

# Robert Wood Johnson Foundation Health & Society Scholars®

# An RWJF national program

Since 2001, the *Robert Wood Johnson Foundation Health & Society Scholars*® (*Health & Society Scholars*) has been building the field of population health by producing leaders who will change the questions asked, the methods used to analyze problems, and the range of solutions offered to improve the health of all Americans. Scholars:

- Investigate the connections among biological, behavioral, environmental, economic, and social determinants of health.
- Develop, evaluate, and disseminate knowledge and interventions based upon these determinants.

The Robert Wood Johnson Foundation Board of Trustees has authorized \$93.2 million for the *Robert Wood Johnson Foundation Health & Society Scholars* program through August 2014.

#### **CONTEXT**

Although the United States spends more for medical care than any other country in the world, it ranks poorly on many indicators of health and well-being. Experts know that medical care has a limited impact on the health of populations.<sup>1</sup>

Yet, 95 percent of spending on health in the United States between 1994 and 1998 went to medical care, with less than 5 percent allocated to population-wide approaches to improving health.<sup>2</sup>

### **Identifying Factors That Impact Health**

In 1993 Michael McGinnis, MD, MPP, and William Foege, MD, MPH, identified the major contributors to death in the United States in 1990.<sup>3</sup> (See also Program Results Report.) They were (in decreasing order):

<sup>&</sup>lt;sup>1</sup> e.g., Bunker, et al. "The Role of Medical Care in Determining Health: Creating an Inventory of Benefits." In *Society and Health*, New York: Oxford University Press, 1995.

<sup>&</sup>lt;sup>2</sup> McGinnis JM, Williams-Russo P and Knickman JR. "The Case for More Active Policy Attention to Health Promotion." *Health Affairs*, 21(2): 78–93, 2002.

- Tobacco
- Diet and activity patterns
- Alcohol
- Microbial agents
- Toxic agents
- Firearms
- Sexual behavior
- Motor vehicles
- Illicit use of drugs

The Institute of Medicine has explored ways to improve the health of Americans and examined factors that affect health (determinants of health) in a series of reports from 1998 to 2002. For example, one report<sup>4</sup> stated that, "Health and disease are determined by dynamic interaction among biological, psychological, behavioral and social factors." The report also noted that multiple disciplines needed to interact in order to understand and influence health and behavior.

Another report<sup>5</sup> repeated a theme from that report and other reports: "Personal health care is only one, and perhaps the least powerful, of several types of determinants of health, among which are also included genetic, behavioral, social and environmental factors."

McGinnis et al. described each of these determinants of health in a 2002 *Health Affairs* article<sup>6</sup>:

- **Genetics:** Although many diseases have a genetic component, other factors play a much larger role in determining whether or not a person stays healthy or becomes ill.
- **Behavioral choices:** Personal behavior—diet, physical activity, sex, substance abuse and other addictions, the approach to safety and strategies to cope with stress—is the most prominent influence over health in the United States. For example, diet is associated with heart disease, stroke, certain cancers, and diabetes. Physical inactivity has been associated with increased risk for heart disease, colon cancer, diabetes, dementia, and osteoporosis.

<sup>&</sup>lt;sup>3</sup> McGinnis JM and Foege WH. "Actual Causes of Death in the United States." *Journal of the American Medical Association*, 270(18): 2207–2212. 1993.

<sup>&</sup>lt;sup>4</sup> Institute of Medicine. *Health and Behavior: The Interplay of Biological, Behavioral, and Societal Influences*, 2001.

<sup>&</sup>lt;sup>5</sup> Institute of Medicine. *The Future of the Public's Health in the 21st Century*, 2002.

<sup>&</sup>lt;sup>6</sup> McGinnis JM, Williams-Russo P and Knickman JR. "The Case for More Active Policy Attention to Health Promotion." *Health Affairs*, 21(2): 78–93, 2002.

- Social circumstances: Education, employment, income disparities, poverty, housing, crime, and social support are major influences on health. Education and poverty are the strongest influences, with more education and higher income linked to better health.
- Environmental conditions: The physical environments in which people live and work contribute to health. Exposure to toxic agents, including pollution, germs, and contaminated food and water, have been associated with skin diseases, cancers, allergies, and other diseases. Structural hazards (e.g., poor road design or unsafe workplaces) are associated with serious and fatal motor vehicle crashes, falls, fires, and work-related injuries. Urban design choices can promote or discourage physical activity and community cohesiveness.

According to McGinnis et al., a person's health "fate" is determined by the interconnections among these factors. Gene expression can be influenced by environmental conditions or behavioral choices. Social circumstances affect the nature and consequences of behavioral choices and the health care received.

Studies comparing the health status of different population groups within the United States repeatedly show disparities in health status between racial and ethnic groups, men and women, and populations with lower and higher levels of income and education. For example:

- In 1999, the infant mortality rate for African Americans was 14.6 per 1,000 live births, 2.5 times higher than that for Whites<sup>7</sup>
- Life expectancy is consistently higher for women than for men, with a difference of 5.5 years in 1999.8
- In 2000, people with less than 12 years of education were twice as likely to die from chronic disease than those with more than 12 years of education. 9

# A Shortage of Population Health Expertise

The field of population health began to emerge later in the United States than in the rest of the world. Early definitions of population health included:

• "A conceptual framework for thinking about why some people are healthier than others, as well as the policy development, research agenda and resource allocation that flow from it." <sup>10</sup>

<sup>&</sup>lt;sup>7</sup> Hoyert et al. "Deaths: Final Data for 1999." National Vital Statistics Reports, 49(8), 2001.

<sup>&</sup>lt;sup>8</sup> ibid.

<sup>&</sup>lt;sup>9</sup> U.S. Department of Health and Human Services, *Healthy People 2010: Understanding and Improving Health*, Washington: U.S. Government Printing Office, 2000.

<sup>&</sup>lt;sup>10</sup> Young T. Population Health Concepts and Methods, New York: Oxford University Press, 1998.

• "The health of a population as measured by health status indicators and as influenced by social, economic and physical environments; personal health practices; individual capacity and coping skills; human biology; early childhood; and health services."

By 2001, there were new funding sources and a growing demand for experts who could research, develop, and implement interventions to improve the health of populations (groups of people sharing common characteristics such as ethnicity, religion, or membership in an HMO, or common geography such as a city, a county, or a prison).

Government agencies, universities, and public health organizations all needed experts from many disciplines, including the behavioral and social sciences, biological and natural sciences, health professions, public policy and public health, who could collaborate in the emerging field of population health. However, experts with such knowledge and skills were in critically short supply.

The Future of the Public's Health in the 21st Century (2002) called for greater attention and resources to be directed toward understanding the interconnections between the multiple determinants of health. It also noted the need to develop leaders who can help the public understand the determinants of health and mobilize action to improve health.

#### **RWJF's Interest in This Area**

RWJF has a long history of supporting training programs for health care and health service scholars and providers.

The *Robert Wood Johnson Foundation Clinical Scholars* provides post-residency clinical training for young physicians interested in research and leadership careers in health policy and academic medicine. The two-year university-based program is designed to produce scholarly physician leaders with the understanding and skills necessary to have a major influence on health care policy, and to help create and build the field of health services research.

Originally authorized in 1972, *Clinical Scholars* is the oldest RWJF national program. Read the Program Results Report.

The next year, RWJF launched the *Robert Wood Johnson Health Policy Fellows Program*, which sends midcareer health professionals and behavioral and social scientists to Washington to work in Congress or the administrative branch on health policy issues. Read the Program Results Report.

RWJF established the *Robert Wood Johnson Scholars in Health Policy Research* in 1991 to produce creative thinkers and problem solvers in health policy research by attracting

<sup>&</sup>lt;sup>11</sup> Dunn JR and Hayes MV. "Toward a Lexicon of Population Health." *Canadian Journal of Public Health*, 90(Suppl. 1): 57–60, 1999.

talented recent graduates of doctoral programs in economics, political science and sociology to the field. This is a two-year university-based program. Read the Program Results Report.

In 1992, RWJF established the *Investigator Awards in Health Policy Research*, which aims to build the capacity of the health policy field by offering general research support for innovative ideas that are unlikely to be funded elsewhere. The program funds investigators from a wide range of disciplines to conduct broad studies of the most challenging health, health care and health policy issues facing America. Read the Program Results Report.

# A Program to Build Population Health

The Population Health: Science and Policy Team at RWJF wanted to build the emerging field of population health by creating a program to foster understanding of the interconnections between the multiple determinants of health and train leaders who could design, implement, and evaluate population-wide interventions to improve health and reduce disparities in health. Staff determined that the best way to do this was through a hybrid effort: a scholars training program, based on the model of *Clinical Scholars* and focused on providing interdisciplinary training for population health, plus a "centers of excellence" initiative that would strengthen the university sites at which the scholars were trained.

The strategy behind the *Robert Wood Johnson Foundation Health & Society Scholars* was to:

- Train scholars who will become the future leaders of population health.
- Increase the capacity of six academic sites to provide a dynamic training environment and foster interdisciplinary collaboration.
- Cultivate training sites as models for bridging the barriers to interdisciplinary careers and collaboration.

### **THE PROGRAM**

RWJF established *Robert Wood Johnson Foundation Health & Society Scholars*<sup>®</sup> in 2001 to build the field of population health by producing leaders who will change the questions asked, the methods used to analyze problems and the range of solutions offered to improve the health of all Americans. The program's goals are to:

• Investigate the connections among biological, behavioral, environmental, economic, and social determinants of health.

• Develop, evaluate, and disseminate knowledge and intervention strategies based upon these determinants.

The program began with a planning phase, authorized by RWJF's Board of Trustees for up to \$1.3 million in January 2001. Since then, the Trustees have reauthorized the program four times:

- In April 2002, for up to \$31 million for the first five years
- In April 2005, for up to \$33.958 million for five years
- In January 2009, for up to \$21 million for three years
- In April 2011, for up to \$6.4 million for 26 months<sup>12</sup>

# **Program Planning**

During the planning phase, members of the RWJF program staff established a technical advisory committee of experts and selected six universities to participate in planning the program and developing implementation proposals: Columbia University; Harvard University; University of California, San Francisco and University of California, Berkeley (a joint program, hereafter called the University of California at San Francisco/Berkeley); University of Michigan; University of Pennsylvania; and University of Wisconsin.

All of these universities later became program sites.

During the planning phase, RWJF program staff held three meetings with the site directors and core faculty and members of the technical advisory committee. They worked collaboratively to design *Health & Society Scholars*. Site directors and core faculty from the participating universities also began to develop a network for collaboration across the six sites as well as planning their individual program site's curriculum and training.

#### **Implementing the Program**

As of 2011, *Health & Society Scholars* accepts up to 12 scholars annually; two scholars per year at each of the six sites. <sup>13</sup> Like *Clinical Scholars* and the *Scholars in Health Policy Research Program, Health & Society Scholars* offers a mix of formal curricula, research mentoring, seminars, and individualized multidisciplinary learning over a two-year period.

