

PITT
iiii PUBLIC HEALTH



**PREVENTING
HOMICIDE**

**HISTORIC
DATA GO
DIGITAL**

**REUNION
2014**

*and
more*

“Collecting all this data is one thing, but making the data computable is where the big payoff should be.”

Irene Eckstrand

Program Director and Science Officer,
Models of Infectious Disease Agent Study (MIDAS)
Read the full story on page 18.

Pitt Public Health Magazine

Spring/Summer 2014

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Our Research in Big Data is Getting Noticed



Pitt Public Health got a shout out from Kathleen Sebelius, then U.S. secretary of health and human services, in her remarks to Aspen Institute's Care Innovation Summit 2014. A week later, the prestigious journal *Nature* featured our work in a special fold-out section on vaccines. Both referred to our latest adventure in Big Data: Project Tycho, a searchable digital compendium of 88 million records of infectious diseases in the United States since the very beginning of nationally notifiable disease reporting in the late 1800s.

When our paper on Project Tycho was published in the *New England Journal of Medicine* in November, *The New York Times* headlined one of its findings: that immunizations have prevented 100 million cases of serious infectious disease. That's a powerful statement, to be sure. But the underlying point is that our Big Data approach is working. There is valuable public health data out there, and when we commit to share our data freely and ask others to contribute theirs, as we have with Project Tycho, the possibilities are vast.

Computation made Project Tycho possible (as you'll learn in the story, page 18). But computational modeling also informs our analysis of crime prevention right here in Pittsburgh. We have compared block-by-block data on violent crimes with the effect of voluntary efforts by concerned local citizens. Spatial and temporal modeling shows that neighborhood watch programs do work but can simply drive crime elsewhere. That analysis complements our research on one of the chief causes of premature mortality in our region: high murder rates among young African American men (see our cover story, page 12). As we collect and analyze data, reviewing individual cases and discerning patterns, we aim to reduce both the effects and the causes of violent crime.

Other ongoing work—like our real-time epidemic modeling

project or our analysis of varying emergency preparedness laws across the country—employs Big Data to answer other complex questions. As the applications of computational modeling explode, our school is increasingly identified as a leader in the field. So it's energizing to think about what we might want to tackle next. To give just one example, national death certificate data are recorded but not widely accessible nor usable for long-term spatial temporal pattern analysis. We would like to be able to examine and understand 50-year trends in cancer deaths to see how Pittsburgh is doing compared to Cleveland and other peer regions. I'm a resolute believer in the value of data for evidence-based decision making and in "rescuing" precious historical data sets. When you have access to such long-term data sets, insights follow.

I'm also a proselytizer when it comes to making public health data accessible to the entire research community. We named our historical analysis of infectious disease after Tycho Brahe quite deliberately. It was access to Tycho's meticulous astronomical observations that allowed Johannes Kepler to derive the laws of planetary motion. Similarly, we are getting better at recognizing the long-term patterns, understanding their deep causes, and expressing the system in computational simulations. By sharing these data with the scientific community at large, we hope that future "Keplers of health" will use these data to derive life-saving insights.

As we learn to use these new Big Data tools to better identify public health needs, target resources, and evaluate programs, we'll become more effective in our mission to improve the public's health. ●

Donald S. Burke, dean

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In this issue we address the second major cause of premature mortality in our region: youth-on-youth violence, which affects a disproportionate number of African Americans. Previously, we featured infant mortality, and our next issue will examine premature mortality among seniors in our county.

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School News



Building on Our History

At the January 30 ribbon-cutting ceremony for the Pitt Public Health laboratory pavilion, it was a 60-year-old story from Arthur Levine, senior vice chancellor for Pitt's health sciences, that captivated the standing-room-only crowd of hundreds.

He recalled an experiment conducted by former faculty member C.C. Li, a noted population geneticist, to select the bricks used for building Parran Hall in the 1950s. Li had the contractors build several small walls around the construction site to help the builders decide which bricks to use.

"By the time the building was ready for the bricklayers, Li reasoned, the choice would be obvious: Those that didn't catch Pittsburgh's legendary soot and smoke would be the ones to use," Levine explained.

Those light grey bricks match nicely with the modern stone of the newly opened four-story, 58,000-square-foot laboratory pavilion. The building faces Fifth Avenue in Oakland and is joined to Parran Hall.

The pavilion's auditorium provides modern educational space for the

school's students and greater capabilities to host events and lectures by national and international leaders in the field. New labs house research in infectious diseases, human genetics, epidemiology, and environmental health—which explores health effects of air pollution that, 60 years after Li's experiment, persists in the Pittsburgh region.

"Our new lab space is much more open and conducive to collaborations," said Donald S. Burke, dean of Pitt Public Health. "Windows are abundant to draw in natural light, and each floor has a cozy and bright lounge area where casual conversations can lead to new research ideas."

Over the next four years, Pitt will complete the second phase of the project—renovation of Parran Hall and the conjoined Crabtree Hall, which was added in 1966, almost 10 years after Parran was completed. The renovation will give modernized meeting, office, and research space; "smart" classrooms; and updated heating, cooling, and electrical infrastructure. The renovations are striving to achieve Leadership in Energy and Environmental Design (LEED) certification. ●

YOU MAKE IT POSSIBLE

The renovations to Parran and Crabtree halls are only partially funded by the Commonwealth of Pennsylvania and the University. The remainder requires funding from individuals, corporations, and foundations. To make a gift of any size, contact Kristen de Paor at kwd128@pitt.edu or 412-624-5639.

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Visit www.publichealth.pitt.edu/building for more photos from the ribbon cutting, a time-lapse video of the construction of the laboratory pavilion, and images of our new space.



ONE BOOK, ONE COMMUNITY TURNS FIVE

Born in 2009 as an effort to draw the Pitt Public Health community together through a shared experience, One Book, One Community was launched by Dean Burke with the book *Smallpox: The Death of a Disease*. One Book turned five this year with the reading of *Salt Sugar Fat*. Events during this past academic year included the viewing of the films *A Place at the Table* and *King Corn*, a campus food day (promoting locally grown and sustainable foods), and more.

Here's a look back at the books we've read together:

- 2013-14** *Salt Sugar Fat: How the Food Giants Hooked Us* by Michael Moss
- 2012-13** *Silent Spring* by Rachel Carson
- 2011-12** *The Ghost Map* by Steven Johnson
- 2010-11** *An Enemy of the People* by Henrik Ibsen
- 2009-10** *Smallpox: The Death of a Disease* by D.A. Henderson



Visit our *One Book, One Community* page.

www.publichealth.pitt.edu/oboc



Salt Sugar Fat: How the Food Giants Hooked Us

Michael Moss, author of the bestseller *Salt Sugar Fat: How the Food Giants Hooked Us*, and Pulitzer Prize winning investigative journalist for *The New York Times*, visited campus in April to receive the 2014 Porter Prize. Moss spoke to a standing-room-only audience of more than 300.

This year's Porter Prize was co-hosted by the United Way of Allegheny County, which moderated a panel discussion following Moss' presentation, and was sponsored by the Highmark Foundation and the Jewish Healthcare Foundation.

The Porter Prize, named in honor of Milton and Adrienne Porter, is awarded in recognition of an individual's exceptional performance in health promotion and disease prevention. Milton Porter, past CEO of the LB Foster Company, was among the first industrialists in the nation to view the workplace as a site for wellness programs.

The prize was first awarded in 1985 to Anne Somers, a health economist and author. Past awardees include Fred Rogers, Senator John Heinz III, C. Everett Koop, Bill Cosby, Françoise Barré-Sinoussi, and more.

Salt Sugar Fat was also chosen for this year's One Book, One Community initiative. (See sidebar.) ●

Bookshelf

Methods for Community Public Health Research: Integrated and Engaged Approaches

Coedited by Jessica Burke, associate professor and associate chair of behavioral and community health sciences, and Steven Albert, professor and chair of behavioral and community health sciences, this textbook is written for multidisciplinary public health scholars. It suggests a new model for community public health research, one that integrates qualitative and quantitative methods, bridges the disciplines of community health and epidemiology, and stresses the effects of "place"—socioeconomic disadvantage, access to health care, quality of housing—as having great relevance for health outcomes. The book was published in 2014 by Spring Publishing Company and is available for purchase on Amazon.com.

Statistical Inference on Residual Life

Written by Jong-Hyeon Jeong, professor of biostatistics, this book reviews existing statistical methods to infer the residual life distribution. The review and comparison include existing inference methods for mean and median, or quantile, residual life analysis through medical data examples. Published by Springer-Verlag in 2014, the book is available on Amazon.com in hardcover and Kindle editions.



Environmental Health Law:

An Introduction

Cowritten by Bernard Goldstein, professor emeritus of environmental and occupational health and former dean of Pitt Public Health, and Russellyn Carruth, adjunct assistant professor of environmental and occupational health, this book is a resource for non-law students. It contains an overview of major U.S. environmental laws, the American legal system, and environmental policy. Published by Jossey-Bass in 2013, the book is available on Amazon.com and Barnes and Noble.

Biostatistics: A Computing Approach

Stewart Anderson, professor of biostatistics, examines how the emergence of high-speed computing and simulation have helped to further develop statistical and mathematical methods. Published in 2012 by Chapman and Hall/CRC Biostatistics Series, this book is available on Amazon.com to rent or buy.

