Jennifer **Bertrand**

780-278-6129 | jenniferkbertrand@gmail.com

Education

Doctor of Philosophy in Kinesiology and Neuroscience (Expected) 2017 – present

University of Alberta, Canada | Supervisor: Dr. Craig S. Chapman
Thesis:
The utility of webcam eye-tracking: lessons learned and practical applications in decision-making and digital computer-human interactions
Doctoral Internship:
Research Scientist & New Product Development, Scicovery GmbH ('21-'22)

Master of Science (Thesis-Based) 2015 – 2017

University of Alberta, Canada | Supervisor: Dr. Craig S. Chapman
Thesis:
EEG oscillations as a neural correlate for brightness enhancement of flickering stimuli

Bachelor of Science in Kinesiology 2010 – 2014

University of Alberta, Canada
Final year placement: *Neurophysiology Department, Royal London Hospital, London UK*

Publications

JK Bertrand & CS Chapman (2023) Dynamics of eye-hand coordination are flexibly preserved in eye-cursor coordination during an online, digital, object interaction task. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23), April 23–28, 2023, Hamburg, Germany.* ACM, New York, NY, USA, 13 pages. doi: 10. 1145/3544548.3580866

H Ma, **JK Bertrand**, CS Chapman & D Hayward (2023) You read my mind: Generating and minimizing intention uncertainty under different social contexts in a 2-player online game. *Journal of Experimental Psychology: Human Perception and Performance*. Advance online publication. doi: 10.1037/xhp0001150

JK Bertrand & CS Chapman (2023 – submitted to *Behavior Research Methods* in September 2023, awaiting review) A practical guide to webcam eye-tracking.

AA Ouellette Zuk, **JK Bertrand** & CS Chapman (2023 – pre-print; in prep for submission to *Computers in Human Behavior*) Continuous Measures of Decision-Difficulty Captured Remotely: I. Mouse-tracking sensitivity extends to tablets and smartphones. doi: 10.1101/2023.06.06.543796

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JK Bertrand, AA Ouellette Zuk & CS Chapman (2023 – pre-print; in prep for submission to *Computers in Human Behavior*) Continuous Measures of Decision-Difficulty Captured Remotely: II. Webcam eye-tracking reveals early decision processing. doi: 10.1101/2023.06.06.543799

NJ Wispinski, SA Stone, **JK Bertrand**, AA Ouellette Zuk, EB Lavoie, JP Gallivan & CS Chapman (2021) Reaching for the known unknowns: Rapid reach decisions accurately reflect the future state of dynamic probabilistic information. *Cortex, 138*, 253-265. doi: 10.1016/j.cortex.2021.02.010

JK Bertrand, AA Ouellette Zuk & CS Chapman (2019) Clarifying frequency-dependent brightness enhancement: delta-, and theta-band flicker, not alpha-band flicker, consistently seen as brightest. *Experimental Brain Research,* 1-13. doi: 10.1007/s00221-019-05568-1

JK Bertrand, NJ Wispinski, KE Mathewson & CS Chapman (2018) Entrainment of theta, not alpha, oscillations is predictive of the brightness of a flickering stimulus. *Scientific Reports*, *8*, 6152. doi: 10.1038/s41598-018-24215-3

EB Lavoie, **JK Bertrand**, SA Stone, NJ Wispinski, J Sawalha & CS Chapman (2018) Examining the "species" of situated cognition in humans. Comment on "Cognition beyond representation: Varieties of situated cognition in animals". *Comparative Cognition & Behavior Reviews, 13,* 31-34. doi: 10.3819/CCBR.2018.130004

Scholarship & Grant Support

Selected Scholarships, Research Funding + Honours

SIGCHI Gary Marsden Travel Award for CHI'23 (*$2500 USD*)	2023
MITACS Accelerate International Internship Funding (*$45,000*)	2021 – 2022
SMART Network Innovation Fund Scholarship (*$25,000*)	2020
Best Poster – U of A Neuroscience and Mental Health Research Day	2020
Queen Elizabeth II Graduate Scholarship (*$15,000*)	2017 – 2018
Alberta Gambling Research Institute Graduate Student Scholarship (*$20,000*)	2016 – 2017
Jason Lang Scholarship (*$1000*)	2014
University of Alberta Ringette Club Scholarship (*$1000*)	2012
Millar Entrance Leadership Scholarship (*$3500*)	2010
Alexander Rutherford Scholarship (*$2500*)	2010
Premier's Citizenship Award	2010