<sup>&</sup>lt;sup>12</sup> Total authorizations are \$93,243,845 because of a reduction of \$1.2 million due to an economic downturn

<sup>&</sup>lt;sup>13</sup> For the first eight years, the program accepted 18 scholars per year, three at each of its six participating sites.

#### **Host Universities**

The six universities that participated in planning *Health & Society Scholars* serve as the host universities:

- Columbia University
- Harvard University
- University of California at San Francisco/Berkeley
- University of Michigan
- University of Pennsylvania
- University of Wisconsin

Each of these sites has outstanding talent in specific disciplines, a commitment to interdisciplinary collaboration, breadth and depth in research opportunities and faculty leaders in population health.

Specific offerings vary by university, but scholar-directed research conducted with the guidance or collaboration of faculty mentors is a major element of the program at all sites. Each site also has:

- A structured curriculum (usually seminars), which varies among sites and constantly evolves
- Opportunities to draw on the expertise and offerings of the broader university and across program sites
- Focused training in skills necessary for leadership, program implementation, and policy change
- Access to competitive grants for research projects that are funded from the research
  and training budget that RWJF awards to each site for use in developing population
  health research and teaching capacity. All sites use some of these funds for
  competitive grants, which are open to the program scholars as well as students and
  faculty at the university. Many sites also use some of these funds to bring in outside
  speakers or sponsor workshops.

For more details on these elements see Common Program Elements.

#### Scholar Selection and Placement

To be eligible for *Health & Society Scholars*, applicants must:

• Have a doctoral degree in a field such as behavioral and social sciences, biological and natural sciences, health professions, public policy, public health, history, or ethics

- Have significant research experience
- Have training in health-related areas or be able to clearly connect their research interests to important population health concerns
- Welcome the challenge of building the field of population health
- Be willing to relocate to the designated institution during the two-year program.

Scholars have access to a full range of university resources and receive annual stipend support (for 2011 it is \$89,000). Scholars also receive additional financial support for research-related and other expenses, training workshops, and travel to professional meetings.

The national program office typically receives more than 300 applications each year (up from 200 in earlier years and 130 in the first few years—an increase of 130%). Staff members from the national program office, RWJF program staff, national advisory committee members and representatives of the participating universities review the applications. The national advisory committee selects about 50–60 finalists each year.

Finalists interview at up to three participating universities. After the interviews, program directors at each site rank the applicants and applicants rank the sites. Sites and scholars are matched as closely as possible based on these rankings. The program accepts the top 12 applicants. See the program's website for details about the scholar selection process.

Scholars start in August or September, depending upon each university's academic calendar. The first group of 18 scholars entered the program in 2003 (RWJF reduced the number of scholars per year to 12 beginning in 2011 due to reductions in investment across the Human Capital portfolio necessitated by the economic downturn. As of September 2011, the ninth group of scholars had begun the program.

# **National Advisory Committee**

The national advisory committee guides program policy, reviews scholar applications, participates in annual meetings, and assists in monitoring site performance. Harvey V. Fineberg, MD, MPP, PhD, president of the Institute of Medicine of the National Academies in Washington, chairs the committee, which is selected by RWJF program staff from national experts across the disciplines informing population health.

#### Management

RWJF managed *Health & Society Scholars* internally until September 2007. Pamela G. Russo, MD, MPH, senior program officer and at that time director of the Public Health Team, co-directed the program, first with James Knickman, PhD, former vice president

for Research and Evaluation and then with Carol Chang, MPH, MPA, a former program officer.

Another RWJF program officer, Kimberly Lochner, ScD, fulfilled the responsibilities of a deputy director during the initial years of the program. Gerard P. Lebeda was the program coordinator. When Lochner left RWJF in 2005, Lebeda assumed her responsibilities.

By 2007, *Health & Society Scholars* had grown to the point where the Foundation felt it needed an external national program office that could dedicate time promoting the field of population health more broadly. RWJF chose the New York Academy of Medicine, <sup>14</sup> which began serving as the national program office in September 2007. Jo Ivey Boufford, MD, and David Vlahov, PhD, RN, were co-directors of the program until April 2011 when Vlahov assumed a new position as dean and professor at the University of California, San Francisco, School of Nursing. Christine Bachrach, PhD, assumed his role as co-director of the program. Lebeda moved from RWJF to the New York Academy of Medicine in September 2007 and continues to serve as deputy director.

The national program office provides administrative and policy oversight for the program, including:

- Promoting the program and the field of population health, including through the program website and more recently through a program group on LinkedIn
- Managing the scholar selection process
- Monitoring program development at the six sites
- Working with site leadership on cross–cutting program issues
- Planning and conducting the program's annual meeting
- Facilitating networking among scholars and alumni and keeping track of alumni
- Promoting the field of population health

#### Meetings and Other Cross-Site Interaction

Opportunities for scholars and faculty from the six sites to interact occur at:

- The annual meeting
- The scholars-only meeting
- Short courses at some sites

<sup>&</sup>lt;sup>14</sup> A nonprofit institution dedicated to improving the lives of people (especially disadvantaged and vulnerable populations) living in cities, through research, education, community engagement and evidence-based advocacy.

#### Professional meetings

The program holds an annual meeting in May. Scholars, site directors and faculty, national advisory committee members and national program office and RWJF staff attend.

The annual meeting provides an opportunity for scholars to present their research and obtain input on it. First-year scholars participate in a research-in-progress seminar to obtain input on their research plans. Second-year scholars present the research they have conducted while participating in the program during concurrent sessions.

The scholars also hold a scholars-only meeting every October. This was instituted because the scholars in the first cohort wanted more time together. They drew on their individual travel funds the program provides to attend the meeting. The scholars determine the content of the scholars-only meeting.

Columbia University and the University of Pennsylvania have offered short courses or workshops, primarily on research methods, that are open to scholars and faculty from all of the sites.

# Health & Society Scholars Compared With Other RWJF Scholar Training Programs

Health & Society Scholars differs from the other two scholar training programs—Clinical Scholars and Scholars in Health Policy Research—in that it includes an institution-building component. Each university has a small research and training budget to foster interdisciplinary collaboration and research in population health.

The sites use these funds, which are not connected to individual scholars, to develop research, teaching, and career development capacity for population health at the site. (*Robert Wood Johnson Scholars in Health Policy Research* adopted this model in 2005 after observing the positive effects in the *Health & Society Scholar* sites.)

Health & Society Scholars also represents the widening of the lens through which RWJF views the nation's health problems, from the narrowly focused Clinical Scholars for young physicians interested in careers in health policy, health services research, and academic medicine to Scholars in Health Policy Research, which seeks to attract recently minted PhDs in economics, political science, and sociology to health policy research to Health & Society Scholars.

Using the widest lens, *Health & Society Scholars* targets scholars who think seriously about a range of determinants of health and their interactions. Its aim is the most conceptual of the three scholars programs. It employs an integrative model, understanding that many different factors intersect and combine to produce good or poor health, and they should be assessed in combination, not in isolation. It seeks to enlarge

the knowledge base about the multiple determinants that shape population health by drawing upon the paradigms and methods from multiple disciplines.

# **Interaction With Other RWJF Programs**

Participants in *Health & Society Scholars* interact with those from other RWJF national programs involving researchers:

- Clinical Scholars Program
- Scholars in Health Policy Research Program
- Health Policy Fellows Program
- Investigator Awards in Health Policy Research

Two of the *Clinical Scholars Program* sites—University of Michigan and University of Pennsylvania—and three of the *Scholars in Health Policy Research Program* sites—Harvard University, University of California at San Francisco/Berkeley and University of Michigan—also are sites in the *Health & Society Scholars* program.

Program directors and national program office staff create opportunities for scholars and fellows from these different programs to meet each other and work together. For example:

- At the University of Pennsylvania, *Health & Society Scholars* and *Clinical Scholars* attend joint scholar and work-in-progress seminars.
- The University of Michigan hosts an opening reception and some meetings throughout the year for scholars from the *Health & Society Scholars*, *Clinical Scholars* and *Health Policy Research* programs.
- Selected scholars attend the annual meetings of other programs. For example, some *Health & Society Scholars* attend the annual meetings of the *Scholars in Health Policy Research* and *Health Policy Fellowships* programs, and vice versa.

#### Alumni Activities

RWJF has created an alumni network for scholars and fellows from all of its human capital programs to strengthen connections and information exchange among alumni and with RWJF; facilitate cross-alumni research, program collaboration, and mentoring; and increase the impact and visibility of RWJF alumni and their work.

Health & Society scholars (current scholars and alumni) also stay connected through the program's annual meeting and other professional meetings they attend, the program website, and social networking. The national program office has also added information about each scholar's publications (including links to PubMed) and activities and started LinkedIn and Facebook groups for scholars and faculty.

Deputy Director Lebeda regularly posts scholar and faculty collaborations, publications, and press coverage on the news section of the program's website and the two social networking sites. "I'm always posting collaboration between alumni from different cohorts and different institutions. Some are collaborating with former faculty in the universities they studied in," he said.

A database of scholars by discipline on the website enables scholars to find potential collaborators with the desired expertise.

#### **Self-Evaluation**

In 2010, the national program office oversaw a self-evaluation in which the *Health & Society Scholars* sites reported on their activities since the program began. This included:

- Scholars' activities during and after the program (including current positions, publications, grants, leadership, and collaboration with program faculty and other scholars)
- Faculty productivity (publications, including those co-authored with scholars and other program faculty)
- Impact of Research and Training Budget funds
- Effect of the program in terms of number and type of disciplines represented by the faculty
- Relationship of the program to the university (e.g., getting university funding for grants and faculty support and evidence of enhanced visibility/awareness of population health and the importance of rewarding interdisciplinary scholarship).

The national program office oversees an annual update to the self-evaluation, including review and in-person site visits (alternate years) by national advisory committee members.

#### **OVERALL PROGRAM RESULTS**

Key program results through September 2011 include the following:

- As of September 2011, 157 scholars had completed or were participating in the Robert Wood Johnson Foundation Health & Society Scholars<sup>®</sup>:
  - A total of 125 scholars (Cohorts 1–7) had completed the program.
  - Some 31 scholars (Cohorts 8 and 9) were enrolled in the program.
  - In addition, one scholar, Michelle McMurry, MD, left after her first year because
    of a job opportunity; she became director of the Health, Biomedical and Society
    Policy Program at the Aspen Institute. She is included in alumni activities.

