

OCTOBER 23-25, 2016



2nd Seattle Symposium on Health Care Data Analytics

Learning from Electronic Data to Advance Health and Health Care

SHORT COURSES: Sunday October 23, 8 a.m. – 5 p.m.

RECEPTION: Sunday, October 23, 4 p.m. – 7 p.m.

SYMPOSIUM DAY 1: Monday, October 24, 8 a.m. – 5 p.m.

SYMPOSIUM DAY 2: Tuesday, October 25, 8 a.m. – 12:30 p.m.

LOCATION: Hyatt Olive 8, Seattle, WA
Third Floor Ballroom & Foyer

SOCIAL MEDIA: #hcanalytics16

Symposium objectives

- To bring together biostatisticians, data scientists, epidemiologists, health services researchers, informaticists, and other scientists from across the country to discuss health research and methods that involve large health care data
- To feature innovative research on inference and prediction using electronic health records, trial designs in big health care data, and methods for drug and vaccine safety
- To discuss methodological challenges encountered in research involving large health care data, share ideas for addressing them, and brainstorm future directions for methods research in this area

Acknowledgements

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DEPARTMENT OF BIostatISTICS
SCHOOL OF PUBLIC HEALTH
UNIVERSITY of WASHINGTON



AGENDA: Short Courses & Reception | Sunday, October 23

8 a.m. – Noon **Targeted learning for data adaptive causal inference in observational and randomized studies**

INSTRUCTORS: Mark van der Laan, PhD, UC Berkeley, and Susan Gruber, PhD, MPH, MS, Harvard Medical School and Harvard Pilgrim Health Care

1 – 5 p.m. **Practical approaches to health care analytics in the presence of big data: Case studies in Python and Apache Spark**

INSTRUCTORS: Debashis Ghosh, PhD, University of Colorado Denver, and Evan Carey, MS, Veteran Healthcare Administration and University of Colorado Denver

4 – 7 p.m. **RECEPTION & REGISTRATION**
Appetizers, cash bar

AGENDA: Symposium Day 1 | Monday, October 24

7 – 8 a.m. **REGISTRATION**

8 – 9:45 a.m. **SESSION 1: WELCOME & OVERVIEW**

ORGANIZER: Jennifer Nelson, PhD
Group Health Research Institute and
University of Washington

DISCUSSANT: Patrick Heagerty, PhD
University of Washington

Collaboration + big data: The need for partnerships to influence policy and practice

Grace Lee, MD, MPH
Harvard Medical School and Harvard Pilgrim Health Care

Making good on the promise of EHR for research: The PCORnet experience

Lesley Curtis, PhD
Duke University and Duke Clinical Research Institute

Observational health data sciences and informatics

George Hripcsak, MD, MS
Columbia University

9:45 – 10:15 a.m. **BREAK**

AGENDA: Symposium Day 1 | Monday, October 24 (cont.)

10:15 - Noon

SESSION 2: USING HEALTH CARE DATA TO PROMOTE PRECISION MEDICINE

ORGANIZER: Jennifer Nelson, PhD
Group Health Research Institute
and University of Washington

DISCUSSANT: Sebastien Haneuse, PhD
Harvard T.H. Chan School of Public Health

Statistical approaches to precision medicine with EMR data

Tianxi Cai, Sc.D.
Harvard T.H. Chan School of Public Health

The value of representative populations for accurate inferences

Eric Larson, MD, MPH
Group Health Research Institute

Studying pregnancy outcomes with EMR data: The critical role of supplemental data

Sascha Dublin, MD, PhD
Group Health Research Institute and University of Washington

Noon – 1:30 p.m.

LUNCH

Buffet provided

1:30 – 3 p.m.

SESSION 3: INNOVATIONS IN THE DESIGN AND ANALYSIS OF TRIALS USING ELECTRONIC HEALTH CARE DATA

ORGANIZER: Andrea Cook, PhD
Group Health Research Institute
and University of Washington

DISCUSSANT: Ross Prentice, PhD
Fred Hutchinson Cancer Research Center
and University of Washington

Pragmatic clinical trial challenges: Lessons learned from the NIH Collaboratory biostatistics core

Andrea Cook, PhD
Group Health Research Institute and University of Washington

The design and analysis of stepped wedge trials

Jim Hughes, PhD
University of Washington and Fred Hutchinson Cancer Research Center

Using healthcare databases to construct representative simulation studies for evaluating a proposed randomized trial design

Michael Rosenblum, PhD
Johns Hopkins University

AGENDA: Symposium Day 1 | Monday, October 24 (cont.)

3 – 3:30 p.m.

BREAK

3:30 – 5 p.m.

SESSION 3 (CONT.): INNOVATIONS IN THE DESIGN AND ANALYSIS OF TRIALS USING ELECTRONIC HEALTH CARE DATA

Micro-randomized trials: A design for optimizing just-in-time adaptive interventions

Pedja Klasnja, PhD
Group Health Research Institute

Some data analytics for developing just-in-time adaptive interventions in mobile health

Susan Murphy, PhD
University of Michigan

AGENDA: Symposium Day 2 | Tuesday, October 25

8 – 9:45 a.m.

SESSION 4: METHODS FOR PREDICTION AND INFERENCE USING ELECTRONIC HEALTH RECORD DATA

ORGANIZER: Susan Shortreed, PhD
Group Health Research Institute and
University of Washington

DISCUSSANT: Patrick Heagerty, PhD
University of Washington

Integrative Bayesian Models for Multi-platform Genomics and Imaging Data

Veera Baladandayuthapani, PhD
University of Texas MD Anderson Cancer Center

Variable selection for causal inference

Susan Shortreed, PhD
Group Health Research Institute and University of Washington

Constructing stabilized dynamic treatment regimens using electronic health record data

Yingqi Zhao, PhD
Fred Hutchinson Cancer Research Center

AGENDA: Symposium Day 2 | Tuesday, October 25 (cont.)

9:45 – 10:15 a.m. **BREAK**

10:15 – 12:15 p.m. **SESSION 5: DRUG SAFETY SURVEILLANCE: WHAT'S PRACTICAL NOW, AND WHERE ARE WE HEADING?**

ORGANIZER & DISCUSSANT: Susan Gruber, PhD, MPH, MS
Harvard Medical School and Harvard Pilgrim Health Care

Staying up-to-date on methods in drug safety: CARMIC insight

Todd Lee, PharmD, PhD
University of Illinois at Chicago

Integrating Sentinel into the Center for Drug Evaluation and Research (CDER) regulatory framework

Michael Nguyen, MD
U.S. Food and Drug Administration

Machine learning for adverse drug event discovery

C. David Page Jr., PhD
University of Wisconsin-Madison

Connecting the data to the science: A biostatistician's role in advancing safety knowledge

Jennifer Nelson, PhD
Group Health Research Institute and University of Washington

12:15 – 12:30 p.m. **THANK YOU AND CLOSING REMARKS**
