



25-27 October, 2018

@BigSurv18 #BigSurv18

www.bigsurv18.org

Research and Expertise Centre for Survey Methodology (RECSM) at the Universitat Pompeu Fabra (UPF), Barcelona





#### BigSurv18 Conference Scientific Committee

**Dr. Craig A. Hill** (Chair, editorial committee): Senior Vice President, Survey, Computing, and Statistical Sciences, RTI International, USA

**Dr. Antje Kirchner** (Chair, organising committee): Research Survey Methodologist, RTI International; Adjunct Research Assistant Professor, University of Nebraska—Lincoln, USA

**Dr. Paul Biemer**: Distinguished Fellow, RTI International; Associate Director for Survey Research, Odum Institute for Research in Social Science, University of North Carolina at Chapel Hill, USA

**Dr. Trent Buskirk**: Director, Center for Survey Research, and Professor, Department of Management Science and Information Systems, University of Massachusetts Boston, USA

Dr. Mario Callegaro: Senior Survey Scientist, Google Cloud Platform UX, Google London, UK

**Dr. Ana Lucía Córdova Cazar**: Assistant Professor, Political Science and International Relations, Universidad San Francisco de Quito, Ecuador; Adjunct Research Assistant Professor, University of Nebraska—Lincoln, USA

Dr. Adam Eck: Assistant Professor, Computer Science, Oberlin College, USA

Dr. Lilli Japec: Senior Scientific Advisor, Statistics Sweden, Sweden

Dr. Stas Kolenikov: Senior Scientist, Abt Associates, USA

Dr. Lars Lyberg: Inizio, Sweden

**Prof. Patrick Sturgis**: Professor of Research Methodology, Department of Social Statistics and Demography, and Director of National Centre for Research Methods, University of Southampton, UK

For updates and important information (including website links in the online program), please check <a href="https://www.bigsurv18.org">www.bigsurv18.org</a> or the conference app (available for Android and iOS).

Complimentary internet is available at UPF for all BigSurv18 attendees.

Network: event@upf Password: 2018pomf

Eduroam is also available at UPF.

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#### About the European Survey Research Association (ESRA)

ESRA was established in 2005 to provide a forum for discussion between European survey methodologists and users of survey research. ESRA's broader objective is to build capacity and improve best practices in survey research by promoting methodological research and training and also encouraging closer cooperation between survey researchers in Europe and around the world. The association comprises over 600 individual members and is affiliated with a number of key academic departments, institutes, and survey agencies around Europe and the rest of the world. ESRA pursues its communication and dissemination objectives by organising conferences; encouraging scholarly publications; exchanging information through electronic or other means; and supporting, provisioning, and promoting courses in survey methodology and substantive applications of survey research. One of ESRA's key activities is editing the journal Survey Research Methods, (SRM) which is a high-quality scientific publication of interest to researchers in all disciplines who are involved in survey design, implementation, and analysis. The journal is edited by Ulrich Kohler of the University of Potsdam, Germany.

#### ESRA Board Members

**Bart Meuleman,** President *Catholic University of Leuven* 

**Annelies Blom**, Vice-President *University of Mannheim* 

**Gerry Nicolaas**, General Secretary *NatCen Social Research* 

**Gabriele Durrant**, Treasurer *University of Southampton* 

**Caroline Roberts**, Conference Chair *University of Lausanne* 

**Alexandru Cernat,** Vice Conference Chair *University of Manchester* 

**Ulrich Kohler**, Representative of the Survey Research Methods Journal *University of Potsdam* 

**Annette Scherpenzeel**, Bursaries SHARE—Survey of Health, Ageing and Retirement in Europe, Munich

Malcolm Fairbrother, Prizes Umeå Universitet

**Stephanie Eckman**, Membership Chair *RTI International* 

**Tom W. Smith**, Constitutional Affairs Officer *NORC at the University of Chicago* 

**Ting Yan**, Communications *Westat* 

**Antje Kirchner**, BigSurv18 Organiser *RTI International* 

Marieke Haan, Bursaries University of Groningen

**Salima Douhou**, Prizes *City University London* 



#### A Welcome from ESRA

It gives me great pleasure to welcome attendees to the BigSurv18 "Big Data Meets Survey Science" conference in the beautiful location of Barcelona. With more than 260 paper and poster presentations, a panel discussion,



**Annelies Blom** 

2 keynote speeches and a variety of additional conference activities, BigSurv18 is the most successful and far-reaching thematic conference under the auspices of the European Survey Research Association (ESRA). This event has exceeded expectations and it has united Big Data specialists, data scientists, survey methodologists, and statisticians across research generations and disciplines.

We gather at a time of great opportunity for the data analytical disciplines. Though some regard Big Data and machine learning as threats to traditional survey methodology and statistics, others see these areas as new opportunities for data fusion, linkage, and augmentation; for the development of new data-analytical approaches; and for reigniting discussions regarding data protection and research ethics. The challenge we face now is that uniting traditional survey and statistical expertise with modern data science and Big Data is far too often hampered by differences in lingua and misunderstandings about the aims of the disciplines. BigSurv18 strives to overcome these differences and enables us to learn from each other and to further advance this growing and diverse field of research.

By hosting BigSurv18, ESRA is reaching beyond boundaries. A founding objective and ambition of the association is to bring together methodologists, survey practitioners, and applied social scientists to better understand one another's perspectives and ways of working. However, at its seminal conference in 2005, Big Data was still science fiction. The fact that the first-generation iPhone was released in 2007 demonstrates how much our lives, in general, and our research, in particular, have changed since ESRA's early years. In the spirit of ESRA's

objectives, it is only natural to add Big Data collectors and data scientists to the ESRA family.

I want to take the opportunity to pay tribute to the conference committee, which organised this year's conference and gave freely and generously of their time, energy, and enthusiasm. I also want to express my gratitude to teams at the Research and Expertise Centre for Survey Methodology (RECSM) at the Universitat Pompeu Fabra (UPF), Reunions i Ciència (RiC), and Open Data BCN, as well as the many generous sponsors for their support.

Finally, I want to thank you, conference participants for contributing your research, participating in the data challenge, and enabling the cross-fertilisation across boundaries—you make BigSurv18 possible. I wish you an interesting and enjoyable conference.

Annelies Blom Vice President of ESRA

## Welcome to BigSurv18, Where Big Data Meets Survey Science

This event, hosted by the ESRA, convenes experts from around the globe to address how promising technologies and methodologies for using massive datasets and state-of-the art analytical techniques can improve, supplement, or replace data and estimates from complex surveys and censuses.

Over the next several days, you will have the opportunity to meet with hundreds of your fellow researchers and practitioners to discuss the many



Craig A. Hill



**Antje Kirchner** 

practical applications for employing Big Data and data science to improve the quality of statistics production. You will hear from a variety of speakers on topics related to wearable data and smartphones, social media, machine learning methods, and alternative data sources—plus you will learn ways to better understand



critical issues, including social and economic indicators, consumer trends, and political participation and elections.

We are particularly excited to hear from our keynote speakers, Dr. Julia Lane and Dr. Tom Smith, as well as the panellists on our special plenary discussion on privacy-ethics challenges.

And for those of you participating in the Green City Hackathon, you will have the opportunity to support the city of Barcelona in addressing crucial questions around reducing private car use within the city and promoting the use of bicycles.

We are on the precipice of a major paradigm shift in how social and statistical data are collected, analysed, and used. We thank you for joining us for this ground-breaking opportunity to establish that new future, and we want to thank our many generous sponsors whose financial support helped make this event possible. We also want to extend our gratitude to the National Science Foundation for their support of travel awards to the conference, as well as to the RTI International Barcelona office for assisting with the conference.

Sincerely, Dr. Craig A. Hill Chair, editorial committee

Dr. Antje Kirchner Chair, organising committee

Thanks also from the BigSurv18 scientific committee: Dr. Paul Biemer, Dr. Trent Buskirk, Dr. Mario Callegaro, Dr. Ana Lucía Córdova Cazar, Dr. Adam Eck, Dr. Lilli Japec, Dr. Stas Kolenikov, Dr. Lars Lyberg, Prof. Patrick Sturgis

#### Local Hosts' Welcome

Dear BigSurv18 participants,

Welcome to Barcelona, the UPF, and RECSM! We are honored to be hosting ESRA's BigSurv18, along with so many researchers and practitioners from around the world.



**Mariano Torcal** 

BigSurv18 is an important event in which we will discuss how we can combine Big Data techniques and technologies with new developments in survey methodology. This is truly the future of Public Opinion and



**Bruno Arpino** 

Marketing research, and it is relevant for practitioners, social science researchers, and social research methodology disciplines.

The future is here, and we are thrilled to take part in it.

Thank you,

Mariano Torcal and Bruno Arpino Co-Directors of RECSM

About RECSM: RECSM is a multidisciplinary centre with different research teams focusing on survey methodology (questionnaire design, evaluation of survey questions, fieldwork strategies and supervision, interviewer effects); survey data analysis (political behaviour, statistical models for the social sciences, studies of social demography, behavioural and experimental studies, and labour market studies); and experimental and quasi-experimental design.

RECSM also offers advice and expert knowledge on survey research to academic, governmental and commercial researchers. The centre pursues this through customised consulting on survey design, seminars, and short courses on methodological issues and statistical techniques; the annual organisation of the Barcelona Summer School in Survey Methodology; and the development of SQP (Survey Quality Predictor), software that evaluates the measurement quality of survey questions.

## Special Thanks from Annelies Blom, Vice President of ESRA

I want to once again express my appreciation to members of the conference committee—this event would not have been a success without them. In particular, I must pass our collective gratitude to the conference chair, Dr. Antje Kirchner, who has assembled the scientific programme and coordinated the practical arrangements with dedication and skill. I also extend my sincere gratitude to Dr. Craig A. Hill, chair of

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the editorial committee, and the rest of the Big-Surv18 scientific committee: Dr. Paul Biemer, Dr. Trent Buskirk, Dr. Mario Callegaro, Dr. Ana Lucía Córdova Cazar, Dr. Adam Eck, Dr. Lilli Japec, Dr. Stas Kolenikov, Dr. Lars Lyberg, and Prof. Patrick Sturgis. Additionally, I want to express my gratitude to the local teams at RECSM at UPF and RiC (Mariano Torcal Loriente, Helena de Puig, Ana Mas Fraga, Mar Lluís Dixon, Valentina Coppola, Cristina Blasco, Aina Padró); Màrius Boada i Pla (Director of Municipal Data Office, Ajuntament de Barcelona); Mª Mercè Fígols i Puigbò (Head of Open Data BCN,

Municipal Data Office, Ajuntament de Barcelona); and Pau Balcells i Alegre (Program Manager, Technology and Digital Innovation Office, Ajuntament de Barcelona). I commend Jon Earley who developed and maintained the Big-Surv18 website and mobile app, Penelope White who provided administrative assistance, and Debra Kulik who provided logistical support. Thanks also to our many generous sponsors without whom BigSurv18 would not have been as successful. I encourage you to visit our exhibitors in the exhibition hall during the conference.



The photographs belong to D. Rostuhar and J. Duval

# JOIN US IN ZAGREB FOR THE 8TH ANNUAL ESRA CONFERENCE!

### CALL FOR ABSTRACTS NOW OPEN.

The European Survey Research Association (ESRA) is pleased to announce its 8th Annual Conference hosted in Zagreb, Croatia, from 15 to 19 July 2019. The Faculty of Economics and Business at the University of Zagreb will host the conference.

## HIGHLIGHTING THE CONTRIBUTION OF SURVEY RESEARCH IN THE CHANGING DATA ENVIRONMENT

Over the past decade, survey researchers have had to confront a number of challenges to the methods at the heart of their practice. During the same period, rapid advances in web and mobile-web technology have created a wealth of new opportunities for data gathering. These developments have resulted in not only a sea change in how surveys are being conducted, but also a host of new opportunities for methodological research aimed at identifying best practice principles for practitioners and providing recommendations to analysts who work with the data.



FOR MORE INFORMATION
ON THE CONFERENCE,
INCLUDING KEY DATES
AND SPONSORSHIP
OPPORTUNITIES, SEE THE
CONFERENCE PAGE ON
THE ESRA WEBSITE.

These recent advances in survey science are happening in a fast-evolving data environment in which alternative forms and sources of data are increasingly available on a vast scale. As a result, there are exciting new ways to address research objectives that in the past were met by survey methods, as well as ones for which survey methods alone would be unsuitable. The potential offered by big data sources—and the growth of data science methods and tools necessary to handle them—are both redefining the role that surveys play in social research, as well as bringing to light the continued importance and value of the survey method as a tool for understanding society. ESRA has already initiated its contribution to this movement, collaborating in the organisation of the BigSurv18 conference. We plan to continue the conversation in Zagreb next July.

As survey and data science advance, it is important to remember the corresponding needs to address public trust in statistical research and improve data skills and literacy across all stakeholders. The conference in Zagreb will also provide an opportunity to consider how, as an organisation, ESRA can contribute to meeting this demand.



#### Getting to Universitat Pompeu Fabra (UPF)

The best ways to reach the city and UPF from the airport are by the Aerobús, train, taxi or metro.

BUS (Aerobús): The Aerobús is an express bus service that connects the Barcelona-El Prat airport with the city centre (plaça Catalunya) in 35 minutes. You can take the Aerobús outside Terminal 1 (T1) and Terminal 2 (T2). This service runs every day of the year with departures between 5 and 15 minutes. From the city centre, you can then take the metro or a city bus to move around Barcelona. From the city centre to the airport, bear in mind the departure terminal of your flight. For T1, take Aerobús, line A1; for T2, take Aerobús, line A2.

TRAIN: The train service (R2 line) runs approximately every 30 minutes to and from the Barce-Iona-El Prat airport to the city centre. The journey takes 25 minutes. The train service operates from T2. To get from T2 to T1, use the shuttle bus service (bus transit T1-T2). If you travel from the airport to the city centre, you can get off at Barcelona-Sants, Passeig de Gràcia, or Clot—which are all serviced by metro stops. Clot is about a 25-minute walk from UPF. **TAXI**: Taxis from Barcelona-El Prat airport offer their services 24 hours per day, waiting for passengers at the taxi ranks located in both terminals. A journey from the airport to the city centre usually takes between 20 and 40 minutes, depending on your arrival terminal (the trip from T1 will be longer than from T2) and traffic conditions. All official Barcelona taxis are black and yellow and are required to charge you only the value on the taximeter (plus any surcharge [e.g., luggage or night]). The rates and surcharges are displayed inside the cab. In Barcelona, a taxi may be ordered by phone, found at authorised taxi stand, or flagged down in the street.

METRO: The airport metro line, L9 Sud, connects to downtown Barcelona. It goes through Barcelona, L'Hospitalet, and El Prat de Llobregat. It links the Zona Universitaria district with the airport's T1. The complete journey takes 32 minutes and trains run every 7 minutes on weekdays. Along the way, you can link to different metro lines. To reach UPF, change lines to reach the closest metro stop, Ciutadella—Vila Olimpica, line 4. See

<u>www.tmb.cat/en/barcelona-transport/map/metro</u> for maps and further details.

#### Getting to UPF from within Barcelona

**BUS**: H16: Ramon Trias Fargas/Dr. Trueta

stop

10: Ramon Trias Fargas stop14: Sardenya/Dr. Trueta stop

**METRO**: The nearest metro station is

Ciutadella—Vila Olimpica, line 4. Just walk 200 metres down Ramon Trias Fargas (away from the sea) and UPF is on the left side of the street.

**TRAM:** Line T4—Wellington and Ciutadella—

Vila Olímpica

#### Conference Location

BigSurv18 is taking place in Building 40, Roger de Llúria building, on the Campus de la Ciutadella. There will be conference signage outside the building, and directional signage inside the building. The main entrance to the Roger de Llúria building is on the 0 level, Level S is located one floor below, Level 1 is located one floor above and Level 2 is located 2 floors above. From the 0 level, you can access the registration, auditorium and the reception/posters/exhibits/breaks/lunch hall.

All levels are accessible by stairs and elevators. Restrooms and water fountains are located on all levels.

The UPF cafeteria in the Roger de Llúria building is open on Wednesday–Friday from 07:45 to 18:30, and closed on Saturday. Abacus, the UPF bookstore, is open from 09:30 to 15:00 and from 16:00 to 19:00 Wednesday–Friday.

## Have Questions? Need Directions or Assistance?

The Conference Registration and Information Desk is located in 30.SV01 HALL and is staffed

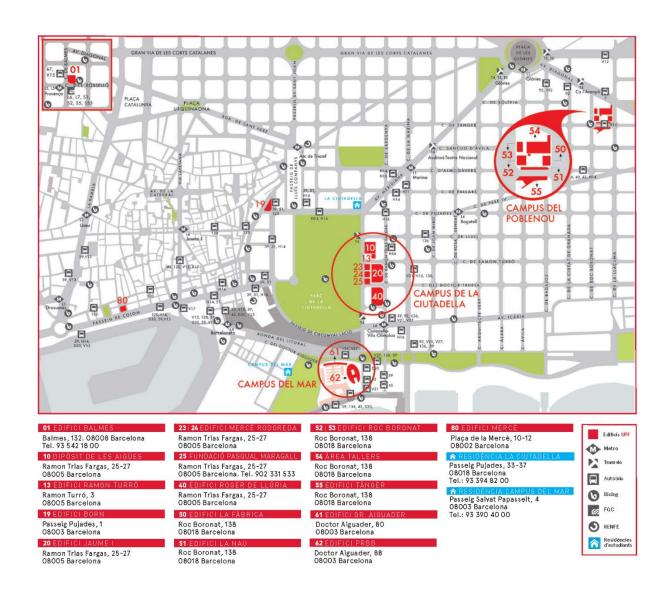
- Thursday and Friday: 08:00–18:30
- Saturday: 08:00–18:00

There are also volunteers from UPF throughout the conference facility who will assist attendees; these volunteers will be wearing blue "Ask Me" T-shirts.