Scholars have represented a variety of fields and research interests. They include:

- Annaliese Beery, PhD, a neurobiologist who studied how experience and environment alter the biology and behavior of individuals during her fellowship at the University of California, San Francisco/Berkeley (2008–2010). Her findings were subsequently published in *Nature* as well as *Neuroscience and Behavioral Reviews*.
- Sarah A. Burgard, PhD, MS, a sociologist and epidemiologist who examined how health and work are related as part of the first group of scholars at the University of Michigan (2003–2005). Burgard published her findings in the *Journal of Health and Social Behavior* and *Social Science and Medicine*. Read the Grantee Profile on Burgard.
- Clinical psychologist Dominick L. Frosch, PhD, who explored direct-to-consumer advertising and patient decision-making as a scholar at the University of Pennsylvania (2003–2005). Frosch's findings, published in journals such as Annals of Family Medicine, have received widespread media coverage, including USA Today, Washington Post, NPR, ABC, NBC, CBS and WebMD. Read the Grantee Profile on Frosch.
- Medellena Maria Glymour, MS, ScD, a social scientist who studied the relationship between geographic risk factors and adult cognitive impairment and stroke during her fellowship at Columbia University (2006–2008). Glymour published her findings in Stroke: Journal of the American Heart Association and other journals and received a grant from the National Institute on Aging to continue the research. Read the Grantee Profile on Glymour.
- David T. Grande, MD, MPA, a physician who studied social issues related to health care, including public distrust of health care, during his fellowship at the University of Pennsylvania (2005–2007). Read the Grantee Profile on Grande.
- Consumer psychologist Sonya A. Grier, PhD, MBA, who studied the effects of marketing on childhood obesity as part of the first group of scholars at the University of Pennsylvania (2003–2005). Read the Grantee Profile on Grier.
- Douglas P. Jutte, MD, MPH, a pediatrician who studied the interaction of biological and social risk factors in early childhood and their relationship to long-term health and educational outcomes as a scholar at the University of California at San Francisco/Berkeley (2003–2005). Jutte's research has been published in Epidemiology, Annual Review of Public Health, the Journal of the International Neuropsychological Society, and Academic Pediatrics. Read the Grantee Profile on Jutte.
- Economist José A. Pagán, PhD, who conducted research to raise awareness of the impact of uninsurance on everyone (including people with health insurance), as a

scholar at the University of Pennsylvania (2003–2005). Read the Grantee Profile on Pagán.

- Rachel Tolbert Kimbro, PhD, a family sociologist who explored how relationships impact health behaviors during pregnancy while a fellow at the University of Wisconsin (2005–2007). Read the Grantee Profile on Kimbro.
- Medical anthropologist and asthma epidemiologist David Van Sickle, PhD, MA, developed a device to track the time and location of asthma attacks and send these data to a database, for use in improving asthma care, during his fellowship at the University of Wisconsin-Madison (2006–2008). This work has been covered in *Economist, Time*, and the *New York Times*. Van Sickle was selected as a White House Champion of Change in 2011. Read the Grantee Profile on Van Sickle.
- Matt Wray, PhD, a sociologist at Harvard University (2006–2008), who studied risk factors for the high suicide rate in Las Vegas. Nevada suicide prevention groups are using his results in developing suicide prevention programs. Read the Grantee Profile on Wray.

See Appendix 1 for a complete list of scholars who entered the program between 2003 and 2011. See the program website for biographies of the scholars.

• The scholars have broadened their research and career perspectives and choices. "The scholars come out of the *Health & Society Scholars* program as changed young academics," says John Mullahy, PhD, program director at the University of Wisconsin. "They have a broader appreciation of the interdisciplinary nature of the field of population health and understand the spectrum of methods and approaches to population health problem solving."

"During my time in the program, I have become a completely different type of academic. I have developed into a far more interdisciplinary scholar than I ever would have been otherwise," said Kate McLaughlin, PhD, a scholar at Harvard University from 2008–2010, now an instructor in the Department of Health Care Policy at Harvard Medical School.

"I now feel confident evaluating research in economics, epidemiology, sociology, psychology, physiology, biology, and anthropology. I feel comfortable interacting and sharing ideas with academics from these disciplines and have developed collaborations with people in many of these often disconnected fields. My research is able to tackle bigger problems that almost by definition require interdisciplinary approaches and solutions."

Scholars have also gotten good jobs, says David Asch, MD, MBA, program codirector at the University of Pennsylvania. "In some cases, those jobs are quite different than what they would have gotten without the program," he said. "In some cases, the program is transformative. I'm not going to attribute causality, but we are enabling some things."

# For example:

- Clinical psychologist Dominick L. Frosch, PhD, joined the medical school faculty at the University of California, Los Angeles.
- Wizdom Powell Hammond, PhD, MPH, a clinical psychologist who completed her fellowship at the University of California at San Francisco/Berkeley (2005– 2007), joined the public health faculty at the University of North Carolina at Chapel Hill. Powell Hammond is a White House Fellow (2011–2012).
- Medical Anthropologist David Van Sickle, PhD, MA, a scholar at the University of Wisconsin (2006–2008), developed the Asthmapolis (an inhaler with GPS tracking) and is co-founder and CEO of Reciprocal Labs, dedicated to developing new tools for public health and research. He was subsequently named a Champion of Change by the White House for his work. For more information, see his Grantee Profile.
- Demographer Margaret M. Weden, PhD, MHS, a scholar at the University of Wisconsin (2004–2006), joined the RAND Corporation, a nonprofit organization that works to improve policy and decision-making through research and analysis.

"The program is on the cusp of inventing the new integrated science of population health," said Lisa F. Berkman, PhD, co-director of the program at Harvard University. "Ten years from now, when you see some of the first scholars taking on leadership positions and becoming tenured, it will change how we think about population health issues."

- The participating universities are building their population health infrastructure. Health & Society Scholars has enabled the participating universities to create linkages across departments and campuses—including joint faculty appointments—and establish new initiatives, departments and centers. These linkages continue to grow. In particular:
  - At Columbia University, the program contributed to the establishment of two interdisciplinary centers. Both centers seek to create interdisciplinary communities of researchers.
    - The Center for the Study of Social Inequalities and Health focuses on understanding and addressing connections between social inequalities and health.
    - The Columbia Population Research Center focuses on addressing the health and well-being of vulnerable populations in the context of inequalities, and informing policies that affect those populations.

"The effort to get these centers [established] relied on two important things demonstrated by the RWJF program: the capacity for collaboration between the school of public health and the graduate school of arts and sciences and the

- capacity to demonstrate sustained interest in population health projects," said Peter Bearman, PhD, co-director of *Health & Society Scholars* at Columbia.
- The Center for Obesity Assessment, Study and Treatment (COAST) is a direct result of *Health & Society Scholars* at the **University of California, San Francisco/Berkeley**, according to Nancy E. Adler, PhD, program co-director. Based on the San Francisco campus, the center brings together interdisciplinary teams who study the mechanisms by which stress influences obesity and ways to promote optimal weight status.
  - Also, the School of Public Health created a Division of Community Health and Human Development in order to facilitate collaborative population health research and the medical school has created a "Health and Society" pathway as one of the research focuses for students and residents. "The program has really catalyzed a lot more interaction around research," says Adler.
- At the University of Pennsylvania, the Health & Society Scholars program was instrumental to the National Institutes of Health funding the establishment of the Center for Population Health and Health Disparities. Penn also established two master's degree programs—public health and health policy research—in part due to the influence of *Health & Society Scholars*. The program has built bridges between the population studies program and the school of medicine and fostered interdisciplinary research.
  - "There's no better way to bring in faculty and get them working on interdisciplinary projects than through highly-placed programs like the *Robert Wood Johnson Foundation Health & Society Scholars* program," said Penn program co-director Asch.
- Health & Society Scholars at Harvard University, with faculty from four schools (public health, medicine, government and arts and sciences) represents the best example of university-wide collaboration at Harvard. "Harvard is known to have very high structural walls," said program co-director Berkman. "Our provost sees the program as enormously influential for the university."

The University of Michigan and the University of Wisconsin programs built upon interdisciplinary structures already in place:

- The University of Michigan is known for its strong interdisciplinary environment, according to Ana Diez-Roux, MD, PhD, and James S. House, PhD, program co-directors. Within this environment, *Health & Society Scholars* has fostered new collaborations and engaged new disciplines in population health research. For example:
  - Faculty from 40 disciplines, have applied for competitive research grants.
  - There are new partnerships between faculty traditionally involved in population health (e.g., public health, epidemiology and social sciences) and

other disciplines, such as architecture, economics, public policy and urban planning.

"The program has made connections and had an impact out into a broad range of disciplines and professional schools in the university," said House.

— The University of Wisconsin's School of Medicine and Public Health has had a population health sciences department since before the start of *Health & Society Scholars*. Within this supportive infrastructure, the program is bringing even more attention to the importance of population health, according to Mullahy. "We've also been able to reach out to faculty across the campus, and there's a broader and deeper appreciation of population health and what it's all about," he says.

About 5 percent of the university's faculty has participated in the program in some way, including those from disciplines that had not been involved with population health before, such as allergy and immunology, anthropology, communications and urban and regional planning.

- The program is helping to define population health. Although no formal consensus about the definition of population health research yet exists <sup>15</sup> most descriptions of the field include one or more of the following characterizations:
  - Population health research is an interdisciplinary field focusing on the health outcomes of groups of individuals, which can be defined variously (e.g., workers at a workplace, residents of a neighborhood, people sharing a common race or social status, or the population of a nation).
  - Population health researchers conduct studies that seek to characterize, explain and/or influence the levels and distributions of health within and across populations.
  - Population health researchers view health as the product of multiple determinants at the biologic, genetic, behavioral, social, and environmental levels and their interactions among individuals and groups and across time and generations.
  - The field addresses health outcomes, health determinants, and policies and interventions that link the two<sup>16</sup> in efforts to improve population health and ameliorate health disparities.

Population health research encompasses many different substantive foci, disciplines, theories, and methodologies. It can address a diverse set of health outcomes, from biological markers of physiological function or health-related behaviors to general well-being or mortality. As suggested above, it may address a broad set of health determinants, either singly or in combination."

<sup>&</sup>lt;sup>15</sup> Kindig D and Stoddart G. "What is Population Health?" *American Journal of Public Health*; 93(3): 380–383, March 2003.

<sup>16</sup> ibid.

• The work of *Health & Society Scholars* faculty and scholars is informing and influencing public policy and public opinion. "As the understanding increases that health is a product of the interaction of factors from multiple domains, *Health & Society Scholars* helps provide evidence that can be important for making policy decisions," said Russo.

#### For example:

— Research by clinical psychologist Mark L. Hatzenbuehler, PhD, a scholar at the University of Pennsylvania (2010–2012), was cited in the 2010 resolution by the American Psychological Association reaffirming support for marriage equality for same-sex couples. Hatzenbuehler says the courts tend to look at these kinds of policy statements to see what research says about the influence of gay marriage and marriage bans on many outcomes.

Hatzenbuehler also published a study in *Pediatrics*<sup>17</sup> linking the social environment to gay teen suicide risk. The study showed that lesbian, gay and bisexual teens living in counties with a high proportion of gay and lesbian couples, and those who went to schools with gay-straight alliances and anti-discrimination policies, were less likely to attempt suicide than lesbian, gay, and bisexual teens living in less accepting environments.

