Amanda M. Cook

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cookamanda.github.io

Research Interests

UAT Keywords: Astrostatistics (1882), Radio transient sources (2008), Baryon density (139), Circumgalactic medium (1879), Galaxy formation (595), High energy astrophysics (739), Intergalactic gas (812), Interstellar medium (847), Milky Way formation (1053), Warm ionized medium (1788)

Education

Ph.D. Astronomy and Astrophysics, University of Toronto, Toronto ON 2025
Thesis Title: "*Fast Radio Burst Statistics in Space and Time*"
Thesis Supervisors: Prof. Gwendolyn Eadie, Prof. Bryan Gaensler, Prof. Paul Scholz

B.Sc. First Class Honours in Mathematics and Physics McGill University, Montreal QC 2019
Thesis Title: *"Survey for Repeating Radio Transients with CHIME/FRB"*
Thesis Supervisors: Prof. Victoria Kaspi, Dr. Ziggy Pleunis

Professional Appointments

Banting Postdoctoral Research Fellow, McGill University & the University of Amsterdam 2025-2027
Advisor: Prof. Jason W. T. Hessels

Competences

Languages English (*native*), French (*B2*)

Techniques Python, R, LaTeX, bash, git, basic mathematica, and Matlab

Awards

Research Excellence Award McGill Association of Postdoctoral Fellows – Institutional, Research 2026
Winner, Natural and Physical Sciences

President's Prize for Public Engagement Through Media – Institutional, $5000, Communication 2026
McGill University, Graduate and Postdoctoral Category; awarded for my leadership on a large media campaign for FRB 20250316A.

Banting Postdoctoral Fellowship – National, $140,000, Research 2025–27

ASA Astrostatistics IG Student Paper Award (Winner) – International, $500, Research 2025
for my paper "k-Contact Distance for Noisy Nonhomogeneous Spatial Point Data with application to Repeating Fast Radio Burst sources."

Marcel Grossmann Award *as member of CHIME/FRB* – International, Research 2024

Walter C. Sumner Fellowship – National, $16,000, Research, 2022–24

NSERC Brockhouse Prize, *as member of CHIME/FRB* – National, Research 2022

NSERC PGS-D – National, $82,000, Research 2022–25

AAS Lancelot M. Berkley award, *as member of CHIME/FRB* – International, Research 2022

Dunlap Institute 'You got us through 2022' Award 2022
for my service as the president of the UofToronto Graduate Astronomy Students Association

Ontario Graduate Scholarship – Provincial, $15,000, Research 2021

Dunlap Student Training Grant *to attend Penn State Astrostats Summer School* 120 USD 2021

Dunlap Institute Seed Funding *as a member of LUVS* – Institutional, $67,182, Research 2021

Dunlap Institute Seed Funding *as a member of LUVS* – Institutional, $26,046, Research 2020

Governor General's Innovation Award, *as member of CHIME/FRB* – National, Research 2020

Student Internship Stipend, JPL/Caltech – Institutional, $8000, Research 2018

Student Poster Award, Canadian Undergraduate Research Conference – Communication 2017

Undergraduate Student Research Award, NSERC – National, $4500, Research 2017

Undergraduate Research Award, McGill University – Institutional, $1625, Research 2017

Supplement de NSERC USRA, Fonds de recherche du Québec – Provincial, $2000, Research 2017

Higher Education Award, Enbridge – Institutional, $6900, Academic 2015

Rutherford Scholarship, Government of Alberta – Provincial, $2500, Academic 2015

PUBLICATIONS

Summary: Five lead author publications since 2023 in premier journals and totaling 180 citations. 37 co-authored publications with nearly 3,000 total citations. Journals include *Nature, Nature Astronomy, the Astrophysical Journal, the Astrophysical Journal Letters,* and *Annals of Applied Statistics* (AOAS). Top statistics journals like AOAS have acceptance rates of ∼5–20%. First author on commissioned meeting report for *Nature Astronomy*.

