The Stanford Center for Population Health Sciences is a new interdisciplinary center that follows the inaugural Population Health Sciences Colloquium in the fall of 2013. Since then, faculty leaders have been laying the groundwork for a new center focused on improving the health of populations. Our medical school and university have a critical role to play in developing innovative new solutions to population health challenges. We recognize that personal and population health outcomes are the product of multiple determinants, including genetics, behavioral and lifestyle choices, social factors, and environmental conditions, with medical care playing a small but important role in health outcomes. Rising health care costs, increasing prevalence of chronic disease, persistent health care disparities, and an aging population underlie the urgent need for partnerships between academic medical centers and all sectors of the community to address population health imperatives.

Given our proximity to campus scholars in all of the disciplines necessary for transformational research on all sectors of the population, we have a unique opportunity to assume a position of intellectual leadership in the field of population health. Exploiting Stanford’s cutting-edge advantages in design technology, engineering, computational science, social science, bioinformatics, health services and scientific inference, we aim to develop a trans-disciplinary research collaborative for the study of population health. Our ultimate goal is to engage faculty and students across campus (in business, education, law, design, engineering, and humanities) to collaborate in developing innovative trans-disciplinary problem solving to improve population health.

Inaugural Lecture
What: Population Health Sciences Distinguished Lecture Series
Topic: Building the Learning Health Care System: Improving health through data, technology, disciplined analysis, and action
Who: Amy Abernethy, MD, PhD
Director, Center for Learning Health Care
Duke Clinical Research Institute
When: 8-9am, Wed., July 9, 2014
Where: Li Ka Shing Center, Berg Hall, 2nd Fl
What does the term “population health” encompass?

Population health is centered on the study of the determinants of health and disease in populations. It reaches beyond the individual-level focus of traditional clinical medicine to address a broad range of factors that impact health at a population level. The term “population” encompasses the classical definition of a people within a defined geographical region, in addition to population subsets, such as employees or patients served by a medical care system such as Stanford Medicine. In keeping with this broad definition, the Stanford Center for Population Health Sciences will be home to faculty members and research scientists at Stanford whose research involves any of the following disciplines:

- behavioral health
- biomedical ethics
- biostatistics
- clinical informatics
- clinical research
- community health
- comparative effectiveness research
- demography
- epidemiology
- health economics & health policy
- health services research
- implementation science
- population-based research
- population health informatics
- prevention research
- preventive medicine

First Initiatives

Following the first SCPHS Colloquium, the PHS leadership has been laying the groundwork for three major initiatives:

**Developing Santa Clara County as a Population Health Laboratory**

Taking advantage of extraordinary advances in electronic medical records and community-level data, we are working with key health care partners in the region to develop Santa Clara County as a population-based “laboratory” for discovering, designing, implementing and testing novel interventions to improve population health. With a population of 1.8 million people, Santa Clara County is 16th largest county in the U.S. and arguably one of the most diverse, incorporating urban and rural settings, extremes of wealth and poverty, and a rich ethnic mix. Thus, we believe that Santa Clara County can serve as the ideal microcosm for addressing the multiple determinants of health at play in the larger regional, state, and national population. Together with other health care providers in Santa Clara County, we aim to address population health problems within four thematic areas:

- Measuring and integrating behavioral, clinical, genetic, social, and physical environment information in large populations
- Identifying modifiable social, environmental, behavioral and medical determinants of disease, disability, and mortality in Santa Clara County
- Developing and testing technological solutions for improving population health
- Identifying the causes of, and developing the remedies for, population health disparities
Establishing the Stanford Learning Health Care Network

Stanford Medicine is currently undergoing expansion and building a coordinated health-care network with more than 300 regional physicians in small and medium-sized community medical practices joining as partners in the University Healthcare Alliance (UHA) and the Packard-Children’s Healthcare Alliance (PCHA). Building on the strength of this network, we aim to create the Stanford Learning Health Care Network, a continuously learning health care system to improve the quality, safety, and effectiveness of medical care. In this enlarged network of care, and in conjunction with a growing faculty clinical practice, we will develop a continuously learning and adapting health care network with the goal of improving the quality, safety and effectiveness of medical care.

This new model will involve patients as partners in improving the evidence base that underlies their medical care. Our ultimate goal will be to capture a rich set of clinical, biological, and patient-provided data. This in turn will be used as a vital resource for generating knowledge and tailoring clinical recommendations so that patients can make more informed medical choices. Successful development of the Stanford Learning Health Care Network faces many hurdles, including the need to develop a distributed data research network that aggregates the interoperable EPIC electronic medical records that are being implemented by all practices in the network. Investigators within the Stanford Learning Health Care Network will also need to develop new methods for successfully implementing clinical and systems-level interventions that are discovered to be effective through the new learning health care network.