- David Van Sickle, PhD, was part of a team from the Centers for Disease Control and Prevention and the South Carolina Department of Health and Environmental Control investigating the resulting health effects of a train collision that released 42–60 tons of chlorine gas in a South Carolina town. Their study, published in the American Journal of Emergency Medicine, 18 helped inform new federal regulations on the transport of rail cargo that seek to prevent a similar disaster in a major metropolitan area.
- Douglas Jutte, MD, MPH, coordinated several conferences on community investment policies to improve health that were jointly sponsored by the Federal Reserve Bank and RWJF in 2010 and 2011.
- Sociologist Kate Strully, PhD, MA, a scholar at Harvard University (2005–2007), published a study in *American Sociological Review*<sup>19</sup> showing that relieving poverty during pregnancy through state-based Earned Income Tax Credits can reduce the incidence of low birth-weight babies and may help break the

<sup>&</sup>lt;sup>17</sup> Hatzenbuehler ML. "The Social Environment and Suicide Attempts in Lesbian, Gay, and Bisexual Youth." *Pediatrics*, 127(5): 896–903, 2011. Abstract available online.

<sup>&</sup>lt;sup>18</sup> Van Sickle D, Wenck MA, Bellflower A, Drociuk D, Ferdinands J, Holguin F, Svendsen E, Bretous L, Jankelevich S, Gibson JJ, Garbe P and Moolenaar RL. "Acute Health Effects After Exposuer to Chlorine Gas Released After a Train Derailment." *American Journal of Emergency Medicine*, 27(1): 1–7, 2009. Abstract available online.

<sup>&</sup>lt;sup>19</sup> Strully KW, Rehkopf DH and Xuan Z. "Effects of Prenatal Poverty on Infant Health: State Earned Income Tax Credits and Birth Weight." *American Sociological Review*, 75(4): 534–562, 2011. Available online.

succession of poor childhood health. The study found that single mothers who participated in the state-based Earned Income Tax Credits had babies with higher birth weights and were less likely to smoke during pregnancy than those who did not participate in the program.

State-based Earned Income Tax Credits supplement the incomes of low-wage workers. They are the largest anti-poverty plan in the United States, and in many states have supplanted traditional welfare programs.

— Peter Bearman, PhD, Cole Professor of Social Sciences and co-director of *Health & Society Scholars* at Columbia University, led a study published in the *International Journal of Epidemiology*<sup>20</sup> on the social determinants of autism, which found that other medical problems are often diagnosed as autism and that it is very unlikely that autism is related to immunizations. Doctoral student Marissa King co-authored the article.

Autism Speaks, an autism science and advocacy organization, cited this study under one of the "Top Ten Autism Discoveries" of 2009. The study "is not per se changing public policy, but it's changing public opinion," said Russo. Bearman conducted the study under a National Institutes of Health Director's Pioneer Award.

- David Kindig, MD, PhD, professor emeritus of Population Health Sciences and co-director of *Health & Society Scholars* at the University of Wisconsin, co-authored a population health paradigm being used to provide annual reports on the nation's health, using county-level health and social measures, which has been published in the *Journal of the American Medical Association*.<sup>21</sup> The co-authors are Yukiko Asada, PhD, associate professor of medicine at Dalhousie University (in Canada), and Bridget Booske, PhD, a senior scientist at the University of Wisconsin's Population Health Institute.
- Recognition of the field of population health is growing. "The field has gotten a lot more visibility, and not just at the sites," said RWJF's Russo. "The program is offering an opportunity for brilliant post-docs and early faculty to have some protected time where they can get into how other disciplines think and mix that with the knowledge they already have. They see things in a new light and are able to find some new connections."
  - Evidence of this recognition includes the Obama administration's commitment to using a population-level, "place-based" approach to developing policies to influence how metropolitan and rural areas develop and how well they function as

<sup>&</sup>lt;sup>20</sup> King M and Bearman P. "Diagnostic Change and the Increased Prevalence of Autism." *International Journal of Epidemiology*, 38(5): 1224–1234. Epub September 2009. Abstract available online.

<sup>&</sup>lt;sup>21</sup> Kindig DA, Asada Y and Booske B. "A Population Health Framework for Setting National and State Health Goals." *Journal of the American Medical Association*, (17): 2081–2083, 2008. Extract available online.

places to live, work, operate a business, and more. Government agencies are collaborating with each other and working with local communities on policies. One area is community health and access to opportunity: policies to promote improved access to and quality of health care through coordinated local and regional approaches, expansion of access to healthy food, and support for environmental health (including clean air, water and soil) and healthy homes.

During the 2010 *Health & Society Scholars* annual meeting in Washington, scholars visited government officials involved with the place-based approach in the White House, U.S. Department of Housing and Urban Development, U.S. Environmental Protection Agency, and U.S. Department of Transportation, as well as key officials at the National Institutes of Health. This provided scholars, alumni, and faculty with direct insight on how their research can change policy and provided government officials with exposure to the program, the scholars, and their work.

- The 2008 Annual Meeting of the Institute of Medicine (IOM), "Is Biology Destiny? The Interaction of Biological, Behavioral and Social Determinants of Health" showed that the medical establishment is beginning to fully understand the importance of population health and to accept that it is rigorous science, says RWJF's Russo. The network created by the *Health & Society Scholars Program* was critical to the success of this meeting, according to Russo. *Health & Society Scholar* national advisory committee members, site directors and alumni were among the meeting planners and presenters.
- The evidence produced by scholars and faculty has been crucial for many RWJF initiatives, including the *Robert Wood Johnson Foundation Commission to Build a Healthier America*, the County Health Rankings, and the *Health Impact Assessment Portfolio*, also called the Health Impact Project.

"These all depend on having evidence of the connection between factors coming from multiple domains of health: whether it's transportation and health or labor and health or racial discrimination and health," said Russo. "That's the kind of evidence that population health research gives you, those interactions between other sectors, not just looking at health care and health."

For a description of Commission to Build a Healthier America, the County Health Rankings and the Health Impact Project, see Appendix 2.

Russo also believes that the population health research conducted under *Health & Society Scholars* is crucial to the future work of RWJF's Health Group, which focuses more on prevention, the multiple determinants of health, and how policies and regulations in other sectors affect health. "Population health is the essence of the conceptual framework for the Health Group at the Foundation," she said.

#### **KEY SITE ACTIVITIES AND RESULTS**

# **Site-Specific Population Health Focus**

Each of the six sites participating in *Robert Wood Johnson Foundation Health & Society Scholars*<sup>®</sup> has its own population health focus:

- Columbia University: A broad view of population health with a focus on the social sciences
- *Harvard University:* Understanding the determinants of population health through four core disciplines: social epidemiology, public policy, history of science and neuroscience and applying that knowledge to design interventions to improve the health of communities
- *University of California at San Francisco/Berkeley:* The interactions of context, behavior and biology over the life of a population (the life course approach)
- *University of Michigan:* Building bridges between the many causal factors (cells to society) in order to understand and improve population health and eliminate health disparities
- *University of Pennsylvania:* A broad understanding of population health with a focus on the role of the health care system in population health
- *University of Wisconsin:* A broad understanding of population health with a focus on translating knowledge into policy and practice

# **Site Faculty**

Senior faculty members at each university serve as program directors. At most sites, a small group of faculty is very involved with the curriculum, research and/or mentoring. Other faculty members participate to a lesser extent (for example, as lecturers or occasional mentors). About 470 faculty members at the six sites participate in the program, with a range of 28 to more than 127 per site. This is an increase from about 353 faculty members in 2008.

For information about the program's base within each site, and participating disciplines and faculty, see Appendix 3.

At all sites, scholars and faculty from different disciplines work together, fostering cross-disciplinary thinking and dialogue. Scholars become familiar with different ways to assess the broad range of factors that influence health, as well as measurement issues related to population health. They study interactions among context, behavior and biology across the life span, and learn to think creatively about the intersections among different disciplines.

# **Common Program Elements**

Each site offers the following common program elements, but the sites have the flexibility to implement these elements in different ways:

- Scholar-directed research
- Mentoring
- A common structured curriculum
- Focused training in leadership and professional development

All of the universities are developing their population health research and teaching capacity. All sites use some of their research and training budget (RWJF funds for developing population health research and teaching capacity) to sponsor competitive research grants.

Scholars explore an all properties of the competition of the compe

All sites have created opportunities for scholars and faculty from different disciplines to collaborate on research projects through formal or informal interdisciplinary working groups.

#### Scholar-Directed Research

Scholars spend the majority of their time conducting population health research with the guidance or collaboration of faculty mentors. (For information about the mentor programs, see Mentoring Experiences.)

Each scholar develops a research plan tailored to his/her population health interests and professional goals. "Every set of scholars comes with a different set of interests. We take that as a sign of the vitality of the field of population health," says Wisconsin program director Mullahy.

"We pick the scholars for their promise and their talent. We try to choose people who are interested in different things so they kind of stir each other up," adds Bruce G. Link, PhD, program co-director at Columbia University.

Scholars conduct individual and collaborative research. Collaborative research includes projects

Scholars explore an array of population health issues in their research, including:

- The over-consumption of food through the lens of the Las Vegas buffet
- Differences in heart disease in women and men based on socioeconomic position
- Fatalistic beliefs about cancer prevention and their associations with prevention behaviors (exercise, no smoking, and fruit and vegetable consumption)

For details about these and other research projects, <u>read more</u>.

Columbia's short courses usually "sell out" within a few hours of when they are announced. These courses provide scholars and faculty from Columbia and other program sites with a common technical toolkit for population health research across the social and health sciences. Read more

with one or a few faculty as well as research conducted through interdisciplinary working groups. (For more information, see Interdisciplinary Working Groups.)

Research themes have emerged at some sites, including:

- The built environment and its implications for health, developmental disorders and autism and the relationship between social networks and health outcomes at Columbia University.
- Cell aging and psychoimmunology (San Francisco campus) and neuroscience and the brain (Berkeley campus) at the University of California at San Francisco/Berkeley.
- Partnerships with the city of Philadelphia on health research and the role of lay media in communicating about population health issues (e.g., producing films and photographs and evaluating the use of newspapers and other mass media) at the University of Pennsylvania. (The Philadelphia Deputy Mayor of Health and Opportunity and Health Commissioner, Donald F. Schwarz, MD, MPH, is a former RWJF Clinical Scholar with an understanding of population health.)

Mentoring

Faculty mentors guide scholars in developing their research plans, partner with them on research projects and connect them with other faculty with whom they can collaborate. They also provide guidance on career planning and professional development outside of research.

Social epidemiologist Carolyn Cannuscio, ScD, wanted to take on a risky research project as a Health & Society Scholar at the University of Pennsylvania (2005–2007): documenting the health of Philadelphia through photographs. Her faculty mentor, David Asch, MD, MBA, gave her the encouragement and support she needed to follow her vision. See the Photo Essay.

<u>Read more</u> about Cannuscio and mentoring at the University of Pennsylvania and about mentoring at the University of Wisconsin.

Most scholars have one to three mentors. Usually, at least one mentor is from the scholar's home discipline (discipline of origin, i.e., the discipline of their degree). At three sites, the program directors also mentor scholars.

- At Columbia University, scholars typically have a career mentor and at least one research mentor. The program directors provide career mentoring to all scholars.
- Scholars at Harvard University have one mentor from the school of public health and one mentor from another core area (neuroscience, history of science or social policy).
- At the University of California at San Francisco/Berkeley, scholars have a career mentor and a research mentor. At least one mentor is usually from outside the scholar's home discipline.