FIRST OR CORR. AUTHOR PUBLICATIONS

[1] **Cook, A. M.**, Shin, K., Pleunis, Z., Fine, M., Jain, N., Bingham, D., Curtin, A. P., Eadie, G. M. and 39 colleagues (2026). *Discovery of 30 Repeating Fast Radio Burst Sources and Uniform Population Statistics of 80 Repeating Sources from CHIME/FRB*, submitted to ApJ (05-11-2026), eprint arXiv:2605.08410 (23 citations)

[2] **Cook, A. M.**, Li, D., Eadie, G. M., Stenning, D. C., Scholz, P., Bingham, D., Craiu, R., Gaensler, B. M., and 7 colleagues (2026). *k-Contact Distance for Noisy Nonhomogeneous Spatial Point Data with application to Repeating Fast Radio Burst sources*, Annals of Applied Statistics 20(2): 1586-1604 (5 citations)

[3] **CHIME/FRB Collaboration** (2025). Corresponding Author: **Cook, A. M.** *FRB 20250316A: A Brilliant and Nearby One-Off Fast Radio Burst Localized to 13 parsec Precision*, ApJ Letters, 989, 2, L48 (37 citations)

[4] **Cook, A. M.**, Scholz, P., Pearlman, A. B., Abbott, T. C., Cruces, M., Gaensler, B. M., Dong, F. A., Michilli, D., and 15 colleagues (2024). *Contemporaneous X-ray Observations of 30 Bright Radio Bursts from the Prolific Fast Radio Burst Source FRB 20220912A*, The Astrophysical Journal, Volume 974, Issue 2, id.170 (15 citations)

[5] **Cook, A. M.**, Bhardwaj, M., Gaensler, B. M., Scholz, P., Eadie, G. M., Hill, A. S., Kaspi, V. M., Masui, K. W., and 20 colleagues (2023). *An FRB Sent Me a DM: Constraining the Electron Column of the Milky Way Halo with Fast Radio Burst Dispersion Measures from CHIME/FRB*, The Astrophysical Journal, Volume 946, Issue 2, id.58, 14 pp. (100 citations)

[6] **Cook, A.** (2018) Exploration of Fermi-LAT Data: An Analysis of Pulsar J1930+1852, McGill Science Undergraduate Research Journal, 13, 12-15 (B.Sc. work)

COLLAB. PUBLICATIONS

[1] **CHIME/FRB Collaboration** (2026). The Second CHIME/FRB Catalog of Fast Radio Bursts, The Astrophysical Journal Supplement Series, Volume 283, Issue 1, id.34, 29 pp. (99 citations)
Individual Contribution: I performed repeater analyses and removed Galactic known-source contaminants for the second CHIME/FRB catalog and wrote these sections of the paper. I serve as a maintainer of the real-time pipeline and as a system administrator for CHIME/FRB.

[2] **CHIME/FRB Collaboration** (2023). CHIME/FRB Discovery of 25 Repeating Fast Radio Burst Sources, The Astrophysical Journal, Volume 947, Issue 2, id.83, 31 pp. (203 citations)
Individual Contribution: I defined the sample for publication by developing a method to characterize probability of chance coincidence of each of the candidate repeaters. This quantifies the likelihood that each cluster of bursts with positions consistent within errors would be physically unrelated to one another. For CHIME, a telescope with uneven exposure on the sky and significant uncertainties in burst localization, this is a non-trivial problem with consequences for modelling and follow-up efforts.

[3] **CHIME/FRB Collaboration** (2021). The First CHIME/FRB Fast Radio Burst Catalog, The Astrophysical Journal Supplement Series, Volume 257, Issue 2, id.59, 41 pp. (626 citations)
Individual Contribution: I maintained and developed software within CHIME/FRB's realtime pipeline, including the 'known source sifter' which identifies any associated sources with each detected pulse, and the L4 pipeline, which coordinates, for each detected pulse, the actions taken by the system (what data is saved and notifying the community) according to the science priorities of the team. In addition, I helped classify signals to discriminate between real and non-astrophysical

during regular monitoring shifts for the experiment, and measured physical parameters for a subset of the bursts.