On the Frontier of Change

Learn about research discoveries and innovations made by the faculty of the University of Pittsburgh Graduate School of Public Health in the school's new history book. A limited number of copies are available for purchase in the Pitt Bookstore.

Leadership Changes

MMPH Program Under New Direction

David Finegold has been named the new director of the Multidisciplinary Master of Public Health (MMPH) Program. Finegold brings a multidisciplinary background himself, with an accomplished career as an educator, clinician, and researcher, specializing his work in the areas of biochemical genetics and pediatric endocrinology. Finegold holds appointments as professor of human genetics, pediatrics, and medicine. He completed his MD at Pitt's School of Medicine and is board-certified in pediatrics, pediatric endocrinology, and biochemical genetics. He also leads a research team in the Department of Human Genetics that is investigating the genetic basis of lymphedema. Finegold is the author or coauthor of more than 80 articles published in leading medical and scientific journals. His memberships in professional and scientific societies have included the American Society of Human Genetics, Pediatric Endocrine Society, American Diabetes Association, American Federation for Medical Research, Endocrine Society, Society for Pediatric Research, American Society of Nephrology, and Society for Inherited Metabolic Disorders.

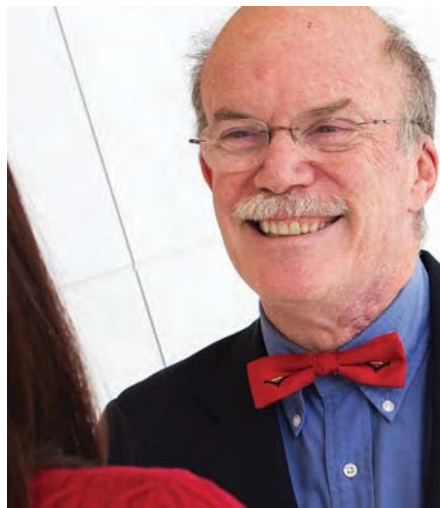
Finegold's vision for the program is to create formal partnerships with other health sciences degree programs, thereby reinforcing the mission of the multidisciplinary program. "My goal is to have formal collaborations with all of Pitt's schools of the health sciences within three to five years, and then to branch out to include health professional degrees at neighboring institutions," Finegold said. He also envisions close collaboration with the Allegheny County Health Department, where he hopes to engage MMPH students in pivotal public health projects important to Allegheny County.

Finegold succeeds Ron LaPorte, who has retired.

New Associate Dean for Faculty Affairs

Todd Reinhart has been named associate dean for faculty affairs, overseeing all faculty activities including appointments, promotions, and tenure. He will be taking over the reins from Robert Ferrell, who has retired.

Reinhart joined the faculty in 1997 and became professor of infectious diseases and microbiology (IDM) in 2009. He has authored or coauthored more than 80 publications, brought in more than \$10 million in extramural



support, served on more than 80 dissertation and thesis committees, and served as director of IDM graduate programs. He is currently the program director for an NIH T32 training grant, seeking to better understand how HIV-1 causes AIDS.

Ferrell was recruited to Pitt in 1984 to lead the Human Genetics Program. He established a human molecular genetics laboratory and expanded the program's strengths to include molecular and experimental genetics. He was promoted to the rank of professor in 1989. Ferrell served as chair of the Department of Human Genetics from 1994–95 and again as interim chair from 2001–04.

Among Ferrell's many achievements, he is credited for discovering, in collaboration with Dan Weeks, professor of human genetics, one of the major genes for age-related macular degeneration. His career included supervision of 39 master's theses and 20 doctoral dissertations. He refereed 599 publications, brought in nearly \$2 million in external funding in the last five years, presented invited papers at 49 symposia, and served on more than 50 school or University committees and 46 external committees, including as reviewer for the National Science Foundation's Systematic Biology Program, Anthropology Program, and Population Biology and Physiological Ecology Program since 1985.

Ferrell served Pitt Public Health as associate dean for academic affairs since November 2011. In this role, he instituted online distribution and review of committee documents. He retired on April 30, 2014. ●

Benter Foundation Gift

Thanks to a \$225,000 grant from the Benter Foundation, the International Modeling Fellows Initiative (IMFI), run out of the Public Health Dynamics Laboratory (PHDL), will expand to include new collaborations with South Africa and Myanmar. IMFI, which worked with its first team of fellows from Taiwan in 2011 and then with Brazil in 2012, identifies and trains local experts in epidemiology, information technology, and public policy in each participating country. The grant enables the teams to visit Pittsburgh to receive training in computational modeling software and methods, and for Pitt researchers to visit the collaborating countries for further consultation with the participating teams.

In addition to the recent grant, the Benter Foundation provided the initial support to establish the IMFI. The additional funding will also add a student internship component to the established programs. ●

Above Average

Pitt Public Health's CPH passing rate* of 85% is above the national average of 77%. ●

85%
PITT PUBLIC HEALTH

77%
NATIONAL AVERAGE

**CPH
PASS
RATE**

**Data for the February 2014 exam only*



Keep up with the latest school announcements and events. www.publichealth.pitt.edu

Research Highlights



Older Age at Onset of Type 1 Diabetes Associated with Lower Brain Connectivity Later in Life

Children and adolescents older than age 8 at the onset of type 1 diabetes had weaker brain connectivity when tested later in life relative to those who had earlier ages of diagnosis. The findings, presented at the American Psychosomatic Society's annual meeting, were made by analyzing the brain scans of 44 middle-age adults diagnosed with type 1 diabetes as children.

Half the study participants had onset of type 1 diabetes before age 8 and were matched with participants of the same sex and age who were diagnosed after age 8, but before age 17. All were enrolled in the Pittsburgh Epidemiology of Diabetes Complications Study, an ongoing investigation led by Pitt Public Health to document long-term complications of type 1 diabetes among patients at Children's Hospital of Pittsburgh of UPMC between 1950 and 1980.

Type 1 diabetes is usually diagnosed in children and young adults and happens when the body does not produce insulin, a hormone that is

needed to convert sugar into energy, which can lead to nerve and organ damage. With insulin therapy and other treatments, the condition can be controlled.

"The fact that adults with type 1 diabetes are now living longer than ever is certainly a success of treatment advancements, but it also presents an urgent public health problem," said Caterina Rosano, senior author of this work and associate professor of epidemiology. "A striking feature of these patients is that they develop brain abnormalities similar to those observed in much older adults without diabetes. We need to rapidly identify and prevent the characteristics of this accelerated brain aging in type 1 diabetics if we want to ensure the highest quality of life for these patients."

John Ryan, of the Pitt Department of Psychiatry, was lead author on this project. Additional researchers include Howard J. Aizenstein (Department of Psychiatry and School of Medicine) and Trevor J. Orchard (Department of Epidemiology). ●



Falls Reduced Among Pennsylvania Elderly

A low-cost program reduced falls in the elderly by 17 percent statewide, illustrating the value and effectiveness of using existing aging services, such as senior centers, in preventing falls. Pitt Public Health researchers followed nearly 2,000 older Pennsylvanians between 2010 and 2011 to determine the effectiveness of the state's Healthy Steps for Older Adults, a voluntary fall-prevention program. Results of the study, funded by the U.S. Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH), were published in the May issue of the *American Journal of Public Health*.

"There is a high prevalence of falls among people 65 and older that increases with age, as does the inability to get up after a fall," said lead author Steven Albert, chair of the Department of Behavioral and Community Health Sciences. "A challenge for public health officials is to decrease the risk of falls without encouraging reduced physical activity. Our research shows that the

Healthy Steps for Older Adults program is a successful tool to help reduce falls.”

Healthy Steps for Older Adults, run by the Pennsylvania Department of Aging, offers risk screening for falls and educational information regarding fall prevention. Participants who are identified as high risk are referred to primary care providers and encouraged to complete home safety assessments to reduce hazards in their homes that might put them at greater risk for falls. The program is designed to be administered by volunteers at senior centers to keep costs low.

Albert and his coauthors recruited 814 older adults at senior centers statewide to complete the program, and compared them to 1,019 counterparts who did not.

Of those who completed the program and were informed they were at high risk for falls, 21.5 percent followed up with physicians. More than three-quarters of program participants at high risk conducted home safety assessments, and a third went on to reduce home hazards.

“Though further analyses will be necessary to understand specifically how these actions translated into a 17 percent reduction in falls, it appears that referrals for physician care and home safety assessments, along with informing older adults of their high-risk status and heightening their sensitivity to situations involving a risk of falling, may lead to reductions in falls,” said Albert.

Additional researchers on this study are Anne B. Newman, Robert Boudreau, Tanushree Prasad, and Jennifer King, all of Pitt Public Health, and Chyongchiou J. Lin of the Pitt School of Medicine. ●



More Fish Oil May Benefit Heart Health

Eating fish in amounts comparable to those of people living in Japan seems to impart a protective factor that wards off heart disease, according to an international study funded by the National Institutes of Health (NIH) and led by Pitt Public Health.

Middle-aged men living in Japan had lower incidence of coronary artery calcification, a predictor of heart disease, than middle-aged White men living in the United States, likely due to the significantly higher consumption of omega-3 fatty acids found in fish. The findings were published in the March 6 issue of the journal *Heart*.

“Multiple studies have looked at the effect of fish oil on cardiovascular health, with mixed results,” said lead author Akira Sekikawa, associate professor of epidemiology. “Previous studies investigated substantially lower intake of omega-3 fatty acids than what people in Japan actually get through their diet. Our study seems to indicate

that the level of marine-derived omega-3 fatty acids consumed must be higher than previously thought to impart substantial protection.”