Grants

Dyadic gaze and movement behaviours during cooperative and competitive gameplay
- Principal Investigator: Dana A. Hayward
- Co-Investigator: Craig S. Chapman
- Collaborators: **Jennifer K. Bertrand** and Helen Ma
- Agency: NSERC/SSHRC General Research Fund (University of Alberta)
- Amount: $43,700
- Funding Period: 2020 – 2022

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Using custom built board games and video-game level editors to measure the impact of theme and medium on risk decision making

Principal Investigator: Craig S. Chapman
Co-Investigators: Nathan J. Wispinski, Ewen Lavoie, and **Jennifer K. Bertrand**
Agency: Alberta Gambling Research Institute
Amount: $10,000
Funding Period: 2016 – 2017

Professional Experience

Graduate Student Researcher 2015 – present
The Actions in Complex Environments Laboratory at the University of Alberta

Established a new laboratory for electroencephalography study within the Actions in Complex Environments Laboratory. Spearheaded the transition of the lab's research program to remote, online experimentation methods during the global pandemic. Responsible for the supervision of various students including undergraduate Honours theses, directed studies projects, full-time summer research assistants, and practicum students. Completed two Advanced Quantitative Statistics + Experimental Design courses, an Advanced Neuroscience seminar course, a reading course focused on time frequency decomposition for EEG analysis and a doctoral research seminar course. Participated in a term-long lab rotation for Neuroscience interdisciplinary PhD program. Deeply engaged in a 6-month candidacy study period with successful oral and written candidacy examination. Successfully proposed and completed yearlong Mitacs Accelerate International PhD Internship with global industry partners. Presented work at international research conferences, and collaborated on or led the creation of 6 research publications (+1 under submission, and 2 pre-prints).

Research Scientist & New Product Development, PhD Intern 2021 – 2022
Scicovery, GmbH - MITACS Accelerate International Doctoral Internship

Defined research goals and strategies, articulated hypotheses and applied the best research methods for impactful B2C SaaS product strategy and insights. Guided the ideation process for a new B2B SaaS product, identifying and resolving ambiguous product challenges. Engaged with product users (academic researchers) in a scientific support and guidance role.

Teaching Assistant & Primary Co-Instructor 2015 – 2021
The University of Alberta

Teaching assistant for 200, 300 and 400-level faculty courses, teaching seminars, lab components, assessing student work, working directly with students and faculty professors. Teaching Human Motor Control, Skill Acquisition, and Sport Ethics content.

Research Administrative Assistant | *The Canadian Hemoglobinopathy Association* 2018 – 2020
Neurophysiology Practicum Student | *Royal London Hospital, London, UK* 2014
Program Facilitator | *Campus and Community Recreation, University of Alberta* 2011 – 2013
Server | various steakhouses + golf clubs, Edmonton 2010 – 2016
Youth Ringette and Hockey Instructor | *various summer camps, Edmonton* 2008 – 2015

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Additional Research + Professional Training

NSERC-CREATE SMART Network Entrepreneurship Workshop Series (4-day) 2021
University of Alberta's NSERC SMART CREATE Program

Neuroscience Graduate Research Program Lab Rotation 2020
Dr. Dana Hayward's Visual Attention and Social Processes Lab – University of Alberta

NSERC-CREATE Complex Dynamics Summer School 2018
McGill University's Complex Dynamics of Brain and Behaviour

Computational Methods in Neuroscience Workshop (10-day) 2016
Campus Alberta Neuroscience

Presentations (Selected)

Bertrand J.K., Stone S.A., Chapman C.S. (2023) Moving and seeing beyond the laboratory: Quantitative UX methods informed by vision and movement neuroscience. Talk given at the Quant UX Conference (global, virtual) in June 2023.