[4] **CHIME/FRB Collaboration** (2020). A bright millisecond-duration radio burst from a Galactic magnetar, Nature, Volume 587, Issue 7832, p.54-58 (913 citations)
Individual Contribution: I crafted the argument confirming the FRB's measured DM was consistent with having originated from the magnetar, using free electron models of the Galaxy and the magnetar's X–ray absorbing column density. This evidence was essential to our paper claiming we had detected the first FRB with known progenitor: a Galactic magnetar.

NTH AUTHOR PUBLICATIONS

[1] Mckinven, R., **Cook, A. M.**, Curtin, A. P., Gaensler, B. M., Hessels, J. W. T., Jain, N., Kahinga, L. A., Kaspi, V. M., and 24 colleagues (2026). FRB 20210601A: Extreme Temporal Clustering in a Repeating Fast Radio Burst Source as Evidence for a Hidden Class of Episodic Repeaters, submitted to the Astrophysical Journal (15/10/2026) arXiv:2610.31365

[2] Dong, Y., Fong, W., Nimmo, K., Loudas, N., Andersen, B. C., Andrew, S., Cai, A., Chatterjee, S., and 19 colleagues including **Cook, A. M.** (2026). Probing the Metallicity Dependence of Fast Radio Burst Progenitors with CHIME/FRB Outrigger Dwarf Host Galaxies, eprint arXiv:2609.28629 (2 citations)

[3] Sammons, M. W., Ahuja, A., Dobbs, M., Kader, Z., Davies-Velie, E., Bhardwaj, M., Brar, C., **Cook, A. M.**, and 20 colleagues (2026). Evidence for Enhancement in the Rate of Fast Radio Bursts Toward Galaxy Clusters, eprint arXiv:2608.10358

[4] McGregor, K., Hessels, J. W. T., Kaspi, V. M., Shin, K., Dong, F. A., Jain, N., Main, R. A., Sammons, M. W., and 21 colleagues including **Cook, A. M.** (2026). Debiasing the Observed Fast Radio Burst Population with the CHIME/FRB Selection Function, eprint arXiv:2606.26334 (3 citations)

[5] Ould-Boukattine, O. S., Cooper, A. J., **Cook, A. M.**, Hessels, J. W. T., Hewitt, D. M., Huang, J., Cognard, I., Dijkema, T. J., and 9 colleagues (2026). A 4200-hour HyperFlash and ÉCLAT campaign on the hyperactive FRB 20240114A: constraining energetics with the most brilliant bursts, eprint arXiv:2605.18513 (6 citations)

[6] Pandhi, A., Nimmo, K., Andrew, S., Brar, C., Chatterjee, S., **Cook, A. M.**, Curtin, A., Gaensler, B. M., and 24 colleagues (2026). A Steadily Declining Dispersion Measure for the Repeating Fast Radio Burst FRB 20220529A: Evidence for a Fast Radio Burst Engine Embedded in an Expanding Supernova Remnant, The Astrophysical Journal Letters, Volume 1000, Issue 2, id.L53, 18 pp. (18 citations)

[7] Abbott, T. C., Pearlman, A. B., Kaspi, V. M., Pandhi, A., Brar, C., Cassity, A., **Cook, A. M.**, Curtin, A. P., and 15 colleagues (2026). Radio Monitoring Campaign of Active Repeater FRB 20220912A with CHIME, eprint arXiv:2604.09098 (6 citations)

[8] Shin, K., Curtin, A., Fine, M., Pandhi, A., Andrew, S., Bhardwaj, M., Chatterjee, S., **Cook, A. M.**, and 23 colleagues (2026). CHIME/FRB Discovery of the Extremely Active Fast Radio Burst Source FRB 20240114A, The Astrophysical Journal, Volume 997, Issue 2, id.334, 8 pp. (25 citations)