#### **Conference Venue**

BigSurv18 will take place on the UPF Campus de la Ciutdella, in Building 40, the Roger de Llúria building.

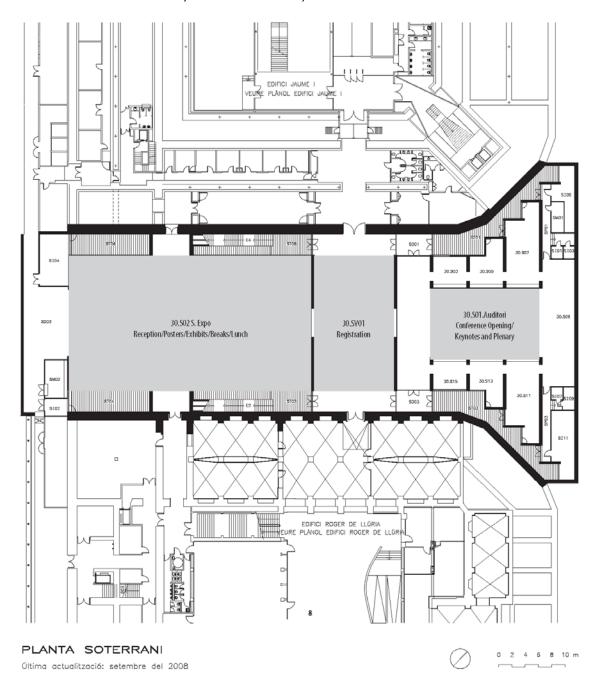




Conference Registration, the Conference Opening/Keynotes and Plenary, and the Reception/Posters/Exhibits/Breaks/Lunch are located in the underground space between the Jaume I building (Building 20) and the Roger de Llúria building (Building 40). There will be signage and volunteers to direct you.

- Room 30.SV01—Conference Registration
- Room 30.S01.Auditori—Conference Opening and Keynotes (Thursday evening), Special Plenary Session (Friday morning)
- Room 30.S02 S.Expo—Reception/Posters/Exhibits/Breaks/Lunch

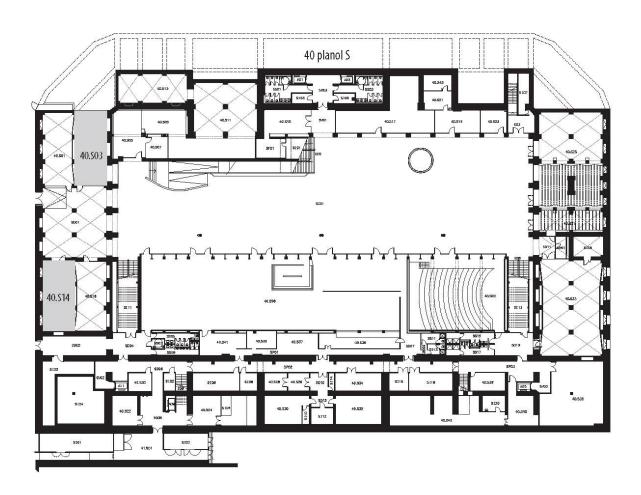
The UPF Cafeteria and ABACUS, the UPF Bookstore, are also located on this level.





#### Building 40—Roger de Llúria building—Level S

Located on this floor are rooms 40.S03 and 40.S14



PLANTA SOTERRANI

Óltima actualització: març del 2018

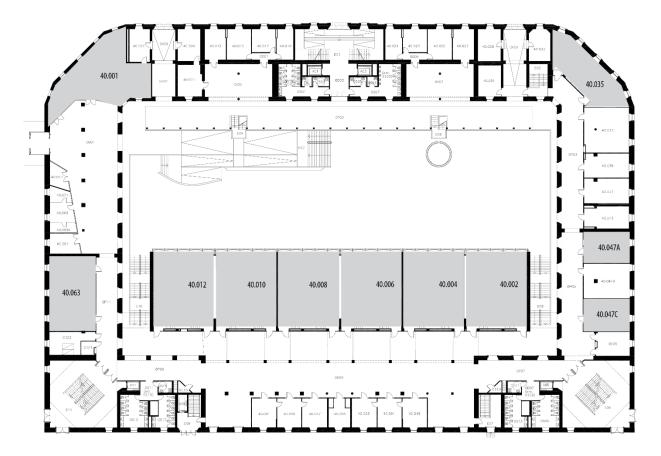
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#### Building 40—Roger de Llúria building—Level 0

Located on this floor are rooms **40.001**, **40.002**, **40.004**, **40.006**, **40.008**, **40.010**, **40.012**, **40.035 S. Graus**, **40.047A**, **40.047C** and **40.063**.

The main entrance to the Roger de Llúria building is on this level. Level S is located one floor below and is accessible by stairs and elevators. Level 1 is located one floor above and Level 2 is located 2 floors above. Restrooms and water fountains are located on all levels.



PLANTA BAIXA Último actualització: setembre del 2012

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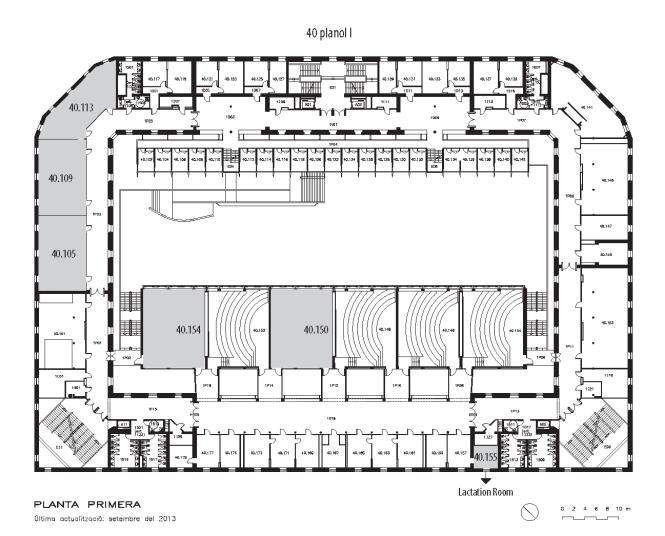
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#### Building 40—Roger de Llúria building—Level 1

Located on this floor are rooms **40.105**, **40.109**, **40.113**, **40.150** and **40.154**.

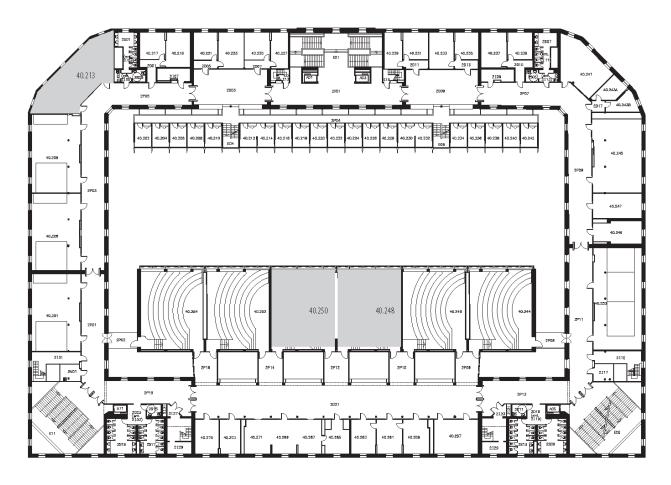
The Nursing Room has been moved to 40.033.





#### Building 40—Roger de Llúria building—Level 2

Located on this floor are rooms 40.213, 40.248 and 40.250.



PLANTA SEGONA

Última actualització: octubre del 2016





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# It's Time to Change the Game!

Whether it be Big Data, Survey Data, Population data or Text data, Ipsos has the tools and analytics to bring it together for impact.

From Survey Questions to Social Media and Satellite Imagery, Deep Learning and Automated Platforms, Ipsos is innovating the face of research.

Across sectors with staff in over 85 countries, we deliver a unique combination of data driven insights and strategy that help our clients be more successful in their missions.

Stop by our table, or contact us, to discuss how we can help you *change the game*.

Cliff Young, Ph.D. clifford.young@ipsos.com

Rich Timpone, Ph.D. rich.timpone@ipsos.com

www.ipsos.com





#### **Conference Highlights**

On Thursday, the Conference Registration and Information Desk, located in 30.SV01 HALL, will be open from 08:00 until 18:30; please stop by to check in and pick up your conference materials.

The BigSurv18 agenda is packed full of interesting and exciting presentations, plenaries, keynotes, short courses, and other events. Be sure not to miss these exciting events:

#### Welcome and Opening Keynotes

17:00-18:45, Thursday, 30.S01 Auditori, UPF

Please join us for the official opening of BigSurv18 on Thursday, 25 October at 17:00. Words of welcome will be given by Antje Kirchner (Chair, ESRA BigSurv18 Organising Committee), Mariano Torcal (UPF/RECSM), and Craig A. Hill (RTI International). Be sure to catch the key-note presentations from Dr. Julia Lane and Dr. Tom Smith, two outstanding leaders in the fields of Big Data and survey science. Additionally, we will present the winners of the Green City Hackathon and announce the student paper and travel award recipients.

#### Welcome Reception

18:45-20:30, Thursday, Indoor Courtyard, Roger de Llúria building, UPF

Continue networking and conversations from the conference at the welcome reception. The reception will feature hors d'oeuvres and drinks—including beer and wine. All conference participants are welcome; however, advanced registration is required.

The event begins at 18:45 after the Welcome and Opening Keynotes. The reception is scheduled to take place in the Indoor Courtyard of the Roger de Llúria building. If the weather permits, this reception will be moved to the Outdoor Courtyard of the Jaume 1 building. If you miss the announcement about the event location during the "Welcome and Opening Keynotes," then please check the conference website or the app. Conference staff will be available to direct you to the appropriate location.

## Big Data, Surveys, and the Privacy-Ethics Challenge: An Interdisciplinary Panel Discussion

8:30-9:30, Friday, 30.S01 Auditori, UPF

<u>Dr. Frauke Kreuter</u> (Institute for Employment Research [IAB], University of Mannheim, and University of Maryland) will moderate Friday's plenary discussion on the ethical challenges of Big Data and survey research. Hear from a variety of experts on the subject, including <u>Dr. Julia Lane</u>, a professor at the NYU Center for Urban Science and Progress; <u>Bianca Marcu</u>, the advocacy and standards services coordinator at ESOMAR; and <u>Dr. Karsten Weber</u>, an expert with a background in computer science and ethics, who focuses particularly on the ethics of technology, information ethics, and the internet's social impacts.



#### Connect and Dine with Fellow Attendees

19:00-21:30, Friday, Maritim Restaurant, Moll d'Espanya, 4, 08039, +34 932 211 775

Continue networking and conversations from the conference at Maritim while enjoying freshly prepared local cuisine. Located on the water with wonderful harbour views, Maritim offers fresh seafood and Spanish dishes. BigSurv18 will have the entire restaurant for our attendees. We will start with a reception featuring snacks and drinks (including complimentary beer and wine; cocktails are available for purchase) at 19:00, and then take our places for dinner at 19:45. Preregistration and payment for dinner were required during conference registration. If you are interested in attending but did not previously register, please check the Conference Registration and Information Desk to see if any last-minute spaces are available.

Maritim is non-smoking, but attendees can smoke outside the restaurant. Maritim is a pleasant walk from UPF and several of the nearby conference hotels; the restaurant is also easily accessible by taxi. Following the dinner, cabs will be available at the restaurant for transportation back to your hotel.

#### Have Questions? Need Directions or Assistance?

The Conference Registration and Information Desk is located in 30.SV01 HALL, UPF, and is staffed

- Thursday and Friday: 08:00–18:30
- Saturday: 08:00-18:00

There are also volunteers from UPF throughout the conference facility who will assist attendees; these volunteers will be wearing blue "Ask Me" T-shirts.





#### **Keynotes**

Our keynote speakers are <u>Dr. Julia Lane</u> (Professor, Wagner School of Public Policy at New York University; Center for Urban Science and Progress; Provostial Fellow) and <u>Dr. Tom Smith</u> (Managing Director, <u>Data Science Campus of the Office for National Statistics</u>, UK). The keynotes are moderated by <u>Dr. Craig A. Hill</u> (Senior Vice President, Survey, Computing, and Statistical Sciences, RTI International, USA).

Dr. Julia Lane will give a talk on "Automating Metadata Documentation: A New Initiative." This presentation describes a new initiative to build and develop automated tools to create the equivalent of an Amazon.com or TripAdvisor for the access and use of microdata. The goal of the project is to automate the collection and codification of knowledge about sensitive data sets from publications and people.

Julia Lane is a Professor at Wagner School of Public Policy at New York University, the NYU Center for Urban Science and Progress, and an NYU Provostial Fellow for Innova-



tion Analytics. Her current research focuses on Big Data's role in government and public policy. Julia has published over 70 articles in leading economics journals and authored and edited numerous books. She co-founded the Longitudinal Employer-Household Dynamics program at the US Census Bureau and the Institute for Research on Innovation and Science; additionally, she established the NORC/University of Chicago Data Enclave and the NYU Administrative Data Research Facility. She has been the recipient of more than USD 70 million in grants from foundations, government agencies, and international organisations. Julia is the recipient of the 2014 Julius Shiskin award and the 2014 Roger Herriot award. She received her PhD in economics and her MA in statistics, both from the University of Missouri, Columbia. Julia is a fellow of the American Statistical Association, the International Statistical Institute, the American Association for the Advancement of Science, and the Society for Economic Measurement.

Dr. Tom Smith will give a talk on "Data Science for Public Good." The increasing availability of data sources—such as consumer transaction data, unstructured text, and high-resolution images—provides great opportunities to strengthen our statistical understanding of the world. This presentation shows how national statistics institutes are using nontraditional data sources alongside survey data, building-up their Big Data and data science capabilities, and collaborating across sectors and disciplines.

Tom Smith is Managing Director at the Data Science Campus, joining the Office for National Statistics (ONS) in 2017. He is cofounder and, prior to joining ONS, was chief executive of Oxford Consultants



for Social Inclusion (OCSI), a research and data "spin-out" company from the University of Oxford.

Tom has more than 20 years' experience using data and analysis to improve public services. Working at the intersection of government, academia, and industry, he has led data and research projects with hundreds of local as well as national public and community sector organisations, including the government's English Indices of Deprivation. His primary research interests are in using data science to improve public services as well as machine learning and assessing nontraditional data sources to improve our understanding of society and the economy.

A lifelong data addict, Tom has a PhD in computational neuroscience, evolving neural networks for robot control (Sussex, 2002); an MSc in knowledge-based systems (Sussex, 1997); and an MA in theoretical physics (Cambridge, 1994). He is vice-chair of the Royal Statistical Society Official Statistics section, and previously chaired the Environment Agency Data Advisory Group; he is a member of the Open Data User Group ministerial advisory group to Cabinet Office. He has also acted as an external advisor on opening-up, sharing and using data for multiple government departments.

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#### **Short Courses**

#### Survey Track

Biases and Their Consequences: Learning from the Total Survey Error Framework by Dr. Frauke Kreuter

Time: 13:00–16:30 Room 40.047A

Data science is often referred to as the art of extracting insights from data. As such, the focus is very much on techniques to analyse data and on tools to do so easily with large quantities of unstructured data. Increasingly, however, heavy users of data worry about (1) errors in data collected, (2) biases that can creep into analyses—in particular machine learning models, and (3) effects of decisions made during data curation and processing. Such a focus on potential flaws and remedies in the creation of survey statistics has always been a focus of survey methodologists. It is only natural, therefore, for our field to expand our methodological perspective to data beyond surveys. Moreover, it is often only through the combination of several and different data sources that we are in a position to evaluate data quality, and with that we gain confidence in the analytic results. Against this backdrop, this course will sketch the total survey error framework, bridge between error sources identified there and error sources as they occur in other data sources, and discuss strategies to mitigate error and their effects on statistics and prediction results.

This course is geared towards (1) social and computer/data scientists who are unfamiliar with the total survey error concept or with the discussion around fair machine learning models and (2) participants interested in the following:

- » Discussing ways to identify errors across different data types
- » Understanding data generation processes,
- » Identifying sources of errors in survey data and common, found data
- » Understanding the effects of biases on estimates, in particular on prediction models in the machine learning context

**About the instructor: Frauke Kreuter** is director of the Joint Program in Survey Methodology at

the University of Maryland, head Statistical Methods group at the Institute for Employment Research in Nuremberg, and Professor at the University of Mannheim. Prior to her appointment at the University of Mannheim, she held a Professorship at the Institute for Statistics at the Ludwig-Maximilians-Universität in Munich, Germany. She received her PhD from the University of Konstanz in 2001. Her research focuses on data quality; the use of paradata to improve surveys; and the joint use of survey and administrative data, as well as other newly emerging data sources.