Bertrand J.K. & Chapman C.S. (2023) Dynamics of eye-hand coordination are flexibly preserved in eye-cursor coordination during an online, digital, object interaction task. Paper talk given at the Conference on Human Factors in Computing Systems (CHI '23) in Hamburg, Germany, April 2023.

Bertrand J.K. & Chapman C.S. (2022) Dynamics of eye-hand coordination are flexibly preserved in eye-mouse coordination during an online, screen-based interaction task. Poster presented at the Society for Neuroscience in San Diego, USA, November 2022.

Bertrand J.K. (2020) Developing Novel Measurement and Assessment Tools for Beyond the Research Setting. Talk presented at the Sensory Motor Adaptive Rehabilitative Technology Network Talk Series in Edmonton, Canada, June 2020.

Bertrand J.K., Chouinard B., Fyshe A., Chapman C.S. (2020) What are the consequences of simplifying a sensorimotor task for translation to the clinic? Poster presented at the 21st Annual Neuroscience and Mental Health Institute's Research Day in Edmonton, Canada, March 2020.

Bertrand J.K., Ouellette Zuk A.A., Wispinski N.J., Mathewson K.E., Chapman C.S. (2019) Clarifying theta's role in the brightness enhancement of a flickering stimulus. Poster presented at the 20th Annual Neuroscience Institute's Research Day in Edmonton, Canada, March 2019.

Bertrand J.K., Ouellette Zuk A.A., Wispinski N.J., Mathewson K.E., Chapman C.S. (2018) Clarifying theta's role in the brightness enhancement of a flickering stimulus. Poster presented at the Society for Neuroscience Conference in San Diego, USA, November 2018.

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Bertrand J.K., Wispinski N.J., Mathewson K.E., Chapman C.S. (2017) Are neural oscillations responsible for the enhancement of flicker brightness? Poster presented at the Psychonomic Society 58th Annual Meeting in Vancouver, Canada, November 2017.

Bertrand J.K., Wispinski N.J., Mathewson K.E., Chapman C.S. (2017) Are neural oscillations responsible for the misperception of flicker brightness? Poster presented at the International Conference for Cognitive Neuroscience in Amsterdam, Netherlands, August 2017.

Chapman C.S., **Bertrand J.K.**, Wispinski N.J. (2017) The influence of non-conscious processing on human decision making. Talk presented by the first author at the Association for the Scientific Study of Consciousness (ASSC) Conference in Beijing, China, June 2017.

Bertrand J.K., Wispinski N.J., Cormier D.L., Singhal A., Mathewson K.E., Chapman C.S. (2016) Discrimination of brightness biased by flicker rate in alpha frequency range. Poster presented at Society for Neuroscience in San Diego, USA, November 2016.

Scientific Engagement, Communication + Outreach Activities (Recent)

Moderator | *General Election Forum, University of Alberta Graduate Students Association* 2023
Podcast Guest | *"Online Research – The Big Topics" episode, Labvanced's Late to Lab Podcast* 2022
Workshop Presenter | *U of A SMART-CREATE Knowledge and Skills Workshop* 2022
Scientific Committee Member | *Hidden Methods Virtual Conference* 2022

Volunteer Initiatives

Chair, Elections and Referenda Committee 2017 – present
Graduate Students Association of the University of Alberta

Committee Member 2023 – present
KSR Indigenous Initiatives and Equity, Diversity, and Inclusion Action Committee

President and Executive Vice-President 2017 – 2021
Brain Waves – Brain Injury Prevention Children's Programming

Early-Career Student Mentor 2016 – 2018
Women in Scholarship, Engineering, Science and Technology (WISEST) Mentoring Program

Weekly House Volunteer | *Sorrentino's Compassion House for Women* 2015 – 2016
President and Executive VP | *Physical Education Council of Students at the U of A* 2011 – 2013
President | *Student's Union at St. Francis Xavier High School* 2009 – 2010