Dr. Jason Locklin, Ph.D.

Research Officer
Research and Organizational Transformation
Waterloo Region District School Board
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Profile Summary

Education Research Project Management and Organizational Transformation

Innovative community research with large-scale research projects and skilled knowledge translation. Project management skills, complemented with a high degree of technical expertise in research design, ethics protocols, measurement theory, advanced qualitative and quantitative statistical analysis, including the translation of complex data to accessible and actionable insights to support and achieve organizational goals.

Beyond research, application of evidence-based decision-making to lead organizational transformation through professional development, program evaluation and development, efficient and equitable resourcing of projects, staff, and interventions. Always centering the eduction community and student voice in decisions that effect them.

Career aim:

- Employ what I have learned to facilitate strategic planning of capacity-building and equitable growth in our education systems.
- Lead the translation of research to evidence-based instructional and programming practice, and system change.
- Model a spirit of inquiry, a growth mindset, and sense of social responsibility among organization leaders.
- Support student and staff well-being and success by removing barriers and creating the conditions where they can thrive and achieve their full potential, unconstrained by social location or identity.

Education

University of Waterloo:

Ph.D., Psychology, Behavioural and Cognitive Neuroscience 2015

- Dissertation: *Perceptual and Memory Deficits in Unilateral Neglect*
- Area of Study: Stroke, Perception, and Memory.

M.A., Psychology, Behavioural and Cognitive Neuroscience 2009

- Thesis: *Development of a Measure of Visuomotor Control for Assessing the Long-term Effects of Concussion*
- Area of Study: Fine Motor Control, Concussion Research.

B.Sc. (Honours), Psychology, Biology (minor) 2007

- Course load including strong mix of Psychology with Natural and Life Sciences.

Professional Experience

Research Officer, Waterloo Region District School Board 2018 to Present

- Spearhead the development and implementation of system-level measurements aligned with WRDSB's Strategic Plan and Board Improvement and Equity Plan, focusing on enhancing educational outcomes and operational efficiency through evidence-based practices.
- Maintain a student demographic data tool that leverages Canadian Census data and guide senior team on using it to support WRDSB equity goals for resource allocation.
- Collaborate with senior administrators and key stakeholders to provide actionable insights into data, facilitating data-informed decision-making to improve program effectiveness and student well-being.
- Managed and guided several large research projects from conception through to completion, employing both quantitative and qualitative methodologies to assess and address complex educational challenges. This includes data collection using the student information system, provincial and national data, and surveys developed using the Qualtrics platform, and knowledge translation to bring the data to action in the organization.
- Deliver a major, district-wide longitudinal student well-being research project that involves tens of thousands of students completing both a normed, standardized measurement, the Middle Years Development Instrument, and locally developed questions. I produce analytics and data visualizations in the form of customized pdf reports for every school using the "R" statistical software package.
- Lead professional development workshops for WRDSB school administrators focusing on the integration of the Middle Years Development Instrument into practical school leadership strategies and utilizing the data effectively for their School Learning And Improvement Plans.
- Responsible for several other major projects supporting student achievement and well-being as well as the implementation of the locally delivered staff well-being "Guarding Minds at Work" survey. I manage these from the planning and data collection stages, through to qualitative and quantitative analytics, to communicating the results. Each project involves engaging in knowledge translation, and that will often involve taking into account new insights from the field of education research in a way that carefully considers the needs of department and organizational leadership.

Research Associate, Centre for Family Medicine 2016 - 2018

- Responsible for working as part of a multi-disciplinary team of researchers and healthcare professionals with a culture of inquiry and creative thinking, to develop, evaluate, and disseminate innovative primary-care programs to improve quality-of-care for persons with dementia, frailty, and related geriatric issues.
- Manage and achieve successful completion of an innovative pilot frailty screening measure for the Waterloo Region Local Health Network
- Develop a collaboration between a family health organization (family doctor's office) with a community pharmacy to deliver an empathetic screening program to all patients 75+ years old, using a human-centred approach.
- Field tested the screening measure with medical professionals and adjusted the screening measure for better strategy implementation (e.g., booking procedures were adjusted to better meet the needs of patients and administration)
- Utilized qualitative research methods to evaluate the successful improvements in confidence, self-report competence, and capacity of clinicians after participation in a memory-clinic training program.
- Trained and supervised co-op students and volunteer research assistants.