#### Adaptive Survey Design by Dr. Andy Peytchev

Time: 13:00–16:30 Room 40.S14

Adaptive survey designs (ASDs) provide a framework for data-driven tailoring of data collection procedures to different sample members, often for cost and bias reduction. People vary in how likely they are to respond and in how they respond. They also vary in what can motivate them to participate in a survey. This heterogeneity leads to opportunities to selectively deploy design features in order to control costs, as well as nonresponse and measurement errors. ASD aims at the optimal matching of design features and the characteristics of respondents given the survey budget. This calls for more complex designs that need additional planning, modelling, simulation and testing, monitoring, evaluation, and further optimisation. The main objectives of this course are to provide an overview of ASDs and introduce each component of this approach needed for implementation by using several illustrative examples from surveys.

These designs may be particularly promising in combining multiple sources of data, such as administrative data and survey data. For example, a national survey of students in the United States combines administrative data from multiple sources and collects survey data, subjected to nonresponse. In an ASD, imputation models were estimated to determine for which students the statistical models could not predict key variables very well. These models were then used to target data collection effort to



those students in order to maximise the amount of information that can be collected.

This course is based on the recent book, *Adaptive Survey Design*, by Barry Schouten, Andy Peytchev, and James Wagner.

This course is geared towards survey methodologists, managers, statisticians, researchers, and computer/data scientists interested in understanding what constitutes ASDs and their potential utility in modern surveys and learning how to implement ASDs, with particular emphasis on stratification, strategies and interventions, modelling, monitoring, costs and logistics, and optimisation of ASDs.

About the instructor: Andy Peytchev is a senior survey methodologist at RTI International, where his work includes the design and implementation of responsive and adaptive survey designs in web, telephone, and in-person surveys. Prior to that, he was an assistant research professor at the University of Michigan.

#### Computer/Data Science Track

Introduction to Computational Text Analysis by Dr. Rochelle Terman

Time: 13:00–16:30 Room 40.047C

This short course introduces students to modern quantitative text analysis techniques. The goal is to provide an orientation for those wishing to go further with text analysis in their own research. We will discuss preprocessing texts into data (covering n-grams, stop words, stemming, and document-term matrices); comparing texts with discriminating words; and sentiment analysis using dictionary methods. Time permitting, we will introduce more advanced supervised and unsupervised machine learning methods, including topic models. We will demonstrate these techniques using the open source programming language R.

**Prerequisites:** Participants must have basic computer skills and be familiar with their computer's file system. Basic knowledge of R programming is helpful but not required. Participants with no prior experience with R may wish to complete this brief tutorial (requiring 2–3 hours) to learn the basics of R before the course.

This course is geared towards social scientists who work with unstructured text data, including (but not limited to) news and media, openended surveys, and social media posts. By the end of the course, participants will

- » Be familiar with the main methods and techniques involved in modern computational text analysis
- » Be able to load, preprocess, and conduct simple analysis on text data
- » Know where to go next in their pursuit of more advanced computational text methods.

About the instructor: Rochelle Terman is currently a Provost Postdoctoral Fellow in the Department of Political Science at the University of Chicago, where she will begin as assistant professor in 2020. Her research examines international norms, gender, and advocacy—with a focus on the Muslim world using a mix of quantitative, qualitative, and computational methods. She also teaches computational social science in a variety of capacities.

Big Data Processing for Social Science: An Introduction to Apache Spark by Ian Thomas

Time: 13:00–16:30 Room 40.S03

While enabling new research possibilities, Big Data also introduces new challenges to analysis and interpretation. Today, much research can still be done on personal computers or research servers. Sometimes, however, datasets get so large that more computing power is needed. For example, the posts on Reddit—a popular online forum—are available to researchers but the full dataset is over 1.5 TB. Common Crawl, allows researchers to access 5 billion web pages, and GDELT (Global Database of Events, Language, and Tone) offers over 250 million records monitoring the world broadcast, print, and web news. A popular and effective tool for utilising these resources is Apache Spark.

Spark is an open source computing platform, maintained by the Apache Software Foundation, that lets researchers perform analyses on many computers at once. Spark significantly reduces the complexity of analysing large datasets, but it can also be used on a single



computer. This makes it an ideal tool for researchers and analysts.

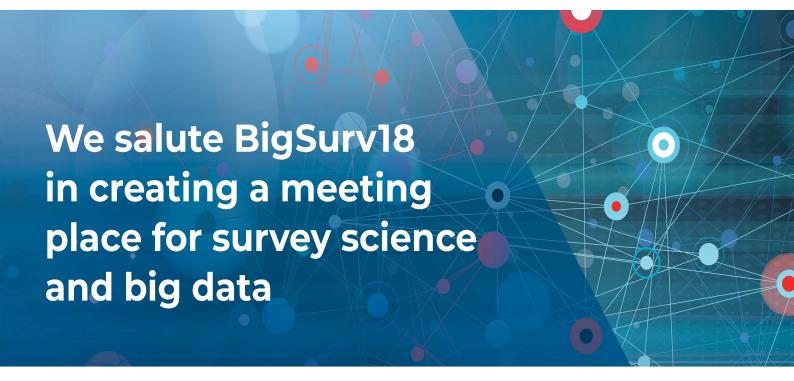
This course will introduce participants to the fundamentals of using Spark for Social Science by introducing modern approaches for working with large datasets; reviewing when these approaches are most appropriate, fundamental mechanisms, and basic internals of the Spark framework; and providing hands-on examples that demonstrate Sparks' capabilities, speed, and programmatic idioms.

This course is geared towards anyone looking for an introduction to Apache Spark for Social Science. Participants should have some programming experience—ideally in R, Python, SAS, or SPSS. A laptop is required to work through exercises.

About the instructor: Ian Thomas leads the development of data products and large-scale data processing in the Center for Data Science at RTI International. In his time at RTI, Mr. Thomas has led the Substance Abuse and Mental Health Data Archive (SAMHDA) Data Analysis System, web-based twitter research tools, and an Apache Spark—based social media text collection and processing pipeline. Prior to joining RTI, he was a data engineer and reporting analyst for Epic Games, where he developed Hadoop-based, large-scale data pipelines for collecting and analysing incoming data from millions of users, and using that information to build interactive dashboards.



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### Program at a Glance

Sponsor exhibits will be in Room 30.S02 S. Expo on Friday, 26 October–Saturday, 27 October

Wednesday, 24 October  90:00-18:30 Nursing Room available (Room: 40.033) 13:00-17:30 Green City Hackathon (Room: 40.035 S. Graus)  Thursday, 25 October  80:00-18:30 Arrival and Registration (Room: 30.5V01 HALL) 80:30-09:00 BCN Supercomputing Centre tour 90:00-20:30 Nursing Room available (Room: 40.033) 90:00-12:00 Green City Hackathon (Room: 40.035 S. Graus) 12:00-13:00 Lunch (on your own) 13:00-13:30 BCN Supercomputing Centre tour Short Courses Big Data Processing for Social Science: An Introduction to Apache Spark, Room: 40.503 Adaptive Survey Design, Room: 40.514 Biases and Their Consequences: Learning from the Total Survey Error Framework, Room: 40.047A Introduction to Computational Text Analysis, Room: 40.047C  17:00-18:45 Welcome and Opening Keynotes by Julia Lane (Professor, Wagner School of Public Policy at New York University; Center for Urban Science and Progress; Provostial Fellow) and Tom Smith (Managing Director, Data Science Campus of the Office for National Statistics, UK), Room: 30.501.Auditori  18:45-20:30 Welcome Reception at UPF (Indoor Courtyard, Roger de Llúria building). Weather permitting, the reception will be held outside (Outdoor Courtyard, Jaume I building)  Friday, 26 October  8:630-0-18:30 Registration and Information Desk (Room: 30.5V01 HALL)  9:30-0-9:30 Special plenary session on "fig Data, Surveys, and the Privacy-Ethics Challenge: An Interdisciplinary Panel Discussion," organised and moderated by Dr. Frauke Kreuter, Room: 30.501.Auditori  8:30-0-9:30 Nursing Room available (Room: 40.033)  Poster Session 1 (actively presented 11:30-13:00)  8:30-0-9:30 Special plenary session on "fig Data, Surveys, and the Privacy-Ethics Challenge: An Interdisciplinary Panel Discussion," organised and moderated by Dr. Frauke Kreuter, Room: 30.501.Auditori  8:30-0-9:30 Pata, Room: 40.030 Special plenary session on "fig Data, Surveys, and the Privacy-Ethics Challenge: An Interdisciplinary Panel Discussion," organised and moderated by Dr. Frauke Kreuter, Room: 40.004 Peering Through Transtition Lens	Pre-conference		
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Respondents, Room: 40.213  Are the Machines Making the Mark? Applications to Compare Traditional and Machine Learning Models, Room: 40.035 S. Graus	09:45–11:15		
Models, Room: 40.035 S. Graus			
11:15–11:30 Coffee Break (Room: 30.S02 S. Expo)		· · · · · · · · · · · · · · · · · · ·	
	11.15_11.30	Coffee Break (Room: 30.S02 S. Expo)	



	9		
Friday, 26 October (continued)			
	Concurrent Sessions		
	Big Data Enhancements to Surveys: Methods and Tools, Room: 40.105		
	Ok Google—Is Siri Busy? Innovating with Mobile Phone Data? Room: 40.109		
	Ethical Considerations for Using Big Data I: Exploring the Ethics of Data Linkage, Room: 40.150		
11:30–13:00	Putting Text into Context: Exploring Classification and Automation of Textual Survey Data, Room: 40.154		
	Computers vs. Humans: Who's Better at Social Science?, Room: 40.213		
	Population Estimates for Small Geographic Areas: Can We Do a Better Job? Room: 40.035 S. Graus		
13:00-14:15	Lunch (Room: 30.S02 S. Expo)		
	Concurrent Sessions		
	Methods to Improve Survey Representativeness Using High Dimensional Data, Room: 40.002		
	Big Data for Official Statistics I: Big Data Use is Officially a Big Deal for Government Statistics, Room: 40.105		
14:15–15:45	Smart TVs, Smartphones, and now Smart Surveys: Building Smarter Surveys Using Big Data Tools, Room: 40.109		
	Ethical Considerations for Using Big Data II: Exploring the Relationship Between Ethical Considerations, Reproducibility, and Participation, Room: 40.150		
	Big Data Methods, Small Survey Nonresponse?, Room: 40.213		
	Missing Data? No Big Deal Using New Big Data Methods, Room: 40.035 S. Graus		
15:45-16:00	Coffee Break (Room: 30.S02 S. Expo)		
	Concurrent Sessions		
	Big Data for Official Statistics II: Administrative and Big Data Use for Survey Design and Estimation, Room: 40.105		
	Filing the Claim for Social Media Data: Who's Covered and Who Isn't, Room: 40.109		
	Exploring How Responsive Designs Respond to Machine Learning Methods, Room: 40.213		
16:00–17:30	The Fourth Paradigm: Moving From Computational Science to Data-Intensive Scientific Discovery? Room: 40.248		
	Getting Aggressive About Passive Data Collection, Room: 40.250		
	Respondents Responding Well or So I Recall Exploring Memory, Mode, and Behaviour in Surveys  Room: 40.035 S. Graus		
19:00-21:30	Conference Dinner at Maritim Restaurant, Moll d'Espanya, 4, 08039, +34 932 211 775		
Saturday, 27 October			
08:00–18:00	Registration and Information Desk (Room: 30.SV01 HALL)		
30.00 10.00	Registration closes at 12:00		
08:30–17:30	Poster Session 2 (actively presented 10:30–11:00 and 15:30–16:00)		
08:00-20:30	Nursing Room available (Room: 40.155)		
1.5	Concurrent Sessions		
	Combining General Population Surveys with Big Data from Activity Trackers or Smartphone		
	Apps, Room: 40.004  Socializing with Surveys: Combining Big Data and Survey Data to Measure Public Opinion, Room:		
09:00–10:30	40.006		
	Translations Across Nations: Exploring Natural Language Processing in Multicultural Applications, Room: 40.010		
	The Bigger the Better? Exploring Opportunities and Challenges of Using Big Data for Rapid Ethnography, Room: 40.012		
	Crowdsourcing, Causality, and the Issue of Social Trust, Room: 40.063		
10:30-11:00	Coffee Break (Room: 30.S02 S. Expo)		



Saturday, 27 October	(continued)
	Concurrent Sessions
	Smartphone Sensor Measurement and Other Tasks in Mobile Web Surveys I, Room: 40.002
	Big Data Enhancements to Surveys: Social Issues, Room: 40.004
	Fake News! Information Exposure in Complex Online Environments, Room: 40.006
11:00-12:30	Refining Big Data Methods Using Survey Data, Room: 40.008
	Enhancing Survey Quality with Big Data, Room: 40.010
	Leveraging Big Data for Improving Health Researchthe Follow-up Visit, Room: 40.012
	Big Data Applications to Enterprise Statistics: Businesses, Employers, and Consumers, Room: 40.063
12:30-14:00	Lunch (Room: 30.S02 S. Expo)
	Concurrent Sessions
	Smartphone Sensor Measurement and Other Tasks in Mobile Web Surveys II, Room: 40.002
	Leveraging Big and Nontraditional Datasets to Reduce Burden, Increase Response, and Assess Survey Quality, Room: 40.004
14:00–15:30	How Do You Like Those Likes? Exploring the Validity of Measures Derived from Social Media Data, Room: 40.006
14.00-15.50	New Approaches to Augment Sampling Frames I: Does Bigger Data Mean Better Sampling Frames? Room: 40.008
	Applying Machine Learning and Automation to Improve Imputation—Replicate I, Room: 40.010
	Using Big Data for Electoral Research I: What's the Sentiment for Using Sentiment in Electoral Research? Room: 40.012
	New Digital Data Sources and Official Statistics, Room: 40.063
15:30–16:00	Coffee Break (Room: 30.S02 S. Expo)
	Concurrent Sessions
	Social Science Infrastructure for Big Data, Room: 40.002
	Using Big Data for Electoral Research II: Likes, Tweets, and Votes? Room: 40.006
16:00–17:30	New Approaches to Augment Sampling Frames II: Leveraging Data Science Methods for Sample Frame Construction, Room: 40.008
	Applying Machine Learning and Automation to Improve Imputation—Replicate II, Room: 40.010
	Big Data = Big Applications: From Data Linkage to Education, Room: 40.012
	Can We Mix It? Big Data Tools, Social Network Analysis, and Causal Inference, Room: 40.063



#### **Detailed Daily Program**

Wednesday, 24 October

Green City Hackathon

13:00-17:30

Room: 40.035 S. Graus

Thursday, 25 October

Arrival and Registration

09:00-18:30

Room: 30.SV01 HALL

Green City Hackathon

09:00-12:00

Room: 40.035 S. Graus

Lunch (on your own)

12:00-13:00

Big Data Processing for Social Science: An Introduction to Apache Spark

13:00–16:30 Room: 40.S03

Adaptive Survey Design

13:00–16:30 Room: 40.S14

Biases and Their Consequences: Learning from

the Total Survey Error Framework

13:00–16:30 Room: 40.047A

Introduction to Computational Text Analysis

13:00–16:30 Room: 40.047C

Welcome and Opening Keynotes by Julia Lane (Professor, Wagner School of Public Policy at New York University; Center for Urban Science and Progress; Provostial Fellow) and Tom Smith (Managing Director, Data Science Campus of the Office for National Statistics, UK)

17:00-18:45

Room: 30.S01 Auditori

Welcome Reception (Indoor Courtyard, Roger de Llúria building; weather permitting: Outdoor Courtyard, Jaume 1 building)

18:45-20:30

Friday, 26 October

Registration and Information Desk

08:00-18:30

Room: 30.SV01 HALL

Big Data, Surveys, and the Privacy-Ethics Challenge: An Interdisciplinary Panel Discussion

08:30-09:30

Room: 30.S01 Auditori

Chair: Frauke Kreuter (Institute for Employment Research [IAB], University of Mannheim, University of Maryland)

This special plenary session on "Big Data, Surveys, and the Privacy-Ethics Challenge: An Interdisciplinary Panel Discussion," is organised and moderated by <u>Dr. Frauke Kreuter</u>. The plenary features <u>Dr. Julia Lane</u>, a professor at the NYU Center for Urban Science and Progress; <u>Bianca Marcu</u>, the advocacy and standards services coordinator at ESOMAR; and <u>Dr. Karsten Weber</u>, an expert with a background in computer science and ethics, who focuses particularly on the ethics of technology, information ethics, and the internet's social impacts.

Friday, 26 October

09:30-09:45

Break

Room: 30.S02 S. Expo

Poster Session 1 (actively presented

*11.30–13.00)* 08:30–17:30

Room: 30.S02 S. Expo

The following six posters are the result of the <u>Barcelona Dades Obertes Data Challenge</u> organised by the city of Barcelona. For more information on the <u>institutions</u> and the <u>projects</u> refer to the online program or the conference app.

