



3rd Seattle Symposium on Health Care Data Analytics

OCTOBER 22-24, 2018 | SEATTLE, WA

Learning from health care data to improve patient outcomes and public health

Short Courses: Monday, October 22, 8 a.m. – 4 p.m.

Symposium Day 1: Tuesday, October 23, 8 a.m. – 5 p.m.

Symposium Day 2: Wednesday, October 24, 8 a.m. – 12:30 p.m.

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

Symposium objectives

- To bring together biostatisticians, health informaticists, epidemiologists, and other data scientists to discuss health research and methods that involve large health care databases
- To share research on statistical approaches to learning from electronic health care data, methods for precision medicine, and health policy

Short courses on Oct. 22

- **8 a.m. – 12:15 p.m.:** Targeted learning for data adaptive causal inference in observational and randomized studies. Instructors: Mark van der Laan, PhD, University of California Berkeley School of Public Health; and Susan Gruber, PhD, MS, MPH, Putnam Data Sciences
- **2 p.m. – 4 p.m.:** How to make a picture worth a thousand words: Effectively communicating your work using statistical graphics. Instructor: Michael Jackson, PhD, MPH, KPWHRI

Acknowledgements

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Agenda: Symposium Day 1 | Tuesday, October 23

7 – 8 a.m. **Registration & breakfast buffet**

8 – 8:15 a.m. **Welcome & overview**

8:15 – 9:45 a.m. **Session 1: Delivering data-driven, evidence-based health care: How do we get there?**

Chair: Patrick Heagerty, PhD, Dept of Biostatistics, UW

Data science and statistical methods for Johns Hopkins Precision Medicine (Hopkins inHealth)

Scott Zeger, PhD, Johns Hopkins Bloomberg School of Public Health

Data science framework for learning health systems

Yates Coley, PhD, KPWHRI

Integrating research and health care delivery: Experience from Intermountain Health Care and KPNW

Lucy Savitz, PhD, MBA, Kaiser Permanente Center for Health Research, Northwest & Hawaii

9:45 – 10:15 a.m. **Break**

10:15 - Noon **Session 2: Developing and deploying prediction models to inform clinical care**

Chair: Susan Shortreed, PhD, KPWHRI

Leveraging the EHR as a platform for real-time predictive models

Vincent Liu, MD, Kaiser Permanente Northern California

Explainable artificial intelligence in precision medicine

Su-In Lee, PhD, UW

Machine learning based clinical decision support systems: A case study of predicting and managing patients at risk for sepsis

Hossein Soleimani, PhD, Johns Hopkins University

Biomarker-guided dynamic decision-making

Aastha Bansal, PhD, UW Department of Pharmacy

Noon – 1:30 p.m. **Lunch**

Buffet provided

Agenda: Symposium Day 1 | Tuesday, October 23 (cont.)

1:30 – 3 p.m.

Session 3: Statistical methods for learning from EHR data

Chair: Andrea Cook, PhD, KPWHRI

EHR-based phenotyping in the presence of patient-driven observation processes

Rebecca Hubbard, PhD, University of Pennsylvania Perelman School of Medicine

Using EHR data to enhance cancer clinical trials

Carrie Bennette, PhD, Flatiron Health

Promoting interoperability via automatic translation of medical terminology

Xu Shi, PhD, Harvard TH Chan School of Public Health

Studying spillover effects of medications using existing health care data

M. Alan Brookhart, PhD, University of North Carolina Gillings School of Global Public Health

3 – 3:30 p.m.

Break

3:30 – 5 p.m.

Session 4: How can electronic health record data inform health policy

Chair: Yates Coley, PhD, KPWHRI

Computational health economics and outcomes research

Sherri Rose, PhD, Harvard Medical School

Using health care data to study and improve colorectal cancer screening

Jessica Chubak, PhD, KPWHRI

Combining health data and decision modeling for precision early detection in prostate cancer

Ruth Etzioni, PhD, Fred Hutchinson Cancer Research Center

Agenda: Symposium Day 2 | Wednesday, October 24

7 – 8 a.m. **Breakfast Buffet**

8 – 9:45 a.m. **Session 5: Leveraging Big Data to Address the Opioid Epidemic**

Chair: Jennifer Nelson, PhD, KPWHRI

Discussant: Lynn DeBar, PhD, MPH, KPWHRI

New methodological approaches for opioid and overdose surveillance

Daniel Neill, PhD, New York University

A regulatory perspective on using big data to study opioid use, abuse, and related events

Tamra Meyer, PhD, MPH, U.S. Food and Drug Administration

Statistical challenges in the design of a pragmatic trial of primary care-based treatment for opioid use disorders

Jennifer Bobb, PhD, KPWHRI

9:45 – 10:15 a.m. **Break**

10:15 – 12:15 p.m. **Session 6: Beyond the EHR: Learning from health-related data generated outside of the clinic**

Chair: Jennifer Bobb, PhD, KPWHRI

What data sources can help learn about diet, nutrition and chronic disease

Ross Prentice, PhD, Fred Hutchinson Cancer Research Center and UW School of Public Health

Using social media data to measure and predict mental and behavioral health

Scott Counts, PhD, Microsoft Research

Monitoring health behaviors with sensor mobile technology

Vadim Zipunnikov, PhD, Johns Hopkins Bloomberg School of Public Health

Measuring actionable social determinants of health to improve health care access

Krisda Chaiyachati, MD, University of Pennsylvania Perelman School of Medicine

12:15 – 12:30 p.m. **Thank you and closing remarks**