Researchers at Pitt partnered with scientists in Japan, Hawaii, and Philadelphia to follow nearly 300 men for five years, tracking multiple factors that affect cardiovascular health, as well as their rates of diabetes and high blood pressure.

After accounting for risk factors for heart disease, the U.S. men had three times the incidence of coronary artery calcification as the Japanese men. Meanwhile, the levels of marine-derived omega-3 fatty acid in the blood were more than 100 percent higher in the Japanese than in the White men.

“The vast difference in heart disease and levels of marine-derived omega-3 fatty acid are not due to genetic factors,” said Sekikawa. “When we look at Japanese Americans, we find that their levels of coronary artery calcification are actually higher than that of the rest of the U.S. population.”

The average dietary intake of fish by Japanese people living in Japan is nearly 100 grams each day, which the American Heart Association considers one and a half servings. The average



American eats about 7 to 13 grams of fish a day, or about one serving a week.

“I am not encouraging Americans to start consuming massive amounts of fish, which may have harmful contaminants, such as mercury, in their flesh,” said Sekikawa. “However, our findings indicate that it is worthwhile to take another look at the effect of marine-derived omega-3 fatty acids on heart disease, particularly when consumed at higher rates than previously investigated.”

Additional coauthors on this study are S. Lee, R. Evans, K. Sutton-Tyrrell, M. Bertolet, E. Barinas-Mitchell, and L. Kuller, Pitt Public Health; K. Miura, A. Fujiyoshi, T. Kadowaki, S. Kadowaki, T. Okamura, A. Kadota, H. Ueshima, and H. Maegawa, Shiga University of Medical Science in Japan; D. Edmundowicz, Temple University; K. Masaki and B. Wilcox, University of Hawaii; Y. Nakamura, Kyoto Women’s University; and T. Seto, Queen’s Hospital in Hawaii. ●



Low Cholesterol in Immune Cells Tied to Slow Progression of HIV

People infected with HIV whose immune cells have low cholesterol levels experience much slower disease progression, even without medication, according to Pitt Public Health research that could lead to new strategies to control infection.

Researchers found that low cholesterol in certain cells, which is likely an inherited trait, may inhibit the ability of the body to transmit the virus to other cells. The discovery, funded by the National Institutes of Health (NIH), is featured in *mBio*, the journal of the American Society for Microbiology.

When HIV enters the body, it is typically picked up by immune system dendritic cells that recognize foreign agents and transport the virus to lymph nodes where it is passed to other immune system cells, including T cells. HIV then uses T cells as its main site of replication. It is through this mechanism that levels of HIV increase and overwhelm the immune system, leading to AIDS. Prior to effective drug therapy, a person died within one to two years after the AIDS diagnosis.

“We’ve known for two decades that some people don’t have the dramatic loss in their T cells and progression to

AIDS that you’d expect without drug therapy,” said lead author and assistant professor Giovanna Rappocciolo. “Instead the disease is much slower to progress, and we believe low cholesterol in dendritic cells may be a reason.”

The discovery was made possible by using 30 years of data and biologic specimens collected through the Pitt Men’s Study, a confidential research study of the natural history of HIV/AIDS, part of the national NIH-funded Multicenter AIDS Cohort Study (MACS). “We couldn’t have made this discovery without the MACS. Results like ours are the real payoff of the past three decades of meticulous data and specimen collection,” said senior author Charles Rinaldo, chair of the Department of Infectious Diseases and Microbiology and professor of pathology.

Combination antiretroviral therapy (ART) medications disrupt the viral replication process and can delay the onset of AIDS. However, even without ART, a small percentage of people infected with HIV do not have the persistent loss of T cells and increase in levels of HIV after initial infection. They can sometimes go many years, even more than a decade, without the virus seriously compromising the immune system or leading to AIDS.

Through the Pitt Men’s Study/MACS, eight such “nonprogressors” were assessed twice a year for an average of 11 years and compared to eight typically progressing HIV-positive counterparts. Rappocciolo and her colleagues found that in nonprogressors, dendritic cells were not transferring the virus to T cells at detectable levels. When taking a closer look at these dendritic cells, the researchers discovered that the cells

had low levels of cholesterol, even though the nonprogressors had regular levels of cholesterol in their blood.

Cholesterol is an essential component of the outer membranes of cells. It is required for HIV to replicate efficiently in different types of cells. None of the study participants were taking statins, which are cholesterol-lowering medications that some people take to prevent vascular problems when cholesterol in their blood is too high.

When HIV was directly mixed with the nonprogressors' T cells in the laboratory, those T cells became infected with the virus at the same rate as the T cells of the regularly progressing, HIV-positive participants. Indeed, T cells from the nonprogressors had normal levels of cholesterol.

"This means that the disruption is unlikely to be due to a problem with the T cells, further supporting our conclusion that the slow progression is linked to low cholesterol in the dendritic cells," said Rappocciolo.

"What is most intriguing is that dendritic cells in the nonprogressors had this protective trait years before they became infected with HIV," Rinaldo said. "This strongly suggests that the inability of their dendritic cells to pass HIV to their T cells is a protective trait genetically inherited by a small percentage of people. Understanding how this works could be an important clue in developing new approaches to prevent progression of HIV infection."

Additional researchers on this study are Mariel Jais, Paolo Piazza, Todd A. Reinhart, Stella J. Berendam, Laura Garcia-Exposito, and Phalguni Gupta, all of Pitt Public Health. ●



HIV Research Collaboration

Pitt Public Health and the Center for Black Equity in Washington, D.C., are partnering on a new research project to study reasons for increased risk of HIV infection among African American men who have sex with men (MSM).

Funded by a \$3.2 million grant from the National Institute of Nursing Research at the National Institutes of Health (NIH), the project will seek to enroll nearly 6,000 African American MSM in large cities nationwide.

"It has become clear in recent years that the major reason that African American MSM have such high rates of HIV infection is not that these men have high rates of risk-taking behaviors for infection," said Ron Stall, director of the Center for LGBT Health Research at Pitt Public Health. "Rather, the reason for elevated infection has far more to do with lack of access to HIV testing and medical care."

Stall and his team plan to recruit men for their study at Black Gay Pride events in Atlanta; Chicago; Houston; Los Angeles; Philadelphia; and Washington, D.C.

In addition to data about HIV risk in this population, the study will generate information about other social determinants that are likely to be important to the overall health of African American MSM, including depression, substance use, violence victimization, and other health problems. Finally, the study will measure specific resiliencies—or the ability to avoid negative health outcomes—that may be important resources for health, even among men who must cope with adverse social environments.

"It is exciting to be part of a study that will create the largest sample of HIV-related data from African American MSM ever taken, and one that will yield important data about the health and well-being of our community. The Center for Black Equity will work with our partners at Pitt to ensure that these data are shared with the community and can be used to improve the health of these men," said Earl Fowlkes, president and CEO of the Center for Black Equity.

"HIV/AIDS has been a crisis in the African American MSM community for more than 30 years, and it is past time that we took this epidemic more seriously. We hope that this study, in collaboration with other research and care efforts, will provide a real contribution to bringing this dangerous epidemic to an end," said Stall. ●



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Or visit us online to read full press releases. www.publichealth.pitt.edu/news



NIH Grant Funds Multicenter Study of Mysterious Trauma-Induced Hemorrhaging

Stephen Wisniewski, senior associate dean and codirector of the Epidemiology Data Center, will coordinate a new, multicenter, multidisciplinary effort—supported by a five-year, \$23.8 million National Institutes of Health (NIH) grant—to study a deadly bleeding syndrome called coagulopathy, which occurs without warning in some trauma patients.

Led by University of Vermont Professor Emeritus of Biochemistry Kenneth Mann, the Trans-Agency Consortium for Trauma-Induced Coagulopathy (TACTIC) study is a cooperative effort funded by the National Heart, Lung, and Blood Institute that establishes a unique collaboration between the NIH and the Department of Defense (DOD).

“Multiple, parallel research projects will explore a different side of coagulopathic syndromes in an effort to discover why they occur and, ultimately, to explore ways to treat and prevent them,” said Wisniewski, also professor of epidemiology. “Those projects will produce a massive amount of data, something we at Pitt Public Health are well-equipped to collect, analyze, and organize into useful information.”

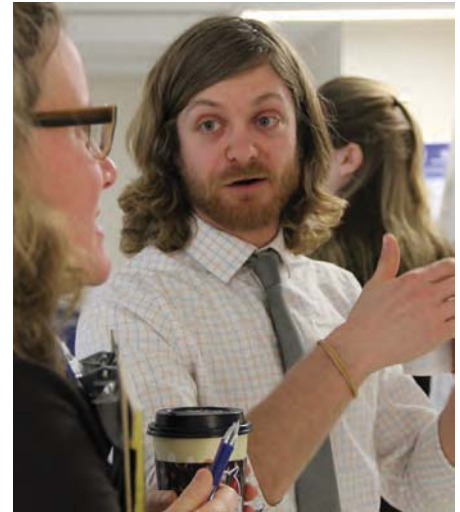
Trauma is the major cause of death in people less than 34 years old and the third-leading cause of mortality in the United States, with uncontrollable hemorrhage representing the major cause of preventable deaths. Each year, nearly 50 million traumatic injuries in the United States result in 170,000 deaths.