- A. Investigating Complaints in Gracia Institut Vila de Gràcia
- B. Social Cohesion and Type of Neighborhood Institut Ferran Tallada
- C. Free WI-FI Points in Barcelona Institut Juan Manuel Zafra
- D. Access to Housing in Barcelona Institut Joan Brossa



#### E. A Study of Traffic Accidents in Barcelona Institut J. Serrat i Bonastre

F. WI-FI Points
Institut Josep Comas i Solà

#### 1. Count Regression Modelling on Number of Migrants in Households

Tsedeke Lambore Gemecho (PhD student)—Presenting Author
Ayele Taye Goshu (Associate Professor of Statistics)

#### Testing Analytical Methods Related with the Unstructured Data Analysis from Perspective of 'Data Scientists and Methodologists'

Piotr Tarka (Poznan University of Economics and Business, Department of Market Research)—Presenting Author

## 3. A Joint Modelling Approach in SAS to Assess Association Between Adult and Child HIV Infections in Kenya

Elvis Muchene (University of Nairobi)— Presenting Author

## 4. Comparison of Artificial Neural Networks and Generalized Linear Models for NBA Outcomes

Shan Wang (Northeastern Illinois University)—Presenting Author William Johnson (Northeastern Illinois University)

#### 5. From Data Points to Data Dan: Combining Log Analysis: Survey Analysis and Interviews to Segment Google Analytics Customers

Laura Eidem (N/A)—Presenting Author Yinni Guo (N/A) Sundar Sdorairaj (N/A)

#### 6. SurveyMotion: What Can We Learn from Sensor Data About Respondents' Actions in Mobile Web Surveys?

Jan Karem Höhne (University of Göttingen)—Presenting Author Stephan Schlosser (University of Göttingen)

## 7. Measuring the Official Statistics Capability of the Public-Sector Organizations in Presence of Big Data Sources

Wasim Syed (National College of Business Administration and Economics, Lahore, Pakistan)—Presenting Author

## 8. Indirect Sampling Applied to Dual Frames Manuela Maia (Católica Porto Business School)—Presenting Author

### 9. Spatial Influence in Basque Country's Hotels Price

Ander Juarez Mugarza (Eustat)—Presenting Author Asier Badiola Zabala (Eustat) Jorge Aramendi Rique (Eustat)

#### 10. Recognizing Patterns in the Price Time-Series of the Basque Country Hotels

Asier Badiola Zabala (EUSTAT)—Presenting Author

Ander Juarez Mugarza (EUSTAT) Jorge Aramendi Rique (EUSTAT)

#### 11. A Cross-Sectional vs. Longitudinal Case Study of Twitter and Presidential Approval

Robyn Ferg (University of Michigan)—
Presenting Author
Johann Gagnon-Bartsch (University of Michigan)
Fred Conrad (University of Michigan)

# 12. Developing an Effective Procurement Performance Data Approach for Predicting Expectations Gaps in Construction Contracts at District Local Governments in Uganda

Charles Kalinzi (PhD student, Makerere University)—Presenting Author Joseph Ntayi (Makerere University Business School)
Moses Muhwezi (Makerere University Business School)
Levi Kabagambe (Makerere University Business School)

## 13. Income Inequality Through People's Lenses: Evidence from the OECD Compare Your Income Web-Tool

Carlotta Balestra (OECD)—Presenting Author Guillaume Cohen (OECD)

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<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Friday, 26 October

09:45-11:15

Classifieds: Coding Open-Ended Responses Using Machine Learning Methods

Room: 40.004

Chair: Malte Schierholz (Institute for Employment Research [IAB])

## Automated Topic Modeling for Trend Analysis of Open-Ended Response Data‡

Reuben McCreanor (SurveyMonkey)—
Presenting Author
Laura Wronski (SurveyMonkey)
Jack Chen (SurveyMonkey)

## Natural Language Processing for Open-Ended Survey Questions

Cong Ye (American Institutes for Research)
Rebecca Medway (American Institutes for Research)

Claire Kelley (American Institutes for Research)—Presenting Author

## Automatic Classification of Open-Ended Questions: Check-All-That-Apply Questions‡

Matthias Schonlau (University of Waterloo)—
Presenting Author
Hyukjun Gweon (University of Illinois)

## Democracy in Writing: Comparing the Meaning of Democracy in Open-Ended Survey Responses and in Big Online Text Data

Jonas Linde (University of Bergen)—
Presenting Author
Stefan Dahlberg (University of Bergen and
University of Gothenburg)
Magnus Sahlgren (RISE SICS)

#### Friday, 26 October

09:45-11:15

Peering Through Transition Lenses: New Landscapes and Horizons for Survey Research and Social Science

Room: 40.008

Chair: Zeeshan-ul-hassan Usmani (MiSK Foundation)

## The Future Is Now: How Surveys Can Harness Social Media to Address 21st-Century Challenges\*

Amelia Burke-Garcia (Westat)—Presenting Author

Brad Edwards (Westat) Ting Yan (Westat)

### **New Paradigms in Online Declarative Data Collection**

Kamil Wais (7N)—Presenting Author

## Mixed Methods Approaches to Programmatic Social Science Research in Applied Setting

Kate Johnson-Grey (Google)
Molly Delaney (Google)—Presenting Author

#### Statistical Inference Aided by Big Data

Masahiko Aida (Civis Analytics)—Presenting Author

#### Friday, 26 October

09:45-11:15

Leveraging Big Data for Improving Health Research... the Initial Visit

Room: 40.105

Chair: Charlie Knott (RTI International)

#### Mapping Behavioral Influencers in the Pharmaceutical Industry

Elizabeth Rountree (Charles River Associates)

Rob Sederman (Charles River Associates)
Michael Roy (Charles River Associates)
Kristen Backor (Charles River Associates)—
Presenting Author
Erika Sloan (Charles River Associates)
Greta Olesen (Charles River Associates)

## **Predicting Depression Occurrence Using Classification Algorithm in Data Mining**

Abdur Rahman (Department of Statistics, Shahjalal University of Science and Technology, Sylhet, Bangladesh)— Presenting Author

Kanis Ferdushi (Assistant Professor, Department of Statistics, Shahjalal University of Science and Technology, Sylhet, Bangladesh)

## Assessing Community Health Using Imagery from Google Street View\*

Pablo Diego-Rosell (Senior Researcher, Gallup, Inc.)—Presenting Author Rajesh Srinivasan (Director of Research, Gallup, Inc.) Ben Dilday (Data Scientist, Gallup, Inc.) Stafford Nichols (Research Consultant, Gal-

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lup, Inc.)

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## Smartphone Interrupted Sleep: A New Public Health Challenge? High-Resolution Smartphone Data from Denmark

Naja Rod (Section of Epidemiology, University of Copenhagen)—Presenting Author Agnete Dissing (Section of Epidemiology, University of Copenhagen)
Alice Clark (Section of Epidemiology, University of Copenhagen)
Thomas Gerds (Section of Biostatistics, University of Copenhagen)
Rikke Lund (Section of Social Medicine, University of Copenhagen)

#### Friday, 26 October

09:45-11:15

Big Data, Little Error? Assessing the Total Error of Survey Estimates in the Era of Big Data

Room: 40.109

**Chair: Ashley Amaya (RTI International)** 

### Total Error Frameworks for Hybrid Estimation and Their Applications\*

Paul Biemer (RTI International)—Presenting Author

Ashley Amaya (RTI International)

## Understanding the Effects of Record Linkage on Estimation of Total When Combining a Big Data Source with a Probability Sample

Benjamin Williams (Southern Methodist University)—Presenting Author Lynne Stokes (Southern Methodist University)

## Income Data Linkage in the Swiss Context: What Can We Learn Regarding Different Error Sources?

Boris Wernli (FORS)—Presenting Author Nicolas Pekari (FORS) Georg Lutz (FORS)

## Combining Administrative Data and Survey Samples for the Intelligent User

Phillip Kott (RTI International)—Presenting Author

#### Friday, 26 October

09:45-11:15

More Than Words Can Say: Leveraging Data Science Methods to Get the Full Story About Survey Respondents

Room: 40.213

Chair: Gabriele Durrant (University of Southampton)

#### Combining High-Volume Paradata with Survey Data to Understand Respondent, Instrument, and Interviewer Effects on Response Latencies

Patrick Sturgis (University of Southampton)—Presenting Author
Gabriele Durrant (University of Southampton)
Olga Maslovskava (University of

Olga Maslovskaya (University of Southampton)

Ian Brunton-Smith (University of Surrey)

#### Eight Seconds from Opine to Click— Respondent and Question Effects on Response Times in a Large-Scale Web Panel

Oliver Serfling (Faculty of Society and Economics, Rhine-Waal University of Applied Sciences)—Presenting Author

#### Using Paradata to Interpret an Autoforward Experiment

Jeldrik Bakker (Statistics Netherlands)—
Presenting Author
Marieke Haan (University of Groningen)
Peter Lugtig (Utrecht University)
Barry Schouten (Statistics Netherlands/
Utrecht University)

## Research-Driven Product Development with Surveys, Big Data, and Machine Learning: A Google AdWords Case-Study

Inna Tsirlin (Google)—Presenting Author Soeren Preibusch (Google)

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#### Friday, 26 October

09:45-11:15

Are the Machines Making the Mark? Applications to Compare Traditional and Machine Learning Models

Room: 40.035 S. Graus

**Chair: Curtis Signorino (University of** 

Rochester)

## **Empirical Comparison of Time Series Data Mining Algorithms**

Sakinat Folorunso (Olabisi Onabanjo University)—Presenting Author Abass Taiwo (Olabisi Onabanjo University) Timothy Olatayo (Olabisi Onabanjo University)

#### Real-Time Estimation of Unemployment with Dynamic Factor and Time-Varying State Space Models

Franz Palm (Maastricht University)
Stephan Smeekes (Maastricht University)
Jan van den Brakel (Statistics Netherlands)
Caterina Schiavoni (Maastricht University)—Presenting Author

#### Machine-Learning Techniques for Family Demography: An Application to the Divorce Determinants in Germany

Bruno Arpino (Universitat Pompeu Fabra)—
Presenting Author
Marco Le Moglie (Bocconi University)
Letizia Mencarin (Bocconi University)

#### Comparison of Simple and Complex Predictive Models Applied to the National Surveys on Drug Use and Health. Example of Multiple Visits to Emergency Departments

Georgiy Bobashev (RTI International)—
Presenting Author
Li-Tzy Wu (Duke University)

#### Coffee Break

11:15-11:30

Room: 30.S02 S. Expo

#### Friday, 26 October

11:30-13:00

Big Data Enhancements to Surveys: Methods and

Room: 40.105

Chair: Niklas M. Loynes (NYU/University of

Manchester)

## When Behavioral Data Isn't Enough: Mixing Survey, Log, and Usability Data for a Holistic Understanding of User Experience

Jessica Cornick (Facebook)—Presenting Author Alexandra Sullivan (Facebook) Lan Guo (Facebook) Adam Sage (Facebook)

## Using a Large GPS Dataset to Enhance Survey Matching

Ryan McShane (Southern Methodist University)—Presenting Author

## Marketing Research in the Digital Era: A Comparison Between Adaptive Conjoint Analysis Methods

Catarina Reis da Fonseca (University of Porto—Faculty of Economics)

Manuela Maia (Católica Porto Business School)—Presenting Author

Pedro Campos (University of Porto—Faculty of Economics)

#### A Case Study of Processing Large Scale Data— A Method to Accomplish Reproducibility

Inga Brentel (Research Associate at Institute of Social Science, Heinrich-Heine-University Düsseldorf, Germany)—
Presenting Author
Olaf Jandura (Professor at Institute of Social

Science, Heinrich-Heine-University
Düsseldorf, Germany)
Kristi Winters (Research Associate at GESIS

Kristi Winters (Research Associate at GESIS Leibniz-Institute for Social Science in Cologne, Germany)

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#### Friday, 26 October

11:30-13:00

Ok Google—Is Siri Busy? Innovating with Mobile Phone Data?

Room: 40.109

Chair: Annette Jäckle (University of Essex)

### Performance and Sensitivities of Home Detection on Mobile Phone Data\*

Maarten Vanhoof (Open Lab, Newcastle University and Orange Labs France)— Presenting Author

Clement Lee (Open Lab, Newcastle University)

Zbigniew Smoreda (Orange Labs France)

## More Than Meets the Eyes: Complementing Surveys with Mobile Phone Digital Data Trail

Ivano Bison (University of Trento)—
Presenting Author
Mattia Zeni (University of Trento)
Matteo Busso (University of Trento)
Enrico Bignotti (University of Trento)
Fausto Giunchiglia (University of Trento)
Giuseppe Veltri (University of Trento)

#### Methodological Implications of Device-Related Error Sources in Integrating Smartphone Sensor Data and Survey Data

Nejc Berzelak (University of Ljubljana, Faculty of Social Sciences)—Presenting Author

Uroš Podkrižnik (University of Ljubljana, Faculty of Social Sciences)

Vasja Vehovar (University of Ljubljana, Faculty of Social Sciences)

### **Complementing Official Statistics with Mobile Phone Data**

Lino Galiana (INSEE)—Presenting Author Benjamin Sakarovitch (INSEE) Zbigniew Smoreda (Orange Labs)

### Mobile Phone Data for Official Statistics: Elements for a Production Framework

- C. Alexandru (Romanian National Institute of Statistics [INSSE])
- E. Coudin (Institut National de la Statistique et des Etudes Economiques [INSEE])
- M. Debusschere (Belgian National Statistical Institute [Statistics Belgium])
- M.E. Esteban (Spanish National Statistics Institute [Statistics Spain—INE])

- S. Kienzle (Statistisches Bundesamt [DESTATIS])
- O. Nurmi (Finnish National Statistical Institute [Statistics Finland])
- B. Oancea (Romanian National Institute of Statistics [INSSE]; University of Bucharest)
- P. Piela (Finnish National Statistical Institute [Statistics Finland])
- D. Salgado (Spanish National Statistics Institute [Statistics Spain—INE])—Presenting Author
- R. Radini—Italian National Institute of Statistics (ISTAT)
- B. Sakarovitch—National Institute of Statistics and Economic Studies (INSEE)
- S. Saldaña—Spanish National Statistics Institute (Statistics Spain—INE)
- L. Sanguiao—Spanish National Statistics Institute (Statistics Spain—INE)
- M. Tennekes—Dutch National Statistics Office (Statistics Netherlands—CBS)
- S. Williams—Office for National Statistics (ONS)
- M. Zwick— Federal Statistical Office (DESTATIS)

#### Friday, 26 October

11:30-13:00

Ethical Considerations for Using Big Data I: Exploring the Ethics of Data Linkage

Room: 40.150

Chair: Henning Silber (GESIS—Leibniz Institute for the Social Sciences)

### Attitudes Towards Data Linkage, Privacy, Ethics, and the Potential for Harm\*

Aleia Fobia (US Census Bureau)—Presenting Author

Jennifer Childs (US Census Bureau) Casey Eggleston (US Census Bureau)

## **Public Confidentiality Expectations Regarding Data Linkage**

Jennifer Childs (US Census Bureau)—
Presenting Author
Casey Eggleston (US Census Bureau)
Aleia Fobia (US Census Bureau)

#### **Evaluating Survey Consent to Social Media Linkage**

Zeina Mneimneh (University of Michigan)— Presenting Author

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



Colleen McClain (University of Michigan) Lisa Singh (Georgetown University) Trivellore Raghunathan (University of Michigan)

## Privacy-Preserving Methods for Linking Big Data and Survey Data Sets

Rainer Schnell (University of Duisburg-Essen)—Presenting Author Christian Borgs (University of Duisburg-Essen)

#### Determinants of Consent to Administrative Records Linkage in Next Steps—A Large-Scale Longitudinal Cohort Study in the UK

Darina Peycheva (Centre for Longitudinal Studies—UCL Institute of Education)— Presenting Author
George Ploubidis (Centre for Longitudinal Studies—UCL Institute of Education)
Lisa Calderwood (Centre for Longitudinal Studies—UCL Institute of Education)

#### Friday, 26 October

11:30-13:00

Putting Text into Context: Exploring Classification and Automation of Textual Survey Data

Room: 40.154

Chair: Matthias Schonlau (University of

Waterloo)

## A Comparison of Automatic Algorithms for Occupation Coding

Malte Schierholz (Institute for Employment Research [IAB])—Presenting Author

## How to Make AI do Your Job for Statistical Classification of Industry and Occupation

Jukka Kärkimaa (Statistics Finland)—
Presenting Author
Liisa Larja (Statistics Finland)

## Topic Modeling and Status Classification Using Data From Surveys and Social Networks\*

Suat Can (University of Bremen
(Germany), Social Science Methods Centre)
Presenting Author
Uwe Engel (University of Bremen
(Germany),
Social Science Methods Centre)
Jennifer Keck (University of Bremen
(Germany), Social Science Methods Centre)

#### Machine Learning and Verbatim Survey Responses: Classification of Criminal Offences in the Crime Survey for England and Wales

Peter Matthews (Kantar Public)—
Presenting Author
George Kyriakopoulos (Kantar Public)
Maria Holcekova (Kantar Public)

#### Friday, 26 October

11:30-13:00

Computers vs. Humans: Who's Better at Social Science?

Room: 40.213

**Chair: Masahiko Aida (Civis Analytics)** 

## Data-Inspired Life—How Data Science and AI is Pushing the Boundaries of Human Behavior

Zeeshan-ul-hassan Usmani (MiSK Foundation)—Presenting Author
Sana Rasheed (Telenor)

### Can Computers Compete with Human Experience?

Gaye Banfield (Birkbeck College)—Presenting Author

### **Detecting and Comparing Survey Research Topics in Conference and Journal Abstracts**

Alison Thaung (Booz Allen Hamilton)—
Presenting Author
Stas Kolenikov (Abt Associates, Inc)

#### Friday, 26 October

11:30-13:00

Population Estimates for Small Geographic Areas: Can We Do a Better Job?

