

EDUCATION

MA, Forensic Psychology

Carleton University, Ottawa, Ontario

2025 – Present

BSc, Psychology

University of Calgary, Calgary, Alberta

2019 – 2024

Honours Thesis: Using Reverse Correlation to Explore Dynamic Links
Between Brain and Behaviour

Supervisor: Dr. Jackson Cone

Minor: French

GPA (last 2 years): 3.8/4.0

RESEARCH EXPERIENCES

Parenting Resilience Kids (paRK) Lab

Affiliation: Mount Royal University

Supervised by: Dr. Joanne Park, PhD, R. Psych.

Research Coordinator

Jan. 2025
– Present

- Coordinated a meta-analysis examining the impact of social support on parental sensitivity and child mental health outcomes, including factors that may influence these relationships
- Trained and supervised a team of research assistants in systematic review methodology, including abstract screening, full-text review, and data extraction using Covidence

Society of Umbra Scientia

Affiliation: National Cold Case Initiative

Supervised by: Dr. Sasha Reid, PhD, JD

Forensic Research Analyst

Dec. 2022
– Present

- Collaborated with a multidisciplinary team to develop a comprehensive database on Canadian cold cases and international serial killers
- Investigated demographic information, vulnerability markers, and geographical locations for possible patterns of missing/murdered individuals

- Examined numerous developmental factors spanning prenatal to childhood stages to identify potential contributors to serial killer pathology
- Examined details of crime scenes, including timing of murders, victim vulnerability markers, and geographical locations to identify potential serial killer murder patterns
- Served on the hiring committee for the recruitment of new research members
- Partnered with Please Bring Me Home to contribute to youth missing cases search efforts

Hotchkiss Brain Institute

Affiliation: University of Calgary

Supervised by: Dr. Grant Gordon, PhD & Dr. Minh Dang Nguyen PhD, MD & Dr. Milène Vandal, PhD

Clinical Neuroscience Research Volunteer

Aug. 2022
– Aug. 2024

- Assessed the effects of amyloid beta on various brain blood vessels and structures
- Examined the vasoconstriction and dilation of brain capillaries, arterioles, sphincters, and vasomotion using software in MATLAB
- Utilized the Automated Quantitative analysis (AQUA) tool to detect presence of calcium as a biomarker

Summer Student Intern

July 2022
– Aug. 2022

- Analyzed amyloid beta in brain capillaries in vivo to fill a gap in Alzheimer's disease research
- Familiarized with the experimental process including surgeries on mice and linescan image analysis on red blood cells
- Conducted t-tests and produced visual representations of results using GraphPad Prism

Pediatric Emergency Medicine Research Associates Program (PEMRAP)

Affiliation: Alberta Children's Hospital

PEMRAP Director: Dr. Graham Thompson, MD

Clinical Research Associate

May 2023
– May 2024

- Enrolled patients in clinical research studies taking place at the Alberta Children's Hospital
- Screened eligible patients by checking for inclusion and exclusion criteria in the Connect Care clinical information system

Computational Behavioural Neuroscience Lab

Affiliation: University of Calgary

Supervised by: Dr. Jackson Cone, PhD

Honours Thesis

Sept. 2023
– April 2024

- Extended work from the independent research project by exploring more complex methods that combine relevant metrics of performance and performing multidimensional analyses
- Independently developed software via MATLAB, leveraging machine learning techniques (K-Means, DBSCAN, t-SNE) to automate and enhance the analysis of complex behavioural data

Paid Summer Research Assistant

June 2023
– Aug. 2023

- Conducted a literature search on machine learning techniques (KNN, HMM, DBSCAN) for anomaly detection and clustering large experimental datasets
- Utilized MATLAB to code software that clusters the dataset using DBSCAN
- Explored tools for parameter validation and cluster validation for DBSCAN

PSYC 504 Course: Independent Research Project

Sept. 2022
– April 2023

- Conducted an experimental analysis throughout a full academic year to understand the effects of fluctuating brain activities on mice performance during a visually-guided task
- Developed a series of original software using MATLAB to analyze data and generate visual representations of results

URNCST Mentored Scientific Paper Essay Competition

Affiliation: Undergraduate Research in Natural and Clinical Science and Technology (URNCST)

Mentor: Curtis D'Hollander, PhD Candidate

URNCST Essay Competition Participant

June 2023
– Aug. 2023

- Collaborated with a mentor in the URNCST Mentored Scientific Paper Essay Competition to produce a comprehensive narrative review on the Baby-Friendly Hospital Initiative, a promising intervention aimed at enhancing breastfeeding rates in Canada
- Conducted a detailed literature review to investigate the multifaceted socioeconomic determinants influencing breastfeeding rates within the Canadian context

Attention and Action Lab

Affiliation: University of Alberta and Alberta Motor Transport Association

Supervised by: Dr. Reyhaneh Bakhtiari, PhD

Paid Research Analyst

Sept. 2021
– Sept. 2022

- Contracted as a research analyst for one year to conduct cognitive tests, surveys, and physiological tracking on participants to determine the effects of fatigue and stress on cognitive processes related to driving
- Administered the Vitals Mobile cognitive tests that look at reaction time, spatial awareness, memory and motor skills, and decision-making abilities
- Administered online surveys identifying fatigue, stress due to operating a recently developed automated truck, and driving experiences before and after being on the road
- Set up and calibrated eye-tracking and electroencephalogram (EEG) equipment needed for data collection
- Analyzed EEG graphs and eye-tracking data using MATLAB
- Drafted a template for a final report of all the collected data