- Scholars at the University of Michigan have at least three mentors: a primary mentor (one of the program directors), a mentor from their home discipline and one or more research mentors.
- At the University of Pennsylvania, scholars typically have two or three mentors, including a primary mentor and at least one mentor in the scholar's home discipline. The program directors also mentor scholars.
- Scholars at the University of Wisconsin have one or two research mentors and the program directors provide career mentoring to all scholars.

#### A Common Structured Curriculum

All sites cover population health and research methods in the curriculum, usually through weekly or biweekly seminars. Most sites offer workshops or seminars in which scholars present their work in progress for feedback from faculty and other scholars. Some sites also offer other seminars, courses and workshops, or allow scholars to health requires researchers from different

disciplines to make the same inferences about causality. However, researchers are

trained by their main discipline to use

discipline-specific theories, assumptions

and techniques. Harvard's core seminar

series helps researchers understand the

language and methods of different

 Columbia University's curriculum consists of biweekly miniseminars that the scholars lead, intensive short courses and an invited speaker series. Columbia used some of its research and training budget to fund the miniseminars, short courses and invited speaker series.

take other university courses, seminars and workshops.

- Harvard University's curriculum consists of a biweekly core seminar series, informal discussions and instruction in multilevel research methods. The seminars emphasize the need for transdisciplinary understanding of causality (cause and effect) and cover the history of science, neuroscience, social epidemiology and policy sciences (sociology, economics and political science).
- The core curriculum at the University of California at San Francisco/Berkeley consists of the *Health & Society Research* Seminar, the Scholar' Workshop and an optional course on the "Responsible Conduct of Research."
- The core curriculum at the University of Michigan consists of a course in "Foundations of Population Health," taken in the first semester and three seminar series (research, methodology and scholars). The University of Michigan used some of its research and training budget to fund the seminars.
- The University of Pennsylvania's core curriculum consists of the Scholar Seminar in Health and Society and the biweekly Population Health Work in Progress Seminar.

• The core curriculum at the University of Wisconsin consists of the weekly *Robert Wood Johnson Health & Society* Seminar and the Professional Development Seminar.

For details about the curriculum at each site, see Appendix 4.

# Focused Training in Leadership and Professional Development

All of the sites interpreted leadership and professional development training broadly. Site program directors and faculty served as models of leaders, and mentors provided one-on-one coaching in leadership and professional development.

"Professional development and leadership training is something that happens daily," said Michigan program director Kaplan. "It's not something you organize a special sit-down time for. It's done by observing, talking about issues with people, and by collectively thinking about the general issues involved in building an interdisciplinary career."

A few sites offered training or hosted invited speaker series where speakers served as examples of leaders and offered their own career paths as options for scholars to consider.

- At Columbia University, leadership lunches focus on career issues and bringing population health research into the policy process. These informal meetings feature leaders in a variety of fields (e.g., academia, the media, government and health care). Sample leadership lunches included:
  - Lorne Thorpe, deputy commissioner for Epidemiology Services, New York City Department of Health and Mental Hygiene.
  - Ichiro Kawachi, MD, PhD, professor of social epidemiology, Harvard University, and co-director of the Harvard *Health & Society Scholars*.

Columbia used some of its research and training budget to fund this series.

• The Professional Development Seminar series at the University of Wisconsin covers leadership and other aspects of professional development. It also provides a venue for scholars to present and get feedback on their research.

### Recent seminars include:

- "Discussion of Plans for the Commission to Build a Healthier America," led by David Williams, MD, Leland Fikes chair in pediatrics at Harvard Medical School and chief of the Department of Pediatrics at Children's Hospital Boston.
- "Media, Knowledge Transfer, and Population Health Issues," led by David Wahlberg, a reporter for the Wisconsin State Journal of Health.

Some sites incorporated leadership and professional development training in the core curriculum (usually in the seminars).

- The University of Michigan incorporated leadership and professional development training in the core curriculum and offers minisymposia on topics such as writing grants to the National Institutes of Health. The University of Michigan used some of its research and training budget to fund these activities.
- The University of Pennsylvania incorporates leadership and professional development training in the core curriculum and occasionally offers separate seminars or workshops (e.g., on negotiating).

# **Competitive Research Grants**

All sites used some of their research and training budget for competitive research grants (usually called seed grants) to promote population health research. Scholars and faculty from *Health & Society Scholars* were eligible for seed grants. Most sites also allowed other faculty and students to apply for funding. In academic year 2009–2010, each site awarded between 10 and 25 seed grants, with awards ranging from \$1,000 to \$55,000.<sup>22</sup>

Sample projects funded through seed grants include:

- Summer Hawkins, PhD, a scholar at Harvard University (2009–2011), studied the impact of policy changes in maternal health behaviors and infant outcomes by examining the association between changes in state-level tobacco control policy and changes in maternal smoking during pregnancy and in infant health outcomes.
- A "Genetics and Social Structure Conference" (March 2006) organized by two scholars—Molly Martin, PhD, (2003–2005) and Sara Shostak, PhD, MPH, (2004–2006)—at Columbia University and program co-director Peter Bearman, PhD. Martin, Shostak and Bearman were working on a special issue of *Social Science and Medicine* on genetics and social structure.
- Jennifer Dowd, PhD, MA, a scholar at the University of Michigan (2006–2008), used various datasets to study the role of stress and socioeconomic status. In particular, she studied the role of immune function in socioeconomic status and health and the relationship between psychosocial factors and health.
- Harvard scholar Jeffrey Bingenheimer, PhD, (2005–2007) explored social and behavioral correlates of historical trajectories of HIV infection and AIDS in Chicago. He used U.S. Census data to study HIV-related racial/ethnic and neighborhood socioeconomic disparities in death rates and then developed a model of the trajectories of HIV diagnoses, AIDS cases and HIV-related deaths in the neighborhoods of Chicago.
- Wizdom Powell Hammond, PhD, MPH, a scholar at the University of California at San Francisco/Berkeley (2005–2007), studied the psychosocial context of the use of preventive health services by African American men. As of March 2008, Hammond

<sup>&</sup>lt;sup>22</sup> This is the latest year for which there is complete data.

had developed and pilot tested the survey and was planning to survey 300 African American men.

- Using anthropological and social epidemiological perspectives, Craig A. Hadley, PhD, identified key population-level vulnerabilities and capacities that influence population health and well-being after disasters during his fellowship at the University of Michigan (2005–2007).
- The Philadelphia Green Space project explored converting abandoned properties in Philadelphia to recreation and conservation uses and measuring the environmental,
  - social, economic and health outcomes. The project was a collaboration between all of the 2005 to 2007 scholars at the University of Pennsylvania (Carolyn Cannuscio, ScD, David T. Grande, MD, MPA, Annice E. Kim, PhD, MPH, and Elizabeth Wildsmith, MA, PhD), Professor of Social Welfare Policy Dennis P. Culhane, PhD, and the city of Philadelphia.
- Richard M. Carpiano, PhD, (2004–2006), associate professor of social work, Robert A. Stephanie, MSW, PhD, and other faculty from the University of Wisconsin conducted a telephone survey to explore the attitudes of adults about the causes of health and health disparities. In the second part of the Wisconsin Population Health and Disparities Study, the researchers plan to determine the type of policies that are most relevant for improving health and reducing disparities.

In 2004, an interdisciplinary group of researchers from the University of California at Berkeley began a program of research on the neurodevelopmental origins of the association between socioeconomic status and health, under an R21 National Institutes of Mental Health grant. The Health & Society Scholars Research and Training budget, which funded early work in this area, leveraged the R21 grant.

Read more about the Berkeley Consortium on Population Health and Human Development and other working groups at Columbia University and the University of Wisconsin.

# **Interdisciplinary Working Groups**

Three sites (Columbia University, the University of California at San Francisco/Berkeley and the University of Wisconsin) established interdisciplinary working groups comprised of scholars and faculty from different disciplines to foster interdisciplinary research on population health. The University of Pennsylvania used the working group concept less formally.

The working groups are organized around specific themes or research questions. In most working groups, members collaborate on research projects. Working groups also provide resources and support for interdisciplinary research. Members of some are involved in other projects such as seminars and conferences.

Most sites used some of their research and training budget to support the development and function of their interdisciplinary working groups and to fund research projects.

- Columbia University working groups are the following:
  - Working Group on Stigma, Discrimination and Prejudice
  - Health Disparities Working Group
  - Working Group in African American History and the Health and Social Sciences
  - Built Environment & Health Working Group
  - The Social Network Analysis Working Group
  - Capability Theory Working Group
- University of California at San Francisco/Berkeley working groups are the following:
  - Health Disparities Working Group at University of California, San Francisco
  - Berkeley Consortium on Population Health and Human Development at University of California, Berkeley
- University of Wisconsin working groups are the following:
  - Working Group on Media Representations of Health Problems
  - Working Group on Medical History and Bioethics and Population Health
  - Working Group on Interdisciplinary Research Focusing on Communities at Risk
  - Working Group on Genetics and Social Environments
- While there are no set working groups at the University of Pennsylvania, program
  directors continually create opportunities for scholars and faculty from different
  disciplines to collaborate on large, multidisciplinary research projects in population
  health. For example, scholars frequently collaborate with researchers at the
  Annenberg School for Communication on how populations are affected by mass
  media messages.

# **Unique Program Elements**

Some sites have developed unique program elements.

# Translating Research Into Practice

Scholars at the University of California at San Francisco/Berkeley and the University of Wisconsin are helping to translate research into practice by working with the universities' partner institutions.

- At the University of California at San Francisco/Berkeley scholars can work on research projects with partners such as the San Francisco Department of Public Health, Northern California Cancer Center, Children's Hospital Oakland Research Institute and the Kaiser Permanente Division of Research. Representatives of these organizations also speak at program seminars.
  - Scholars can also conduct research with population health researchers in Canada, through the university's collaboration with the Canadian Institutes of Health Research, Institute of Population and Public Health and the Manitoba Centre for Health Policy.
- The University of Wisconsin funded knowledge transfer projects (projects designed and conducted with clinical policy relevance to important stakeholders and groups) such as:
  - A state population health opinion survey
  - Financial analysis for a universal health insurance coverage plan for Wisconsin

The University of Wisconsin funded David A. Kindig, MD, PhD, one of the program directors, to write "Understanding Population Health Terminology," which is used in the weekly seminar and other courses and was published in the *Milbank Quarterly* (85(1): 139–161, 2007). Abstract available online.

# **Population Health Salons**

Twice a semester, the University of Michigan sponsors a salon in which scholars and interested faculty come together to share common perspectives and differences in interpretation of population health topics. The salons are held at the homes of faculty members, and are limited to 18 people.

"The faculty and scholars never seem to have enough time to sit down and actually talk about interesting issues, books, etc. We wanted to create a comfortable venue, a salon, that would allow us to get together for an evening and do this," said George A. Kaplan, PhD, program co-director at the University of Michigan.