Room: 40.035 S. Graus

Chair: Safaa Amer (RTI International), submit-

ted session

### Advances in Gridded Population Distribution Databases: LandScan HD\*

Amy Rose (Oak Ridge National Laboratory)—Presenting Author

## **GridSample.org: Generating Household Survey Sampling Units from Gridded Population Data\***

Dana Thomson (WorldPop, University of Southampton, and Flowminder Foundation)—Presenting Author

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Residential Scene Classification for Geo-Sampling in Developing Countries Using Deep Convolutional Neural Networks on High-Resolution Satellite Imagery

Robert Chew (RTI International)—
Presenting Author
Safaa Amer (RTI International)
Kasey Jones (RTI International)
Jennifer Unangst (RTI International)
James Cajka (RTI International)
Justine Allpress (RTI International)
Mark Bruhn (Independent Researcher)

#### Household Detection Within Gridded Population Area Units: Producing Small Area Population Estimates in Geo-Sampling\*

Safaa Amer (RTI International)—Presenting Author James Cajka (RTI International) Rob Chew (RTI International) Kasey Jones (RTI International) Jennifer Unangst (RTI International) Justine Allpress (RTI International)

#### Lunch

13:00-14:15

Room: 30.S02 S. Expo

#### Friday, 26 October

14:15-15:45

Methods to Improve Survey Representativeness Using High Dimensional Data

Room: 40.002

Chair: Michael Elliott (University of Michigan),

submitted session

#### Calibrating Big Data for Population Inference: Applying Quasi-Randomization Approach to Naturalistic Driving Data Using Bayesian Additive Regression Trees

Michael Elliott (University of Michigan)—
Presenting Author
Ali Rafei (University of Michigan)
Carol Flannagan (University of Michigan)

#### Bayesian Inference for Sample Surveys in the Presence of High-Dimensional Auxiliary Information

Yutao Liu (Columbia University)
Andrew Gelman (Columbia University)
Qixuan Chen (Columbia University)—
Presenting Author

#### How Non-Ignorable Is the Selection Bias in Nonprobability Samples? An Illustration of New Measures Using a Large Genetic Study on Facebook

Brady West (University of Michigan)—
Presenting Author
Phil Boonstra (University of Michigan)
Roderick Little (University of Michigan)
Jingwei Hu (University of Michigan)

## **Evaluating Doubly Robust Estimation for Online Opt-In Samples with Bayesian Additive Regression Trees**

Andrew Mercer (Pew Research Center/Joint Program in Survey Methodology)—
Presenting Author

#### Friday, 26 October

14:15-15:45

Big Data for Official Statistics I: Big Data Use is Officially a Big Deal for Government Statistics

Room: 40.105

Chair: Lars Lyberg (Inizio)

#### Big Data Initiatives in Official Statistics\*

Lilli Japec (Statistics Sweden)
Lars Lyberg (Inizio)—Presenting Author

### A Framework for Big Data in Official Statistics\*

Kees Zeelenberg (Statistics Netherlands)
Sofie De Broe (Statistics Netherlands)
Presenting Author

#### Mining the New Oil for Official Statistics\*

Siu-Ming Tam (Australian Bureau of Statistics)—Presenting Author

### **Enhancing U.S. Federal Statistics by Combining Multiple Data Sources**

Brian Harris-Kojetin (National Academies of Sciences, Engineering, and Medicine)—
Presenting Author
Robert Groves (Georgetown University)

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#### Friday, 26 October

14:15-15:45

Smart TVs, Smartphones, and now Smart Surveys: Building Smarter Surveys Using Big Data Tools

Room: 40.109

**Chair: Stas Kolenikov (Abt Associates)** 

Augmenting Surveys: An Efficient Framework for the Storing, Querying, and Processing of Big Survey Data

Jack Kuang Tsung Chen (SurveyMonkey)—
Presenting Author
Jon Cohen (SurveyMonkey)
Reuben McCreanor (SurveyMonkey)

#### Comparing Coding of Interviewer Question-Asking Behaviors Using Recurrent Neural Networks to Human Coders

Jerry Timbrook (University of Nebraska-Lincoln)—Presenting Author Adam Eck (Oberlin College)

#### The ODISSEI Data Platform\*

Thomas Emery (NIDI)—Presenting Author

#### Friday, 26 October

14:15-15:45

Ethical Considerations for Using Big Data II: Exploring the Relationship Between Ethical Considerations, Reproducibility, and Participation

Room: 40.150

**Chair: Rebecca Powell (RTI International)** 

Justice Rising—The Growing Ethical Importance of Big Data, Survey Data, Models, and Al

Richard Timpone (Ipsos)—Presenting Author

Charles Taber (Kansas State University) Yongwei Yang (Google)

#### Reproducibility in the Era of Big Data: Lessons for Developing Robust Data Management and Data Analysis Procedures\*

D. Betsy McCoach (Neag School of Education, University of Connecticut)—
 Presenting Author
 Jennifer Dineen (Department of Public Policy, University of Connecticut)
 Sandra Chafouleas (Neag School of Education, University of Connecticut)

Amy Briesch (Bouvé College of Health Sciences, Northeastern University)

Big Data's Front-Ended Ethical Considerations Ignore How Results Can Stigmatize Identifiable Groups: Examining Big Wastewater Data in New Zealand\*

Martin Tolich (University of Otago)— Presenting Author

### Enriching an Ongoing Panel Survey with Mobile Phone Measures: The IAB-SMART App

Sebastian Bähr (Institute for Employment Research [IAB])

Georg-Christoph Haas (Institute for Employment Research [IAB], University of Mannheim)—Presenting Author Florian Keusch (University of Mannheim) Frauke Kreuter (Institute for Employment Research [IAB], University of Mannheim, University of Maryland)

Mark Trappmann (Institute for Employment Research [IAB], University of Bamberg)

## Augmenting Survey Data with Big Data: Is There a Threat to Panel Retention?

Mark Trappmann (Institute for Employment Research [IAB], University of Bamberg)—
Presenting Author

Sebastian Bähr (Institute for Employment Research [IAB])

Georg Haas (Institute for Employment Research [IAB])

Florian Keusch (University of Mannheim)
Frauke Kreuter (Institute for Employment
Research [IAB], University of Mannheim,
University of Maryland)

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#### Friday, 26 October

14:15-15:45

Big Data Methods, Small Survey Nonresponse?

Room: 40.213

**Chair: Roeland Beerten (Statistics Flanders)** 

## Advances in Modelling Attrition: The Added Value of Paradata and Machine Learning Algorithms

Peter Lugtig (Utrecht University)—
Presenting Author
Annelies Blom (University of Mannheim)

Preserving Our Precious Respondents: Predicting and Preventing Non-Response and Panel Attrition by Analyzing and Modeling Longitudinal Survey and Paradata Using Data Science Techniques

Joris Mulder (CentERdata/Tilburg University)—Presenting Author Natalia Kieruj (CentERdata/Tilburg University)

### Using Predictive Modeling to Identify Panel Dropouts

Jan-Philipp Kolb (GESIS)—Presenting Author Christoph Kern (University of Mannheim) Bernd Weiß (GESIS)

Operational Challenges in Gaining and Maintaining Survey Respondents' Cooperation to Supplement Survey Data with "Big Data" Collected Through a Custom Smartphone Application

Kristine Wiant (RTI International)—
Presenting Author
Diana Greene (RTI International)
Joli Brown (RTI International)
Ellen Causey (RTI International)

#### Friday, 26 October

14:15-15:45

Missing Data? No Big Deal Using New Big Data Methods

Room: 40.035 S. Graus

**Chair: Paul Biemer (RTI International)** 

#### Motivated Misreporting in Crowdsourcing Tasks of Content Coding, Image Classification, and Surveys

Yuli Hsieh (RTI International)
Herschel Sanders (RTI International)
Amanda Smith (RTI International)
Stephanie Eckman (RTI International)
Presenting Author

#### New Data to Correct for Nonresponse Bias: The Case of Administrative Data in Spain

Pablo Cabrera-Álvarez (University of Salamanca)—Presenting Author

#### Health Survey Non-Representativeness Bias Methodology and Validation

Linsay Gray (MRC/CSO Social & Public Health Sciences Unit, University of Glasgow)—

**Presenting Author** 

Megan Yates (MRC/CSO Social & Public Health Sciences Unit)

Tommi Härkänen (National Institute for Health and Welfare (THL), Helsinki)

Oarabile Molaodi (MRC/CSO Social & Public Health Sciences Unit)

Hanna Tolonen (National Institute for Health and Welfare (THL), Helsinki)

Alastair Leyland (MRC/CSO Social & Public Health Sciences Unit)

Pekka Martikainen (Department of Sociology, University of Helsinki)

## Experiences in FBI's NCS-X NIBRS Estimation Project\*

Dan Liao (RTI International)—Presenting
Author
Marcus Berzofsky (RTI International)
Ian Thomas (RTI International)
Lance Couzens (RTI International)
Alexia Cooper (Bureau of Justice Statistics)

#### Coffee Break

15:45-16:00

Room: 30.S02 S. Expo

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Friday, 26 October

16:00-17:30

Big Data for Official Statistics II: Administrative and Big Data Use for Survey Design and Estimation

Room: 40.105

Chair: Lilli Japec (Statistics Sweden)

## Web Scraping Meets Survey Design: Combining Forces

Olav ten Bosch (Statistics Netherlands)—
Presenting Author
Dick Windmeijer (Statistics Netherlands)
Arnout van Delden (Statistics Netherlands)
Guido van den Heuvel (Statistics Netherlands)

#### Making Administrative Records Key to Operational Agility for the American Community Survey

Jennifer Ortman (U.S. Census Bureau)—
Presenting Author
Victoria Velkoff (U.S. Census Bureau)

#### Linkage of the Australian Census to Three Administrative Databases with an Application to Understanding Income Inequality in Australia

Nicholas Biddle (Australian National University)—Presenting Author Robert Breunig (Australian National University)

## Use of Alternative Data Sources at Statistics Canada: A Case Study with GPS Data

Francois Brisebois (Statistics Canada)—
Presenting Author

## The Usability of Government Open Data for Social Research—Estonian Case

Laur Lilleoja (Tallinn University)—Presenting Author

#### Friday, 26 October

16:00-17:30

Filing the Claim for Social Media Data: Who's Covered and Who Isn't

Room: 40.109

Chair: Jonathan Nagler (NYU, Social Media and Political Participation Lab)

# Seeking the "Ground Truth": Assessing Methods Used for Demographic Inference from Twitter

Colleen McClain (University of Michigan)—
Presenting Author
Zeina Mneimneh (University of Michigan)
Lisa Singh (Georgetown University)
Trivellore Raghunathan (University of Michigan)

## Coverage Bias in Election Research Using Data from Social Media

Marie Kühn (GESIS Leibniz Institute for the Social Sciences)—Presenting Author Hannah Bucher (GESIS Leibniz Institute for the Social Sciences)

Joss Roßmann (GESIS Leibniz Institute for the Social Sciences)

## Who's Tweeting About the President? What Big Survey Data Can Tell Us About Digital Traces

Josh Pasek (University of Michigan)—
Presenting Author
Colleen McClain (University of Michigan)
Frank Newport (Gallup)
Stephanie Marken (Gallup)

## Augmenting Public Opinion Research with Social Media Data: A Case Study of Brexit

Celeste Stone (American Institutes for Research)—Presenting Author Claire Kelley (American Institutes for Research)

Sarah Kelley (American Institutes for Research)

Caitlin Deal (American Institutes for Research)

Luke Natzke (American Institutes for Research)

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Friday, 26 October

16:00-17:30

Exploring How Responsive Designs Respond to Machine Learning Methods

Room: 40.213

**Chair: Gonzalo Rivero (Westat)** 

#### **Responsive Designs in Practice**

Roger Tourangeau (Westat)

Gonzalo Rivero (Westat)—Presenting

Author

**Brad Edwards (Westat)** 

Tammy Cook (Westat)

## Machine Learning in Adaptive Survey Designs: A Bandit Approach

Rob Chew (RTI International)—Presenting
Author

Paul Biemer (RTI International)

## Mining Interviewer Observations in a Panel Survey

Daniel Guzman (SRO/University of Michigan)—Presenting Author

#### Predicting Response Mode Preferences of Survey Respondents: A Comparison Between Traditional Regression and Data Mining Methods

Mahi Megra (American Institutes for Research)—Presenting Author

Rebecca Medway (American Institutes for Research)

Michael Jackson (American Institutes for Research)

Cameron McPhee (American Institutes for Research)

#### Friday, 26 October

16:00-17:30

The Fourth Paradigm: Moving From Computational Science to Data-Intensive Scientific Discovery?

Room: 40.248

Chair: Craig A. Hill (RTI International)

## Moving Social Science Into the Fourth Paradigm: Opportunity Abounds\*

Craig A. Hill (RTI International)—Presenting Author

## Doing Social Science With Big Data Sets—A Framework of Approaches

Peter Dahlin (Mälardalen University)— Presenting Author

## A Paradigm Shift From Surveys to Big Data in Financial Market Research

Amos Chinomona (Rhodes University)— Presenting Author

## Addressing the Variety and Changeability of Big Data

Peter Dahlin (Mälardalen University)— Presenting Author

## From Data to Big Analytics—Automated Analytic Platforms for Data Exploration

Richard Timpone (Ipsos)—Presenting Author

Yongwei Yang (Google) Jonathan Kroening (Ipsos)

#### Friday, 26 October

16:00-17:30

Getting Aggressive About Passive Data Collection

Room: 40.250

Chair: Stephanie Eckman (RTI International)

#### Combining Survey and Wearable Data on Exercise and Sleep

Stephanie Eckman (RTI International)— Presenting Author Ashley Amaya (RTI International)

## Using Call Detail Records to Conduct a Commuting Survey in Poland

Robert Furberg (RTI International)

Piotr Kałużny (Poznań University of Economics and Business)—Presenting Author

Maciej Beręsewicz (Poznań University of Economics and Business/Statistical Office in Poznań)

Agata Filipowska (Poznań University of Economics and Business)

# Capture-Recapture Techniques for Transport Survey Estimate Adjustment Using Road Sensor Data‡

Jonas Klingwort (University of Duisburg-Essen)—Presenting Author Bart Buelens (Statistics Netherlands)

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



Rainer Schnell (University of Duisburg-Essen)

#### A New Smart Meter Research Portal

Simon Elam (University College London [UCL])—Presenting Author

Friday, 26 October

16:00-17:30

Respondents Responding Well or So I Recall... Exploring Memory, Mode, and Behaviour in Surveys

Room: 40.035 S. Graus

Chair: Linsay Gray (MRC/CSO Social & Public Health Sciences Unit, University of Glasgow)

Different Strokes for Different Folks: An Assessment of Mode Effects in a Student Population

Rebecca Powell (RTI International)—
Presenting Author
Antje Kirchner (RTI International)
Austin Lacy (RTI International)

Johnathan Conzelmann (RTI International)

## Memory Bookmarking: Using Multimodal Real-Time Data to Facilitate Recall

H.Yanna Yan (University of Michigan)
Frederick Conrad (University of Michigan)—
Presenting Author

## What Are the Effects of "Forcing" Respondents to Behave in Certain Ways?

David Vannette (Qualtrics Methodology Lab)—Presenting Author Mario Callegaro (Google) Yongwei Yang (Google) Steven Snell (Qualtrics)

#### Conference Dinner

19:00–21:30 Maritim Restaurant, Moll d'Espanya, 4, 08039, +34 932 211 775

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The SRMS mission is to promote the improvement of survey practice and the understanding of survey methods by encouraging both theoretical and applied research on survey-related topics, and by disseminating information on survey methods.

We have many useful resources available on our website http://ww2.amstat.org/sections/srms/ including:

- The "What is a Survey?" series for non-specialists
- List of upcoming conferences and webinars of interest to members
- Travel Awards / Student Paper Awards / Edward C. Bryant Scholarship
- The SRMSNET Mailing List
- Survey Analysis Software Resources
- SRMS JSM Proceedings



#### Saturday, 27 October

Registration and Information Desk (Registration closes at 12:00)

08:00-18:00

Room: 30.SV01 HALL

Poster Session 2 (actively presented 10:30–11:00 and 15:30–16:00)

08:30-17:30

Room: 30.S02 S. Expo

The following six posters are the result of the Barcelona Dades Obertes Data Challenge organised by the city of Barcelona. For more information on the <u>institutions</u> and the <u>projects</u> refer to the online program or the conference app.

