

Mathieu Bray

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University of Michigan School of Public Health

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EDUCATION

University of Michigan

Ann Arbor, MI
Aug. 2012 ~ Present

- Ph.D. – Biostatistics (Advisor: [Peter X-K. Song](#))
- Achieved Candidacy – June 2015; Expected Completion – April 2018

McGill University

Montreal, Canada
Sep. 2009 ~ May 2012

- B.Sc. - Joint Honours, Statistics and Computer Science
- [Distinction](#) (Top 25% of graduating class), [First Class Honours](#) (CGPA > 3.5)

ACADEMIC & RESEARCH EXPERIENCE

University of Michigan, Kidney Epidemiology and Cost Center Research Assistant

Ann Arbor, MI
Aug. 2012 ~ Present

- Assist with research for the [Kidney-Paired Donation \(KPD\)](#) simulation group at the [Kidney Epidemiology and Cost Center](#), including investigations on optimization strategies in KPD, as well as development of visualization software for KPD networks.
- Advisors: [Peter X-K. Song](#), [Jack \(John D.\) Kalbfleisch](#)

McGill University Hospital Centre, Neuroepidemiology Research Unit endMS Summer Student

Montreal, Canada
May ~ Sep. 2011

- Provided research and analysis on general practitioner preferences in managing care for multiple sclerosis patients.
- Advisor: [Christina Wolfson](#)

McGill University, Dept. of Epid., Biostatistics, and Occ. Health Biostatistics Summer Intern

Montreal, Canada
May ~ 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.
- Advisor: [Erica E. M. Moodie](#)

COMMITTEE MEMBERSHIP & SERVICE

Biostatistics Student Association Executive Member & Co-Founder

Ann Arbor, MI
Aug. 2014 ~ Apr. 2016

- Goals included clear and regular communication of issues and events pertaining to students, representation of student interests, and organization of social and professional development activities, which included student computing workshops
- Contact: [Nicole Fenech](#), Program Coordinator, Department of Biostatistics, University of Michigan

- Organized, advertised and hosted [MSSISS 2015](#) (March 20, 2015).
- Other tasks included selecting student speakers, judging the student oral presentation competition, coordinating with the keynote speaker, and selecting the keynote speaker for the event the following year.
- Contact: [Timothy D. Johnson](#), Professor, Department of Biostatistics, University of Michigan

SKILLS

Languages: English (written and oral), Français (écrit et verbal)

Technical Expertise

- High level of experience with R (RStudio, Shiny, shinyapps.io), C++ (GUI programming with Qt), LaTeX
- Previous extensive experience with Java, C, SAS, MATLAB
- Familiarity with SQL, Python, Julia, Ruby, Tableau

Academic Interests

- Network analysis: Kidney exchange, multilayer networks, dynamic networks, patient transfers, social networks
- Bandit problems
- Supervised and regularized dimension reduction, including non-negative matrix factorization
- Online algorithms

DISTINCTIONS

Natural Sciences and Engineering Research Council of Canada ([NSERC](#))

- Alexander Graham Bell Canada Graduate Scholarship (Master's) CGS M, 2012-2013. (*Declined*)
- [Postgraduate Scholarship \(Master's\) PGS M](#), 2012-2013.

Fonds Québécois de Recherche en Nature et Technologie ([FQRNT](#))

- Bourse de Maîtrise (Master's Scholarship) B1, 2012-2013. (*Declined*)

Multiple Sclerosis Society of Canada & Multiple Sclerosis Scientific Research Foundation

- [endMS Summer Studentship Award](#) (May – September 2011)

McGill University

- Sir Edward Beatty Memorial Scholarship (2011-2012 academic year)
 - Awarded to students entering the intermediate or final year in Major or Honours Mathematics in recognition of high academic merit, on the recommendation of the Department of Mathematics.
- Deans Honour List (2010-2011 & 2009-2010 academic years)
 - Top 10% of continuing students in the Faculty of Science based on combined GPA for the fall and winter terms.
- J.W. McConnell Scholarship (2009-2010 academic year)
 - Recognition of high academic standing for Canadian citizens entering an undergraduate degree program.

PUBLICATIONS & PRESENTATIONS

Kidney Paired-Donation

1. Wang W, **Bray M**, Song PXX, Kalbfleisch JD (2016). *An Effective Algorithm to Enumerate Sets with Fallbacks for a Kidney Paired Donation Program* (In Preparation).
2. **Bray M**, Wang W, Rees MA, Song PXX, Leichtman AB, Ashby VB, Kalbfleisch JD (2016). *A Visualization Software Platform for Managing a Kidney Paired-Donation Program* (In Preparation).
 - Poster Presentation. [2016 American Transplant Congress \(ATC\)](#) as *A Visualization Software Platform for Managing a Kidney Paired-Donation Program*. Boston, MA (June 14). American Society of Transplant Surgeons/American Society of Transplantation.
3. **Bray M**, Wang W, Song PXX, Kalbfleisch JD (2016). *Calculation of Expected Utilities in a Probabilistic Model for Kidney Paired Donation* (In Preparation).
 - [Oral Presentation. MSSISS 2016](#) as *Incorporating Candidates with Multiple Associated Incompatible Donors in Kidney Paired-Donation*. Ann Arbor, MI (March 25). University of Michigan.
 - [Poster Presentation. ENAR Spring Meeting 2016](#) as *Incorporating Candidates with Multiple Associated Incompatible Donors in Kidney Paired-Donation*. Austin, TX (March 6). Eastern North-American Region of the International Biometrics Society.
4. Ashby VB, Leichtman AB, Rees MA, Song PXX, **Bray M**, Wang W, Kalbfleisch JD (2016). *Donor-Candidate Mismatch in Age, Sex, HLA, and Body Size Inform a Calculator for Kidney Graft Survival*. Clinical Journal of the American Society of Nephrology (Submitted).
5. Wang W, **Bray M**, Song PXX, Kalbfleisch JD (2016). *A Look-Ahead Strategy for Non-Directed Donors in Kidney Paired-Donation*. Statistics in Biosciences. Published online: 06 July 2016. DOI: [10.1007/s12561-016-9155-y](#)
6. **Bray M**, Wang W, Song PXX, Leichtman AB, Rees MA, Ashby VB, Eikstadt R, Goulding A, 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: 2636-2645. DOI: [10.1111/ajt.13413](#)
 - [Poster Presentation. MSSISS 2014](#) as *Incorporating Uncertainties and Contingencies in a Paired Donation Program*. Ann Arbor, MI (March 21). University of Michigan.
 - [Poster Presentation. ASN Kidney Week 2013](#) as *Incorporating Uncertainties and Contingencies in a Paired Donation Program*. Atlanta, GA (November 7). American Society of Nephrology.

Multiple Sclerosis

1. **Bray M**, Wolfson C, Moore F, Zhu B, Uniat J (2016). *General Practitioner Preferences in Managing Care of Multiple Sclerosis Patients*. Canadian Journal of Neurological Sciences, 43: 142-148. DOI: [10.1017/cjn.2015.239](#)
 - Oral Presentation. endMS Rounds 2011 as *General Practitioner Preferences in Managing Care for Multiple Sclerosis Patients*. Montreal, Canada (September 8). Montreal Neurological Institute.

Invited Commentary

1. **Bray M**, Song PXX (2016). *Commentary on “Statistical modelling of citation exchange between statistics journals” by Varin C, Cattelan M, Firth D*. Journal of the Royal Statistical Society: Series A (Statistics in Society), 179: 1-63. DOI: [10.1111/rssa.12124](#)