[9] Curtin, A. P., Andrew, S., Simha, S., Cai, A., Nimmo, K., Chatterjee, S., **Cook, A. M.**, Dong, F. A., and 21 colleagues (2026). CHIME/FRB Discovery and Localization of the Swift-observed FRB 20241228A, The Astrophysical Journal, Volume 998, Issue 1, id.97, 11 pp. (13 citations)

[10] Kahinga, L. A., Prochaska, J. X., Simha, S., Leung, C., **Cook, A. M.**, Craiu, R. V., Eadie, G., Fonseca, E., and 16 colleagues (2026). Constraining the mass of the M31 ionized baryon Halo using CHIME/FRB Catalog 2, eprint arXiv:2602.23749 (4 citations)

[11] Patil, S. S., Main, R. A., Fonseca, E., McGregor, K., Gaensler, B. M., Bhardwaj, M., Brar, C., **Cook, A. M.**, and 21 colleagues (2026). A Spatial Gap in the Sky Distribution of Fast Radio Burst Detections Coinciding with Galactic Plasma Overdensities, The Astrophysical Journal Letters, Volume 997, Issue 1, id.L5, 17 pp. (9 citations)

[12] Blanchard, P. K., Berger, E., Andrew, S. E., Suresh, A., Uno, K., Kilpatrick, C. D., Metzger, B. D.,

Kumar, H., and 18 colleagues (2025). James Webb Space Telescope Observations of the Nearby and Precisely Localized FRB 20250316A: A Potential Near-IR Counterpart and Implications for the Progenitors of Fast Radio Bursts, The Astrophysical Journal Letters, Volume 989, Issue 2, id.L49, 10 pp. (11 citations)

[13] Shin, K., Leung, C., Simha, S., Andersen, B. C., Fonseca, E., Nimmo, K., Bhardwaj, M., Brar, C., and 26 colleagues including **Cook, A. M.** (2025). Investigating the Sightline of a Highly Scattered Fast Radio Burst through a Cosmic Sheet Structure in the Local Universe, The Astrophysical Journal, Volume 993, Issue 2, id.208, 16 pp. (18 citations)

[14] Dong, Y., Kilpatrick, C. D., Fong, W., Curtin, A. P., Opoku, S., Andersen, B. C., **Cook, A. M.**, Eftekhari, T., and 19 colleagues (2025). Searching for Historical Extragalactic Optical Transients Associated with Fast Radio Bursts, The Astrophysical Journal, Volume 991, Issue 2, id.199, 16 pp. (10 citations)

[15] Dong, F. A., Clarke, T., Curtin, A. P., Kumar, A., Stairs, I., and 16 colleagues including **Cook, A. M.** (2025). CHIME/Fast Radio Burst/Pulsar Discovery of a Nearby Long-period Radio Transient with a Timing Glitch, The Astrophysical Journal Letters, Volume 990, Issue 2, id.L49, 15 pp. (57 citations)

[16] Mckinven, R., Bhardwaj, M., Eftekhari, T., Kilpatrick, C. D., Kirichenko, A., Pal, A., **Cook, A. M.**, Gaensler, B. M., and 36 colleagues (2025). A pulsar-like polarization angle swing from a nearby fast radio burst, Nature, Volume 637, Issue 8044, pp. 43-47 (41 citations)

[17] Pearlman, A. B., Scholz, P., Bethapudi, S., Hessels, J. W. T., Kaspi, V. M., and 24 colleagues including **Cook, A. M.** (2025). Multiwavelength constraints on the origin of a nearby repeating fast radio burst source in a globular cluster, Nature Astronomy, Volume 9, p. 111-127 (40 citations)

[18] Abbott, T. C., Zwaniga, A. V., Brar, C., Kaspi, V. M., Petroff, E., Bhardwaj, M., Boyle, P. J., **Cook, A. M.**, and 7 colleagues (2025). frb-voe: A Real-time Virtual Observatory Event Alert Service for Fast Radio Bursts, The Astronomical Journal, Volume 169, Issue 1, id.39, 7 pp. (9 citations)