However, little is known about the biological phenomena that lead to coagulopathy. “There are no analytical tools that allow emergency department staff to conclude that coagulopathy is occurring in trauma victims. We’re starting from ‘ground zero,’” Mann explained. “The physicians and staff are left without resources to guide an effective therapeutic approach.”

Study coleader Charles Esmon, the Lloyd Noble Chair in Cardiovascular Biology at the Oklahoma Medical Research Foundation, will look at the role played by DNA and histones that escape from cells in initiating the inflammatory and coagulation abnormalities that occur in trauma.

“We’ve gathered the leading minds in the field to attack a problem that has a serious and immediate impact on patients,” said Esmon. “To understand and address the issue of severe trauma, we need a multidisciplinary approach. This project requires experts in clinical science, basic biology, laboratory science, and animal research.”

Additional institutions involved in the research funded by the TACTIC grant include Massachusetts Institute of Technology, Mayo Clinic, Scripps Research Institute, University of California-San Francisco, University of Illinois, and University of Pennsylvania. DOD-supported institutions participating in the clinical component of the TACTIC grant include University of Colorado, University of Pittsburgh, and Virginia Commonwealth University. ●



2014 Dean’s Day Showcases and Rewards Student Research and Practice

Pitt Public Health celebrated its biggest Dean’s Day ever with 112 poster submissions, up from 80 last year. The annual competition prepares students by providing an opportunity to communicate about their research work to both scientific and nonscientific audiences. Pictured above is epidemiology doctoral student Karl Vanderwood explaining his winning project to an adjudicator during poster session three. A team of faculty employed a research evaluation metric to select winners, who were then invited to give oral presentations at a April 17 awards ceremony held in the new laboratory pavilion auditorium. ●



This is the third article in a series about premature mortality in our region. Previously, we featured infant mortality, and our next issue will examine premature mortality among seniors in our county.



Homicide

by *Christine H. O'Toole*

The leading cause of death among young African American men is preventable. A Pitt Public Health initiative aims to stop the cycle of murder in Allegheny County.

After midnight, a wintry Saturday night party went terribly wrong. On March 1 at the Rendezvous Phase III Lounge on Pittsburgh's Hamilton Avenue, a gunman pulled his weapon. Five young men fell as patrons and security guards fled. Shot eight times, 27-year-old Vincent Holt Jr. died at the scene. Three other Allegheny County men, ages 22 through 27, were wounded.

As police rushed to the scene, Richard Garland's pager buzzed with the message "Level one trauma," which usually means gunshot wounds. Garland, a visiting instructor in the Department of Behavioral and Community Health Sciences, could only shake his head. After decades of a sometimes lonely crusade to stop violence among Pittsburgh's young men, he understands the connection between tragic murder cases and epidemiological statistics.

The evidence is stark. Homicide is the region's leading cause of death among those 15 to 19, and second for those from 20 to 24. While violent crime rates are decreasing across the country, they are rising in Pittsburgh. According to a 2012 report by Pitt Public Health's Violence Prevention Project, the city's rate of 13.7 per 100,000 residents that year was higher than New York (5.02). In 2012, Allegheny County's Department of Human Services reported that the 2011 homicide rate in the United States was 4.7 per 100,000, while the county rate was 6.4 per 100,000.

Research from the National Center for Health Statistics shows the disparity: Allegheny County homicide rates among African Americans 15–19 were 38 times higher than those of Whites; the rate for those 19–24 was 45 times higher. Within Pittsburgh city limits, homicide rates for young Black men are 50 times the national average.

Garland has an unusual new role with Pitt Public Health, which involves working with law enforcement, social service agencies, and hospitals to prevent future murders. Since August 2012, the Community Violence Prevention Project, led by Garland and colleagues through the school's Center for Health Equity, has developed a framework to coordinate efforts to stem the bloodshed among young men, many of whom are known to each other.

The school's new approach includes a novel intervention technique and in-depth analysis of homicide data. So far the project has received nearly \$350,000 from local foundations.

For Garland, who earned his Master of Social Work from Pitt in 1996, the move from outreach on the streets to a university cubicle allows him to test his theories on violence prevention on a larger scale. "I have never had the opportunity to look at data," he explains. "I was always doing [the outreach work]; I didn't look at the causes." He is determined to find a way to understand the causes of youth violence and make teenagers understand the consequences.

"These kids are so impulsive," he says. "They don't think. They commit crimes, and they're in jail for the rest of their lives."

A Changed Life

Garland knows the consequences firsthand. After conviction for a crime in his native Philadelphia, he spent 23 years in prison. At age 38, he emerged from Western Penitentiary with his GED and a determination to keep other young men alive and safe. Over the next two decades, he led county and nonprofit violence prevention programs. At age 61, Garland's signature dreadlocks are now mostly gray, and he has gained a reputation as a formidable role model who can dissuade young men from gangs and crime.

"Richard's effective because he's lived the life. He's made it against all the odds," says Marc Cherna, director of Allegheny County's Department of Human Services. "He has street cred. As a former gang leader, he gets tremendous respect. Watching him making gang truces and all his other interactions, I see his ability to relate to people."

Local foundations that had previously supported his work valued Garland's unique expertise and suggested that pairing him with university researchers could create a new model to prevent homicides.

"Violence is a public health problem, and we need to address it," says Steven Albert, chair of the Department of Behavioral and Community Health Sciences. "The foundations realized that Richard's work needed an official endorsement. It needed public health surveillance and intervention science to make it work. At first, the University had a little bit of consternation about hiring a former prison inmate. But there is absolutely no way you could do this work without such a background. So we took a risk to make this happen, thanks to the foundation support and some far-thinking people in Pitt's administration."

The Community Violence Prevention Project combines Garland's savvy with several national models. One with promising results is Caught in the Crossfire (CiC), a program





“I want to involve everybody in the community as part of that intervention: the barber, the beautician, the person who runs the five and dime.... So this kid now has a big support group—not just family, but the whole community. That’s the way we begin to change things.”

—Richard Garland, visiting instructor,
behavioral and community health sciences

created by Oakland, California’s Youth ALIVE!

In Pittsburgh, trauma departments at four major hospitals, which receive the majority of gunshot victims, will work with Garland to adapt the Oakland program to local needs. Trauma staff at Allegheny General Hospital (AGH), UPMC Presbyterian/Shadyside, UPMC Mercy, and Children’s Hospital of Pittsburgh of UPMC are the front line of the intervention, gaining patient consent to bring in a counselor. Then Garland and his crew—all chosen for their experience in neighborhood-based youth programs—step in to prevent retaliation and further injury.

Federal data show that hospitalization for violence-related injuries is recurrent. Readmission rates for subsequent assaults are as high as 44 percent, and subsequent homicide rates are as high as 20 percent.

Trained intervention specialists deter those consequences. They help the injured patient and his or her family and friends to cope with the injury and start talking about alternatives to retaliation. Identifying the individual’s needs, such as job training, medical attention, safe housing, or legal advice, the specialist works with the youth over a period of weeks or months to coordinate effective assistance.

A 2004 study of CiC published in the *Journal of Adolescent Health* reported that participants were 70 percent less likely to get arrested and 60 percent less likely to have any criminal involvement than injured youth who were not involved in CiC. Those results were replicated in a 2007 analysis in the *Journal of the American College of Surgeons*.

The approach makes sense to Allan Philp, chief trauma surgeon at AGH, who has worked with Garland.

“We see the same folks coming back [to the ER] with violent traumatic injuries,” he says. “Some are in the wrong

place at the wrong time. Far more have made lifestyle choices putting them in the wrong place at the wrong time—drugs, gangs, alcohol use. When they return to the same situation, they're in the same danger." Philp uses the analogy of herd immunity to describe the hospital interventions. "If enough people get it, the whole group is protected. At some point you'd like to see that the whole community will realize there are alternatives, if they've had enough examples of positive change. If we pick the people at highest risk, we can inspire others."

Change comes slowly, as specialists trace the victim's history and relationships.

"One of the questions we ask is, who's a part of your social network? That is, who do I need to talk to who is most likely to retaliate on your behalf?" says Garland. He stresses that it takes time for the patient to open up, even to a street-smart adult.

"It's the third visit when we start getting really pertinent information, when we're saying, 'All right, dog, what's up with you? I went to the streets and this is what I found out.' I tell them, 'Ask [neighborhood] folks, do they know who I am? I'll see you next time.'

The work naturally extends to the victim's friends and neighbors.

"We're focusing on the high-risk social network. That's really our innovation," says Albert.

Garland wants to take it to next level. "I want to involve everybody in the community as part of that intervention: the barber, the beautician, the person who runs the five and dime. I want 'Ms. Cookie': the matriarch of the community, the grandmother or mother that the kids and adults in neighborhoods respect. In all our communities, we have a 'Ms. Cookie' that no one crosses. So this kid now has a big support group—not just family, but the whole community. That's the way we begin to change things."

The shift from treating trauma victims to providing services that prevent violence makes financial sense. The average U.S. hospital bill for each person wounded by a 33-cent bullet is more than \$250,000.

Jay Gilmer, coordinator of the Pittsburgh Initiative to Reduce Crime (PIRC), points out that some victims have been shot multiple times in separate incidents before being

fatally shot. "Violence also affects family members, kids, spouses, even housing issues, so you see the enormous cost. All the money that our system spends on guys that die in the prime of their lives—that person could have had a personal assistant or tutor every minute of his life."

