

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 - CGPA: 4.00/4.00

Ongoing

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

McGill University

Montreal, Quebec, Canada

B.Sc. JOINT HONOURS IN STATISTICS AND COMPUTER SCIENCE - CGPA: 3.83/4.00

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 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

BIOSTATISTICS REPRESENTATIVE, ORGANIZING COMMITTEE

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 following year's event.
- Contact: [Timothy D. Johnson](#), Professor, Department of Biostatistics, University of Michigan

Consulting

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

Ann Arbor, Michigan, USA

VOLUNTEER STATISTICAL CONSULTANT

Sep. 2015 - Mar. 2018

- Provided statistical consultation and analysis for the University of Michigan Wolverines men's hockey team, including season-long video tracking and data collection, data management and visualization, and simulation-based analysis and visualization 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, Linear Mixed Models
- Analysis of Repeated Measures, Longitudinal Analysis
- Categorical Data Analysis
- Stochastic Processes
- Survival Analysis
- Modern Statistical Computing (Statistical Optimization, Penalized Regression, Advanced Bayesian Computation,)
- Data Mining & Machine Learning (Dimension Reduction, Classification, Clustering, Graphical Models)

TECHNICAL EXPERTISE

- Extensive experience with R (including application development using Shiny), C++ (including GUI programming with Qt), & LaTeX
- Moderate experience with SQL (including MySQL), Python, SAS, Java, C, MATLAB, & Tableau
- Familiarity with MapReduce framework (e.g. 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	<i>Declined</i>
2012-2013	Bourse de Maitrise (Master's Scholarship) B1 FQRNT	<i>Declined</i>
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	

Test Scores

Sept. 2011 **GRE:** Verbal 161/170 - Quantitative 169/170 - Analytical 4.0/6.0

Presentations

ORAL PRESENTATIONS

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

POSTER PRESENTATIONS

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

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](#)
- 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](#)
- 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](#)
- 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](#)
- 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](#)

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)