



◆ A South Side resident joins a clinical trial for a new drug at the University of Chicago Medical Center.

◆◆ A breast cancer patient learns she has an aggressive, genetically tied form of the disease.

◆◆◆ A child at high risk for diabetes learns to eat better and exercise, along with his parents.

◆◆◆◆ Different as they may seem,  
all three are connected through health disparities research.

## Balancing inequities in health care

by Suzanne Wilder

**Health disparities:** the variations in medical conditions for patients with different racial, ethnic, socioeconomic, cultural, geographic or other factors. The phrase applies to numerous conditions and involves people all over the country and the world. And, health care disparities—inequalities in medical services, health education and clinical access available to patients—are pervasive, too.

University of Chicago physicians and social scientists are investigating these topics and creating new ways to work with the South Side community to improve the health of its residents. Researchers here delve into social factors, cultural inequities, statistical differences in disease rates, and disparities in medical treatment and quality of care. A major portion of the work aims to create interventions that eliminate disparities in care. But Chicago teams also investigate the illnesses under the skin and the way different bodies are affected by diseases, stress or medication. Collaboration among social scientists, psychologists, economists and many medical departments has led to major discoveries about health and health care disparities.

The city of Chicago provides an ideal setting for such research: The city suffers from worse disparities than many other places. More black women here die of breast cancer, research has shown, than in many other major U.S. cities. The South Side of Chicago is home to a chronically underserved population, with high rates of hypertension, diabetes, asthma and other complex diseases. The area also has unusually high percentages of physically disabled adults (10 to 15 percent of the population), premature births (15 to 20 percent) and three times the national rate for adult diabetes-related hospitalizations, according to many studies on disparities.

## According to Chin, disparities research falls into three categories:

- Describing the phenomena that make up the disparities, such as health and health care differences based on racial or ethnic background or socioeconomic status.
- Determining why the disparities exist, and the social or other factors that influence them.
  - Creating solutions and interventions to improve the quality of care for underserved populations or for the patients affected by disparities.

The diversity of the city's population makes it a "rich place to study and make a difference," said Marshall Chin, MD, associate professor of medicine and director of one of the primary disparities research programs at the university—Finding Answers: Disparities Research for Change.

"Frankly, I think disparities are common everywhere," Chin said. Differences in health conditions and medical care, he added, are "equally unacceptable no matter where we are."

The issue reaches far beyond the campus, the South Side or the city of Chicago. Three years ago, the Robert Wood Johnson Foundation (RWJF), a national, private foundation devoted to improving health and care for Americans, launched a set of initiatives to reduce racial and ethnic disparities in American health care. Chin's Finding Answers project found a home at the University of Chicago.

As its director, Chin is a mentor to many faculty members—Monica Peek, MD, a physician researcher at Chicago, calls him her "guru"—and oversees the administration of millions of



Marshall Chin, MD, associate professor of medicine and director of Finding Answers: Disparities Research for Change. Photo by Dan Dry

dollars in grants that are distributed from RWJF. The funds support a variety of health care disparities interventions that address cardiovascular disease, depression and diabetes.

Finding Answers has become a barometer of trends and interventions in health care system disparities, Chin said, because of the number of grant applications it has reviewed

for support. A quarter of its 177 applications had community health worker components, with community educators, links to community resources or assistance navigating the medical system. The 11 proposals that won grants focused on diabetes, patient empowerment, systematic changes to chronic care treatments, depression care management and other topics in American Indian, Latino, Asian and Pacific Islander, and African-American communities.

Finding Answers is just one component of the University of Chicago health inequities research. Another is the Health Disparities Collaboratives, a national effort that works to improve treatments for chronic conditions such as diabetes. The collaboratives bring together community health centers across the country to determine what systematic improvements work best.

"Health centers love it," Chin said. "They see an improvement for their patients, and it makes a lot of sense."

### "Impossible not to see disparities"

A common bond unites researchers in disparities work: "We all have a social justice mission," Chin said.

Christopher Masi, MD, PhD, also speaks of that mission, of wanting to improve health and medical care for all patients. "I guess I have this optimistic streak," said Masi, assistant professor of medicine. "It said, 'We could probably do something about this.'"

Perhaps that concern for the greater good contributes to some of the collaboration that researchers in the field embrace. "People in this field tend to be pretty collegial and team-oriented," Chin said. Because "the challenges are enormous," he said, the strengths and expertise of many academic and community players are required to make a difference.

Sarah Gehlert, PhD, director of the university's Center for Interdisciplinary Health Disparities Research, comes to the field with the perspective of an anthropologist and social worker but has seen progressively more research in the field emerge during her 17 years at Chicago. The topic, she noted, has become a priority for U.S. policymakers.

