

Mathieu Bray

PH.D. CANDIDATE · DEPARTMENT OF BIOSTATISTICS · UNIVERSITY OF MICHIGAN SCHOOL OF PUBLIC HEALTH

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Education

University of Michigan

Ann Arbor, Michigan, USA

PH.D. IN BIOSTATISTICS

Ongoing

- Advisor: [Peter X-K. Song](#)
- Achieved Candidacy – June 2015

McGill University

Montreal, Quebec, Canada

B.SC. JOINT HONOURS IN STATISTICS AND COMPUTER SCIENCE

May 2012

- [Distinction](#) - Top 25% of graduating class
- First Class Honours - CGPA above 3.5
- Deans Honour List - 2010-2011 & 2009-2010 academic years

Experience

University of Michigan Kidney Epidemiology and Cost Center

Ann Arbor, Michigan, USA

RESEARCH ASSISTANT

Aug. 2012 - Present

- Assisted the [Kidney-Paired Donation](#) simulation group at the [Kidney Epidemiology and Cost Center](#) with investigations on optimization strategies in paired donation, as well as development of visualization software for paired donation networks.
- Contact: [Peter X-K. Song](#), Professor & [Jack \(John D.\) Kalbfleisch](#), Professor Emeritus, Dept. of Biostatistics, University of Michigan

McGill University Health Centre

Montreal, Quebec, Canada

ENDMS SUMMER STUDENT - NEUROEPIDEMIOLOGY RESEARCH UNIT

May 2011 - Sep. 2011

- Provided research and analysis on general practitioner preferences in managing care for multiple sclerosis patients.
- Contact: [Christina Wolfson](#), Professor, Faculty of Medicine, McGill University

McGill University

Montreal, Quebec, Canada

BIOSTATISTICS SUMMER INTERN - DEPT. OF EPIDEMIOLOGY, BIOSTATISTICS & OCCUPATIONAL HEALTH

May 2010 - Jul. 2010

- Selected for the inaugural cohort of Undergraduate Summer Internships within the biostatistics division.
- Assisted with preparation of a literature review on the relation between family responsibilities and gender to the productivity and career satisfaction of medical faculty, as well as the release of a software package for optimal dynamic treatment regimes.
- Contact: [Erica E. M. Moodie](#), Associate Professor, Dept. of Epidemiology, Biostatistics & Occupational Health, McGill University

Committee Membership & Service

Fifth Bayesian, Fiducial & Frequentist Conference - BFF5

Ann Arbor, Michigan, USA

MEMBER, ORGANIZING COMMITTEE

May 2017 - May 2018

- Member of the organizing committee for the Fifth Bayesian, Fiducial and Frequentist ([BFF5](#)) Conference, primarily responsible for drafting and sending speaker invitations, maintaining the conference website, and scheduling organizing committee meetings.
- Contact: [Peter X-K. Song](#), Professor, Department of Biostatistics, University of Michigan

Michigan Student Symposium for Interdisciplinary Statistical Sciences - MSSISS

Ann Arbor, Michigan, USA

2015

ORGANIZING COMMITTEE, BIOSTATISTICS REPRESENTATIVE

Sep. 2014 - Mar. 2015

- Organized, advertised and hosted [MSSISS 2015](#) (March 20, 2015).
- Selected student speakers, judged the student oral presentation competition, coordinated with the keynote speaker, and helped select the keynote speaker for the event the following year.
- Contact: [Timothy D. Johnson](#), Professor, Department of Biostatistics, University of Michigan

Consulting

University of Michigan Men's NCAA Div-I Ice Hockey

Ann Arbor, Michigan, USA

STATISTICAL CONSULTANT

Sep. 2015 - Mar. 2018

- Provided statistical consultation and analysis for the University of Michigan Wolverines hockey team, including season-long video tracking and data collection, data management and visualization, as well as simulation-based analysis and visualizations of historical NCAA team-level trends.
- Contact: [Evan Hall](#), Video Coordinator, University of Michigan Men's NCAA Div-I Ice Hockey

Skills

COURSES

- Probability & Distribution Theory, Biostatistical Inference, Large Sample Theory
- Linear Regression, Generalized Linear Models
- Analysis of Repeated Measures, Longitudinal Analysis
- Categorical Data Analysis
- Stochastic Processes
- Survival Analysis

TECHNICAL EXPERTISE

- Extensive experience with R (RStudio, Shiny, shinyapps.io), C++ (GUI programming with Qt), & LaTeX
- Moderate experience with SQL (mySQL), Python, SAS, Java, C, MATLAB, & Tableau
- Mild experience with MapReduce framework (Hadoop, Pig, Spark) in controlled settings

LANGUAGES

- English (written and oral)
- Français (écrit et verbal)

Distinctions

2012-2013 **Postgraduate Scholarship (Master's)** [PGS M](#), [NSERC](#)

2012-2013 **Alexander Graham Bell Canada Graduate Scholarship (Master's)** [CGS M](#), [NSERC](#)