[19] Ibik, A. L., Drout, M. R., Gaensler, B. M., Scholz, P., Sridhar, N., and 23 colleagues including **Cook, A. M.** (2024). A Search for Persistent Radio Sources toward Repeating Fast Radio Bursts Discovered by CHIME/FRB, The Astrophysical Journal, Volume 976, Issue 2, id.199, 30 pp. (26 citations)

[20] Lin, H.-H., Scholz, P., Ng, C., Pen, U.-L., Bhardwaj, M., and 44 colleagues including **Cook, A. M.** (2024). Do All Fast Radio Bursts Repeat? Constraints from CHIME/FRB Far Sidelobe FRBs, The Astrophysical Journal, Volume 975, Issue 1, id.75, 25 pp. (28 citations)

[21] Curtin, A. P., Sirota, S., Kaspi, V. M., Tendulkar, S. P., Bhardwaj, M., and 10 colleagues including **Cook, A. M.** (2024). Constraining Near-simultaneous Radio Emission from Short Gamma-Ray Bursts Using CHIME/FRB, The Astrophysical Journal, Volume 972, Issue 1, id.125, 19 pp. (17 citations)

[22] Bhardwaj, M., Michilli, D., Kirichenko, A. Y., Modilim, O., Shin, K., and 23 colleagues including **Cook, A. M.** (2024). Host Galaxies for Four Nearby CHIME/FRB Sources and the Local Universe FRB Host Galaxy Population, The Astrophysical Journal Letters, Volume 971, Issue 2, id.L51, 27 pp. (97 citations)

[23] **CHIME/FRB Collaboration** (2024). Updating the First CHIME/FRB Catalog of Fast Radio Bursts with Baseband Data, The Astrophysical Journal, Volume 969, Issue 2, id.145, 17 pp. (70 citations)

[24] Pandhi, A., Pleunis, Z., Mckinven, R., Gaensler, B. M., Su, J., and 21 colleagues including **Cook, A. M.** (2024). Polarization Properties of 128 Nonrepeating Fast Radio Bursts from the First CHIME/FRB Baseband Catalog, The Astrophysical Journal, Volume 968, Issue 2, id.50, 34 pp. (51 citations)

[25] Ibik, A. L., Drout, M. R., Gaensler, B. M., Scholz, P., Michilli, D., and 16 colleagues including **Cook, A. M.** (2024). Proposed Host Galaxies of Repeating Fast Radio Burst Sources Detected by CHIME/FRB, The Astrophysical Journal, Volume 961, Issue 1, id.99, 17 pp. (69 citations)

[26] Dong, F. A., Crowter, K., Meyers, B. W., Pleunis, Z., Stairs, I., and 11 colleagues including **Cook, A. M.** (2023). The second set of pulsar discoveries by CHIME/FRB/Pulsar: 14 rotating radio transients and 7 pulsars, Monthly Notices of the Royal Astronomical Society, Volume 524, Issue 4, pp.5132-5147 (47 citations)

[27] Sand, K. R., Breitman, D., Michilli, D., Kaspi, V. M., Chawla, P., and 29 colleagues including **Cook, A. M.** (2023). A CHIME/FRB Study of Burst Rate and Morphological Evolution of the Periodically Repeating FRB 20180916B, The Astrophysical Journal, Volume 956, Issue 1, id.23, 19 pp. (27 citations)

[28] Curtin, A. P., Tendulkar, S. P., Josephy, A., Chawla, P., Andersen, B., and 19 colleagues including **Cook, A. M.** (2023). Limits on Fast Radio Burst-like Counterparts to Gamma-Ray Bursts Using CHIME/FRB, The Astrophysical Journal, Volume 954, Issue 2, id.154, 16 pp. (28 citations)