AWARDS/HONOURS

University of Calgary Faculty of Arts Dean's List

2023

Calgary Public Library Bright Futures Scholarship (1st place – \$3500)

2023

Québec Travel Award (\$1000)

Vascular Training (VAST) Platform Summer Student Award (\$3000)	2023
	2022

PUBLICATIONS

Arellano, A.F.B. (2023). The Baby Friendly Hospital Initiative in Canada: A Narrative Review. *Undergraduate Research in Natural and Clinical Science and Technology (URN CST) Journal*, 7(11), 1–8. <https://doi.org/10.26685/urncst.516>

Vandal, M., Institoris, A., Reveret, L., Korin, B., Gunn, C., Hirai, S., Jiang, Y., Lee, S., Lee, J., Bourassa, P., Mishra, R. C., Peringod, G., **Arellano, F.**, Belzil, C., Tremblay, C., Hashem, M., Gorzo, K., Elias, E., Yao, J., & Meilandt, B. (2025). Loss of endothelial CD2AP causes sex-dependent cerebrovascular dysfunction. *Neuron*.
<https://doi.org/10.1016/j.neuron.2025.01.006>

PRESENTATIONS

Arellano, A.F.B. (2024, April). Using Reverse Correlation to Explore Dynamic Links Between Brain and Behaviour [Poster Presentation]. University of Calgary Arts Undergraduate Student Research Conference. Calgary, Alberta, Canada

Arellano, A.F.B. (2024, March). Using Reverse Correlation to Explore Dynamic Links Between Brain and Behaviour [PowerPoint Presentation]. University of Calgary Arts Undergraduate Research Symposium (AURS). Calgary, Alberta, Canada

Arellano, A.F.B. (2022, August). Vandal, M., Hirai, S., Gordon, G., & Nguyen, M.D. Capillary Flow in Response to Amyloid Beta In Vivo [PowerPoint Presentation]. Vascular Training (VAST) Platform Summer Student Research Symposium. Calgary, Alberta, Canada

TRAINING AND CERTIFICATIONS

Early Childhood Educator Level 1 Certification	2024
First Aid and CPR/AED Level C	2024
Canadian Pediatric Imaging Platform (C-PIP) Study Consent and Screening Training	2024
Stress After Pediatric Pain in the Emergency Department (STRAPPED) Study Consent and Screening Training	2023
WHMIS 2015 Certification	2023

Symptom Management versus Alternative Randomized Treatment of Concussion Trial (SMART) Study Consent and Screening Training	2023
Canadian Anaphylaxis Network- Predicting Recurrence after Emergency Presentation for Allergic Reaction (CAN-PREPARE) Study Enrolment Training	2023
IAUTP Mouse Husbandry and Technical Procedure Certification	2023
TCPS 2: CORE Certification	2023
CITI Good Clinical Practice Course Certification	2023
Vitals Mobile Certification	2021

VOLUNTEER AND OUTREACH POSITIONS

Hispir Care Behavioural Aide

2024 – Present

- Provided one-on-one support and implemented evidence-based intervention plans for children with ASD, ADHD, and other disabilities, collaborating with families and specialists to promote social and behavioural development

Calgary Public Library Program Assistant

2017 – Present

- Assisted in several programs for young children offered at the Calgary Public Library such as Reading Buddies, ELL School Success, and Coding Buddies
- Promoted to adult lead volunteer and assisted in administering the program and acting as a guide for younger volunteers

Breastfeeding Committee for Canada Associate Member

2024 – 2025

- Active member of the Breastfeeding Committee for Canada, supporting the protection and promotion of breastfeeding through participation in annual meetings, engaging with BFI news and events, and contributing to the organization's initiatives

University of Calgary: Equity, Diversity, and Inclusion Workshop Co-Facilitator

2024

- Collaborated with University of Calgary staff to co-facilitate the Inclusive Facilitation Practices workshop, fostering inclusive learning environments and

enhancing participants' comprehension of equity, diversity, and inclusion in a collaborative setting

University of Calgary: PSYCHS Club Academic Commissioner

2023 – 2024

- Responsible for organizing and contacting speakers/collaborators for academic and development events such as Honours Information Night and How to get into Grad School

University of Calgary: Mental Health Awareness Club Subcommittee Member

2020 – 2022

- Responsible for organizing and administering events for the Break the Stigma Summit to help increase student knowledge on mental health

University of Calgary: Schizophrenia Awareness Vice President Treasurer

2020

- Facilitated group discussions about schizophrenia through sharing resources and conducting online meetings on specific topics related to schizophrenia

SOFTWARE SKILLS

- Mastery skills in Microsoft Excel, PowerPoint, and Word and their Google equivalents
- Advanced coding competency in MATLAB
- Adequate competency in SPSS, NVIVO, and GraphPad Prism analysis software
- Adequate competency in Canva graphic design software
- Novice skills in the GIMP image manipulation program

LANGUAGES

- Tagalog– native language
- English – speak, read, and write fluently
- French – speak, read, and write with intermediate skills