Bringing Data to the Table

While the state mandates a formal review of all cases of child death, it does not require reviews of homicide cases. "It's kind of amazing that it's fallen through the cracks. The medical examiner's office used to do that, but no longer," notes Albert. The Community Violence Prevention Project team created a 100-item checklist detailing every aspect of a case. Next, they invited police, the Urban League, educators, and UPMC to contribute to the first-ever review process.

Jail and probation officers, medical examiners, and the county's Department of Human Services, which has created a massive data warehouse that has become a national model, are important participants.

"We conduct the review under the auspices of Pitt Public Health and, more particularly, our Center for Health Equity," explains Albert. "We

keep the county health department informed but do not have a formal relationship. Likewise, we are distinct from PIRC, but they are involved with us. We are autonomous. Our inquiry is really something different: a microscopic view of violence in communities to determine opportunities for prevention."

Review participants contributed answers within their areas of expertise. The coroner's office supplied data on cause of death; social workers reported services that the victim may have received; specific criminal records were noted; the specific kinds of illegal drugs at issue were described. Patterns of shared neighborhoods, motives, and relationships among the victims and perpetrators emerged. Researchers went deep, fleshing out the complexities of each case with additional information from community and coalition meetings, informal interviews, and community outreach.

The group focused on Pittsburgh homicides in 2012 in its first set of data, analyzing 42 cases. In 95 percent of the homicides, the cause of death was a gunshot wound. "The easiest thing to do in the hood is to get a gun," Garland acknowledges.

The study results disproved some assumptions. Not all of the homicides were gang-related. In fact, more than 30

"Violence is a public health problem, and we need to address it. The foundations realized that Richard's work needed an official endorsement. It needed public health surveillance and intervention science to make it work."

—Steven Albert

percent were caused by peer violence and might have been prevented by early intervention.

“Peer violence could involve a disagreement over a girl, or money, or even a pair of shoes,” explains Garland. “The Pittsburgh gangs of the 1990s barely exist anymore. The leaders are in jail—or dead.”

In addition to the homicides where peer violence was a possible motive, researchers found that 28 percent of all homicide victims were killed during illegal transactions, such as a drug deal gone bad. In another 23 percent of the homicides, the victim was an unintended target. Gang violence caused seven percent of deaths; three percent were related to child abuse.

Researchers also found further confirmation of the impact of homicides on young African Americans. In 2012, 93 percent of victims were male; 83 percent were African American. More than a third were between 18 and 25 years old. And nearly half of the homicides occurred in Pittsburgh Police Zone 5, which includes the neighborhoods of East Liberty, Garfield, Lincoln-Lemington, Larimer, and Homewood.

Gilmer found new patterns in the homicide review findings. “The data point to the usual neighborhoods, but it goes deeper than that,” he says. “For example, with the solved murders from 2012, the victims had been previously incarcerated just as often as the perpetrators. That’s amazing. There’s a sense that murders are random; in fact, we do know a lot about these perpetrators and victims. None of this is totally new, but it has been difficult to craft solutions based on data. We get very specific and look at a great amount of data, and start to find out what issues do matter: past incarceration, mental health issues, charges involving weapons, a past history of hanging around people who are violent, or having someone in family killed or incarcerated for violent act. Now, what do you do with that? That’s the million dollar question.”

Gilmer notes that university researchers in Cincinnati and Chicago work closely with police. “The more we can do that in Pittsburgh, the better,” he says.

Cherna agrees. “Absolutely the most critical thing is to have law enforcement behind this effort,” he says. “We’ve all got to work together to deal with violence prevention as a community. Like child protection, it’s everyone’s responsibility.” ●

WOMEN AT GROWING RISK

Across the country, women are less likely to be victims of violent crime than men. But Pitt Public Health researchers are watching the rise of a worrisome trend in Allegheny County. In 2012, 10 of the 96 homicides in the county were women. The following year, the number of female victims doubled; there were 93 homicides in the county, 20 of which were women. Of the 15 murders reported between January and March 2014, six were women. That suggests a possible surge in domestic violence, a pattern of concern for Richard Garland and his colleague Jessica Burke, both of the Department of Behavioral and Community Health Sciences.

The Community Violence Prevention Project has enlisted Burke, associate professor and associate chair, to examine data collected for women in the 2013 homicide review process.

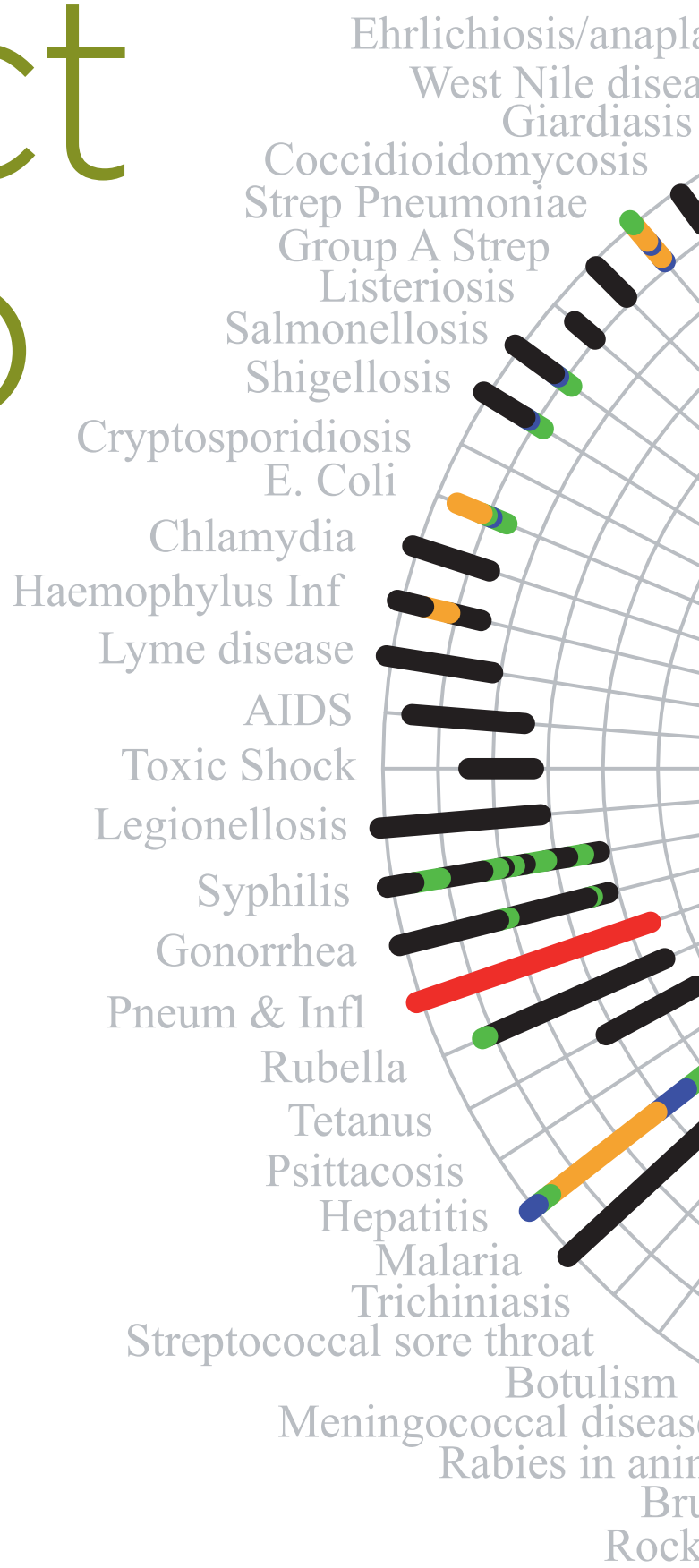
“We realize that the female homicides are more often than not associated with a history of intimate partner violence,” says Burke. “As a result they require a different exploration with different intervention implications.”