"If you're in health care and you're working with vulnerable populations," Gehlert said, "it's impossible not to see disparities."

During her early research, Gehlert wondered "how disease got under the skin, how poverty made people sick." At the same time, University of Chicago pathologist Thomas Krausz, MD, was studying breast cancer cells.

"For years, he looked at breast cancer cells through a microscope," she said, "and also wondered what the patients' lives were like."

By working together at the center and looking at the social and cultural elements that may affect health, Gehlert said, "It is, for each of us, an 'Aha!'"

As principal investigator of the National Institutes of Health-funded center, Gehlert has been a leader for many of the disparities initiatives here. Researchers at the center have focused on the gap between breast cancer mortality rates for black and white women and brought together many disciplines to investigate the difference.

Now Gehlert and a team of researchers—including Martha McClintock, Funmi Olopade, and Suzanne Conzen—are looking at the lives of local women newly diagnosed with breast cancer. The researchers meet with the women repeatedly, go into their homes, observe their social situations, screen for depression and ask about their work, sleep and life habits. They observe what happens inside the home and in the women's neighborhoods and analyze nearby crime statistics.

Groups of medical students involved in the work also study the neighborhoods. They analyze how the body changes after years of living in environments with high crime rates, poor housing conditions or tense social situations.

### Reaching out

Stress and the body's response to it are an important part of health disparities research. Masi, is working with John Cacioppo, PhD, a psychologist who has been studying a diverse cohort of 200 people over several years.

Masi, who analyzes the effects of psychological stress on hormone metabolism and blood pressure, called the data from the study "invaluable." The research team he works with identified racial and ethnic differences in stress hormone levels, which may be important to solving disparities in high blood pressure and heart disease.

In his PhD work at the School of Social Service Administration, Masi investigated birth outcomes disparities in Chicago neighborhoods and showed that infants born in areas with higher violent crime rates had lower birth weights, even after adjusting the results for race, income, maternal smoking, mother's age and other factors. Chronic stress, the results showed, had serious health effects.

"When I think about the long-term, eliminating health disparities in this country will require some philosophical shifts and a new approach," he said. "One that emphasizes social justice as much as health care justice."



Through such collaborative research, Gehlert said, “like-minded people across the campus have connected.” The university’s reputation on the subject of disparities has also brought in top-notch scholars such as geneticist Rick Kittles, she added.

Kittles, PhD, associate professor of genetic medicine, found that a genetic variation on a particular region of chromosome 8 increased the risk of prostate cancer among black and white men. But African-American men also carried an additional genetic variation, with an even greater cancer risk.

Prostate cancer, the second leading cause of cancer death in men, strikes African-Americans at a disproportionately high rate. By further studying this genetic variation, Kittles has said, researchers “may be able to develop molecular targets for improved screening, early detection and possibly treatment.”

The study shows that ancestry plays a role in disease genes, Kittles said. “Since African-Americans vary significantly in genetic ancestral proportions and the prevalence of prostate cancer is almost two-fold higher among African-Americans compared to European Americans,” he said, “the use of ancestry-informative markers for association with prostate cancer is quite powerful.”

Genetic research at Chicago has shown other staggering differences between races, revealing how diseases can differ under the skin. Professor Funmi Olopade, MD, who studies breast

cancer and genetics, discovered that women of African ancestry are more likely to be diagnosed with a virulent form of the disease than women of European ancestry. By studying cancer patients in Nigeria, Senegal and North America, her research team found that cancerous tumors from African women were more likely to originate from a different group of cells and don’t respond to some standard therapies.

“We have known for a long time that breast cancer is not one disease and that it may be somehow different in Africa,” said Olopade, director of the Center for Clinical Cancer Genetics at the University of Chicago and a 2005 MacArthur Fellow. “But there was no real sense of how much of that was biology and how much was environment. Now we have clear evidence that nature plays an important role. These tumors are biologically quite different in ways that make this a worse disease.”

Angel Jacobs, a 29-year-old Chicago resident, is one of Olopade’s patients. After Jacobs found a lump, she was diagnosed with breast cancer at the University of Chicago Medical Center, where she came for regular care. Chemotherapy and radiation treatment have left her cancer-free, but the knowledge lingers that her genes carried this high-risk disease.

“I feel like I manage it pretty well,” said Jacobs, who visits Olopade and a radiologist every three to six months for check-ups. “It’s just something that you deal with forever. It’s not something that’s curable at this point.”



From left: Tonya Payton-Campbell, McKenzie Campbell and Jamon Thomas learn about healthy eating and exercise at a Reach In! Reach Out! weekly meeting. Photo by Dan Dry

Part of the struggle with treating breast cancer and its related inequities in the city of Chicago is educating patients about the disease and the availability of mammograms.