Declined

2012-2013 **Bourse de Maîtrise (Master's Scholarship)** [B1](#), [FQRNT](#)

Declined

2011 **endMS Summer Studentship Award**, [Multiple Sclerosis Society of Canada](#)

2011-2012 **Sir Edward Beatty Memorial Scholarship**, [McGill University](#)

2009-2010 **J.W. McConnell Scholarship**, [McGill University](#)

Presentations

ORAL PRESENTATIONS

Aug. 2, 2018	JSM 2018 , Online Non-Negative Tensor Decomposition with Application to Kidney	<i>Vancouver, BC, Canada</i>
Upcoming	Paired Donation	
Apr. 3, 2018	MSSISS 2018 , Online Non-Negative Tensor Decomposition with Application to Kidney Paired Donation	<i>Ann Arbor, MI, USA</i>
Mar. 15, 2017	ENAR 2017 , Assessing the Benefits of Multiple Incompatible Donors in Kidney Paired Donation	<i>Washington D.C., USA</i>
Mar. 25, 2016	MSSISS 2016 , Incorporating Candidates with Multiple Associated Incompatible Donors in Kidney Paired-Donation	<i>Ann Arbor, MI, USA</i>
Sep. 8, 2011	endMS Rounds , General Practitioner Preferences in Managing Care for Multiple Sclerosis Patients	<i>Montreal, QC, Canada</i>

POSTER PRESENTATIONS

Jun. 2, 2018	American Transplant Congress , Interactive Software for Simulation and Management of a Kidney Paired Donation Program	<i>Seattle, WA, USA</i>
Upcoming	American Transplant Congress , A Visualization Software Platform for Managing a Kidney Paired-Donation Program	<i>Boston, MA, USA</i>
Jun. 14, 2016	ENAR 2016 , Incorporating Candidates with Multiple Associated Incompatible Donors in Kidney Paired-Donation	<i>Austin, TX, USA</i>
Mar. 6, 2016	MSSISS 2014 , Incorporating Uncertainties and Contingencies in a Paired Donation Program	<i>Ann Arbor, MI, USA</i>
Mar. 21, 2014	ASN Kidney Week , Incorporating Uncertainties and Contingencies in a Paired Donation Program	<i>Atlanta, GA, USA</i>
Nov. 7, 2013		

Publication List

JOURNAL ARTICLES

- Bray M, Wang W, Song P XK, and Kalbfleisch JD (2018). Valuing Sets of Potential Transplants in a Kidney Paired Donation Network. *Statistics in Biosciences* (Published Online March 2018). doi: [10.1007/s12561-018-9214-7](https://doi.org/10.1007/s12561-018-9214-7)
- Ashby VB, Leichtman AB, Rees MA, Song P XK, Bray M, Wang W, and Kalbfleisch JD (2017). A Kidney Graft Survival Calculator that Accounts for Mismatches in Age, Sex, HLA, and Body Size. *Clinical Journal of the American Society of Nephrology* 12(7): 1148–60. doi: [10.2215/CJN.09330916](https://doi.org/10.2215/CJN.09330916)
- Wang W, Bray M, Song P XK, and Kalbfleisch JD (2017). A Look-Ahead Strategy for Non-Directed Donors in Kidney Paired Donation. *Statistics in Biosciences* 9(2): 453–69. doi: [10.1007/s12561-016-9155-y](https://doi.org/10.1007/s12561-016-9155-y)
- Bray M, Wolfson C, Moore F, Zhu B, and Uniat J (2016). General Practitioner Preferences in Managing Care of Multiple Sclerosis Patients. *Canadian Journal of Neurological Sciences* 43(1): 142–8. doi: [10.1017/cjn.2015.239](https://doi.org/10.1017/cjn.2015.239)
- Bray M, Wang W, Song P XK, Leichtman AB, Rees MA, Ashby VB, Eikstadt R, Goulding A, and Kalbfleisch JD (2015). Planning for Uncertainty and Fallbacks Can Increase the Number of Transplants in a Kidney Paired Donation Program. *American Journal of Transplantation* 15(10): 2636–45. doi: [10.1111/ajt.13413](https://doi.org/10.1111/ajt.13413)

IN PREPARATION

- Bray M, Wang W, Rees MA, Song P XK, Leichtman AB, Ashby VB, and Kalbfleisch JD (2018). A Visualization Software Platform for Managing a Kidney Paired-Donation Program. *Computer Methods and Programs in Biosciences* (In Preparation)
- Wang W, Bray M, Song P XK, and Kalbfleisch JD (2018). An Effective Algorithm to Enumerate Sets with Fallbacks for a Kidney Paired Donation Program. *Operations Research in Health Care* (Submitted)

INVITED COMMENTARY

- Bray M and Song P XK (2016). Commentary on "Statistical Modelling of Citation Exchange Between Statistics Journals" by Varin C, Cattelan M, and Firth D. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 179(1): 1–63. doi: [10.1111/rssa.12124](https://doi.org/10.1111/rssa.12124)