Data and Analytic Resources for Clinical and Population Health Researchers

One important goal is to develop a Population Health Science Data Center that will be responsive to the needs of clinical and population health researchers. Such a center would ideally include data portals with access to national and commercial health databases that allow for rapid and cost-effective research on large populations. In addition, we expect that many members of our Center will be engaged in patient-oriented research including disease screening and prevention, comparative effectiveness research, developing evidence-based practice and policy guidelines, implementing clinical guidelines in learning health care systems, and developing patient-centered registries. We plan to develop a comprehensive data center that will provide tools to manage the complex data sets produced by these studies, and to offer clinical and population investigators informatics tools for cohort discovery, data integration and management, and analytics.

Our Links with the Biomedical Data Science Initiative (BDSI)

Our ultimate goal is to measure — in large patient and community populations — the most important environmental, social, physical, and other health determinants that act in concert with a person’s genetic background to cause disease. Measures of fundamental biologic traits such as the genome are within reach, but vast intellectual and practical challenges remain for the applications of “big data” to improve personal and population health. Amassing, handling, and merging these data and drawing meaningful inferences from them for improving population health remain largely unsolved. We will partner with the Stanford Biomedical Data Science Initiative (BDSI) to take on this challenge.

Visit BDSI for more information: http://med.stanford.edu/bdsi/
Resources and Activities

**PHS Distinguished Lecture Series** – quarterly lectures featuring prominent outside scientists who are working in areas of critical importance to population health sciences. The inaugural lecture will feature Dr. Amy Abernethy from Duke University speaking on “Building the Learning Health Care System: Improving health through data, technology, disciplined analysis, and action” at Medicine Grand Rounds, Paul Berg Conference Room, 2nd floor LKSC, Wednesday July 9, 8-9 am.

**PHS Departmental Lecture Series** – periodic lectures by Stanford scientists and colleagues from nearby institutions, including the Epidemiology Seminar, Biomedical Informatics Seminars, Research in Progress Seminar, Biostatistics Seminar, Stanford Prevention Research Center/General Medical Disciplines Seminar, among others.

**Strategic Retreat** – A PHS Strategic Retreat will be held in the fall for all interested faculty members, at which time we will brainstorm about center initiatives, necessary resources and potential collaborative projects.

**PHS Grant Opportunities**

**Internal grant opportunity** – Each year, Spectrum sponsors the Population Health Sciences and Community Engagement Pilot Grant Program. Typical one-year grants range from $15,000 to $50,000. This year’s deadline for calendar year 2015 grants is Tuesday, September 30, 2014. Visit [https://spectrum.stanford.edu](https://spectrum.stanford.edu)

**Federal grant opportunities** – At a time when research funding for biomedical research is shrinking, there is increasing support for patient-oriented research from the new Patient Centered Outcome Research Institute (PCORI) and from the Agency for Health Quality Research (AHRQ). We will host periodic workshops on strategies for competing successfully for these funds.

**Community Health Outreach** – Stanford Medicine’s Office of Community Health is committed to improving the health of underserved populations and to enabling Stanford scientists to conduct clinical and population research that involves the viewpoints of patients and community members. [http://och.stanford.edu](http://och.stanford.edu)
New Educational Programs Related to Population Health Sciences

In the spring of 2014, the Stanford Faculty Senate approved two new doctoral programs in the School of Medicine that will enhance formal training in two disciplines central to population health sciences.

**Ph.D. Program in Epidemiology and Clinical Research**
The Department of Health Research and Policy currently offers a Master’s degree in epidemiology and clinical research. Beginning fall quarter 2014, the degree program will be expanded to include a Ph.D. degree, with an emphasis on training students to carry out cutting-edge clinical and population-based epidemiologic research.

**Ph.D. Program in Health Policy**
The Department of Health Research and Policy currently offers a Master’s degree in health policy. Beginning fall quarter 2014, the degree program will be expanded to include a Ph.D. in health policy, with an emphasis on training in health economics and medical decision making.

About Population Health Sciences

The Stanford Center for Population Health Sciences is a broad interdisciplinary program that aims to bring together basic, translational and clinical scientists along with researchers from disciplines across the entire University to provide resources and facilitate collaborations focused on population-level questions, data, and approaches.

**Center Leadership:**

*Dr. Robert Harrington, Director*
Chair, Department of Medicine

*Dr. Lorene Nelson, Faculty Executive Director*
Department of Health Research & Policy

*Dr. Mark Cullen, Co-Director*
Chief, General Medical Disciplines

*Dr. Doug Owens, Co-Director*
Director of Center for Health Policy/Primary Care Outcomes Research

*Dr. Harry Greenberg*
Senior Associate Dean of Research

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Watch for the Population Health Sciences Survey

This summer, we will conduct a survey of School of Medicine faculty members to identify those who are interested in contributing to the Center for Population Health Sciences. All interested faculty will be invited to the retreat.

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