Monica Peek, MD, an assistant professor of general internal medicine, knew Chicago had serious health disparities with breast cancer mortality when she moved to the city in 2001 and was concerned that the women most affected were not getting the health education they needed.

While working at Cook County Hospital and Rush Medical Center, she started a program to train women who lived in the Chicago neighborhood called Rockwell Gardens, an aging

American College of Physicians and the American Medical Association, attempt to address health disparities.

Intervention and education programs, like the one Peek created, put disparities research into practice in affected communities. Internist and pediatrician Deborah Burnet, MD ’89, founded a community-based research project called Reach In! Reach Out!, in which community leaders teach families about healthy eating and exercise. The goal is to lower the risk for diabetes and obesity for African-American youth on the South Side. That program, in its pilot phase and current version, has helped more than 100 families learn about nutrition and activity.

## Disparities researchers at the University of Chicago



Monica Peek, MD  
Assistant Professor, Medicine



Christopher Masi, MD, PhD  
Assistant Professor, Medicine



John Hickner, MD  
Professor and Vice Chair,  
Family Medicine



John Cacioppo, PhD  
Professor, Psychology



Rick Kittles, PhD  
Assistant Professor, Medicine



Scott Cook, PhD  
Deputy Director,  
Finding Answers



Funmi Olopade, MD  
Professor, Medicine and  
Human Genetics  
Director, Cancer Risk Clinic



Deborah Burnet, MD  
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Sarah Gehlert, PhD  
Director, Center for  
Interdisciplinary Health  
Disparities Research  
Professor, Social Service

## Genetic research at Chicago has shown other staggering differences between races, revealing how diseases can differ under the skin.

housing project, to become community health advocates. Peek crafted a program, supported by grants from several different nonprofits and government agencies, that informs women of major health issues, teaches them how to be advocates in their communities and sends them into their neighborhoods to encourage mammograms and spread awareness to families, friends and neighbors. “It’s going to take all of us to care about changing disparities,” she said. “I can’t be everywhere. The reason I train people is so I can extend my reach.”

Peek has moved to the University of Chicago, where she continues her health advocacy work and health disparities research. Her energy now is focused on a new intervention to help diabetes patients and the medical professionals who treat them to better manage medical care and health. She’s also researching workforce diversity and disparities in health care, and looking at ways that physician professional organizations, such as the

“It helped me learn so much about nutrition and exercise,” said Althera Steenes, who started as a community educator for the program and has become a full-time community outreach specialist. “Diabetes is very prominent in my family.”

Since she got involved with the project more than two years ago, Steenes has lost about 50 pounds through diet and exercise, she said. She takes what she has learned to schools and churches, where she talks to parents and kids about their lifestyle choices and the risk of diabetes and obesity.

“I see obesity being a problem when I go out and talk to kids,” she said. But she also sees changes in the families she teaches. One mom lost 40 pounds through healthier eating habits. The program is not created for weight loss specifically, but the participants become more mindful of making changes that can lead to healthy weight and lower diabetes risk.



### Diverse disparities research

As these outreach programs demonstrate, much work focuses on racial, ethnic or socioeconomic disparities. But research on the topic goes far beyond skin color, income or the community in which patients reside.

Before Scott Cook, PhD, became deputy director of Chicago's Finding Answers program, he was on the ground level of disparities interventions, working as a clinical psychologist at the Howard Brown Health Center, a Chicago organization that serves the lesbian, gay, bisexual and transgender (LGBT) population. That background gives Cook a unique perspective on health and care disparities based on LGBT medical needs.

Health disparities such as high rates of HIV infections, particularly in gay men of color, higher smoking rates than the mainstream population, and high rates of syphilis necessitate research on care and interventions that cater to the LGBT community. Disparities in medical care can arise when doctors are not comfortable with or educated about cultural and medical issues specific to LGBT patients. Cook's work and expertise show disparities that impact people who may not first come to mind when discussing the subject.

Cook worked with four community organizations to develop a smoking cessation intervention program based on an existing American Lung Association curriculum but tailored to the LGBT community in Chicago. He is now working on a similar project targeted to help HIV-positive men stop smoking.

Through Finding Answers, Cook helps iron out problems that grant recipients may have: finding resources, staying on budget, following their plans or struggling with technology. He is part of the team that analyzes program results to determine how the successful interventions can be applied to other health centers and promoted around the country.

Other major projects at the university are tied closely to health disparities research, though that label is not always used. One such initiative is the Clinical and Translational Science Award, a \$23 million grant from the National Institutes of Health to rapidly transfer innovative scientific research into treatments for patients. The project will connect disease research, which may yield discoveries about how diseases differ among diverse patient populations, to efforts to bring better treatments to patients, particularly those on the South Side of Chicago who often lack access to clinical trials and the cutting-edge medicine they offer.