Statistical Consultant, Centre for Family Medicine 2016

- Collected, tracked and made use of identity based data from clinical and administrative databases, outcome data, survey methodologies, and clinical measures for statistical analysis to evaluate new and existing procedures in primary care.
- Completed statistical reports with R, including data cleaning and validation, as well as visualization.

Graduate and Undergraduate Research Employment, Department of Psychology, University of Waterloo:

Research Assistant; Perception, action and brain injury. 2007 - 2015

- Supervisor: Dr. James Danckert
- Develop a motor-accuracy task for the measurement of concussion symptoms.
- Test neurological patients using a variety of neuropsychological tests and procedures, including Prism Adaptation.
- Develop and test a gaze-contingent task using real-time eye-tracking equipment.
- Supervise undergraduate research assistants

Research Assistant; Decision making. 2007

- Supervisor: Dr. Jon Fugelsang
- Develop web-based decision making experiments and collect data.

Research Assistant; Psychophysics. 2005 - 2006

- Supervisor: Dr. James Danckert
- Develop a computer-based task for a graduate student's project.

Laboratory Coordinator; Attention and clinical depression. 2005 - 2006

- Supervisor: Dr. Scott McCabe
- Coordinate several covert-orienting experiments.
- Supervise volunteer research assistants

Research Assistant; Attention and clinical depression. (volunteer) 2004 - 2005

- Supervisor: Dr. Scott McCabe
- Conduct experimental psychology research experiments.

Affiliations

Member, Association of Educational Researchers of Ontario 2018 - 2024
Member, Danckert Attention and Action Group 2008 - 2015
Advisory Council, Bad Science Watch 2012
Member, Vision Sciences Society 2006

Service Activities

Executive Member at Large, Association of Educational Researchers of Ontario (AERO-AOCE) 2023 - Present

- Serving as an executive member at large for AERO-AOCE, helping to drive the promotion and improvement of research, evaluation, planning, and development within Ontario's school systems.
- Contributing to initiatives that underscore the importance and impact of educational research in enhancing board of education strategies and outcomes.

Host/Facilitator, AERO-AOCE Fall Conference 2023

- Topic: Student Census, focusing on the analysis, reporting and community engagement phases of the project.
- Contributed to organization and conference delivery and introduction of speakers.

Host/Facilitator, AERO-AOCE Spring Special Interest Group 2023

- Topic: Climate Surveys: Student, Staff & Parent.
- MC role and contributed to organization and program delivery.

Science Advisor, Advisory Committee: Bad Science Watch. 2012

- Provided support and science advice for the non-profit public interest advocacy group.
- Contributed to white paper for science-based journalism.

President: U.W. Undergraduate Psychology Society. 2005 - 2007

- Student organization, administration of 8, over 600 members.

Professional Development

Project Management Professional (PMP) Certification; PMI In-Progress

Leading for Change: Understanding Colonialism, Human Rights and Equity; WRDSB 2024

- Course explored the nuanced concepts of colonialism, human rights and equity —how they are each unique, different, and how they relate to one another, to education and to leadership.
- Interactive, experiential learning exploring notions of colonialism, oppression, and racism and uncovering how these impact all aspects of education, while considering personal identity and one's own role in upholding these structures.

WRDSB Microsoft Power BI Hands-On Training; Go Analytics 2023

- Mastered the full spectrum of Power BI tools, from data connection to publishing dynamic dashboards.
- Learned from Microsoft Certified instructor Klayton Gonçalves, leveraging his extensive data analytics expertise.
- Gained proficiency in Power Query for data transformation and DAX for creating calculated columns and measures.
- Developed skills in building interactive visualizations and employing best practices for effective data presentation.