[29] Michilli, D., Bhardwaj, M., Brar, C., Gaensler, B. M., Kaspi, V. M., and 25 colleagues including **Cook, A. M.** (2023). Subarcminute Localization of 13 Repeating Fast Radio Bursts Detected by CHIME/FRB, The Astrophysical Journal, Volume 950, Issue 2, id.134, 12 pp. (81 citations)

[30] Bhardwaj, M., Gaensler, B. M., Kaspi, V. M., Landecker, T. L., Mckinven, R., and 21 colleagues including **Cook, A. M.** (2021). A Nearby Repeating Fast Radio Burst in the Direction of M81, The Astrophysical Journal Letters, Volume 910, Issue 2, id.L18, 14 pp. (272 citations)

[31] Scholz, P., **Cook, A. M.**, Cruces, M., Hessels, J. W. T., Kaspi, V. M., and 33 colleagues (2020). Simultaneous X-Ray and Radio Observations of the Repeating Fast Radio Burst FRB 180916.J0158+65, The Astrophysical Journal, Volume 901, Issue 2, id.165, 9 pp. (59 citations)

NON-REFEREED CONTRIBUTIONS

[1] Curtin, A. P., Anna-Thomas, R., **Cook, A. M.**, Cruz-Vinaccia, C., Hessels, J., Main, R., Pastor Marazuela, I., Rhodes, L., and 1 colleagues (2026). One Attempt at Building an Inclusive & Accessible Hybrid Astronomy Conference: FRB 2025, eprint arXiv:2601.14357 (2 citations)

[2] **Cook, A. M.** & Curtin, A. P. (2025) *Fast Radio Bursts 2025*, Nature Astronomy, 9, 1760.

[3] Astronomer's Telegram #17021 & GCN Circular #39216: *CHIME/FRB source FRB 20250206A detected less than 1 minute after LVK binary merger S250206dm, however the probability of spatial coincidence is order 0.1%* (2 citations) 2025

AWARDED TELESCOPE TIME (AS PI)

'Simultaneous XMM-Newton and Radio observations of Repeating FRBs' Submitted as PI to *XMM-Newton* AO-21. Time Awarded: 42ks 2021

FRB 20220912A High-Urgency Target of Opportunity, Submitted as PI to *Swift*. Awarded two visits, 24 hours apart to provide simultaneous exposure to CHIME/FRB. 2022

PRESENTATIONS

INVITED

[1] A NICER Legacy: Neutron Stars, Black Holes, and Time-Domain Astronomy (International Conference) Nov 2026
FRBs & Magnetars

[2] Astro Quebec Seminar, Université Laval Oct 2026
Do all FRBs Repeat? Population-level insights from CHIME/FRB and other surveys

[3] Challenging AI for Scientific Discovery: from Neuroscience to Cosmology (International Workshop) Oct 2026
Some data challenges from CHIME/FRB and how to solve them

[4] Astro Quebec Seminar, Bishop's University Oct 2026
Do all FRBs Repeat? Population-level insights from CHIME/FRB and other surveys

[5] Science Seminar, Dominion Radio Astrophysical Observatory Sep 2026
Do all FRBs Repeat? Population-level insights from CHIME/FRB and other surveys

[6] FRB 2026 (International Conference) Jul 2026
Do all FRBs Repeat? Population-level insights from CHIME/FRB and other surveys

[7] Gravity Seminar, University of British Columbia May 2026
Do all FRBs Repeat? The latest from CHIME/FRB

[8] Statistics Seminar, Simon Fraser University May 2026
Towards Solving the Fast Radio Burst Enigma: Probability of Event Chance Coincidence for Inhomogeneous Noisy Spatial Point Processes

[9] SPI-Max Seminar, University of Oxford Dec 2025
Do all FRBs Repeat? The latest from CHIME/FRB

[10] Computational and Methodological Statistics (International Conference) Dec 2025
Towards Solving the Fast Radio Burst Enigma: Probability of Event Chance Coincidence for Inhomogeneous Noisy Spatial Point Processes