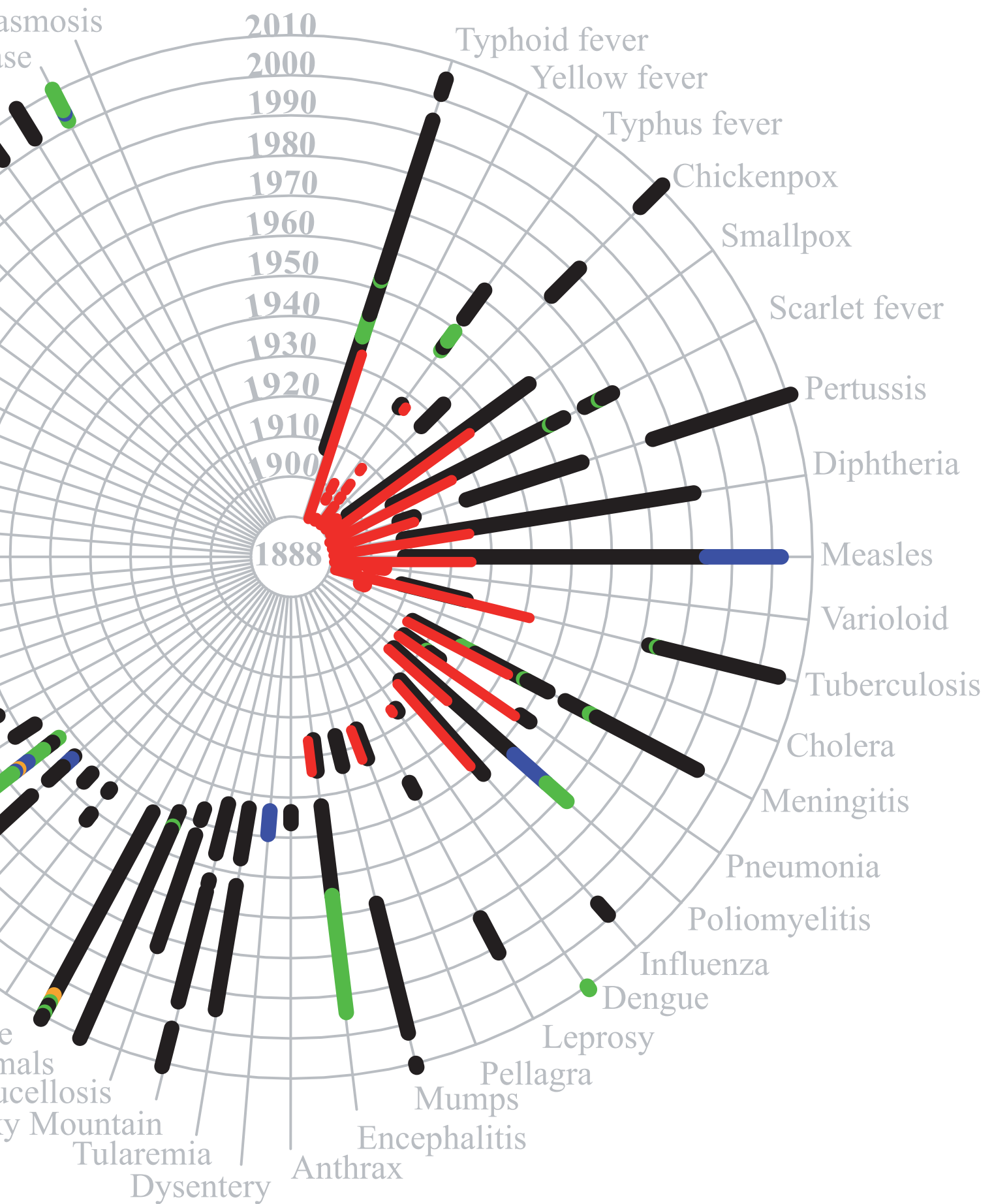


Project Tycho

by Christine H. O'Toole

On first glance, the wheel of colored lines exploding from a central void looks like a pixelated starburst. And as the first illustration for a new effort called Project Tycho, named in honor of Danish astronomer Tycho Brahe, it suggests a celestial provenance. In fact, the circular graphic is an elegant visual interpretation of a massive epidemiological database recently collected and digitized by Pitt Public Health faculty. A snapshot of the history of American public health, the circular graphic represents 125 years of a national effort to combat a historic scourge: communicable disease.







“Project Tycho’s U.S. data can demonstrate the power of a global database to other countries.”

—Willem G. van Panhuis,
assistant professor, epidemiology

The graph, published in the *New England Journal of Medicine* (NEJM) on November 28, 2013, shows how Pitt Public Health researchers are applying computational models to more than a century of public records to create a free, worldwide open source of comprehensive health data.

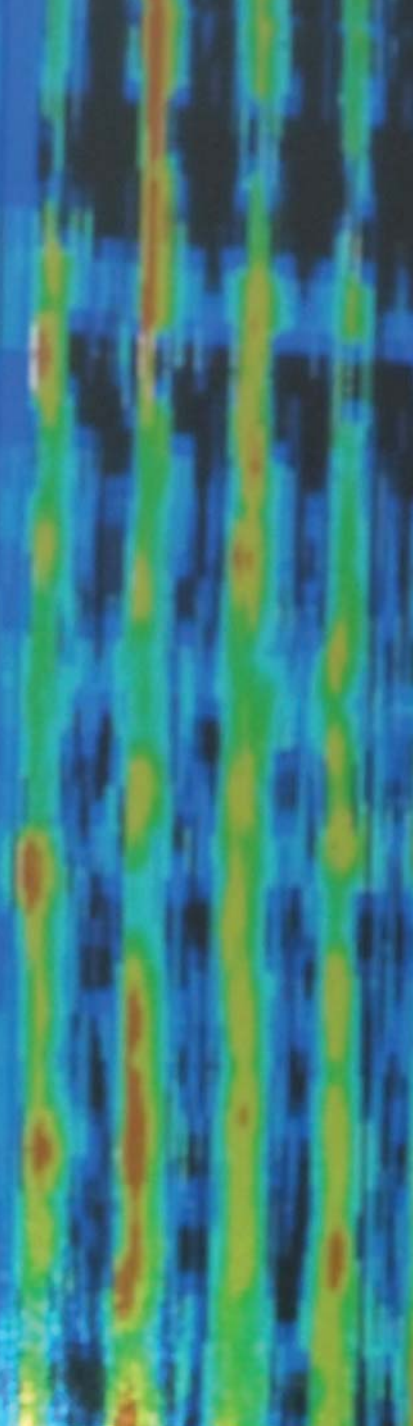
Willem G. van Panhuis, assistant professor of epidemiology at Pitt Public Health, is the lead author of the article, which reports on the first phase of Project Tycho. The endeavor provides a central access point for integrated, standardized country disease surveillance data, globally available in the public domain.

The work goes further. It applies the historical data to reliably estimate the number of individual illnesses that have been prevented by vaccinations. The result—100 million U.S.

cases—is a powerful argument for comprehensive preventive public health work.

Van Panhuis’ experience in disease modeling is worldwide. Before joining the Pitt Public Health faculty in 2009, he had worked for the World Health Organization in Manila, Philippines, and completed his doctoral work at Johns Hopkins University. Everywhere, the 35-year-old epidemiologist found that his peers shared the same challenges as they encountered roadblocks to comprehensive, easily accessible data.

“Infectious disease research is critically dependent on reliable historical data to understand underlying epidemic dynamics. However, my colleagues and I repeatedly find ourselves digging out historical datasets from hidden



sources,” says Van Panhuis. “By digitizing and giving open access to the entire collection of U.S. notifiable disease data, we’ve made a bold move toward solving this problem.”

Van Panhuis is particularly pleased that international researchers, students, and others are using the data online (at www.tycho.pitt.edu and www.healthdata.gov). Since November 2013, the Project Tycho site has more than 1,000 registered users and received more than 75,000 page views from 131 countries. Most recently, the data were used for an infographic on vaccines in the March 6, 2014, issue of the journal *Nature*.

“One of the beauties of the Project Tycho paper is that we now have several other countries interested in looking at their own data,” notes Donald Burke, dean of Pitt Public Health. He cites the school’s ongoing research on dengue fever as an inspiration for the U.S. project. “We were able to study eight countries in Southeast Asia. If we put data from the whole region together, are there larger

patterns? The answer is yes. Whether it is people, mosquitos, or disease, something moves. We’re getting better at saying what the patterns are.”

Project Tycho is named in honor of the 16th-century Danish astronomer whose observations enabled Johannes Kepler to derive the laws of planetary motion. The work, funded by the Bill & Melinda Gates Foundation and the National Institutes of Health (NIH), dovetails neatly with other projects within Pitt’s Public Health Dynamics Laboratory (PHDL). This interdisciplinary collaboration develops computational methods to improve the theory and the practice of public health and comprises more than 40 epidemiologists, biostatisticians, behavioral scientists, policy experts, and computational scientists. Project Tycho

takes its place in the lab alongside FRED (Framework for Replicating Epidemiological Dynamics), HERMES (Highly Extensible Resources for Modeling Supply Chains) and GAIA (Geospatial Area and Information Analyzer).

Project Tycho is also aligned with MIDAS, the Models of Infectious Disease Agent Study, for which Pitt Public Health is a National Center of Excellence. “Collecting all this data is one thing, but making the data computable is where the big payoff should be,” said Irene Eckstrand, a program director and science officer for MIDAS.

The University of Pittsburgh Vaccine Modeling Initiative (VMI), which uses computation for improved decision making in the selection of new vaccine products and epidemic control policies, is another cooperative project. Led by Burke, VMI is a research consortium between Pitt, Imperial College London, Princeton University, and other collaborators.

Harnessing the power of the Pittsburgh Supercomputing Center and computer scientists at Pitt and Carnegie Mellon University, Pitt Public Health is developing an international reputation in computational modeling. “In the past, data has typically been secondary to research. But now agencies are recognizing that data is actually the means,” explains Van Panhuis. “Project Tycho’s U.S. data can demonstrate the power of a global database to other countries.”

Weekly Reports on Contagious Disease

Public reporting of infectious diseases in the United States dates to 1888. The Project Tycho researchers, together with graduate and undergraduate Pitt students, began their work by obtaining all weekly notifiable disease surveillance tables published between 1888 and 2013—approximately 6,300 tables—in various historical reports, including the U.S. Centers for Disease Control and Prevention’s Morbidity and Mortality Weekly Report. Many tables were available only in PDF scans in online repositories that could not be read by computers and had to be hand-entered. For many years, online scans were not even available, and paper records from the Falk and Hillman libraries had to be digitized.

Project Tycho made the data—including death counts, reporting locations, time periods, and diseases—digital. A total of 56 diseases were reported for at least some period of time during the 125-year time span, with no single disease reported continuously. All told, the data included 88 million individual records.