- A. Investigating Complaints in Gracia
  Institut Vila de Gràcia
- B. Social Cohesion and Type of Neighborhood Institut Ferran Tallada
- C. Free WI-FI Points in Barcelona Institut Juan Manuel Zafra
- D. Access to Housing in Barcelona Institut Joan Brossa
- E. A Study of Traffic Accidents in Barcelona Institut J. Serrat i Bonastre
- F. WI-FI Points
  Institut Josep Comas i Solà
- 14. The Generations & Gender Survey: The Future of a Cross-National Survey Online Thomas Emery (NIDI)—Presenting Author
- 15. Predicting Political Behavior and Attitudes
  Using Digital Trace Data

Ruben Bach (University of Mannheim)—
Presenting Author
Christoph Kern (University of Mannheim)
Ashley Amaya (RTI International)
Florian Keusch (University of Mannheim)
Frauke Kreuter (University of Mannheim)
Jan Hecht (SINUS Institut)
Jonathan Heinemann (respondi AG)

 Estimation of Selection Error and Bias in Internet Data Sources by Linking with Register Data

Maciej Beręsewicz (Poznań University of Economics and Business/Statistical Office in Poznań)—Presenting Author

17. Old Problems, New Approaches: The Appearance of Suicide and Depression in the Online Social Media—A Study of Instagram

Júlia Koltai (Hungarian Academy of Sciences)

Zoltán Kmetty (Eötvös Loránd University, Budapest)—Presenting Author Károly Bozsonyi (Károli Gáspár University, Budapest)

18. Merits and Limits of Measuring the Total Acceleration of Smartphones in Mobile Web Surveys Using SurveyMotion

Stephan Schlosser (University of Göttingen)—Presenting Author

Jan Karem Höhne (University of Göttingen)

 Supplementing Probability-Based Surveys with Nonprobability Surveys to Reduce Survey Errors and Survey Costs

Joseph Sakshaug (German Institute for Employment Research)—Presenting Author

Arkadiusz Wisniowski (University of Manchester)

Diego Perez-Ruiz (University of Manchester)

Annelies Blom (University of Mannheim)

20. Exploring Random Respondent Matching with Simulated Multi-Wave Survey Data

Angela Ulrich (D3 Systems)—Presenting Author

David Peng (D3 Systems) Ethan Beaman (D3 Systems)

21. Reimagining Survey Research:
Transforming a Traditional Survey Program
Through Advanced Analytics

Ryan Cristal (Peace Corps)—Presenting Author

22. Calibrating Key Performance Indicators for an Eye Tracking Attention Panel

Emelie Löfdahl (Tobii Pro)
Karin Nelsson (Inizio)—Presenting Author

23. The Classification of Comments About Mobile Phones in the Online Shops

Natalia Kharchenko (Kiev International Institute of Sociology)—Presenting Author Maryna Shpiker (National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute")

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



Oleksandr Pereverziev (National University of "Kyiv-Mohyla Academy," Ukraine)

Saturday, 27 October

09:00-10:30

Combining General Population Surveys with Big Data from Activity Trackers or Smartphone Apps

Room: 40.004

Chair: Peter Lugtig (Utrecht University),

submitted session

Measuring Young People's Physical Activity Using Accelerometers in the UK Millennium Cohort Study

Lisa Calderwood (Centre for Longitudinal Studies, UCL)—Presenting Author Emily Gilbert (Centre for Longitudinal Studies, UCL)

#### Testing the Logistics of the Accelerometer Project in SHARE

Luzia Weiss (Max Planck Institute of Social Law and Social Policy)—Presenting Author

Annette Scherpenzeel (Max Planck Institute of Social Law and Social Policy; TUM Munich)

Nora Angleys (Max Planck Institute of Social Law and Social Policy)

## Using GPS Data as Auxiliary Data to Review the Data Quality of a Time Use Survey‡

Anne Elevelt (Utrecht University)—
Presenting Author
Peter Lugtig (Utrecht University)
Vera Toepoel (Utrecht University)
Stijn Ruiter (Netherlands Institute for the
Study of Crime and Law Enforcement)
Wim Bernasco (Netherlands Institute for
the Study of Crime and Law Enforcement)

# Quality of Spending Data Collected with a Receipt Scanning App in a Probability Household Panel

Alex Wenz (ISER, University of Essex)—
Presenting Author
Annette Jackle (ISER, University of Essex)

# WHO IS WHO. An Algorithm to Attribute the Device's Navigation to Users Sharing the Same Device

Carlos Ochoa (Netquest)—Presenting Author

Carlos Bort (Netquest) Miquel Porcar (Netquest)

#### Saturday, 27 October

09:00-10:30

Socializing with Surveys: Combining Big Data and Survey Data to Measure Public Opinion

Room: 40.006

**Chair: Pascal Siegers (GESIS)** 

## Social Media as an Alternative to Surveys of Opinions About the Economy‡

Frederick Conrad (University of Michigan)—
Presenting Author

Johann Gagnon-Barsch (University of Michigan)

Robyn Ferg (University of Michigan) Elizabeth Hou (University of Michigan) Josh Pasek (University of Michigan) Michael Schober (The New School)

## Measuring the Strength of Attitudes in Social Media Data\*

Ashley Amaya (RTI International)—
Presenting Author
Ruben Bach (University of Mannheim)
Frauke Kreuter (University of Maryland;
University of Mannheim)
Florian Keusch (University of Mannheim)

# Protest Within an Authoritarian Context: Perception of Opportunities and Support for Protest Among Citizens in the Arab World

Mohamed Elsayed Yousef (Universitat de Barcelona)—Presenting Author Camilo Cristancho (Universitat de Barcelona)

#### Saturday, 27 October

09:00-10:30

Translations Across Nations: Exploring Natural Language Processing in Multicultural Applications

Room: 40.010

Chair: Diana Zavala-Rojas (Universitat Pompeu

Fabra)

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Creating Synergies Between Survey Research and Machine Learning: A Road Map for Applying Tools from Computational Linguistics in the Translation of Survey Questionnaires

Diana Zavala-Rojas (Universitat Pompeu Fabra)—Presenting Author

## **Country Comparative Surveys Using Word Embeddings**

Magnus Sahlgren (RISE SICS)—Presenting Author

Stefan Dahlberg (University of Gothenburg)

#### The Meaning of Democracy: Using a Distributional Semantic Lexicon to Collect Co-Occurrence Information from Online Data Across Languages

Sofia Axelsson (Department of Political Science, University of Gothenburg)— Presenting Author Stefan Dahlberg (Department of Political Science, University of Gothenburg)

# Lost in Translation—How Differences in Word Intensity Affect Citizens' Satisfaction with the Working of Democracy

Stefan Dahlberg (Department of Political Science. University of Bergen)—Presenting Author Magnus Sahlgren (RISE SICS) Jönas Linde (Department of Political Science. University of Bergen)

#### Saturday, 27 October

09:00-10:30

The Bigger the Better? Exploring Opportunities and Challenges of Using Big Data for Rapid Ethnography

Room: 40.012

Chair: Frances Barlas (GfK Custom Research)

#### African Big Idea on Big Survey Data: Transforming Challenges into Opportunities

Elieza Paul (International Statistical Literacy Project (ISLP)—Country Coordinator— Tanzania)—Presenting Author

A Sample Survey on the Current Level of Awareness Regarding Big Data Among Academics and Practitioners of Statistics in Pakistan Saleha Naghmi Habibullah (Kinnaird College For Women, Lahore, Pakistan)— Presenting Author

#### Run Silent, Run Deep: Passive Online Monitoring and Survey Data Fusion

Frances Barlas (GfK Custom Research)—
Presenting Author
Mansour Fahimi (GfK Custom Research)
Randall Thomas (GfK Custom Research)

#### Saturday, 27 October

09:00-10:30

#### Crowdsourcing, Causality, and the Issue of Social Trust

Room: 40.063

Chair: Rene Bekkers (Vrije Universiteit

Amsterdam)

#### The Gift of Trust

Rene Bekkers (Vrije Universiteit Amsterdam)—Presenting Author

## Problems in Identifying Causality in Observational Data

Ray Poynter (The Future Place and Nottingham Trent University)—Presenting Author

#### Crowdsourced Small Area Estimation. Crowdsourcing and Estimating Safety Perceptions at Neighbourhood Level in London\*

David Buil-Gil (Centre for Criminology and Criminal Justice, University of Manchester)—Presenting Author

Reka Solymosi (Centre for Criminology and Criminal Justice, University of Manchester)

Angelo Moretti (Geography Department, University of Sheffield)

#### Coffee Break

10:30-11:00

Room: 30.S02 S. Expo

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Saturday, 27 October

11:00-12:30

Smartphone Sensor Measurement and Other Tasks in Mobile Web Surveys I

Room: 40.002

Chair: Bella Struminskaya (Utrecht University),

submitted session

# Emergent Issues in the Combined Collection of Self-Reports and Passive Data Using Smartphones

Frederick Conrad (University of Michigan)—
Presenting Author

Florian Keusch (University of Mannheim)

## Combining Active and Passive Mobile Data Collection: A Survey of Concerns\*

Florian Keusch (University of Mannheim)— Presenting Author

Frauke Kreuter (University of Mannheim, University of Maryland, Institute for Employment Research)

Bella Struminskaya (Utrecht University)
Martin Weichbold (University of Salzburg)

# Collecting Smartphone Sensor Measurements in the General Population: Willingness and Nonparticipation Bias

Bella Struminskaya (Utrecht University)—
Presenting Author

Peter Lugtig (Utrecht University)

Barry Schouten (Statistics Netherlands, Utrecht University)

Vera Toepoel (Utrecht University)

Marieke Haan (University of Groningen)

Ralph Dolmans (Statistics Netherlands)

Vivian Meertens (Statistics Netherlands)

Deirdre Giesen (Statistics Netherlands)

Annemieke Luiten (Statistics Netherlands)

### Data Collection Using Mobile Technologies: Changes Over Time in the Barriers to Participation

Annette Jäckle (University of Essex)—
Presenting Author
Alexander Wenz (University of Essex)
Mick Couper (University of Michigan)

#### Saturday, 27 October

11:00-12:30

Big Data Enhancements to Surveys: Social Issues

Room: 40.004

**Chair: Nicholas Biddle (Australian National** 

**University**)

# How Does Research Productivity Relate to Gender? Analyzing Gender Differences for Multiple Publication Dimensions

Sabrina J Mayer (University of Duisburg-Essen)

Justus M K Rathmann (University of Zurich)—Presenting Author

## Social Diffusion of Xenophobic Attacks in Germany—An Application of Web Crawling

Thomas Hinz (University of Konstanz)— Presenting Author

Johannes Laufer (University of Konstanz) Sandra Walzenbach (LMU Munich) Franziska Weeber (University of Konstanz)

## Potentials of Linking Administrative Data and Survey Data for Inequality Research

Rudolf Farys (University of Bern)
Oliver Hümbelin (Bern University of Applied Sciences)

Ben Jann (University of Bern)—Presenting Author

## The Four Faces of Political Participation in Comparative Perspective

R. Michael Alvarez (California Institute of Technology)

Gabriel Katz (University of Exeter)—
Presenting Author

Ines Levin (University of California, Irvine) Lucas Nuñez (California Institute of Technology)

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Saturday, 27 October

11:00-12:30

Fake News! Information Exposure in Complex Online Environments

Room: 40.006

Chair: Colleen McClain (University of

Michigan)

# When Does the Campaign Matter? Attention to Campaign Events in News, Twitter, and Public Opinion\*

Josh Pasek (University of Michigan)—
Presenting Author
Lisa Singh (Georgetown University)
Stuart Soroka (University of Michigan)
Jonathan Ladd (Georgetown University)
Michael Traugott (University of Michigan)
Ceren Budak (University of Michigan)
Leticia Bode (Georgetown University)
Frank Newport (Gallup)

#### Is Informal Flagging for Propaganda in User Comments Helpful to Identify Anti-Western Narratives? The Benefits and Risks of Relying on User-Based Labeling

Vlad Achimescu (University of Mannheim, Germany)

Dan Sultanescu (CPD SNSPA, Bucharest, Romania)—Presenting Author Dana Sultanescu (CPD SNSPA, Bucharest, Romania)

## Echo Chambers: Twitter Versus Online News Exposure

Susan Banducci (University of Exeter)—
Presenting Author
Iulia Cioroianu (University of Exeter)
Lorien Jasny (University of Exeter)
Travis Coan (University of Exeter)
Hywel Williams (University of Exeter)
Iain Weaver (University of Exeter)

# Boys on the Tweet Bus: Identifying Information Flows Between Political Journalists During the 2016 U.S. Presidential Campaign

Jonathan Ladd (Georgetown University)— Presenting Author

#### Saturday, 27 October

11:00-12:30

Refining Big Data Methods Using Survey Data

Room: 40.008

**Chair: Georgiy Bobashev (RTI International)** 

## The Effect of Survey Measurement Error on Clustering Algorithms

Paulina Pankowska (Vrije Universiteit Amsterdam)—Presenting Author Daniel Oberski (Utrecht University) Dimitris Pavlopoulos (Vrije Universiteit Amsterdam)

#### Efficiency of Classification Algorithms as an Alternative to Logistic Regression in Propensity Score Adjustment for Survey Weighting

Ramón Ferri-García (Department of Statistics and Operations Research, University of Granada)—Presenting Author
María del Mar Rueda (Department of Statistics and Operations Research, University of Granada)

## Accessing the Opinions of a Billion People: Mobile Surveys in the Age of Big Data

Duncan Stannett (Qriously Ltd.)—Presenting Author

## How YouTube Uses Survey Data to Improve Video Recommendations

YouTube Recommendations Team Berg, Haulk, Marriott, McFadden (YouTube/Google)—Presenting Author

#### Saturday, 27 October

11:00-12:30

Enhancing Survey Quality with Big Data

Room: 40.010

Chair: Daniel Oberski (Utrecht University)

## Applying the Multi-Level/Multi-Source (MLMS) Approach to the 2016 General Social Survey

Tom W. Smith (NORC)—Presenting Author Jaesok Son (NORC)
Benjamin Schapiro (NORC)

# Using Multiple Imputation of Latent Classes (MILC) to Construct Consistent Population Census Tables Using Data from Multiple Sources

Laura Boeschoten (Tilburg University)—
Presenting Author

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Jacco Daalmans (Centraal Bureau voor de Statistiek)

Ton De Waal (Centraal Bureau voor de Statistiek)

Jeroen Vermunt (Tilburg University)

# Using Machine Learning Models to Predict Follow-Up Survey Participation in a Panel Study\*

Mingnan Liu (Facebook)—Presenting Author Yichen Wang (Uber)

## **Designing Surveys to Account for Endogenous Nonresponse**

Michael Bailey (Georgetown University)— Presenting Author

Sunday Assemblies: From "Believing Without Belonging" to "Belonging Without Believing"? When Survey and Big Data Combine to Study an Under-Theorized Phenomenon

Francesco Molteni (Università degli Studi di Milano, Dipartimento di Scienze Sociali e Politiche)—Presenting Author Massimo Airoldi (Lifestyle Research Center, Emlyon Business School)

#### Saturday, 27 October

11:00-12:30

Leveraging Big Data for Improving Health Research...the Follow-up Visit

Room: 40.012

Chair: Naja Rod (Section of Epidemiology, University of Copenhagen)

Smartphone Interactions and Mental Well-Being in Young Adults—A Longitudinal Study Based on High-Resolution Smartphone Data

Agnete Skovlund Dissing (Copenhagen
University)—Presenting Author
Naja Hulvej Rod (Copenhagen University)
Thomas Alexander Gertds (Copenhagen
University)
Rikke Lund (Copenhagen University)

How to Operationalize Adaptive Sampling Along with Various Big Data Phenotypic-Neurologic-Ecological-Genotypic Elements Across a Multi-Site Trauma-Based Prospective Data Collection, the AURORA Cooperative Agreement

Charlie Knott (RTI International)—Presenting Author

Steve Gomori (RTI International)
Mai Nguyen (RTI International)
Sue Pedrazzani (RTI International)
Sridevi Sattaluri (RTI International)
Thomas Walker (RTI International)

# Applying a Geospatial Big Data Approach to Survey Data: The Next Stage in Population Health Studies\*

Eileen Avery (Department of Sociology, University of Missouri)—Presenting Author

Timothy Haithcoat (University of Missouri Informatics Institute)

Richard Hammer (Department of Pathology & Laboratory Medicine, University of Missouri)

Chi-Ren Shyu (Electrical Engineering and Computer Science, University of Missouri)

## Classifying Health Insurance Type from Survey Responses Using Enrollment Data

Joanne Pascale (US Census Bureau)—
Presenting Author
Kathleen Call (SHADAC)
Angela Fertig (University of Minnesota)
Don Oellerich (US Department of Health
and Human Services)

#### Saturday, 27 October

11:00-12:30

Big Data Applications to Enterprise Statistics: Businesses, Employers, and Consumers

Room: 40.063

Chair: Mark Trappmann (Institute for Employment Research [IAB], University of Bamberg)

Synthesising Big Data and Business Survey Data\*

Matthew Greenaway (Office for National Statistics [UK])—Presenting Author

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#### Consumer Expenditure Statistics from Retail Transaction Data

Sverre Amdam (Statistics Norway)—
Presenting Author
Henning Holgersen (Statistics Norway)
Bart Buelens (Statistics Netherlands)

Fuzzy Identification, from Raw Survey Data to a Structured Register: An Example from Official Statistics Finding the Employer Declared During the Census in the Companies Register

Benjamin Sakarovitch (INSEE)—Presenting Author Julie Djiriguian (INSEE)

## Identifying Innovative Companies from Their Website

Suzanne van der Doef (Statistics Netherlands)

Piet Daas (Statistics Netherlands)—Presenting Author

Dick Windmeijer (Statistics Netherlands)

#### Requirements in Job Advertisements: Automated Detection and Classification into a Hierarchical Taxonomy of Work Equipment (Tools)

