAL HEALTH

Students in Environmental and Occupational Health study the effects of potential toxic biological, chemical, and physical agents in animal and cell culture model systems to provide insight into human health risks, including defining sensitive populations. In addition, students can participate in risk and policy studies on food-associated toxins and perform original work in exposure assessment and environmental epidemiology. Training activities include identifying such agents that affect health, studying the long-term effects of environmental and occupational health risks, identifying the molecular mechanisms of actions of toxic agents, and identifying genetic contributions to respiratory and cardiovascular disease, neurodegenerative disease, aging, and carcinogenesis.

### Degrees, Areas of Concentration:

- Master of Public Health in Environmental and Occupational Health with either a general focus or a concentration in Environmental Health Risk Assessment
- Master of Science in Environmental Health Sciences
- Doctor of Public Health
- Doctor of Philosophy in Environmental and Occupational Health

### Certificates:

- Environmental Health Risk Assessment
- Global Health
- Public Health Preparedness and Disaster Response

*GSPH's Center for Healthy Environments and Communities (CHEC) takes a community-based approach to analyze the social, economic, political, policy, behavioral, and geographical variables associated with environmental health issues, as well as the traditional physical-chemical aspects of local environmental health problems.*

## EPIDEMIOLOGY

Epidemiologists study patterns of disease in populations, determine the key factors that can increase or decrease the risk of disease, and evaluate interventions to prevent disease within populations. Students in Epidemiology gain in-depth knowledge of disease etiology and natural history and are trained to apply analytic thinking and quantitative methods to create new knowledge. GSPH is among the first American schools of public health to offer concentrations of study on physical activity, women's health, and aging.

### Degrees, Areas of Concentration:

- Master of Public Health
- Master of Science
- Doctor of Philosophy
- Doctor of Public Health
- MD/PhD offered jointly through School of Medicine

*Epidemiology faculty receive approximately \$25 million to \$40 million in direct research funds each year to produce studies leading, for example, to the identification of the dangers of Hormone Replacement Therapy, the comparative benefits of angioplasty versus medication for the relief of blocked arteries, and the long-term outcomes of bariatric surgery. All of this leads to better-informed decisions and ultimately to better health and health outcomes.*

## HEALTH POLICY MANAGEMENT

Health Policy and Management faculty prepare students for entry-level professional and managerial positions in health care systems and other organizations that play a major role in the prevention and treatment of illness and disease. This department also teaches students to develop and advocate for public policies to achieve cost-effective delivery of health care services.

Graduates from GSPH's Health Policy and Management are leading major health care systems across the United States. This network of professionals provides each student with a high-quality internship experience, which distinguishes our recent graduates in landing highly sought employment.

### Degrees, Areas of Concentration:

- Master of Health Administration
- Master of Public Health in Health Policy and Management
- Joint Degree in Health Policy and Law (JD/MPH)
- PhD in Health Services Research and Policy

*Health Policy and Management is attracting the top graduate students with a faculty that is fully engaged in research, teaching, professional development, and service in health policy and health care/public health management. Faculty provide the textbook and hands-on experience to help students establish and grow successful careers.*



## HUMAN GENETICS

The Department of Human Genetics emphasizes the study of genetic mechanisms related to the transition from normal to disease states and studies how genes and the environment interact to affect the distribution of health and disease in human populations. Dedicated to genetics research, teaching, and service, the department embraces three major research missions: developing and using genetic methods to investigate the causes and treatment of hereditary and acquired human illness; understanding and exploring the impact of genetics on public health, education, and disease prevention; and appreciating the role of genetic diversity within human populations.

### Degrees, Areas of Concentration:

- Master of Science in Human Genetics
- Master of Science in Genetic Counseling (Web site)
- Master of Science in Genetic Counseling (Handbook)
- Master of Public Health in Public Health Genetics
- PhD in Human Genetics

*Four out of seven of the genes implicated in lymphedema have been identified by the Department of Human Genetics at GSPH.*

## INFECTIOUS DISEASES AND MICROBIOLOGY

Infectious Diseases and Microbiology conducts research, teaching, and service activities that promote the control of infectious diseases in the human population. To accomplish this mission, the department offers research programs that focus on understanding the mechanisms of pathogenesis of microbial infections at the cellular and molecular level as they relate to developing methods for disease prevention and treatment. Infectious Diseases and Microbiology also offers integrated teaching programs devoted to the education and training of graduate students in various molecular, immunologic, epidemiologic, and biologic aspects of microbial pathogenesis, as well as infectious disease control and prevention. In addition to a major focus on HIV/AIDS, Infectious Diseases and Microbiology scientists are also studying herpes virus infections, hepatitis C virus, malaria, tuberculosis, and host genetics.

### Degrees, Areas of Concentration:

- Master of Public Health
- Master of Public Health, Bioscience of Infectious Diseases (BID) concentration
- Master of Public Health, Community & Behavioral Intervention of Infectious Diseases (CBI) concentration
- Master of Public Health Peace Corps Master's International with the CBI concentration
- Master of Science
- Doctor of Philosophy

*The Department of Infectious Diseases and Microbiology has been at the forefront of HIV/AIDS research for more than 25 years and has contributed to efforts to limit the spread of HIV/AIDS and develop treatments to help those living with the virus.*

University of Pittsburgh  
Graduate School of Public Health  
Office of the Dean  
130 DeSoto Street  
Pittsburgh, PA 15261  
412-624-5200  
[publichealth.pitt.edu](http://publichealth.pitt.edu)