#### **LESSONS LEARNED**

- 1. **Select talented scholars to build or advance a field.** "Selecting and recruiting talented people is the most important part of making these programs successful," said David Asch, MD, MBA, program co-director at the University of Pennsylvania. He noted that talented scholars make the best use of program resources and attract talented faculty to participate in the program.
- 2. **Provide good mentoring to advance scholars' careers in a new field.** Faculty at the University of Wisconsin put a great deal of time and energy into mentoring scholars. "Moving the scholars' careers in directions that might best be productive for the field

- of population health requires good solid mentoring," said John Mullahy, PhD, program director at the University of Wisconsin.
- 3. To advance population health, be open to interdisciplinary thinking. Advancing population health requires that experts from many fields collaborate to understand the multiple determinants of health and design appropriate interventions. "We have been very lucky to be able to engage faculty to think that way, to understand that important problems in population health require openness," said John Mullahy, PhD, program director at the University of Wisconsin.
- 4. The timing is right for advancing population health. Growing recognition of the multiple determinants of health provides an opportunity to advance population health. "This is a time for many of our scientific disciplines, as well as for the country, when it seems extraordinarily propitious to bring together this bridging of social and biological factors and our understanding of the determinants of health and health disparities we see in the population," said George A. Kaplan, PhD, former co-director of the at the University of Michigan.

#### **CHALLENGES FOR THE FUTURE**

As *Robert Wood Johnson Foundation Health & Society Scholars*® continues, both it and RWJF face some important challenges, as outlined below.

# **How Can the Program Engage Other Funders?**

Finding additional funding to maintain the program at its previous capacity is the main challenge, according to both Russo and the national program office. "It's not just about producing scholars. It's also about producing centers at universities that would support the growth of population health research," said Russo. The national program office is planning to approach other foundations about co-funding the program.

The program office is particularly interested in engaging the NIH (including its National Institute of Environmental Health Sciences) and the Centers for Disease Control (CDC) to support population health research. Because population health is an integrative field rather than a single system or risk factor discipline, there is not a designated institute within the National Institutes of Health (NIH) that funds research in population health.

Nevertheless, population health research has a promising future at the NIH, as evidenced by ongoing initiatives in health disparities and population health on the part of numerous institutes and offices as well as two recent workshops sponsored by the NIH Office of Behavioral and Social Sciences Research to foster transinstitute collaboration in this field. NIH officials have reached out to the HSS National Program Office in developing these efforts

The IOM's annual meeting in October 2008 on the interaction of biological, behavioral and social determinants of health was a step in the right direction. Another positive step, according to RWJF's Russo, was the establishment of the Population Health Workgroup by the NIH's Office of Behavioral and Social Sciences Research in 2011 to consider ways to fund this research.

# How Will the Scholars' Work Inform Health Policy and Practice?

RWJF's Russo says that the program has matured to the point where the interdisciplinary research of the scholars and faculty members can be used to inform policy and practice related to population health.

The program is helping scholars and faculty learn how to frame their research to reach policy-makers—for example, with research briefs instead of scholarly articles—through the program's sites and the annual meetings. For example, the 2010 annual meeting in Washington included visits to key officials at the White House and the National Institutes of Health, giving scholars, alumni and faculty insight on how their research can inform policy.

The national program office is committed to helping scholars and faculty use their research to inform population health policy and practice. RWJF supports this work by providing scholars and faculty with communications and media support when they have important new findings to release.

# **Is Two Years Long Enough for Scholars to Become Interdisciplinary?**

Embarking on an interdisciplinary career is a major change from the traditional onediscipline career. A two-year exposure may not be long enough.

"Two years works really well for junior faculty, but not as well for all new post-docs," said Russo, who noted that it is especially difficult for scholars who are trying to really stretch, for example, to combine fields such as molecular biology and epidemiology. Approximately 65 percent of the fellows come into the program directly after earning their doctoral degrees.

To help scholars who need more time, in 2008, RWJF began offering competitive funding for three scholars per year to continue in the program for a third year; however, this was discontinued in 2011 due to the financial downturn and consequent budget cuts to many of RWJF's programs. Other strategies may be needed to help scholars prepare adequately for an interdisciplinary career.

# How Can the Program Help Universities Recognize and Reward Interdisciplinary Work?

Career tracks at most universities are not hospitable toward interdisciplinary scholars. It can be difficult for scholars to find academic positions where interdisciplinary work will be valued after completing *Health & Society Scholars*, although more and more universities are realizing the value of interdisciplinary research and establishing centers based on collaboration across disciplines, and scholars are aided by the prestige of an RWJF fellowship in seeking jobs.

In order for the scholars to succeed in interdisciplinary work, the environment in universities must change. Universities must support and reward interdisciplinary scholarship, for example, by implementing more joint faculty positions. Change in the academic world occurs slowly.

Progress is being made at the *Health & Society Scholars* sites, according to Russo, and there is a trend toward interdisciplinary centers at universities in general. Program sites are leveraging RWJF funding to get other funding for population health work, which helps to highlight the value and prestige of interdisciplinary research within the university setting.

"The deans see that. They know who's successful in bringing in funding. That's proof of concept," said Russo. But much work remains to be done, according to national program office staff.

National program office and national advisory committee meetings with university leadership on alternate year site visits reveal the need for both fundamental rethinking of the tenure process, and creating more opportunities for interdisciplinary doctoral programs as fundamental to reshaping the academic environment to support scholarship such as that required for improving population health.

# How Can RWJF Engage Alumni and Promote Connections and Collaborations Among All of Its Scholars Programs?

Alumni of the *Health & Society Scholars* program, and other scholars programs, need to become engaged in the continued work of the Foundation, or RWJF risks losing part of its investment.

RWJF has a number of other national programs with a health policy or health services research focus, including:

• Robert Wood Johnson Clinical Scholars Program® (For more information see Program Results Report.)

- Robert Wood Johnson Foundation Scholars in Health Policy Research Program (For more information see Program Results Report.)
- Robert Wood Johnson Health Policy Fellows Program (For more information see Program Results Report.)
- Investigator Awards in Health Policy Research (For more information see Program Results Report.)

RWJF is creating an alumni network, with a dedicated website, for graduates from all its human capital programs. In addition, within *Health & Society Scholars*, alumni stay connected with each other, program scholars, and faculty through professional meetings, the program website, and the LinkedIn and Facebook groups.

More bridges among the programs are needed, so that the value of a population health approach is infiltrated into the clinical community and the *Health & Society Scholars* have a chance to broaden their clinical knowledge and networks. A good example of the kind of bridging is at the University of Michigan and the University of Pennsylvania, which are sites for multiple programs, <sup>23</sup> and have worked to improve the connectivity across programs while scholars are participating.

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Grant ID#: HSS

Program areas: Public Health and Building Human Capital

<sup>23</sup> The University of Michigan is one of the sites for *Clinical Scholars*, *Health & Society Scholars* and *Scholars in Health Policy Research*; the University of Pennsylvania is a site for *Clinical Scholars* and *Health & Society Scholars*.

#### **APPENDIX 1**

# **List of Health and Society Scholars: 2003–1013**

#### 2003-2005 Scholars

- Allison E. Aiello, PhD, MS, participating at the University of Michigan
- Sarah Burgard, PhD, MS, participating at the University of Michigan
- Jason Corburn, PhD, participating at Columbia University
- Dorothy M. Daley, PhD, MS, participating at the University of Wisconsin
- Michelle Frisco, PhD, participating at the University of Wisconsin
- Dominick L. Frosch, PhD, participating at the University of Pennsylvania
- Sonya A. Grier, PhD, MBA, participating at the University of Pennsylvania
- Douglas Jutte, MD, MPH, participating at the University of California at San Francisco/Berkeley
- Nicholas B. King, PhD, participating at the University of Michigan
- Enrico A. Marcelli, PhD, participating at Harvard University
- Molly Martin, PhD, participating at Columbia University
- Amani M. Nuru-Jeter, PhD, MPH, participating at the University of California at San Francisco/Berkeley
- José A. Pagán, PhD, participating at the University of Pennsylvania
- Natasha Dow Schull, PhD, participating at Columbia University
- Catlainn Sionéan, PhD, participating at the University of Wisconsin
- Rebecca Thurston, PhD, participating at Harvard University
- Stefan Timmermans, PhD, participating at Harvard University
- Constance Wang, PhD, participating at the University of California at San Francisco/Berkeley

#### 2004-2006 Scholars

- Jennie Brand, PhD, participating at the University of Michigan
- Richard Carpiano, PhD, MA, MPH, participating at the University of Wisconsin
- Michael Emch, PhD, participating at Columbia University

- Reanne Frank, PhD, participating at Harvard University
- Elliot Friedman, PhD, participating at the University of Wisconsin
- Steven Haas, PhD, participating at Harvard University
- Julian Jamison, PhD, participating at the University of California at San Francisco/Berkeley
- Patrick M. Krueger, PhD, participating at the University of Pennsylvania
- Janxin Leu, PhD, participating at the University of California at San Francisco/Berkeley
- Michelle McMurry, MD, PhD, participating at the University of California at San Francisco/Berkeley
- Tamar Mendelson, PhD, participating at Harvard University
- Marie O'Neill, PhD, participating at the University of Michigan
- Sara Shostak, PhD, MPH, participating at Columbia University
- Jennifer Stuber, PhD, participating at Columbia University
- Margaret M. Weden, PhD, MHS, participating at the University of Wisconsin

#### 2005-2007 Scholars

- Debbie Barrington, PhD, MPH, participating at Columbia University
- Lisa Bates, ScD, participating at Columbia University
- Jeffrey Bingenheimer, MPH, participating at Harvard University
- Carolyn Cannuscio, ScD, participating at the University of Pennsylvania
- Cynthia Colen, PhD, MPH, participating at Columbia University
- John Cowan, MD, participating at the University of Michigan
- Duana Fullwiley, PhD, participating at Harvard University
- David T. Grande, MD, MPA, participating at the University of Pennsylvania
- Craig A. Hadley, PhD, participating at the University of Michigan
- Wizdom Powell Hammond, PhD, MPH, participating at the University of California at San Francisco/Berkeley
- Sara Johnson, PhD, MPH, participating at the University of California at San Francisco/Berkeley

- Annice E. Kim, PhD, MPH, participating at the University of Pennsylvania
- Rachel Tolbert Kimbro, PhD, participating at the University of Wisconsin
- Candyce Kroenke, ScD, MPH, participating at the University of California at San Francisco/Berkeley
- Theresa Osypuk, SD, participating at the University of Michigan
- Elizabeth Rigby, PhD, participating at the University of Wisconsin
- Marilyn Sinkewicz, PhD, participating at the University of Wisconsin
- Kate W. Strully PhD, participating at Harvard University
- June Tester, MD MPH participating at the University of California at San Francisco/Berkeley
- Elizabeth Wildsmith, MA, PhD, participating at the University of Pennsylvania
- Sacoby Wilson, PhD, participating at the University of Michigan