The Scientist Knowledge Translation Training (SKTT™) course; SickKids 2018

- Completed intense 2-day workshop focused on effective research dissemination across fields like health, education, and social sciences.
- Learned from Dr. Melanie Barwick, an expert in implementation science and knowledge translation, on enhancing research impact.
- Acquired strategies for making complex scientific information accessible to non-academic audiences.
- Developed skills in creating impactful knowledge translation plans tailored to diverse user groups.

University of Waterloo, selected examples follow:

Technical

- Multiple Regression (Psychology 632)
- Analysis of Variance (Psychology 630)
- Experimental Design (Statistics 830)
- Computer Vision (Systems Design Engineering 677)
- Data Analysis in Neuroscience (Biology 681)

Non-technical

- Visual Perception (Psychology 287)
- Neurobehavioral Analysis of Perceptual and Motor Deficits (Kinesiology 656)
- Nature & Computational Correlations of Intelligence (Psychology 670)
- Cognitive Neuropsychology I (Psychology 779A)
- Human Neuroanatomy and Neuropathology (Psychology 784)

Mathematical Expertise

Basic Statistics and Data Analysis

- Hypothesis testing via means comparisons and correlations, including techniques for the prevention of elevated experiment-wise error.
- Data reduction and simplification using measures of central tendency, variance, and periodicity.
- Data visualization, including experience with the problem of communicating high-dimensional data on paper/screen.
- Experiment power and effect size calculations.
- Experimental design optimization.

Advanced Statistics

- Analysis of Variance and Covariance, as well as Logistic Regression (Generalized Linear Models).
- Multiple Regression, including model comparisons and variable coding for non-typical data sets.
- Bayesian hypothesis testing.

Technical Skills

Statistical / Data Analytical Software

- R, statistics programming, data visualization.
- SPSS, statistical analysis for social sciences.
- Power BI, Data modelling and dash-boarding.
- SAS, data management and advanced statistical analysis.
- Scipy/Pylab, Python library for scientific computation, data visualization.
- Matlab, high-level technical computing language.

Laboratory Equipment and Software

- EyeLink II host control (For controlling eye-tracking equipment).
- Psychopy, Python library for building psychophysics and cognitive psychology experiments.
- Trained in lesion overlay analysis (Analysis of MRI brain imaging data)
- AcqKnowlege software in combination with BIOPAC laboratory equipment for physiological measurement (Electromyography (EMG) and Galvanic Skin Response (GSR))
- E-Prime for data collection in Psychology Research.

Programming and Scripting Languages

- Day-to-day familiarity with several scripting languages including Python, UNIX shell scripting (BASH).
- Experience using a variety of programming languages (C, Pascal, and Java).
- Experience using PHP with HTML and CSS in the development of web-based research experiments.

Typesetting Software

- Comfortable writing with TeX, LaTeX, and BibTeX for technical and scientific documents, as well as common office suites such as Microsoft Office and LibreOffice.

Teaching

Department of Psychology, University of Waterloo:

Physiological Psychology: T.A. 2011 & 2014

- Provide weekly office hour extra instruction to students.

Human Neuropsychology: T.A. 2012

- Provide weekly office hour extra instruction to students.

Res. in Human Cognitive Neuroscience: T.A. 2010

- Provide assistance and feedback to students developing a research paper.

Physiological Psychology: T.A. 2009

- Provide weekly office hour extra instruction to students.

Cognitive Processes: T.A. 2008

- Provide extra instruction during office hours, grade term papers, give feedback to students.

Basic Data Analysis: T.A. & Lab Instructor 2008

- Instruct a weekly tutorial for 30 students, consisting of a 30 minute review lecture of the week's topic, and 30 minutes of practical instruction on solving data analytic problems.
- Develop weekly tutorial lesson plans in cooperation with other teaching assistants.