[11] Physical Society Colloquium, McGill University Nov 2025
CHIME/FRB's Second Catalog: 4000 FRBs and 100 Repeaters

[12] Statistics Seminar, McGill University Oct 2025
k-contact Distance for Noisy Nonhomogeneous Spatial Point Data and Application to Repeating Fast Radio Burst Sources

[13] Joint Statistical Meeting 2025 (Prize Talk, International Conference) Aug 2025
Towards Solving the Fast Radio Burst Enigma: Probability of Event Chance Coincidence for Inhomogeneous Noisy Spatial Point Processes

[14] Séminaire d'astronomie et d'astrophysique du CRAQ, Université de Montréal Apr 2025
FRB Statistics in Time and Space: How to Use Statistics to Study FRBs and the Gas They Travel Through

[15] FLASH Talk Series, University of California, Santa Cruz May 2024
Constraining the Plasma in the Milky Way's Halo with CHIME/FRB

[16] Joint Statistical Meeting 2023 (International Conference) Aug 2023
Towards Solving the Fast Radio Burst Enigma: Probability of Event Chance Coincidence for Inhomogeneous Noisy Spatial Point Processes

[17] Plenty of Room at the Bottom; Fast Radio Bursts in our Backyard, Cornell (International Workshop) Oct 2022
Constraining the Plasma in the Milky Way's Halo with CHIME/FRB

[18] Tea Talk Series, California Institute of Technology Nov 2021
Constraining the Plasma in the Milky Way's Halo with CHIME/FRB

CONTRIBUTED

[1] Dynamic Radio Sky 2026 (International Conference) Aug 2026
FRB 20250316A: A Brilliant and Nearby One-Off Fast Radio Burst Localized to 13 parsec Precision

[2] Science at Low Frequencies XI (International Conference) Dec 2025
FRB 20250316A: A Brilliant and Nearby One-Off Fast Radio Burst Localized to 13 parsec Precision

[3] FRB 2024 (International Conference) Nov 2024
CHIME/FRB's Fourth Repeater Catalogue

[4] Multiphase Madness, Harvard–Smithsonian Center for Astrophysics (International Workshop) Aug 2024
Constraining the Plasma in the Milky Way's Halo with CHIME/FRB

[5] Hot Wiring the Transient Universe VII (International Workshop) May 2024
Towards Solving the Fast Radio Burst Enigma: Probability of Event Chance Coincidence for Inhomogeneous Noisy Spatial Point Processes

[6] Astrostatistics in Canada and Beyond (National Workshop) Oct 2023
Towards Solving the Fast Radio Burst Enigma: Probability of Event Chance Coincidence for

Inhomogeneous Noisy Spatial Point Processes

[7] Gas Evolution in and Around Galaxies (International Workshop) Aug 2023
Constraining the Plasma in the Milky Way's Halo with CHIME/FRB

[8] FRB 2021 (International Conference) 2021
Constraining the Plasma in the Milky Way's Halo with CHIME/FRB

[9] 233rd Meeting of the American Astronomical Society (International Conference) 2019
Radio and X-ray Monitoring of the Recently Reactivated Magnetar PSR J1622-4950

[10] Canadian Undergraduate Physics Conference (National Conference) 2017
Exploration of Fermi-LAT Data: An Analysis of Pulsar J1930+1852

Outreach

[1] Vanier College Science Week Oct 2026
Fast Radio Bursts: A Cosmic Mystery

[2] PANORAMA Summer Camp Jul 2026
Introduction to AstroFLASH: Fast Radio Bursts, Radio Telescopes, and Super Computers!