Manuel Schandock (Federal Institute for Vocational Education and Training [BIBB])—Presenting Author

#### Lunch

12:30-14:00

Room: 30.S02 S. Expo

#### Saturday, 27 October

14:00-15:30

Smartphone Sensor Measurement and Other Tasks in Mobile Web Surveys II

Room: 40.002

Chair: Florian Keusch (University of Mannheim), submitted session

## Framing Consent Questions in Mobile Surveys: Experiments on Question Wording

Henning Silber (GESIS—Leibniz Institute for the Social Sciences)—Presenting Author Bernd Weiss (GESIS—Leibniz Institute for the Social Sciences) Florian Keusch (University of Mannheim)

Christoph Beuthner (GESIS—Leibniz Institute for the Social Sciences)

Jette Schroeder (GESIS—Leibniz Institute for the Social Sciences)

## What Do Researchers Have to Invest to Collect Smartphone Data?\*

Georg-Christoph Haas (University of Mannheim, Institute for Employment Research [IAB])—Presenting Author Florian Keusch (University of Mannheim) Frauke Kreuter (University of Mannheim, Institute for Employment Research [IAB], University of Maryland)
Mark Trappmann (Institute for Employment Research [IAB], University of Bamberg)
Sebastian Bähr (Institute for Employment

## Willingness to Participate in a Metered Online Panel

Research [IAB])

Melanie Revilla (RECSM-Universitat Pompeu Fabra, Spain)—Presenting Author Mick P. Couper (University of Michigan) Ezequiel Paura (Netquest) Carlos Ochoa (Netquest)

#### The Impact of Motion Instructions on the Acceleration of Smartphones and Completion Times in Web Surveys

Jan Karem Höhne (University of Göttingen)—Presenting Author Melanie Revilla (RECSM-Universitat Pompeu Fabra, Spain) Stephan Schlosser (University of Göttingen)

#### Saturday, 27 October

14:00-15:30

Leveraging Big and Nontraditional Datasets to Reduce Burden, Increase Response, and Assess Survey Quality

Room: 40.004

Chair: Nancy Bates (US Census Bureau), submitted session

## Alternative Approaches for Measuring the Movement of Goods in the United States

Julie Parker (US Bureau of Transportation Statistics)—Presenting Author Joy Sharp (US Bureau of Transportation Statistics)

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Using Alternative Data Sources to Reduce Respondent Burden in United States Census Bureau Economic Data Products\*

Rebecca Hutchinson (US Census Bureau)— Presenting Author

# Using Linked Survey and Administrative Data to Assess the Quality of Each Contributing Data Source\*

Rupa Datta (NORC at University of Chicago)—Presenting Author
Gabriel Ugarte (NORC at University of Chicago)
Dean Resnick (NORC at University of Chi-

cago)
Leveraging Nontraditional Data to Improve

# Response Propensity Models and Design Tailored and Targeted Geographical Nonresponse Interventions

Mary Mulry (US Census Bureau)—Presenting Author

Nancy Bates (US Census Bureau) Matthew Virgile (US Census Bureau)

#### Discussant for Organized Session Titled: Leveraging Big and Nontraditional Datasets to Reduce Burden, Increase Response, and Assess Survey Quality

Nancy Bates (US Census Bureau)— Presenting Author

#### Saturday, 27 October

14:00-15:30

How Do You Like Those Likes? Exploring the Validity of Measures Derived from Social Media Data

Room: 40.006

Chair: Lars Lyberg (Inizio)

## Can Facebook "Likes" Measure Human Values?‡

Daniel Oberski (Utrecht University)— Presenting Author

# On the Validity of Statistical Inference Using Social Media Data: Two Interpretations of an Existing Study

Martina Patone (University of Southampton)—Presenting Author

# Improving the Measurement of Political Behavior by Integrating Survey Data and Digital Trace Data

Sebastian Stier (GESIS)
Johannes Breuer (GESIS)
Pascal Siegers (GESIS)—Presenting Author
Arnim Bleier (GESIS)
Tobias Gummer (GESIS)

#### **External and Internal Quality of Big Data**

Beat Hulliger (FHNW School of Business)— Presenting Author

#### Saturday, 27 October

14:00-15:30

New Approaches to Augment Sampling Frames I: Does Bigger Data Mean Better Sampling Frames?

Room: 40.008

Chair: Trent Buskirk (Center for Survey Research, UMass Boston)

#### Investigating the Value of Appending New Types of Big Data to Address-Based Survey Frames and Samples

Paul Lavrakas (Independent Consultant)—
Presenting Author
Ashley Hyon (Marketing Systems Group)
David Malarek (Marketing Systems Group)

#### Is More Data Better Data? Assessing the Quality of Commercial Data Appended to an Address-Based Sampling Survey Frame

Rebecca Medway (American Institutes for Research)—Presenting Author Nicole Guarino (American Institutes for

Research)

Carol Wan (American Institutes for Research)

Danielle Battle (American Institutes for Research)

#### **Commercial Voter Files and Survey Data**

Ruth Igielnik (Pew Research Center)—
Presenting Author
Scott Keeter (Pew Research Center)
Bradley Spahn (Stanford University)
Courtney Kennedy (Pew Research Center)
Feedback Loop: Using Surveys to Build and
Assess RBS Religious Flags\*
David Dutwin (SSRS)—Presenting Author

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



## Research on Combination of Probability and Nonprobability Samples

Nadarajasundaram Ganesh (NORC at the University of Chicago)—Presenting Author

Edward Mulrow (NORC at the University of Chicago)

Michael Yang (NORC at the University of Chicago)

Vicki Pineau (NORC at the University of Chicago)

Adrijo Chakraborty (NORC at the University of Chicago)

#### Saturday, 27 October

14:00-15:30

Applying Machine Learning and Automation to Improve Imputation—Replicate I

Room: 40.010

**Chair: Steven Cohen (RTI International)** 

## The Enigma of Survey Research in the Digital Age—A Paradigm

Mansour Fahimi (GfK)—Presenting Author

## Mass Imputation Combining Information from Big Data

Shu Yang (North Carolina State University)
Jae Kwang Kim (Iowa State University)—
Presenting Author

#### An Imputation Solution for Differentiating Between Unreported Attitudes and Genuine Nonattitudes in Survey Data

Natalie Jackson (JUST Capital)—Presenting Author

Jeff Gill (American University)

## Can Missing Patterns in Covariates Improve Imputation for Missing Data?

Micha Fischer (University of Michigan)—
Presenting Author
Felicitas Mittereder (University of
Michigan)

#### Saturday, 27 October

14:00-15:30

Using Big Data for Electoral Research I: What's the Sentiment for Using Sentiment in Electoral Research?

Room: 40.012

Chair: Susan Banducci (University of Exeter)

#### **Political Sentiment and Election Forecasting**

Niklas M. Loynes (University of Manchester/NYU)—Presenting Author Mark Elliot (University of Manchester)

## A Full Spectrum Approach to Election Polling and Forecasting

Chris Jackson (Ipsos)—Presenting Author Mark Polyak (Ipsos) Clifford Young (Ipsos) Mallory Newall (Ipsos)

# I Get It! Using Qualitative and Quantitative Data to Investigate Comprehension Difficulties in Political Attitude Questions

Naomi Kamoen (Tilburg University)— Presenting Author Bregje Holleman (Utrecht University)

#### Voter Information and Learning in the US 2016 Presidential Election: Evidence from a Panel Survey Combined with Direct Observation of Social Media Activity

Jonathan Nagler (NYU, Social Media and Political Participation Lab)—Presenting Author

Gregory Eady (NYU, Social Media and Political Participation Lab)

Patrick Egan (NYU, Dept of Politics)
Josh Tucker (NYU, Social Media and Political
Participation Lab)

#### Saturday, 27 October

14:00-15:30

#### New Digital Data Sources and Official Statistics

Room: 40.063

Chair: Ralf Münnich (Trier University), submitted session

# The Use of Big Data to Improve Small Area Estimates of Multidimensional Poverty Indicators

Monica Pratesi (University of Pisa)— Presenting Author

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



Stefano Marchetti (University of Pisa) Caterina Giusti (University of Pisa) Vincenzo Mauro (University of Pisa)

#### City Data from LFS and Big Data

Sandra Hadam (Statistisches Bundesamt)—
Presenting Author
Timo Schmid (Freie Universität Berlin)

## From Experimental to Official Statistics: The Case of Solar Energy

Bart Buelens (Statistics Netherlands)
Sofie De Broe (Statistics Netherlands)
Ralph Meijers (Statistics Netherlands)
Presenting Author
Olav ten Bosch (Statistics Netherlands)
Marco Puts (Statistics Netherlands)

## Satellite Data for Developing Social and Economic Indicators

Ralf Münnich (Trier University)
Markus Zwick (Statistisches Bundesamt)—
Presenting Author

#### Coffee Break

15:30-16:00

Room: 30.S02 S. Expo

#### Saturday, 27 October

16:00-17:30

#### Social Science Infrastructure for Big Data

Room: 40.002

Chair: Christof Wolf (GESIS—Leibniz-Institute for the Social Sciences), submitted session

#### **Big Data at FORS**

Brian Kleiner (FORS) Alexandra Stam (FORS) Nicolas Pekari (FORS) Boris Wernli (FORS)—Presenting Author Georg Lutz (FORS)

#### Linking Social Survey and Twitter Data— Consent, Operationalisation, Archiving, and Sharing

Luke Sloan (Cardiff University)—Presenting Author Tarek Al Baghal (ISER) Curtis Jessop (NatCen Social Research)

#### **SOMAR: ICPSR's New Social Media Archive**

Margaret C. Levenstein (ICPSR)—Presenting Author

## Infrastructure for Digital Behavioral Data in the Social Sciences: The GESIS Perspective

Julian Kohne (GESIS—Leibniz-Institute for the Social Sciences) Christof Wolf (GESIS—Leibniz-Institute for the Social Sciences)—Presenting Author

#### Saturday, 27 October

16:00-17:30

Using Big Data for Electoral Research II: Likes, Tweets, and Votes?

Room: 40.006

Chair: Josh Pasek (University of Michigan)

## Gauging the Horserace Buzz: How the Public Engages with Election Polls on Twitter

Colleen McClain (University of Michigan)—
Presenting Author
Ozan Kuru (University of Michigan)
Josh Pasek (University of Michigan)

#### **Social Media and Political Participation**

Sascha Göbel (University of Konstanz)— Presenting Author

## Digital 'Cold Wars' in the U.S. Mid-Term Election

Mark Polyak (Ipsos Public Affairs)— Presenting Author

# Scaling the Civility Wall: Examining Social Media Discourse on Immigration During the 2016 U.S. Presidential Election

Thomas Johnson (University of Texas at Austin)—Presenting Author
Heloisa Aruth Sturm (University of Texas at Austin)
Patricia Rossini (Information Studies, Syracuse University)

## Analyzing Right-Wing Discourse on Twitter: A Case Study of the 2017 German Federal Election

Aubrey O'Neal (University of Texas at Austin)—Presenting Author

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



#### Saturday, 27 October

16:00-17:30

New Approaches to Augment Sampling Frames II: Leveraging Data Science Methods for Sample Frame Construction

Room: 40.008

**Chair: David Dutwin (SSRS)** 

## Using Big Data to Improve Sampling Efficiency\*

Jamie Ridenhour (RTI International)—
Presenting Author
Joseph McMichael (RTI International)
Karol Krotki (RTI International)
Howard Speizer (RTI International)

# Machine Made Sampling Designs: Applying Machine Learning Methods for Generating Stratified Sampling Designs

Trent Buskirk (Center for Survey Research, UMass Boston)—Presenting Author Todd Bear (University of Pittsburgh) Jeffrey Bareham (Marketing Systems Group)

# Machine Made Sampling Frames: Creating Sampling Frames of Windmills and Other Non-Traditional Sampling Units Using Machine Learning with Neural Networks

Adam Eck (Oberlin College)—Presenting Author

Trent Buskirk (University of Massachusetts-Boston)

Kenneth Fletcher (University of Massachusetts-Boston)
Peter Stefek (Oberlin College)
Han Shao (Oberlin College)
Ki Park (University of Northern Iowa)
Mary Losch (University of Northern Iowa)

## The View from Above—Virtual Listing Using GIS

Michelle Amsbary (Westat)
Richard Dulaney (Westat)—Presenting
Author

#### Saturday, 27 October

16:00-17:30

Applying Machine Learning and Automation to Improve Imputation—Replicate II

Room: 40.010

Chair: Mansour Fahimi (GfK)

## Al and Machine Learning Derived Efficiencies for Large Scale Survey Estimation Efforts\*

Steven Cohen (RTI International)—Presenting Author

Jamie Shorey (RTI International)

#### Sequential Imputation of Missing Data in High-Dimensional Data Sets

Micha Fischer (University of Michigan)— Presenting Author

#### **Approximate Nearest Neighbour Imputation**

Maciej Beręsewicz (Poznań University of Economics and Business/Statistical Office in Poznań)—Presenting Author Tomasz Hinc (Poznań University of Economics and Business/Statistical Office in Poznań)

#### Saturday, 27 October

16:00-17:30

Big Data = Big Applications: From Data Linkage to Education

Room: 40.012

**Chair: Ralph Meijers (Statistics Netherlands)** 

#### Enhancing the Collection and Analysis of Survey and Administrative Data by Linking

Gabriele Durrant (University of Southampton)—Presenting Author

Jamie C. Moore (University of Southampton)

Peter W.F. Smith (University of Southampton)

# 5324 Euros Per Hour: Outlier or Football Player? Unsupervised Learning Methods for Anomaly Detection: Application to the Individual Declaration of Social Data

Julie Djiriguian (INSEE)—Presenting Author Marie Cordier-Villoing (INSEE) Thomas Deroyon (INSEE)

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.



# The Best of Two Worlds: Combining Longitudinal Health and Learning to Learn Surveys with National Registry Data

Henrik Dobewall (University of Tampere)—
Presenting Author
Arja Rimpelä (University of Tampere)
Lasse Pere (University of Tampere)
Pirjo Lindfors (University of Tampere)
Mari-Pauliina Vainikainen (University of Tampere)

## Enriching Education Survey Data with Knowledge Graphs‡

Jamie Shorey (RTI International)—Presenting Author Helen Jang (RTI International Peter Baumgartner (RTI International)

#### Saturday, 27 October

16:00-17:30

Can We Mix It? Big Data Tools, Social Network Analysis, and Causal Inference

Room: 40.063

**Chair: Thomas Emery (NIDI)** 

## Learning on Survey Data to Qualify Big Data in a Web Environment

Lucie Duprat (Mediametrie)—Presenting Author Claudio Barros (Mediametrie) Aurélie Vanheuverzwyn (Mediametrie)

#### Surveys and Big Data for Estimating Brand Lift

Tim Hesterberg (Google)
Kyra Singh (Google)
Ying Liu (Google)—Presenting Author
Lu Zhang (Google)
Rachel Fan (Google)
Mike Wurm (Google)

## Finding Friends—A Network Approach to Geo-Locating Twitter Users

Niklas M. Loynes (NYU/University of Manchester)—Presenting Author Jonathan Nagler (NYU) Andreu Casas (NYU) Nicole Baram (NYU)

## Analyzing Big and Small Collections of Books with Network Coincidence Analysis

Modesto Escobar (Universidad de Salamanca)
Luis Martínez-Uribe (Universidad de Salamanca & Fundación Juan March)—Presenting Author
Carlos Prieto (Universidad de Salamanca)

David Barrios (Universidad de Salamanca)

#### **Climatic Visual Art for Farmers Insights**

John Lunalo (Evidence Action, WorldQuant University)—Presenting Author Elvis Karanja (Kenya Markets Trust)

<sup>\*</sup>Indicates papers that are final candidates for the monograph; ‡ indicates papers that are in review process for the special issue.

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#### 2018 Big Data Meets Survey Science (BigSurv18) Publications

#### Conference Monograph

"Big Data" refers to a collection of data sets so large, complex, and rapidly changing that they become difficult to process using on-hand database management tools or traditional data processing applications. Big Data can also be defined as nonsampled data from sources whose purpose are not statistical inference, or as representing an ever-expanding collection of datasets, where the sheer size, variety, and speed of generation make them potentially powerful but also quite difficult to manage and challenging to extract their information. "Big" is the operative word, even though "big" can mean different things to different organisations. Petabytes might not pose a problem for some organisations; however, terabytes might be a challenge for other organisations.

Increasingly, alternative, nontraditional data sources are becoming available for statistical products that traditionally have been created using survey data. This comes at a time where survey data are expensive and hard to collect. Thus, government statistical agencies and private companies are eager to investigate what potential benefits and applications can be made of these new and emerging data to improve, supplement, or even replace survey data.

Examples of Big Data include data obtained from video surveillance and traffic cameras, sensors, retail scanners, mobile phones, webscraping, internet queries, GPS, social media, clickstreams, satellites, and credit card transactions. Big Data used in many scientific and business areas such as agriculture, genomics, banking, health care, sports, and sales. Books on Big Data in these and other fields have already been published; however, thus far the use of Big Data in surveys (and other data collections such as opt-in panels) for the purposes of describing or analysing the characteristics of finite populations has been limited.