Digital Divide Data, a social enterprise that provides jobs and technology training to young people in Cambodia, Laos, and Kenya, performed the data entry—some 200 million keystrokes. But data entry was just the start. The information was put into spreadsheets for making tables but then had

to be sorted and standardized so it could be searched, integrated, and queried by users on the project's website.

Gaps were common. So were overlapping records: Van Panhuis cites the example of local records for "Pittsburg" as well as "Pittsburgh." Sorting the data so it could be visualized online took another year. Now, users can generate instant, customized reports for a U.S. city, state, time period, and disease.

Van Panhuis says that the data are compelling when placed in the context of public health debates. He grabs a computer mouse to create a quick example.

"We know that Boston had a major smallpox outbreak beginning in 1901," he says. Entering choices for disease, outcome, location, and actual cases, he pulls up a chart that shows the dramatic spikes reported in the city during the next two years. The outbreak resulted in 1,596 cases and 270 deaths before immunizations halted its spread in 1903.

The Project Tycho data illuminate a key episode in public health history. Boston's outbreak led to a historic legal validation for immunization campaigns. As the epidemic grew, a local religious group protested forced vaccination campaigns. A landmark decision followed a court battle. In 1905, the U.S. Supreme Court ruled in *Jacobsen v. Massachusetts* that states could require immunization to protect the community. In fact, this instrument has been used in recent years to curb measles epidemics.

For the NEJM report, the researchers selected eight vaccine-preventable contagious diseases for a more detailed analysis: polio, measles, rubella, mumps, hepatitis A, diphtheria, and pertussis. By overlaying the reported outbreaks with the year of vaccine licensure, the researchers drew a clear, visual representation of the effect that vaccines have in controlling communicable diseases.

"Using this database, we estimate that more than 100 million cases of serious childhood contagious diseases have been prevented, thanks to the introduction of vaccines," Van Panhuis concludes. "But we are also able to see a resurgence of some of these diseases in the past several decades as people forget how devastating they can be and start refusing vaccines."

Despite the availability of a pertussis vaccine since the 1920s, the largest pertussis epidemic in the United States since 1959 occurred in 2012. Measles, mumps, and rubella outbreaks have also reoccurred since the early 1980s.

Open Source Data Invites Collaboration

The U.S. database is a breakthrough. But Van Panhuis says that gaps persist. "For our visualizations, we've created three levels of data," he explains. "The first shows cases and

incidence rates used in the NEJM paper—hard, verifiable data. The second level shows all data reported in comparable format, with some missing. The third level shows everything that we have—cumulative data, data that omit location or lack other variables that would make it more reliable." Cleaning these level three data requires the participation of many researchers—an ideal task for crowd sourcing. And as more researchers contribute missing pieces, he says, it will become an increasingly powerful tool. "There could be hundreds of doctoral dissertations generated by the data. About 30 Pitt students have already worked on Project Tycho data."

Van Panhuis says a full global database is Project Tycho's long-term goal. While no international standards exist for such a collection, the number of nations willing to share comparable data is growing rapidly. Funding to convert old paper records into digital form is an issue worldwide—Pitt relied on grants from the Gates Foundation and NIH for this initial stage of Project Tycho—but as public health data moves online across the globe, collaborations may become less costly and more common.

Obsolete and incomplete records abound. Burke suggests that choosing data sets carefully is a key to success. "Who knows what data sets are squirreled away or almost accessible but not accessible? It really does require some thought and insight. There are barriers to data sharing, such as technology and ownership." Data rescue, he suggests, will become a high priority as open source information becomes the norm.

To encourage a broader dialogue, PHDL has established the Public Health International Modeling Fellows Initiative. The program, funded by Pittsburgh's Benter Foundation, will train teams from selected countries in the use of modeling and simulation methods being developed at PHDL, including Project Tycho, and by establishing joint research projects for completion in their home country.

Fellows from Brazil and Taiwan are now adding their information to the database. Translating the data into English and integrating it into comparable categories continues. "We're finding data and showing links," says Van Panhuis.

Countries in Europe are also collecting standardized epidemiological data across the continent, offering the prospect of enlarging Project Tycho's international base in the near future. Other ongoing Pitt collaborations, such as those with Southeast Asian nations on dengue fever transmission and modeling have also encouraged participation from countries in this region.

The worldwide data explosion isn't confined to developed nations. Van Panhuis says he was "highly surprised" when

the Brazilian researchers presented their system in a recent visit to Pittsburgh. “We couldn’t believe it. They’d organized data from almost 6,000 municipalities, with demographic and census data,” he says. Even developing countries have made strides, he notes, “particularly those where foreign aid has helped. If there is no foreign aid or economic progress, data are often very difficult to access.”

The ubiquity of mobile devices will impact both data use and collection. Project Tycho data might be accessible via cell phone in the near future. Although it’s not yet available to the public, John Grefenstette, director of PHDL and professor of biostatistics, has developed a mobile app for simulating infectious diseases. Public health officers in rural Nigeria, for example, will soon be able to report their data globally with a tap on their cell phone or tablet.

Steven Buchsbaum, deputy director of Discovery and Translational Sciences for the Gates Foundation, says Project Tycho’s U.S. data is an important step into the new landscape.

“We are very excited about the release of the database,” he says. “We anticipate this will not only prove to be an invaluable tool permitting researchers around the globe to develop, test, and validate epidemiological models, but also has the potential to serve as a model for how other organizations could make similar sets of critical public health data more broadly publicly available.”

Meanwhile, Pitt Public Health will lead by example. “We have strengths in data management here,” Van Panhuis concludes. “We are seeing the emerging cross-benefits between computer science and epidemiology. It’s a great place to do this work.” ●

Additional coauthors on “Contagious Diseases in the United States from 1888 to the Present,” [N Engl J Med 2013; 369:2152-2158] include John Grefenstette, Su Yon Jung, Nian Shong Chok, Anne Cross, Heather Eng, Bruce Y. Lee, and Shawn Brown, all currently or formerly of Pitt Public Health; Vladimir Zadorozhny of Pitt’s School of Information Sciences; and Derek Cummings of the Johns Hopkins University Bloomberg School of Public Health.



View our YouTube videos about Project Tycho.
www.youtube.com/user/PittPublicHealth



Visit the Project Tycho Web site to register and use the data. www.tycho.pitt.edu

As executive director of the Pittsburgh AIDS Task Force, alumnus **Chuck Christen** is enthusiastic about the broad range of social services it provides, like the food pantry supplied with donations from the Greater Pittsburgh Community Food Bank.



Profile: Chuck Christen Walks the Walk

by *Christine H. O'Toole*

Over a long career, Chuck Christen, currently executive director of the Pittsburgh AIDS Task Force (PATF) has managed research on environmental and community health topics from river water stewardship to air quality. But the heart of his mission, professionally and spiritually, is compassion and effective care for HIV-positive men, women, and youth in the region.

Christen received his DrPh from Pitt Public Health in 2010 and sees his current role as an extension of that training. “For HIV, prevention is treatment. If we can find the people who are HIV positive and do not know it—by approaching health clinics, physician practices, and emergency rooms, as well as expanding HIV testing to marginalized populations—and if we can find those others who know they’re positive and connect and maintain these individuals in treatment, we can reduce their viral loads and decrease the spread of the disease.”

In 2011, Christen traded his post at Pitt Public Health, where he had directed operations at the Center for Healthy Environments and Communities, for the top job at PATF, the region’s largest and oldest AIDS service organization. With 25 employees and a \$2.5 million annual budget, the task force is focused on one key HIV message: Find it, treat it, and beat it.

That initiative has led PATF beyond the usual clinic locations to places where clients may live: in jail or, often, on the street. Through outreach to the Allegheny County Jail and work with Operation Safety Net, providing medical services to the homeless, PATF connects individuals to HIV testing, medication, and social services. Operating a popular food pantry, finding affordable housing, and even driving clients to medical appointments are natural extensions of its mission.

“There’s a real gap in care for folks, especially those who are severely mentally ill or have active addictions,” Christen explains. “They sometimes have problems accessing traditional care facilities. Their lives are fairly chaotic, and they are often chronically homeless. We believe that housing aids in treatment. Often, care means taking a person by the hand to negotiate daily living.”

Christen honed his hands-on approach over five years as a chaplain at Allegheny General Hospital. After training as a Catholic priest and several years as a diocesan priest in New Castle, Pennsylvania, he came to the North Side trauma center post as an experienced counselor.

“To say you enjoy chaplaincy is not the right word—you’re

working with people who have been traumatized. But it is meaningful and satisfying to know you’ve made a difference for people dealing with severe blows, whose tragedies were enormous. I learned a huge amount. It made a great impression on me, but it was traumatic.”

Since taking the helm at PATF, Christen has focused its efforts primarily on HIV testing and reconnecting with diagnosed patients that have been lost to care. As successful treatment for HIV and AIDS expands, public awareness—and many sources of public funding to combat the disease—have diminished. Meanwhile, infections among local youth, particularly African Americans, continue to rise.

“We’ve seen an increase in new cases among those 16 to 24, so we’re providing more testing at Cruze Bar, a Pittsburgh dance club.” The club hosts the events on the first Wednesday of each month and on under 21 nights.

“It’s a place where young men and [transgender] women can really ‘vogue and practice,’” says Christen. “Our purpose is to work to build a safe space where young, Black, gay males and transgender individuals can feel safe and culturally identify. It also provides opportunities for health promotion.”