#### 2006-2008 Scholars

- Dawn Alley, PhD, participating at the University of Pennsylvania
- Erika Blacksher, PhD, participating at Columbia University
- Ryan Brown, PhD, participating at the University of California at San Francisco/Berkeley
- Magdalena Cerda, MPH, participating at the University of Michigan
- Jennifer B. Dowd, PhD, participating at the University of Michigan
- Medellena Glymour, SD, participating at Columbia University
- Haslyn Hunte MPH, MPIA, participating at the University of Wisconsin
- Malo Hutson, PhD, participating at the University of Michigan
- Gina Lovasi, PhD, MPH, participating at Columbia University
- James Macinko, PhD, participating at the University of Pennsylvania
- Vida Maralani, PhD, participating at the University of Pennsylvania
- Belinda Needham, PhD, participating at the University of California at San Francisco/Berkeley
- Jeff Niederdeppe, PhD, participating at University of Wisconsin
- Kristi Pullen, PhD, participating at Harvard University

- David Rehkopf, DS, participating at the University of California at San Francisco/Berkeley
- David Van Sickle, PhD, participating at the University of Wisconsin
- Matt Wray, PhD, participating at Harvard University
- Kathleen Ziol-Guest, PhD, participating at Harvard University

## 2007-2009 Scholars

- Jimi Adams, PhD, participating at Columbia University
- Jason P. Block, MD, participating at Harvard University
- David H. Chae, ScD, participating at the University of California at San Francisco/Berkeley
- Tiffany L. Green, PhD, participating at the University of Wisconsin
- Amar A. Hamoudi, PhD, participating at the University of Michigan
- Kevin Haninger, PhD, participating at the University of Pennsylvania
- Kaja Z. LeWinn, ScD, participating at the University of California at San Francisco/Berkeley
- Sheryl Magzamen, PhD, participating at the University of Wisconsin
- Mehret Mandefro, MD, participating at the University of Pennsylvania
- Sabrina B. McCormick, PhD, participating at the University of Pennsylvania
- Briana Mezuk, PhD, participating at the University of Michigan
- Kimberly J. Montgomery, PhD, participating at Columbia University
- Mahasin S. Mujahid, PhD, participating at Harvard University
- Jenna Nobles, PhD, participating at the University of California at San Francisco/Berkeley
- Sejal S. Patel, PhD, participating at the University of Wisconsin
- Richard Pilsner, PhD, participating at the University of Michigan
- Patrick T. Sharkey, PhD, participating at Columbia University
- Margaret A. Sheridan, PhD, participating at Harvard University

## 2008-2010 Scholars

• Cleopatra Abdou, PhD, participating at the University of Michigan

- Annaliese Beery, PhD, participating at the University of California at San Francisco/Berkeley
- Katherine Dickinson, PhD, participating at the University of Wisconsin
- Sarah Gollust, PhD, participating at the University of Pennsylvania
- Kristin Harper, PhD, participating at Columbia University
- Julie Harris, PhD, MPH, participating at the University of California at San Francisco/Berkeley
- Lindsey Leininger, PhD, MA, participating at the University of Wisconsin
- Carmen Mandic, ScD, participating at the University of Wisconsin
- Katie McLaughlin, PhD, participating at Harvard University
- Arijit Nandi, PhD, participating at Harvard University
- Eran Magen, PhD, MA, participating at the University of Pennsylvania
- Cassandra Okechukwu, DS, MPH, MSN, RN, participating at the University of California at San Francisco/Berkeley
- Keely Cheslack Postava, PhD, MSPH, participating at Columbia University
- Whitney Robinson, PhD, participating at the University of Michigan
- Samir Soneji, PhD, MA, participating at the University of Pennsylvania
- Kristen Springer, PhD, participating at Columbia University
- Elizabeth Sweet, PhD, MPH, participating at Harvard University
- Christopher Wildeman, PhD, participating at the University of Michigan

#### 2009-2011 Scholars

- Michael Bader, PhD, participating at the University of Pennsylvania
- Nicole Bush, PhD, participating at the University of California at San Francisco/Berkeley
- Zoe Donaldson, PhD, participating at Columbia University
- Laura Gottlieb, MD, MPH, participating at the University of California at San Francisco/Berkeley
- Helena Hansen, MD, PhD, participating at Columbia University
- Summer Hawkins, PhD, participating at Harvard University

- Seth Holmes, MD, PhD, participating at Columbia University
- Jennifer Jennings, PhD, participating at Harvard University
- Hedwig Lee, PhD, participating at the University of Michigan
- Jooyoung Lee, PhD, participating at the University of Pennsylvania
- Christopher McKelvey, PhD, participating at the University of Wisconsin
- Beth McManus, ScD, participating at the University of Wisconsin
- Neil Mehta, PhD, participating at the University of Michigan
- Vivian Santiago, PhD, participating at the University of Wisconsin
- Ayako Tomiyama, PhD, participating at the University of California at San Francisco/Berkeley
- Kristin Turney, PhD, participating at the University of Michigan

#### 2010-2012 Scholars

- James Broesch, PhD, participating at the University of Wisconsin
- Andrew Deener, PhD, participating at the University of Pennsylvania
- Amy Gonzales, PhD, participating at the University of Pennsylvania
- Emily Fitzgibbons Shafer, PhD, participating at Harvard University
- Jason Fletcher, PhD, participating at Columbia University
- Mark L. Hatzenbuehler, PhD, participating at Columbia University
- Margaret Hicken, PhD, participating at the University of Michigan
- Emily Jacobs, PhD, participating at the University of California at San Francisco/Berkeley
- Aaron Mauck, PhD, MA, participating at the University of Michigan
- Carolyn McAndrews, PhD, participating at the University of Wisconsin
- Amy Non, PhD, participating at Harvard University
- Julianna Pacheco, PhD, participating at the University of Michigan
- Mark A. Pachucki, PhD, participating at the University of California at San Francisco/Berkeley
- Andrew Papachristos, PhD, participating at Harvard University
- Aric A. Prather, PhD, participating at the University of Michigan

- Laura Tach, PhD, participating at the University of Pennsylvania
- Cate Taylor, PhD, participating at Harvard University
- Alexander C. Tsai, AB, MA, MD, PhD, participating at the University of California at San Francisco/Berkeley
- Emily Walton, PhD, participating at the University of Wisconsin

#### 2011-2013 Scholars

- Meredith Barrett, PhD, participating at the University of California at San Francisco/Berkeley
- Natalie D. Crawford, PhD, participating at the University of Michigan
- Esther Friedman, PhD, participating at Harvard University
- Thomas Fuller-Rowell, PhD, participating at the University of Wisconsin
- Corina Graif, PhD, participating at the University of Michigan
- Jason Houle, PhD, participating at the University of Wisconsin
- Olivier Humblet, ScD, participating at the University of California at San Francisco/Berkeley
- Jennifer Karas Montez, PhD, participating at Harvard University
- Danya Keene, PhD, participating at the University of Pennsylvania
- Ryan K. Masters, PhD, participating at Columbia University
- Yi-Ching Ong, PhD, participating at Columbia University
- Van Tran, PhD, participating at the University of Pennsylvania

## **APPENDIX 2**

# **Descriptions of Initiatives Influenced by Evidence Produced by Scholars and Faculty**

The Robert Wood Johnson Foundation Commission to Build a Healthier America (2008–2013) is based on a concept proposal from a faculty member of the *Health & Society Scholars* and is directed by Harvard *Health & Society Scholars* faculty member, David Williams, PhD, according to Russo.

The national, independent and nonpartisan group of leaders examined the factors outside of medical care that influence health. Members researched and reviewed evidence, collected new data and listened to experts, leaders and citizens around the country. The commission issued 10 recommendations to improve health at the local, state and federal levels—practical, feasible and effective solutions often hidden in plain sight. RWJF has made a variety of grants to spread the work of the commission.

The County Health Rankings, started in 2010, are a collaboration of RWJF and the University of Wisconsin Population Health Institute to help counties see where they are doing well and where they are not, so they can make changes to improve the health of their residents. The rankings measure the overall health of nearly every county in all 50 states on the multiple factors that influence health.

The Health Impact Assessment Portfolio (also called the Health Impact Project) is a collaboration of RWJF and the Pew Charitable Trusts designed to promote the use of health impact assessments as a decision-making tool for policy-makers. The program uses a flexible, data-driven approach that identifies the health consequences of new policies and develops practical strategies to enhance their health benefits and minimize adverse effects. It began in 2009.

#### **APPENDIX 3**

## Site Descriptions: Robert Wood Johnson Foundation Health & Society Scholars®

## Health & Society Scholars at Columbia University

New York, N.Y.

- Base: Mailman School of Public Health and the Institute for Social and Economic Research and Policy (a joint initiative)
- Participating disciplines: epidemiology, sociomedical sciences, population and family health, environmental health sciences, and health policy and management
- Number of participating faculty: Approximately 74

## Health & Society Scholars at Harvard University

Boston, Mass.

- Base: Harvard Center for Society and Health in the School of Public Health
- Participating disciplines: social epidemiology, public policy, sociology, clinical psychology and neuroscience
- Number of participating faculty: Approximately 28

*Health & Society Scholars* at the University of California, San Francisco/Berkeley San Francisco and Berkeley, Calif.

- Base: A joint initiative of the University of California, San Francisco, an academic health sciences campus with its Center for Health and Community, and the University of California, Berkeley, a broad, research-oriented arts and sciences campus with its School of Public Health
- Participating disciplines: public health, epidemiology, sociology, psychology, anthropology, history, biostatistics, health education, moral philosophy, demography, urban planning, economics, public policy, neuroscience, human genetics, molecular and cell biology, medicine, nursing, pharmacy and dentistry
- Number of participating faculty: Approximately 100

## Health & Society Scholars at the University of Michigan

Ann Arbor, Mich.

- Base: Center for Social Epidemiology and Population Health in the School of Public Health
- Participating disciplines: epidemiology, sociology, health behavior, medicine, history, genetics, history, public policy, social work, health policy, neurosciences, biostatistics, economics, urban planning, demography, education, and ecology
- Number of participating faculty: Approximately 89

## Health & Society Scholars at the University of Pennsylvania

Philadelphia, Pa.

- Base: Leonard Davis Institute of Health Economics, a cooperative venture among Penn's schools of medicine, business, nursing and dental medicine
- Participating disciplines: medicine, arts and sciences, communication, business, social work, fine arts, nursing and law
- Number of participating faculty: Approximately 52

## Health & Society Scholars at the University of Wisconsin

Madison, Wis.

- Base: Department of Population Health Sciences in the School of Medicine and Public Health
- Participating disciplines: social sciences, clinical sciences, humanities, and others
- Number of participating faculty: Approximately 127

#### **APPENDIX 4**

## The Curriculum at the Six Program Sites

## Columbia University

Second-year scholars select the theme and topics for the year's biweekly miniseminars, and then organize and lead the seminars. Miniseminars in 2007 to 2008 included "Social Interactions, Neural Systems and Health Outcomes" and "On Being Poor, Feeling Poor and Being Treated Poorly."