Advanced Data Analysis: T.A. & Lab Instructor 2007

- Develop and lead regular 1 hour tutorials instructing 30 students to utilize the statistical software package SPSS in analyzing real world experimental and observational data.

Publications

Refereed:

Lee, L., **Locklin, J.**, Patel, T., Lu, S. K., Hillier, L. M. (2022) Recruitment of participants for dementia research: interprofessional perspectives from primary care-based memory clinics. Neurodegenerative Disease Management. 12 (3), 117-127 doi:10.2217/nmt-2021-0053

Lee, L., Hillier, L., **Locklin, J.**, Lee, J., Slonim, K. (2019) Advanced care planning for persons with dementia in primary care: Attitudes and barriers among health-care professionals. Journal of palliative care, 34 (4), 248-254. doi:10.1177/0825859718812463

Lee, L., Hillier, L., **Locklin, J.**, Lumley-Leger, K., Molnar, F. (2019) Specialist and family physician collaboration: Insights from primary care-based memory clinics. Health & Social Care in the Community. 27 (4), e522-e533. doi:10.1111/hsc.12751

Lee, L., Patel, T., **Locklin, J.**, Milligan., J., Pefanis, J., Costa, A., Lee, J., Slonim, K., Giangregorio, L., Hunter, S., Keller, H., Boscart, V. (2018). Frailty screening and case-finding for complex chronic conditions in older adults in primary care. Geriatrics, 3 (3), 39. doi:10.3390/geriatrics3030039

Locklin, J. (2015). *Perceptual and Memory Deficits in Unilateral Neglect.* (Dissertation, University of Waterloo, Waterloo, Canada).
Retrieve from hdl.handle.net/10012/9590

Locklin, J., Bunn, L., Roy, E. & Danckert, J. (2010). Measuring Deficits in Visually Guided Action Post-Concussion. *Sports Medicine*, *40*, 183-187.
doi:10.2165/11319440-000000000-00000

Locklin, J. (2009). *Development of a measure of visuomotor control for assessing the long-term effects of concussion.* (Master's thesis, University of Waterloo, Waterloo, Canada).
Retrieve from hdl.handle.net/10012/4740

Striemer, C., **Locklin, J.**, Blangero, A., Rossetti, Y., Pisella, L. & Danckert, J. (2008). Attention for action? Examining the link between attention and visuomotor control deficits in a patient with optic ataxia. *Neuropsychologia*, *47*, 1491-1499.
doi:10.1016/j.neuropsychologia.2008.12.021

Non-Refereed:

2022-2023 Safe, Caring and Inclusive School Survey – Summary Report (2024). Public report produced by the Waterloo Region District School Board. Retrieve from wrdsb.ca/about-the-wrdsb/research/reports/scis/2022-2023-safe-caring-and-inclusive-school-survey-summary-report/

Newman, G., Duffy, C., Powell, A., Gray, R., & **Locklin, J.** (2012). Position Paper on Electromagnetic Hypersensitivity (Idiopathic Environmental Intolerance Attributed to Electromagnetic Fields). Canada: *Bad Science Watch*.
Retrieve from www.badsciencewatch.ca/projects/investigation-of-anti-wifi-activism-in-canada

Locklin, J., & Danckert, J. (2010). Do we have Independent Visual Streams for Perception and Action? a Response. Preprint.
Retrieve from cogprints.org/6854/

Locklin, J., Danckert, J. (2009). Changes in Visuomotor Performance of Concussed Individuals. Poster. Abstract published in *Journal of Vision*, *9:8*, 1103-1103. doi:10.1167/9.8.1103

Law, A., McCabe, S., **Locklin, J.**, Tan, C., & Morris, S. (2006). Perceptions of social rank as a predictor of anger and depression symptoms. Poster presented at the Graduate Student Research Conference, University of Waterloo, Waterloo, Canada.