The definition of disparities research can be a bit nebulous, said John Hickner, MD, professor and vice chair of family medicine. Hickner, who has worked with Access Community Health Network and other community health centers on quality improvements, doesn't consider himself a health disparities researcher. He's focused on system improvements to get patients faster, more efficient care or to connect them with primary care physicians for regular medical checkups and needed medical care. He also evaluates how medical tests are administered and how patients manage their medications. His work is focused on primary care and delivery of care, but because he is working on the South Side now, the research is frequently based in clinics with underserved patient populations.

"All of us who are working on care for the underserved get labeled as disparities researchers," Hickner said, adding, "If people put that label on me, that's fine."

Alyna Chien, MD '01, has always been interested in vulnerable populations. A University of Chicago "trainee" from undergraduate through her MD, and as an instructor of pediatrics she worked with refugee and immigrant populations as a social worker prior to medical school, as well as with uninsured and underinsured African-American patients on the South Side during her medical training.

Her research, now based at Children's Hospital Boston, investigates health care performance incentives—such as pay-for-performance and public reporting attempts to tie physician rewards or penalties to the quality of care they deliver and patient outcomes. This strategy is being adopted by many commercial health insurance companies and Medicare. While Chien's main focus is on whether these incentives work, she is also studying how performance incentives impact the care of vulnerable populations.

"What the mainstream does can impact underserved populations," she said. The incentives could help vulnerable groups, she noted, because health care overall may improve by aligning payment with quality. But vulnerable populations—with resource-constrained settings—may not be able to compete with clinics practicing in more affluent areas, particularly if rewards tend to be earned by wealthier providers in the first place. "In general," Chen said, "care is getting better—but faster for mainstream improvements than for underserved populations."



*'You realize you're talking about people'*

First-year Pritzker students toured area clinics and hospitals, including Jackson Park Hospital, pictured here. Above, Jackson Park's directory of surgery Gerrie Pate, RN, (pictured in white lab coat) talks to students about surgical beds and common procedures at the hospital. Photos by Dan Dry

### Opening students' eyes to inequality

Dean Shumway grew up in Idaho where he was relatively unaware of the concept of health care disparities, he said. So when he arrived at the University of Chicago Pritzker School of Medicine, he had a blank slate on the topic—but not for long.

His orientation in 2006 included a class called "Health Care Disparities in America."

"I didn't know what to expect," he said, adding, "I thought it would be interesting."

Shumway and his peers heard lectures, statistics, and historical and hypothetical cases about disparities. But what hit many students hardest were visits to local clinics and Cook County Hospital.

"I was struck by the reality of the situation," said Shumway, a third-year student this fall. "When you go into the clinics, you realize you're talking about people."

More than two years ago, assistant professor Monica Vela, MD '93, assembled a faculty team to teach first-year students about health care disparities. The one-week elective course during orientation expanded the next year to include all first-year students. This fall, the class will span the first eight weeks of the quarter.

The course is an anomaly in modern medical education, and other medical schools have contacted Vela about how to start similar ones. But Vela said that part of the success here is that Chicago has so many experts in disparities who can provide leadership and insight on the topic.

Celine Goetz, who finished her first year at Pritzker this spring, said the class opened her eyes to the complexity of health disparities and how health inequities affect her medical education and future career.

"Once you recognize these realities in medicine, you're acutely aware of them," Goetz said. "It's clear to me that this isn't going away."

The curriculum has a wide scope, with lessons on cultural differences, health literacy, language barriers, history, Medicare and Medicaid, and uninsured patients. The lectures also include health conditions that have socioeconomic or racial disparities, such as diabetes, hypertension, obesity and diet.



The class particularly focuses on "making things relevant to Chicago," said Eric Chen, a Pritzker student who will start his second year this fall. Since taking the class, Chen has volunteered in the community and with the Health Professions Recruitment and Exposure Program, a medical-student-run project that teaches local high school students about health care careers.

Students in the class take excursions to community health care centers such as the Washington Park Children's Free Clinic, Cook County Hospital, the Friend Family Health Center, Access

Community Clinics and the University of Chicago Medical Center emergency room.

The class includes several sections of discussion time, as well, for students to tackle lingering questions and analyze their experiences and lessons. The subject can be highly controversial and emotional.

"I think that has to be handled in just the right way," said Vela, who closely monitors students' reactions to topics and the reviews the class garners each year.

One particular discussion from the class sticks in Shumway's memory. How, he asked, could physicians with radically different backgrounds from their patients relate to the people they serve? The words he heard in response from Monica Peek, MD, a physician and assistant professor, made an impression: The fact that you want to understand your patients' lives will make all the difference.

—SW