Experts from other universities generally teach the short courses, which focus on research methods. The short courses scheduled in 2007 to 2008 were "Focus Groups," "Epigenetics" and "History and Historical Methods."

The invited speaker series features prominent researchers from other universities. For example, two of the speakers in 2006 to 2007 were:

- Paula M. Lantz, PhD, MS, from the University of Michigan School of Public Health, who spoke about "Racial and Ethnic Disparities in Breast Cancer in the United States."
- Jane D. McLeod, PhD, from Indiana University and the Karl F. Schuessler Institute for Social Research, who spoke about "Mental Health and the Transition to Adulthood."

## **Harvard University**

During the biweekly seminars, scholars and faculty explore issues, review research and analytical methods, and critique scholars' research in progress. Faculty members lead most, and second-year scholars lead a few, of the seminars. Topics in 2006–2007 included:

- "Risk Compensation and the Population-Level Impacts of Health Protecting Technologies"
- "Population Effects and Local Illness Effects: Understanding 'Mild' Sickle Cell Anemia in Urban Senegal"

In the week between the seminars, scholars meet informally with the two program directors to discuss their careers, leadership development or recent seminars.

Scholars also take a course in multilevel research methods (advanced quantitative data modeling, analysis and interpretation). In addition they receive one-on-one instruction in statistical software used in multilevel research. Harvard used some of its research and training budget to develop the multilevel research methods course.

Scholars can also take other Harvard University courses and seminars, such as an eight-week "Society and Health" course.

## University of California, San Francisco/Berkeley

Faculty members from different disciplines and outside leaders (e.g., a local health director and a researcher from the Northern California Cancer Center) lead the weekly research seminars. Topics in 2007–2008 included:

- "From Molecule to Mind: Stress, the Brain-Body Connection and the Social Environment"
- "Race as a Basis for Understanding Diseases and Treatments"

Scholars present their work in progress to faculty and other scholars during the scholar's workshop. They receive helpful critiques and suggestions on their work, and gain experience in providing constructive feedback on the work of other scholars.

Scholars can take the 10-week "Responsible Conduct of Research" course in the summer between their first and second year of the program. They can also take other University of California seminars, courses and workshops.

## **University of Michigan**

The biweekly seminars in 2006 to 2007 alternated between research and methodology seminars. The research seminars provide a forum for interdisciplinary analysis and discussion of issues in population health and are open to the general university community. Topics in 2006–2007 included:

- "Inter-University Consortium for Political and Social Research: A Valuable Resource for Population Health"
- "A Possible Decline in Life Expectancy in the U.S. in the 21st Century"

The methodology seminars cover the research, analytical and statistical methods relevant to the study of population health. Topics in 2006–2007 included:

- "Multilevel Models for Longitudinal Data"
- "Measurement Error Models of Latent Class Analysis"

Seminar topics in 2007–2008 included:

- "Race and Racial Identity as Developmental Contexts for African-American Adolescents"
- "Paying for Performance: The Power of Incentives Over Habits"

During the biweekly scholars seminar, scholars and faculty discuss a book or related set of papers/chapters on an important or controversial topic in population health.

Scholars can also take other University of Michigan workshops, seminars and courses.

## University of Pennsylvania

The weekly scholar seminar is a joint series with the *RWJF Clinical Scholars Program* at Penn. The seminar is based on directed readings and discussions focused on general population health topics. Scholars organize and lead some of the seminars. Topics in 2007–2008 included:

- "Injury & the Public's Health"
- "Women Become Physicians: The Feminization of a Rapidly Changing Profession"

The work in progress seminar provides a forum for scholars (*Health & Society*, and *Clinical*) to get input from faculty and colleagues.

Scholars also attend health services research and policy seminars led by visiting faculty at Penn's Leonard Davis Institute, and other occasional seminars organized just for the scholars. Seminars from 2007 to 2008 included:

- Donald Schwarz, MD, MPH, Deputy Mayor of Health and Opportunity and Health Commissioner for the City of Philadelphia, spoke on "Addressing Key Health Priorities in the City of Philadelphia."
- Sara Rosenbaum, JD, from the Department of Health Policy, George Washington University Medical Center, spoke on "Is There a Role in National Health Reform for a Policy Response to Health Inequality?"

Scholars can also take other University of Pennsylvania courses (e.g., statistics).

## University of Wisconsin

The *Robert Wood Johnson Health & Society* seminar, held during the first semester, covers core areas of population health. Topics covered in 2006 to 2007 included:

- "What Are Health Disparities?"
- "Population Health Genetics"

Scholars work with faculty to choose topics and speakers, and design and lead some seminars in the second semester. Scholars can also take other University of Wisconsin courses (e.g., population health or research methods).

#### **BIBLIOGRAPHY**

(Current as of date of the report; as provided by the grantee organization; not verified by RWJF; items not available from RWJF.)

The following bibliographies provide a sample of research by *Health & Society Scholars* who entered the program between 2003 and 2006. The scholars' names are in **bold**. They also provide information on products the sites themselves produced.

## **Selected Bibliography for Columbia University**

## **Articles**

#### Journal Articles

**Bates LM,** Acevedo-Garcia D, Alegría M and Krieger N. "Immigration and Generational Trends in Body Mass Index and Obesity in the United States: Results of the National Latino and Asian American Survey, 2002–2003." *American Journal of Public Health*, 98(1): 70–77, 2008. Abstract available online.

Bayer R and **Stuber J.** "Tobacco Control, Stigma, and Public Health: Rethinking the Relations." *American Journal of Public Health*, 96(1): 47–50, 2006. Abstract available online.

**Blacksher E.** "Healthcare Disparities: The Salience of Social Class." *Cambridge Quarterly of Healthcare Ethics*, 17(2): 143–153, 2008. Abstract available online.

**Colen CG,** Geronimus AT and Phipps MG. "Getting a Piece of the Pie? The Economic Boom of the 1990s and Declining Teen Birth Rates in the United States." *Social Science & Medicine*, 63(6): 1531–1545, 2006. Abstract available online.

**Corburn J.** "Confronting the Challenges in Reconnecting Urban Planning and Public Health." *American Journal of Public Health*, 9(4): 541–546, 2004. Abstract available online.

**Glymour MM,** Avendaño M and Berkman LF. "Is the 'Stroke Belt' Worn From Childhood?: Risk of First Stroke and State of Residence in Childhood and Adulthood." *Stroke*, 38(9): 2415–2421, 2007. Abstract available online.

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**Martin M.** "The Intergenerational Correlation in Weight: How Genetic Resemblance Reveals the Social Role of Families." *American Journal of Sociology*, 114(Suppl.): S67–S105, 2008. Abstract available online.

**Montgomery KJ** and Haxby JV. "Mirror Neuron System Differentially Activated by Facial Expressions and Social Hand Gestures: A Functional Magnetic Resonance

Imaging Study." *Journal of Cognitive Neuroscience*, 20(10): 1866–1877, March 2008. Abstract available online.

Sampson RJ, **Sharkey P** and Raudenbush SW. "Durable Effects of Concentrated Disadvantage on Verbal Ability Among African-American Children." *Proceedings of the National Academy of Science U.S.A.*, 105(3): 845–852, 2008. Abstract available online.

**Schüll ND.** "Machines, Medication, Modulation: Circuits of Dependency and Self-Care in Las Vegas." *Culture, Medicine and Psychiatry*, 30(2): 223–247, 2006. Abstract available online.

Sharkey P. "The Intergenerational Transmission of Context," *American Journal of Sociology*, 113(4): 931–969, 2008. Available online.

## Reports

#### **Documentaries**

"Buffet: All You Can Eat, Las Vegas," a 30-minute documentary by **Natasha Schull.** Southbury, CT: BINGE productions, in association with OVO, Inc., 2007. See <a href="https://www.buffetmovie.com">www.buffetmovie.com</a>.

#### Communication or Promotion

#### **Grantee Websites**

www.chssp.columbia.edu. The website of Health & Society Scholars at Columbia University includes an overview of the program as well as information about the scholars' research. New York: Columbia University, 2001.

## **Selected Bibliography for Harvard University**

#### **Articles**

Journal Articles **Bingenheimer JB**, Raudenbush SW, Leventhal T and Brooks-Gunn J. "Measurement Equivalence and Differential Item Functioning in Family Psychology." *Journal of Family Psychology*, 19(3): 441–455, 2005. Abstract available online.

**Block J**, He Y, Zaslavsky AM, Ding L and Ayanian JZ. "Psychosocial Stress and Change in Weight Among U.S. Adults." *American Journal of Epidemiology*, 170(2): 181–192, 2009. Abstract available online.

**Frank R,** Cerdá M and Rendón M. "Barrios and Burbs: Residential Context and Health-Risk Behaviors Among Angeleno Adolescents." *Journal of Health and Social Behavior*, 48(3): 283–300, 2007. Available online.

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## **Books or Chapters**

#### **Books**

**Timmermans S.** *Postmortem: How Medical Examiners Explain Suspicious Deaths.* Chicago: University of Chicago Press, 2006.

**Wray M.** *Not Quite White: White Trash and the Boundaries of Whiteness.* Durham, NC: Duke University Press, 2006.

## **Communication or Promotion**

#### **Grantee Websites**

www.hsph.harvard.edu. The website of *Health & Society Scholars* at Harvard University includes an overview of the program as well as information about the scholars' research. Boston: Harvard University, 2001.

## Selected Bibliography for the University of California, San Francisco/Berkeley

#### **Articles**

## Journal Articles

Adler NE and **Rehkopf DH.** "U.S. Disparities in Health: Descriptions, Causes, and Mechanisms." *Annual Review of Public Health*, 29: 235–252, 2008. Abstract available online.

**Brown RA,** Adler NE, Worthman CM, Copeland WE, Costello EJ and Angold A. "Cultural and Community Determinants of Subjective Social Status Among Cherokee and White Youth." *Ethnicity and Health*, 13(4): 289–303, 2008. Abstract available online.

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#### Communication or Promotion

#### **Grantee Websites**

www.hss.medschool.ucsf.edu. The website of Health & Society Scholars at the University of California at San Francisco/Berkeley includes an overview of the program as well as information about the scholars' research. San Francisco: University of California at San Francisco, 2001.

## Selected Bibliography for the University of Michigan

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## **SIDEBAR LIST**

- Scholars Explore a Variety of Population Health Issues
- Short Courses at Columbia University Provide a Common Research Toolkit
- The Health of Philadelphia Photo-Documentation Project
- Mentoring Experiences
- Core Seminar Series at Harvard University Fosters Understanding of Other Disciplines
- Interdisciplinary Working Groups

## **GRANTEE PROFILE LIST**

- Sarah A. Burgard, PhD, MS (July 2011)
  - Scholar at the University of Michigan: 2003–2005
- Dominick L. Frosch, PhD (January 2008)
  - Scholar at the University of Pennsylvania: 2003–2005
- David T. Grande, MD, MPA (February 2008)
  - Scholar at the University of Pennsylvania: 2005–2007
- Medellena Maria Glymour, MS, ScD (July 2011)
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