But Big Data are an inevitable source of data for statistics production. Therefore, a book on Big Data, survey research, and statistics production is both inevitable and, given the current pace of development, very timely. Currently there are numerous Big Data developments and

initiatives within the survey industry including initiatives in official statistics and these will generate new theories, methods and applications. Some examples of these initiatives include the UNECE Big Data project, the European Statistical System's ESSnet on Big Data, and the Committee on Using Multiple Data Sources in U.S. Federal Statistics. Most national statistical agencies and their contractors have ongoing activities regarding different aspects of using Big Data in statistics production. Some areas include road and marine traffic surveillance, tourism assessments, consumer confidence statistics, consumer and retail price indices, crop yield forecasting, and energy usage.

It seems as if Big Data have the potential to replace some traditional data collections, complement them, or provide new kinds of information that will improve their quality and increase their utility. But their potential also poses significant challenges such as identification and treatment of errors particularly due to incompleteness and questionable data content; the lack of a framework quantifying and qualifying data quality; issues related to privacy and confidentiality; the univariate, cross-sectional nature of the available data; new legal structures associated with data ownership; the need for universal tools as well as a probable shortage of statisticians/data scientists. Other problems include gaining access to proprietary datasets which are often among the most useful as well as how to deal with storage and processing of massive data sets when traditional methods are infeasible.

Potential general advantages for surveys in a Big Data era include the reduction of sampling errors, respondent burden, data collection costs, production time, and missing or erroneous data as well as the promise of richer and more detailed data. These advantages translate into greater data utility per monetary unit.

The book will also document the ideas spawned by the many discussions among conference attendees on issues that are both timely and most relevant for the field. For example, a panel may consider how can we as a field



should deal with the potential "culture shock" as researchers in the survey discipline move from survey (or "small") data to Big Data thinking; in particular, from the sampling of populations to considering the implications of "N=all" and from applying the Total Survey Error paradigm to adopting a "total statistical uncertainty" framework that will be needed to encompass the new quality issues associated with Big Data.

The lead editor of this conference monograph is Dr. Craig A. Hill (Senior Vice President at RTI International).

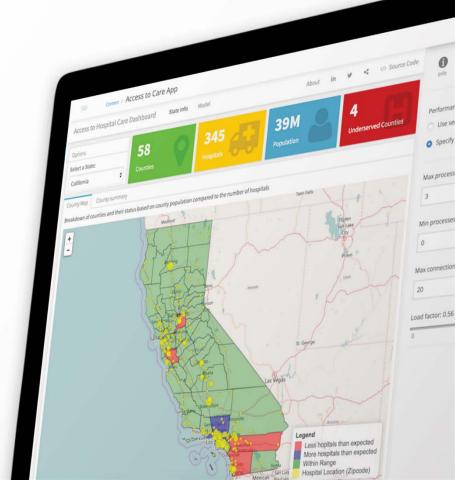
## Conference Special Issue—Social Science Computer Review

In collaboration with *Social Science Computer Review*, a collection of articles from BigSurv18 is being organised into a journal special issue highlighting a range of insightful empirical studies at the intersection of Big Data and survey science. Topics include augmenting survey data with sensor and social media data, applications of data science and machine learning for understanding survey data, and using Big Data to aid in survey administration and evaluation. Look for the special issue online soon and in print in 2019!

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# Awards and Competitions Student Paper Competition

BigSurv18 congratulates the winners of the Student Paper Competition:

- » Mr. Jonas Klingwort, PhD candidate, University of Duisburg-Essen, Germany: "Capture-recapture Techniques for Transport Survey Estimate Adjustment Using Road Sensor Data," together with Dr. Bart Buelens and Professor Rainer Schnell
- » Mr. Maarten Vanhoof, PhD candidate, Newcastle University, United Kingdom: "Performance and sensitivities of home detection on mobile phone data," together with Dr. Clement Lee and Dr. Zbigniew Smoreda

BigSurv18 wishes to thank **Dr. Lilli Japec**, Senior Scientific Advisor, Statistics Sweden, and **Dr. Lars Lyberg**, Inizio, Sweden, and the Board of Reviewers for their work in reviewing the abstracts and selecting the winners.

#### Travel Award Winners

BigSurv18 congratulates the following early career scholars who received travel awards to attend the conference:

- » Dr. Ruben Bach, University of Mannheim, Germany
- » Dr. Todd Bear, University of Pittsburgh, USA
- » Dr. Amos Chinomona, Rhodes University, South Africa
- » Miss Agnete Dissing, Copenhagen University, Denmark
- » Dr. Henrik Dobewall, University of Tampere, Finland
- » Miss Anne Elevelt, Utrecht University, Netherlands
- » Mr. Ramón Ferri-García, Universidad de Granada, Spain
- » Mr. Micha Fischer, Institute for Social Research, USA
- » Dr Sakinat Folorunso, Olabisi Onabanjo University, Nigeria
- » Mr. Tsedeke Gemecho, Hawassa University, Ethiopia

- » Mr. Jan Karem Höhne, University of Mannheim, Germany
- » Mr. Charles Kalinzi, Makerere University, Uganda
- » Mr. Piotr Kałużny, Poznań University of Economics and Business, Poland
- » Mr. Jonas Klingwort, University of Duisburg-Essen, Germany
- » Mr. Niklas M. Loynes, New York University, USA
- » Ms. Colleen McClain, University of Michigan, USA
- » Mr. Ryan McShane, Southern Methodist University, USA
- » Mr. Elvis Muchene, Kenya Markets Trust, Kenya
- » Ms. Aubrey O'Neal, University of Austin at Texas, USA
- » Ms. Paulina Pankowska, Vrije Universiteit Amsterdam, The Netherlands
- » Mr. Elieza Paul, Open University of Tanzania, Tanzania
- » Mr. Abdur Rahman, Shahjalal University of Science and Technology, Bangladesh
- » Mr. Wasim Syed, National College of Business Administration and Economics, Pakistan
- » Mr. Jerry Timbrook, University of Nebraska-Lincoln, USA
- » Mr. Maarten Vanhoof, Newcastle University, United Kingdom
- » Dr Alexander Wenz, University of Essex, United Kingdom
- » Mr. Benjamin Williams, Southern Methodist University, USA

We would like to thank the National Science Foundation for their generous support of the travel awards (Award Number: 1758346).

#### Hackathon

The Green City Hackathon. We kick off the conference with an incredible Hackathon. The Hackathon will be held in the afternoon of 24 October (13:00–17:00), and the morning of 25 October (09:00–12:00), bringing together computer scientists, data scientists, social scientists,



and survey and Big Data experts from all over the world. Teams join forces to work on an open data policy challenge. In collaboration with the Municipal Data Office at the Barcelona City Council, the teams will explore <a href="Open Data BCN">Open Data BCN</a>—the open data website—to help investigate and provide further insights to make Barcelona a more sustainable place to work and live and encourage a greener, greater Barcelona.

The Green City Challenge. The city of Barcelona would like to reduce private car use within the city, in particular by promoting use of bicycles. We would like to know more about how bikes are used by residents: Who uses them? Which neighbourhood observes the most bike commutes? Where is infrastructure missing? Are there enough bicycle stands? Are there any streets where an exclusive use of bikes might be beneficial?

The Goal. This challenge aims to provide the city of Barcelona with descriptive analyses, bike use maps, predictive analyses, digital tools, and so on. The data challenge will be utilising data coming from the Open Data BCN portal (a key unit in the Barcelona Digital City Plan), which contains data on population and demography of specific neighbourhoods, information about bicycle use, or traffic and accidents in the city. In addition, data on complaints are available. All these data are accessible in various formats and can be linked to survey data.

The Data Wrangling Teams. We will have five teams, each with five participants, digging into these questions. The teams will be grouped by the organisers with a focus on being interdisciplinary.

**Support from Experts.** During the Green City Hackathon, teams will be supported by

researchers from the fields of data science and survey methodology. In addition, the Commissioner's Office for Technology and Digital Innovation and the Municipal Data Office at the Barcelona City Council will assist the teams with their data expertise. Once the hacking ends, every team will present their results to a panel of expert judges and audience members. Plus, Hackathon winners will present their results in a flash-talk during the BigSurv18 conference welcome reception.

We want to thank our mentors—Daniela Hochfellner (Senior Research Scientist and Research Assistant Professor, NYU Center for Urban Science + Progress; Adjunct Research Assistant Professor at the Institute for Social Research, Survey Research Center at the University of Michigan); James Cajka (Geographic Information Systems Analyst, RTI International); Micha Fischer (PhD Candidate, Survey Methodology Program, Survey Research Center, Institute for Social Research, University of Michigan); and Open Data BCN staff of the Municipal Data Office at the Barcelona City Council. We also want to thank our jurors—Amelia Burke-Garcia (Westat); Màrius Boada i Pla (Director of Municipal Data Office, Ajuntament de Barcelona); Curtiss Cobb (Facebook); Daniel **Cuende** (technical manager for GEOMEX, the Out of Home Audience Measurement in Spain, winner of the Microsoft & ESOMAR hackathon, and ESOMAR representative); and Silvia **Esteban** (Bicycle's Strategy, Mobility Strategy Department—Ecologia Urbana at the Barcelona City Council).

This event is supported by ESOMAR, RTI International, and Westat, in collaboration with Ajuntament de Barcelona.











# Save the Date

## AAPOR 74th

**Annual Conference** 

May 16-19, 2019

Sheraton Centre Toronto Hotel Toronto, Ontario, Canada

## WAPOR 72nd

**Annual Conference** 

May 19-21, 2019

Chelsea Hotel Toronto Toronto, Ontario, Canada







#### **Local Information About Barcelona**

Barcelona is a modern, cosmopolitan city that has inherited many centuries of history. The open character of its inhabitants and the geographic location constantly enrich the city's culture. Barcelona has a valuable architectural and monumental heritage; some of the most splendid features are the city's Gothic and modernista buildings—nine of which have been designated World Heritage Sites by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The entire city guarantees that visitors will enjoy taking a stroll around its charming streets. Barcelona enjoys a Mediterranean climate, with mild winters and warm summers. This coastal city has more than 4 kilometres of urban beaches and large areas of nearby forests. Although Barcelona is a large city, getting around on public transport and on foot are both easy to do. You can reach any point in the city by metro, bus, or taxi.

#### Water

We strongly recommend that you drink bottled water during your visit. Although you can drink tap water safely, having bottled water is preferable. Local supermarkets sell bottled (mineral) water at a reasonable price.

#### **Electricity Supply**

Electricity supply is 230 volts throughout Spain with two-pin wall sockets; you will need to use an electricity plug adapter if you have sockets with a different number of pins.

For any countries in which the standard voltage is between 220 and 240 volts, most electronics will function adequately. The electricity is 110 volts in the United States; an adapter is required for U.S.-based electronics. Damage can occur if you attempt to use 110-volt-rated electronics with a 220-volt supply.

#### Personal Identification

Spanish law requires that individuals carry photographic identification with them at all times. This may be a passport (or a photocopy of the personal information page), driver's license, or national identity card.

#### Climate

Barcelona's location on the shores of the Mediterranean means the city enjoys a warm, welcoming climate with pleasant temperatures all year-round. It has 5 kilometres of beaches with every amenity; Barcelona's inhabitants enjoy the beaches and an Olympic marina that meets all the requisites for enjoying nautical sports throughout the year. Rainfall, which is occasionally heavy, averages 1.000 millimetres a year, making it possible to maintain the city's many green areas. Barcelona enjoys sunshine during all the seasons of the year. You can eat at openair restaurants or enjoy a drink at any of the city's many pavement cafés, always on the shores of the Mediterranean.

#### Language

Barcelona is a province of Catalonia. Most of Barcelona's inhabitants are bilingual and speak Catalan, their own language, and Spanish; these are the two official languages of Catalonia. Although street names and many road and transport signs are in Catalan, most of the city signage is also in Spanish and English.

#### Currency

Spain is in the European Union. Therefore, Spain's currency is the Euro (€). You can exchange money at the city's banks and savings banks as well as at the exchange booths located in the city centre and at tourist sights. There are also numerous exchange booths in the city centre and at the main tourist sights. The city's main railway and bus stations, Sants and Barcelona Nord bus station, also have exchange booths and cash dispensers (i.e., automatic teller machines [ATMs]).

#### Getting Around the City

Public transport is the most practical way of getting around the city. We recommend you use public transport and alternative means of transport, such as bicycles. There is no better way to discover the city than by walking through its streets. If you come to the city by car, your best bet is to leave your vehicle in a car park and enjoy your visit by metro, bus, or taxi.



#### METRO y FGC

Barcelona currently has six metro lines covering a total of 86.6 kilometres and passing through 123 stations.

- » Barcelona underground (metro): https://www.tmb.cat/en/
- » Ferrocarrils de la Generalitat de Catalunya: https://www.fgc.cat/en/

#### Bus

Barcelona has a fleet of 1,000 buses that operates on more than 80 routes and connects all the city's districts. For more information, see www.tmb.cat/en/home.

#### Taxi/Uber

Barcelona has a fleet of 11,000 taxis that can be easily identified by their yellow and black livery. Uber service is also available.

#### What to Visit

You will always find something to do in Barcelona. The city has more than 50 museums, showcasing permanent collections of works by artists such as Picasso, Joan Miró, and Antoni Tàpies; however, most museums stage temporary exhibitions. Barcelona has museums devoted to art, science, sports, history, archaeology, and many other areas of interest. Be sure not to miss some of the most interesting, such as the Museu Picasso, the Museu d'Art Contemporani de Barcelona (MACBA), the Fundació Joan Miró, and the Museu Nacional d'Art de Catalunya (MNAC). They are outstanding, not only for the incomparable works of art, but for the spectacular architecture. At the MNAC, you can see one of the world's most important collections of Romanesque art. There are famous collections of contemporary art housed in museums such as the MACBA and CaixaForum. If you want to gain a better insight into Barcelona's history, visit the Museu d'Història de la Ciutat located inside the Roman wall. You can also look at the many art galleries throughout the city. Additionally, Barcelona is a showcase for the best of the country's theatrical talent. Barcelona is also renowned for its wide variety of musical events, which includes all genres, and has three major venues: The Gran Teatre del Liceu, devoted to opera; the Palau de la Música, a modernista marvel; and L'Auditori, the concert hall designed by Rafael Moneo.

Barcelona is a box of surprises that will keep you entertained with countless cultural and recreational activities. Barcelona is an open-air museum. You can visit it by bus, bicycle or on foot to enjoy its bustling streets. There are many ways to discover the city and a whole host of things to do for those interested in culture, for those in search of entertainment, or for those thinking about where to do some shopping.

- » Day itineraries: <u>www.barcelonatur-</u> <u>isme.com/wv3/en/page/2/day-itinerar-</u> ies.html
- » Themed routes: www.barcelonaturisme.com/wv3/en/page/13/themedroutes.html

#### **Phones**

To call Barcelona from outside Spain, dial 0034 for Spain and then 93 for the dialing code for landlines in Barcelona.

#### **Useful Telephone Numbers**

#### **Emergency Phones**

- » Unified emergency telephone: 112
- » Health Emergencies: 061
- » Fire: 080
- » Police (City): 092
- » Police (National): 088
- » Pharmacy: 0034 934 810 060

#### **Transport**

- » TMB (Bus, Metro): 0034 902 07 50 27
- » Ferrocarrils de la Generalitat: 0034 932 051 515
- » Renfe (Train): 0034 902 240 202
- » Airport (Information): 0034 902 404 704
- » Taxis: 0034 932 250 000/0034 933 033 033
- » Taxis for disabled: 0034 934 208 088

## Getting to Universitat Pompeu Fabra (UPF)

For information on getting to UPF, please see page 6.

## **SURVEY and DATA SCIENCES**

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# Data Labs is data science at Pew Research Center.

Pew Research Center's Data Labs team uses computational methods to complement and expand on the Center's existing research agenda.

#### What we do:

- Collect text, network and behavioral data
- Use innovative techniques for analysis
- Generate original research
- Work toward establishing standards
- Explore the limitations of these methods









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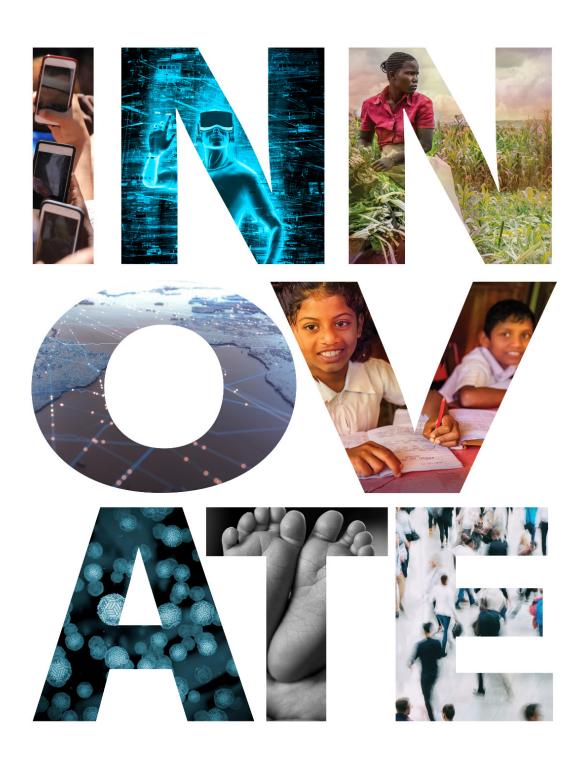
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BigSurv...to be continued...

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