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The Leverhulme Trust

United States™
Census
Bureau

Joint Statistical Meetings 2017

Bayesian Adaptive Survey Designs

M UNIVERSITY OF MICHIGAN

July 30th, 2017

4:00 – 5:50



The BADEN network is funded by the UK Leverhulme Trust International Network Grant, reference number: IN-2014-046



UNIVERSITY OF
Southampton

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INTERNATIONAL

BADEN Group

The **Bayesian Adaptive Survey Design Network** (BADEN) funded by the United Kingdom Leverhulme Trust International Network Grant (reference number: IN-2014-046)
January 2015 – January 2018

Partners:

Natalie Shlomo (PI) - University of Manchester

Stephanie Coffey - US Census Bureau

Gabriele Durrant - University of Southampton

Peter Lundquist - Statistics Sweden

Dan Pratt - RTI International, North Carolina

Barry Schouten - Statistics Netherlands

James - University of Michigan

and the many researchers working in these institutions...

Rebecca Moore – Network Facilitator, University of Manchester

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- **Aim:** to develop theory and practical implementation of adaptive survey designs; in particular, the development of a Bayesian framework to learn and update key input parameters to these designs
- The learning and updating of critical design parameters in a Bayesian framework needs to be done mostly in production environments under theoretical formulations
- Theory to be tested using simulation studies and applications that are subject to real-world constraints in multiple institutions and contexts

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Network goals:

Development of theory for a Bayesian approach towards adaptive survey design

Testing and implementation of theory through practical case studies

Communication of the results to the large public through conferences and workshops

Proclamation of adaptive survey designs

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The BADEN international network grant includes:

- 3 full Network meetings
- 3 Bi-lateral meetings between institutions
- Dissemination at 2 conferences:
 - AAPOR 2016
 - JSM 2017
- 4th International Workshop [Advances in Adaptive and Responsive Survey Design](#), 9-10 November 2015, University of Manchester
- 5th International Workshop [Advances in Adaptive and Responsive Survey Design](#), 6-7 November 2017, University of Michigan

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Six Presentations:

- Stephanie Coffey
 - US Census Bureau/JPSM University of Maryland
- Dan Pratt, Jeffrey Rosen, Michael Duprey, Jamie Wescott
 - RTI International
- Eliud Kibuchi, Gabi Durrant, Patrick Sturgis, Olga Maslovskaya
 - University of Southampton
- Barry Schouten, Joep Burger, Nino Mushkadiani
 - Statistics Netherlands
- James Wagner
 - University of Michigan
- Peter Lundquist, Anton Johansson, Gabi Durrant
 - Statistics Sweden and the University of Southampton



Presentations

Discussion Points

- Feasibility of using Bayesian methods to monitor and optimise data collection using adaptive survey designs
- Elicitation of priors and sensitivity to misspecification
- What are the implications for methodological interventions in data collection which has traditionally been left to survey managers
- The need to find other ways to incentivise interviewers to adapt to new types of data collection protocols



5th International Workshop
Advances in Adaptive and Responsive
Survey Design

6-7 November 2017
University of Michigan

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