Christen acknowledges that the stigma of the disease and the need for better testing and treatment are barriers to delivering care. He sees firsthand that the disparate array of social and medical services HIV patients require is fragmented in Pittsburgh and that public attitude remains a challenge.

“National AIDS/HIV strategy points out clearly that treatment is prevention, but look at the continuum of care. Even with patient consent, we have little access to medical records. Persad Center [a local human service organization for the LGBTQ community] has funding for behavioral health. Shepherd Wellness [a resource center for those with AIDS/HIV] has funding for congregate meals. Compare that with Washington’s Whitman Walker Clinic, or Fenway in Boston, or the Gay Men’s Health Center in New York—they’re essentially medical homes. If you read between the lines, that might be a good place for PATF to be setting its sights—toward becoming a medical home and pharmacy.”

Nationally, the new Affordable Care Act is designed to create medical homes for all. When asked if the law will meet that goal for those with AIDS/HIV, Christen simply says, “I hope we’re close.” ●

Alumni News



Panelists Roderick Harris, Beth Dutton, and Edward Cherry



Alumni joined faculty for Saturday afternoon department and program receptions.



Rain didn't dampen spirits at Saturday's picnic lunch under the Schenley Plaza tent.



Melissa Fann (MPH '12)



Colleagues and friends gathered for Saturday night's award and gala dinner in the University's Alumni Hall.



Guests enjoyed tours of the new laboratory pavilion.



The 2014 alumni award recipients are leaders in their respective fields and communities.

Reunion

For the first time in its history, Pitt Public Health held an all-school alumni reunion, welcoming back more than 200 alumni, family, and friends. Events, held over May 16–18, 2014, included a welcome back reception at Phipps Conservatory and Botanical Gardens, complete with tours of the new sustainable landscape and architecture; continuing education sessions throughout Saturday morning; a picnic at Schenley Plaza; the alumni awards reception and gala; and breakfast at Dean Burke's home on Sunday. ●

2014 Alumni Awards

Congratulations to the 2014 Pitt Public Health alumni award recipients! Awardees were honored by Dean Burke during the school's alumni reunion weekend before members of the Pitt Public Health Board of Visitors, faculty, staff, and fellow alumni.

Recipients of the Distinguished Alumni Awards and Margaret F. Gloninger Service Award are chosen through a competitive nomination and selection process by a Pitt Public Health committee that includes former alumni awardees, faculty, and staff.

The Distinguished Alumni

Awards are the highest awards given to alumni by the Graduate School of Public Health. Recipients are Pitt Public Health alumni who have made a significant contribution to the field of



View more reunion and awards ceremony photos.

www.flickr.com/photos/pittpublichealth

public health, to the school, or to both.

For Teaching and Dissemination: CHUNG-CHOU “JOYCE” H. CHANG (PhD '98), professor of medicine and core faculty of biostatistics and clinical and translational science, University of Pittsburgh

For Research: KAREN CRUICKSHANKS (PhD '87), professor, Department of Population Health Sciences and Department of Ophthalmology and Visual Sciences, University of Wisconsin

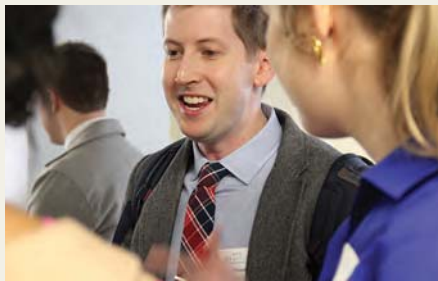
For Practice: JAMES CLISE (MPH '63), president, Sanitary/Environmental Engineering, Inc.

The Margaret F. Gloninger Service Award was established in honor of the late Margaret Fitzgerald Gloninger (MSHyg '66), graduate and former faculty member in maternal and child health. This award is presented annually to an alumnus who has made a significant contribution to the school or to the community through volunteer service.

MARY HERBERT (MPH '05), clinical director and administrative coordinator, The Program for Health Care to Underserved Populations, Division of General Internal Medicine, University of Pittsburgh

The Dean’s Special Achievement Award for Service to the Profession

SUSAN OTT (MPH '76), president, Susan Ott Associates; attorney, Rhoades & Wodarczyk, LLC; and acting executive director, The Foundation to Advance Public Health through Certification, was honored for her work on public health certification. ●



Alumni-Student Networking Breakfast

Our first-ever alumni-student networking breakfast was held on February 13 in the newly renovated Pitt Public Health Commons, connecting 20 alumni with 50 students from all public health backgrounds and departments. Students surveyed after the event indicated that they had made significant contacts and planned to follow up with alumni they met at the breakfast. Alumni attendees indicated interest in joining the Pitt Public Health Alumni Mentoring Program as a result of this event. Both students and alumni expressed interest in attending more networking events! Are you an alum who is interested in participating in a future networking event or becoming a mentor? Contact Sonia Gill, director of external affairs, at sgill@pitt.edu or Joan Anson, director of career services, at anson@pitt.edu. ●



In Memory of Donna Schultz

In December 2013, Pitt Public Health mourned the passing of Donna Lee Schultz, who devoted more than 30 years to the Department of Health Policy and Management (HPM). To honor her memory and commitment, the Donna Lee Schultz Memorial Fund was established with a goal to raise a minimum of \$10,000 to establish an endowed fund to support HPM students and departmental expenses.

Donna touched the hearts of many students, faculty, staff, and alumni. Give online by visiting www.giveto.pitt.edu and designating the contribution for the Donna Lee Schultz Memorial Fund, or by mailing a check payable to the University of Pittsburgh (with Donna Lee Schultz Memorial Fund written on the memo line) to the University of Pittsburgh Graduate School of Public Health c/o Jill Ruempler, A660 Crabtree Hall, 130 DeSoto St., Pittsburgh, PA 15261. Questions? Contact Kristen de Paor, director of development, at 412-624-5639 or kwd128@pitt.edu. ●

In the World

a After a year of coursework and preparation, three Peace Corps Master's International students will begin fieldwork in Zambia. Same-school volunteers are not usually assigned to the same nation but, following three months of in-country training this summer, they will begin individual placements for health-related initiatives. They will return in 2016 to complete degree and Global Health Certificate requirements. Pictured: current students Leah Goeke (EPI), Summer Miller-Walfish (BCHS), and Sarah Sandrian (IDM).

b John Fetterman, mayor of Braddock, Pa., spoke to Pitt Public Health graduates on April 27 at Convocation. Fetterman is credited with revitalizing the borough decimated by the decline of Pittsburgh's steel industry in the 1970s. Part of his revitalization plan has included access to health care for the underserved members of the community.

c Family double-takes at the April 27 Pitt Public Health Convocation: Diane Connors (MPH '96) cheered daughter Brianna McDonough (MPH '14), and Mohamed Ismael (MPH '83) celebrated son Samy (MPH '13) along with his wife Alia and Mary Derkach, assistant dean for student affairs.

d Emerson Evans (MPH '12) and Marquita Noelle Smalls (MPH '13) connected at the Pitt Philadelphia Alumni and Friends Reception held on March 20 at The College of Physicians of Philadelphia and Mutter Museum.

e Aiman El-Saed Ramadan (PhD '04, MPH '05) received the 2013 Research Award of the King Abdulla International Medical Research Center in Riyadh, Saudi Arabia. The award is given for overall research activity, publication, and academic supervision. Ramadan is a biostatistician in the Infection Prevention & Control Department and assistant professor of epidemiology and biostatistics at the College of Public Health and Health Informatics in Riyadh.

f Students of the Association of Women in Public Health invited professionals from a variety of public health fields

to talk with a packed auditorium of current students about their various career paths on April 9 as part of National Public Health Week. Panelists included three alumni: Linda Robertson (DrPH '05), Christina Wilds (DrPH '06), and Christina Farmantino (MPH '13).

g Michael Evans (MPH '80), vice president of surgical program development at Jefferson Regional Medical Center, made a public gift to the Schultz fund during the Pitt Public Health alumni reception at the 2014 American College of Healthcare Executives Congress on Healthcare Leadership. He is pictured here with Rachna Desai, an HPM student. (See below for more about Desai and her team's award.)

h Orrin Tiberi (MPH '14) spent two years in Riobamba, Ecuador, as part of the Peace Corps Master's International student program. He is pictured here with a youth group gathered for the 2013 World AIDS Day, and above with attendees of the 2010 Leadership Conference of Indigenous Peoples in Riobamba, Ecuador.

i On March 4, Pitt Public Health's Master of Health Administration team brought home the bronze from the highly competitive Eighth Annual National Health Administration Case Competition in Alabama. A medical emergency prevented team captain Elizabeth Getty from attending, but Rachna Desai and Rachel Blasko represented the team with distinction. Pictured: team mentor Anna Voelker (MHA '10), administrative director of ambulatory care at UPMC and adjunct faculty member of HPM, along with Desai, Blasko, and Brian Washburn (first-year observer).

j Olivia Houck (MPH '13), Suzanne (Hecker) Redington (MPH '08), Jamie Sokol (MPH '07), and Maura Barrett (MPH '13) attended the Preparedness Summit in Atlanta. Sokol presented a poster with Houck and Jennifer Harmon (MPH '13) highlighting the work Sokol supervised during the students' practica at Allegheny County Health Department. ●



Have something to share?

In the World offers a peek at what some of our alumni, faculty, staff, and students are doing at home and abroad. Send us your photos with short descriptions. sgill@pitt.edu



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