Matthew J. Sigal, PhD

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Professional Appointments

2018-present	**Lecturer**, *Simon Fraser University.* Specialization: History, Quantitative & Theoretical Psychology.
2018-present	**Director**, Psychological Measurements Consulting group. Department of Psychology, *Simon Fraser University* (http://sfu.ca/pmc).
2019-present	**Course Coordinator**, *Fraser Institute College.*

Education

2017	**PhD**, *York University*, Toronto, ON, Area: Quantitative Methods. **Dissertation** Everything on the table: Tabular, graphic, and interactive approaches for interpreting and presenting Monte Carlo simulation data. **Committee:** Drs. Michael Friendly, David Flora, Robert Cribbie, Georges Monettes, R. Walter Heinrichs, and Wayne Oldford.
2010	**MA**, *York University*, Toronto, ON, Area: History and Theory of Psychology.
2008	**BA (Hons.)**, *Bishop's University*, Sherbrooke, QC, Major: Psychology.
Interests:	Quantitative Methods, Data Visualization, Multivariate Statistics, Psychometrics, Monte Carlo Simulations, Interactive Graphics, Statistical Pedagogy.

Scholarships & Awards

2019	Barry Beyerstein Award for Excellence in Teaching, Simon Fraser University
2017	M. Friendly Award for Quantitative Methodology Research, York University
2015	Excellence in Innovation, Multi-Health Systems
2013	Professional Development Fund, CUPE 3903, York University ($400)
2013-2014	Ontario Graduate Scholarship ($15,000)
2012-2013	Queen Elizabeth II Graduate Scholarship in Science and Technology, Ontario Ministry of Training, Colleges and Universities ($15,000)
2012	Professional Development Fund, CUPE 3903, York University ($400)
2011	Certificate of Teaching Excellence, Teaching Assistantship Award, Council of Canadian Departments of Psychology
2010	Research Cost Fund, CUPE 3903, York University ($500)
2008	Graduate Studies Entrance Scholarship, York University ($6,000)
2008	Certificate of Academic Excellence in Undergraduate Research, Canadian Psychological Association

Academic Activities

Journal Articles

Sigal, M. J., & Jacobs, S. (2019). Providing scaffolding: An applied analysis on the efficacy of 4U and university level preparatory STEM courses. *Canadian Journal for the Scholarship of Teaching and Learning*, *10*(1). doi: 10.5206/cjsotl-rcacea.2019.1.7996

Friendly, M., & Sigal, M. J. (2018). Visualizing tests for equality of covariance matrices. *The American Statistician*, 1–12. doi: 10.1080/00031305.2018.1497537

Abbondandolo, S., & Sigal, M. J. (2018). Self-compassion and proactive coping: Moving beyond ordinary to extraordinary coping. *International Journal of Educational Studies*, *5*(1), 21–26.

Friendly, M., & Sigal, M. J. (2017). Graphical methods for multivariate linear models in psychological research: An R tutorial. *The Quantitative Methods for Psychology*, *13*(1), 20–45. doi: 10.20982/tqmp.13.1.p020

Sigal, M. J., & Chalmers, R. P. (2016). Play it again: Teaching statistics with Monte Carlo simulation. *Journal of Statistics Education*, *24*(3), 136-156. doi: 10.1080/10691898.2016.1246953

Friendly, M., & Sigal, M. (2014a). Recent advances in visualizing multivariate linear models. *Revista Colombiana de Estadística*, *37*(2), 261–283. doi: 10.15446/rce.v37n2spe.47934

Sigal, M. J., & Pettit, M. (2012). Information overload, professionalization, and the origins of the *Publication Manual* of the American Psychological Association. *General Review of Psychology*, *16*(4), 357-363. doi: 10.1037/a0028531

Sigal, M. J., & McKelvie, S. J. (2012). Is exposure to visual media related to cognitive ability? Testing Neisser's hypothesis for the Flynn effect. *Journal of Articles in Support of the Null Hypothesis*, *9*(1), 23-50.

Articles Under Review

Sigal, M. J., & Pettit, M. (revise and resubmit). In Style: The Drafting and Revision of Standards for Publication in American Psychology, 1929-1944. *History of Psychology*.

Belliveau, A., Sigal, M. J., & Ball, L. (revise and resubmit). Reevaluating the Essen Climate Evaluation Schema. *Canadian Journal of Behavioral Psychology*.

Book Chapters

Friendly, M., Sigal, M. J., & Harnanansingh, D. (2015). The Milestones Project: A database for the history of data visualization. In M. A. Kimball & C. Kostelnick (Eds.), *Visible Numbers*. Ashgate Publishing.

Friendly, M., & Sigal, M. J. (2014b). Some prehistory of CARME: Visual language and visual thinking. In J. Blasius & M. Greenacre (Eds.), *Visualization and Verbalization of Data*. Chapman and Hall.

