ANNUAL SYMPOSIUM

October 26, 2015

8 AM – 5 PM
STANFORD POPULATION HEALTH SCIENCES ANNUAL SYMPOSIUM

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Mark R. Cullen, MD
Director
What is Population Health Sciences?

- Development and application of tools integrating clinical, biologic, social and environmental data on large numbers of people to:
  - Provide evidence for improved health care delivery at the bedside
  - Establish scientific foundations for population level decision making impacting health of groups
  - Enhance our understanding of the pathways by which health and disease evolve over the life-course
Stanford Population Health Sciences (PHS) Mission

- To fuel the trans-disciplinary work of PHS at Stanford
- To provide an academic home for scientists in the core PHS disciplines
- To coordinate and enhance training opportunities in PHS and its core disciplines
- To serve as a home for community focused research and education in biomedical science in the region
Core Disciplines

- Health Services Research
- Epidemiology
- Informatics and Biostatistics
- Demography
- Genetics
- Environmental Science
- Economics, Psychology, Sociology & other Social Sciences
Strategic Plan

- Secure a trove of data resources - including access to biospecimens, populations, and secondary data.

- Develop a team of professionals and an infrastructure to facilitate the relationships between investigators, trainees and the above assets.

- Develop resources to support core faculty, post-docs, visiting scholars, seed funds, and incentives for investigators at every career stage.
Stanford Center for Population Health Sciences

PhD and MS Training
Post-docs and Fellows
Access to Populations, Databases and Biobanks
Community Engagement
Seed Grants
Bioethics Center
Special Populations
Symposia, Seminars, Academic Exchange
Learning Health System
Stanford Hospital and Clinics
Clinical Research Informatics
Stanford Center for Clinical Research

Department of BDS and Hub
HRP

“Sister” Centers & Institutes:
- IRiSS/RDC
- Woods
- Genomics
- CPOP
- SCI
- Poverty Center
PHS Resources

**ASSETS**
- Data Sets
- Cohorts
- Biobank
- Community Partnership
- PHS Staff
- Consultation Services
- Data Curation & Tech Support
- Grant/IRB Help
- Co-Working Space
- Seed Grants
- PHS Pilot Funds
- SphinX
- WG X Prize and more...

**WORKING GROUPS**
- Gene - Environment Interaction
- First 1000 Days of Life
- Special Populations & Rare Diseases
- Work-Life, Retirement, Disability, Aging & Cognitive Decline
- mHealth & Technologies for Health
- Sex & Gender in Health Research
- Learning Health Systems & Care Delivery
- Health Disparities: Global & Domestic
- Immigration & Health
- Analytics

**MEMBERS**
- Wiki Hub – PHS Intranet
- “Shark Tank” Sessions
Data Set Overview

Large Regional/National Data

- Optum
- *Marketscan*
- CMS
- IRiSS – Census Data
- Danish Biobank
- Alcoa Occupational Cohort
- Solano Cohort
- HRS/CMS Linked Data
- Kaiser Northern California
- Stanford Military Data Repository
- NHANES Dietary Data
- VA Disability
- HCUP Nationwide Inpatient Sample

Stanford PHS Data Vault

Stanford Data

- STRIDE
- Stanford Cancer Genetics Research Database
- Stanford Imaging Studies
- Asthma/Allergy Data with samples

Disease Specific Data

- AIDS Clinical Trials Group data
- DAIDS data sets
- California Cancer Registry
- Ovarian Cancer Assoc. Consortium

Global Health Data

- *Indian Rail Service*
- Africa - Demographic and Health Surveys/ INDEPTH
- *Singapore Cohort*
- *Taiwan National Insurance*
- FEWSnet food price dataset

Environmental Data

- California Neighborhoods Data System
- Worldwide weather data
- Particulate matter
- Pesticide use

Large Regional/National Data

- CPQCC Neonatal Database
- March of Dimes
- HCUP – KID
- California Perinatal Quality Care Collaborative
- Medi-Cal Seriously Ill Children
Dataset Overview: Sampling Frame (n=205)
Dataset Overview: Condition/Disease of Interests (n=62)

Number of Datasets (n=62)

- Cancer - All: 12
- Cancer - Breast: 2
- Cancer - Colorectal: 2
- Cancer - Ovarian: 3
- Cancer - Prostate: 3
- Cardiac - Adult: 12
- Disease specific: 8
- Mental Health: 5
- Surgery/Trauma: 5
- Brain Tumors: 2
- Vector: 6
- Weight Loss: 2
Human Assets: Brokering the “chasms”

- Resources
- Colleagues
- Community
- Mentor(s)
- Technical Support
- Data
- Partnership
Funding Support

- Seed Grants
- PHS Pilot Funds
- SphinX
- WG X Prize
- Faculty/Post-doc Stipends
- Visiting Scholars
Pitch an idea!

PHS Leadership
Working Group Co Chairs
Entrepreneurs
Venture Capitalists
Up Next . . .

Selected presentations of **PHS Data Assets:**

- March of Dimes
- Women & Gender
- Stanford Military Data Repository
- Optum Commercial
- Community Health Partners
- HIMC Biobank
- VA Disability & ACA/Medicaid
- Solano Cohort
### New concentrations in Epidemiology

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Health</td>
<td>Luby</td>
</tr>
<tr>
<td>Life-course / Social</td>
<td>Rehkopf, Leonard</td>
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<tr>
<td>Infectious diseases</td>
<td>Parsonnet</td>
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<tr>
<td>Chronic diseases</td>
<td>Nelson, Simard</td>
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<tr>
<td>Quantitative methods</td>
<td>Sainani</td>
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<tr>
<td>Clinical Research / CER</td>
<td>Goodman</td>
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<tr>
<td>Meta-research</td>
<td>Ioannidis, Goodman</td>
</tr>
<tr>
<td>Cancer / genetic</td>
<td>Whittemore</td>
</tr>
<tr>
<td>Environmental / Occupational</td>
<td>Cullen</td>
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</tbody>
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*Under consideration*

- Learning Health Systems
- Mental health

### New programs in Epidemiology

<table>
<thead>
<tr>
<th>Program</th>
<th>Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergrad co-term (now)</td>
<td>Parsonnet</td>
</tr>
<tr>
<td>Joint Epi-Law (in development)</td>
<td>Mello, Goodman</td>
</tr>
</tbody>
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What’s a Challenge?

- A study whose result could ideally be achieved within 3 years
- Result implies measurable anticipated health impact
- Conducted by a team of investigators from,
  ✓ at least two different schools
  ✓ if within SOM, at least one basic and clinical science
- Demonstrable originality in study design or method
Working Group Panels

**Panel 1**  Moderator: Mark Cullen
- Health Disparities – Global, Domestic | Immigration and Health
- Work-Life, Retirement, Disability, Aging & Cognitive Decline
- Sex and Gender in Health Research

**Panel 2**  Moderator: Doug Owens
- First 1000 Days of Life
- Gene-Environment Interaction
- Special Population & Rare Diseases

**Panel 3**  Moderator: Lorene Nelson
- Learning Health Systems
- mHealth & other New Technologies for Health
- Analytics