Published Software

Chalmers, R. P., & Sigal, M. J. (2016). *SimDesign: Structure for organizing Monte Carlo simulation designs.* R package, http://CRAN.R-project.org/package=SimDesign.

Friendly, M., Chalmers, R. P., & Sigal, M. J. (2016). *statquotes: Quotes on Statistics, Data Visualization and Science.* R package, http://CRAN.R-project.org/package=statquotes.

Chalmers, R. P., Smith, C. E., & Sigal, M. J. (2012). *OLScurve: OLS growth curve trajectories.* R package, http://CRAN.R-project.org/package=OLScurve.

Miscellaneous Output

Sigal, M. J. (2015). Visualizing likert-type data. *Psychostatistics: Newsletter of the Quantitative Methods Section of the Canadian Psychological Association*, *1*, 3.

Sigal, M. J. (2012). *An Applied Introduction to SPSS*. Toronto, ON: Institute for Social Research, York University.

Sigal, M. J., & Pettit, M. (2010). [Review of J. Goodwin's *A History of Modern Psychology: Third Edition*]. *Canadian Psychology*, *51*(1). doi: 10.1037/a0018471

Convention Papers, Posters, and Invited Presentations

Sigal, M. J. (2020, February). Do It Again: An Introduction to Simulation Experiments. Presentation given at HQT Area Seminar, Burnaby, BC.

Friendly, M., & Sigal, M. J. (2019, July). Visualizing multivariate linear models in R. Paper presented at the useR! conference, Toulouse, France.

Sigal, M. J. (2018, March). Factors, what factors? A Whirlwind Tour of Exploratory Factor Analysis. Presentation given at HQT Area Seminar, Burnaby, BC.

Belliveau, A., Sigal, M. J., & Ball, L. (2017, June). Reevaluating the Essen Climate Evaluation Schema. Poster presented at the annual meeting of the Canadian Psychological Association, Toronto, ON.

Sigal, M. J. (2017, March). Table dressing: Strategies for improving tabular displays of Monte Carlo simulation results. Applied lecture given at the Quantitative Methods Forum, York University, Toronto, ON.

Friendly, M., & Sigal, M. J. (2017, January). Visualizing tests for equality of covariance matrices. Applied lecture given at the Quantitative Methods Forum, York University, Toronto, ON.

Belliveau, A., & Sigal, M. J. (2016, August). Chronological celluloid cartography: Mapping the history of psychology's films. Paper presented at the American Psychological Association conference, Colorado Convention Center, Denver, CO.

Friendly, M., & Sigal, M. J. (2016, June). Visualizing multivariate linear models in R. Paper presented at Cinquièmes Recontres R conference, Toulouse, France.

Sigal, M. J. (2016, February). Everything on the table: Demystifying the results of simulation studies and other complex tables. Applied lecture given at the Quantitative Methods Forum, York University, Toronto, ON.

Sigal, M. J. (2015, March). Introduction to R for psychometrics. Full-day applied workshop given at Multi-Health Systems, Inc., Toronto, ON.

Sigal, M. J. (2015, January). MSCEIT meets MIRT: Assessing the psychometric properties of emotional intelligence. Applied lecture given at the Quantitative Methods Forum, York University, Toronto, ON.

Sigal, M. J. (2013, December). Introduction to computerized adaptive testing. Applied lecture given at York University, Toronto, ON.

Sigal, M. J. (2013, November). Multiple trait, multiple method models. Applied lecture given at York University, Toronto, ON.

Sigal, M. J. (2013, October). The grammar of (interactive) graphics. Applied lecture given at the Quantitative Methods Forum, York University, Toronto, ON.

Sigal, M. J., & Friendly, M. (2013, August). Statistical historiography: Plotting the history of data visualization via the Milestones Project. Paper presented at the American Psychological Association conference, Honolulu, Hawaii.

Counsell, A., Sigal, M. J., Chalmers, R. P., & Cribbie, R. (2013, May). Extending the Robust Means Modeling Framework. Paper presented at the Modern Modeling Methods conference, Storrs, Connecticut.

Friendly, M., & Sigal, M. J. (2013, May). Visualization for multivariate linear models. Paper presented at the Statistical Society of Canada conference, Edmonton, AL.

Friendly, M., & Sigal, M. J. (2013, April). Recent Advances in Visualization for Multivariate Linear Models. Paper presented at Statistics Day at York University, Toronto, ON.

Sigal, M. J. (2012, July). From instructions to standards: The maturation of publication policies for American psychology. Paper presented at the Joint Meeting of Cheiron and the European Society for the History of Human Sciences, Dawson College, Montreal, QC.

Sigal, M. J. (2012, June). Counting the seconds: Working with reaction time data. Paper presented at the Social and Personality Psychology symposium on Recent Advances in Data Screening and Solutions to Assumption Violations at the Canadian Psychological Association conference, World Trade and Convention Centre, Halifax, NS.

Anisef, P., Brown, R., Conley, C., Maldonado, V., Sigal, M. J., & Smith, C. E. (2012, February). The big picture: Visualizing issues of post-secondary education access. Poster presented at the Ontario Education Research Symposium, Toronto, ON.

Sigal, M. J. (2011, November). Make it pretty! Graphical post-processing using Adobe Illustrator. Applied lecture given at the Quantitative Methods Brownbag Series, York University, Toronto, ON.

Sigal, M. J. (2011, April). Introduction to SPSS workshop. Lecture given at the Ministry of Child and Youth Services, Toronto, ON.

Sigal, M. J. (2010, August). Statistical thinking and methodology for medical research. Lecture given at the University of Toronto, Toronto, ON.

Sigal, M. J. (2010, June). The origins of the 'Bible': The historical roots of the American Psychological Association's Publication Manual. Paper presented at Cheiron: The International Society for the History of Behavioral and Social Sciences, LeMoyne College, Syracuse, NY.

Sigal, M. J. (2009, August). Applied statistics for graduate-level theses in dentistry. Lecture given at the University of Toronto, Toronto, ON.

Sigal, M. J. (2009, November). APA style: The *Publication Manual* as a foundation for discursivity in 20th century American psychology. Paper presented at the 2009-2010 History and Theory of Psychology Colloquium Series, York University, Toronto, ON.

Sigal, M. J. (2008, April). The influence of visual media on fluid intelligence. Poster presented at the 2007-2008 Research Week, Bishop's University, Sherbrooke, QC.

Professional and Teaching Experience

Course Directorships

Note: All courses given at Simon Fraser University in Burnaby, BC unless otherwise specified.

PSYC 210	Introduction to Data Analysis (8 sections).
PSYC 301	Intermediate Research Methods and Data Analysis (Summer, 2018; Spring, 2019; Spring, 2020).
PSYC 391/715	Special topics course on Data Communication (Spring 2018; Fall, 2019).
PSYC 201	Introduction to Research Methods in Psychology (Fall, 2018).

PSYC 3256	Design and Analysis (2016, Fall), Laurentian University, Barrie, ON.
PSYC 3031	Intermediate Statistics Laboratory (2015, Winter), York University, Toronto, ON.
PSYC 2020	Statistical Methods I (2013, Winter), York University, Toronto, ON.

Workshops and Short Courses

2020, Spring	StartR: Reproducible Data Analysis with R, Workshop presented in conjunction with the Psychology Graduate Student Caucus, Simon Fraser University, Burnaby, BC.
2014, Summer	An Introduction to Data Analysis with R, Continuing Education workshop held at the APA conference, Washington, D.C.
2014, Spring	An Introduction to Data Analysis with R, Institute for Social Research (ISR), York University, Toronto, ON.
2014, Winter	An Introduction to Data Analysis with R, ISR, York University, Toronto, ON.
2013, Summer	An Introduction to Data Analysis with R, Continuing Education workshop held at the APA conference, Honolulu, Hawaii.
2013, Spring	An Applied Introduction to SPSS, ISR, York University, Toronto, ON.
2013, Winter	An Applied Introduction to SPSS, ISR, York University, Toronto, ON.
2012, Fall	An Applied Introduction to SPSS, ISR, York University, Toronto, ON.

Other Professional Experience

2014-2015	Psychometrician at Multi-Health Systems, Inc. (MHS), Toronto, ON, Canada.
2011-2017	Web administrator and contributor with the "Milestones Project" (http://www.datavis.ca/milestones/), York University.
2011-2013	Statistical consultant for the Knowledge Network for Applied Education Research (KNAER) initiative with the Ontario Ministry of Education (OME) and the Toronto District School Board (TDSB).
2011-2013	Administrator for the Quantitative Methods area website, York University.
2011-2013	Coordinator for the Quantitative Methods colloquium series, York University.
2010-2011	Research Assistant for Dr. Michael Friendly, York University.
2010-2016	Consultant with the Statistical Consulting Service, ISR, York University.
2009-2019	Partner and consultant at *df* Consulting (http://www.dfconsulting.org).
2008-2009	Research Assistant for Dr. Michael Pettit, York University.

University Service

| 2018/08/09 | Chair, Undergraduate Honours Thesis Defense, Dept. of Psychology: H. Ogawa. |
| 2018-2019 | Secondary Supervisor, Dept. of Psychology: P. Serafini (undergraduate). |

Professional Development

| 2018, December | Completed the San'Yas Indigenous Cultural Safety Training program. |

Active Professional Affiliations

| 2020, February | Member, Canadian Psychological Association. |
| 2020, February | Member, Psychometric Society. |

Editorial Positions: Reviewer for Oxford University Press and Sage Publications.