[3] Nanaimo Astronomy Society September Meeting Sep 2025
Uncovering the Cosmic Mystery of Fast Radio Bursts with CHIME

[4] Astro on Tap, Montréal 2025
Fast Radio Bursts: A Cosmic Mystery

[5] Astro on Tap, Toronto 2024
Fast Radio Bursts: A Cosmic Mystery

Press releases

[1] *Brightest fast radio burst seen so far allows researchers to zoom in on the location of origin*, McGill-led press release for FRB 20250316A discovery. Coordinated release with 15 participating academic institutions. Commissioned work from artist for release. Subsequently picked up by major news outlets like CNN, Science News Magazine, and Quebec Science. (August 2025)

[2] *Fast Radio Burst Conference hosted at McGill for the first time* , McGill-led press release for our organization of FRB 2025. Focuses on contributions and leadership from early career researchers, equity and accessibility, and the tenth anniversary of the first repeater discovery at McGill (July 2025)

[3] *Fast radio bursts used as 'searchlights' to detect gas in Milky Way* , Dunlap Institute-led press release for my paper constraining the plasma in the Milky Way's halo. Was subsequently picked up by IFLScience and written about in Sky & Telescope. (March 2023)

Other Research Experience

Visiting Astrostatistics Researcher, Canadian Statistical Sciences Institute (CANSSI) 2023
Supervised by Prof. David Stenning, Prof. Derek Bingham

Undergraduate Researcher in High Energy Astrophysics, University of Kyoto 2019
Supervised by Prof. Teruaki Enoto

Student Intern, Caltech & NASA Jet Propulsion Labs 2018
"X-ray Monitoring of Magnetar PSR J1622-4950"/"All-Sky Survey for Radio Transients"
Supervised by Dr. Walid Majid

Undergraduate Researcher, McGill University 2017
"Gamma-ray Astrophysics with Fermi-LAT"
Supervised by Prof. Ken Ragan

Teaching

Graduate students

Kyle McGregor, *PhD, Physics, McGill University* 2026–2030
- co-advised with Prof. Jason Hessels, Prof. Victoria Kaspi

Oliver Wilson, *PhD, Physics, McGill University* 2026–2031
- co-advised with Prof. Jason Hessels

UNDER-GRADUATE STUDENTS

Karina Kirpalani, *Faculty of Science SURA, McGill* 2026
- co-advised with Dr. Alice Curtin, Prof. Jason Hessels
- "Searching for high-energy counterparts to fast radio bursts"

Liam Carbon, *University of Victoria Summer Co-op, Simon Fraser University* 2026
- co-advised with Prof. Derek Bingham
- "The astrostatistics of fast radio bursts and their physical implications"

Victor Lê, *AstroFlash Accelerator Research Internship Award, McGill* 2026
- "Searching for ultraluminous X-ray source counterparts to fast radio bursts using eROSITA"

Maya Smith, *BSc Honours Thesis, McGill* 2025–2026
- co-advised with Prof. Jason Hessels
- "CHORD RFI excision with Convolutional Denoising Autoencoders"

Maya Smith, *TSI Summer Undergraduate Research Program, McGill* 2025
- co-advised with Prof. Jason Hessels
- "Fast Radio Bursts Repetition Statistics via the Weibull Distribution"

COURSES

Lecturer, *Canadian Radio Astronomy Summer Institute and Extended School, McGill University* 2026
- Lecture on statistics for a radio astronomy summer school

Associate Examiner & Guest Lecturer, *Signal Processing, McGill University* 2026
- A second year undergraduate physics course on linear circuits and Fourier transforms

Graduate Teaching Assistant, University of Toronto 2019-2023

Grader, (MATH 325) McGill University 2018
Supervised by Prof. Antony Humphries

SERVICE

CURRENT SERVICE ROLES

Program Chair *Astrostatistics Interest Group, American Statistical Association* 2026-2027

Postdoctoral Representative Trottier Space Institute Board of Directors since 2025

EDI In Action Advisory Committee Co-Chair since 2025
Canadian Excellence Research Chair in Transient Astrophysics
- Led the development of a comprehensive Equity, Diversity, and Inclusion (EDI) Action Plan for the Canada Excellence Research Chairs (CERC) program, aligning with federal tri-agency mandates and setting institutional precedent for intersectional, evidence-based EDI practices in high-impact research environments.
- As co-chair, I ensure that EDI practices are central to CERC Chairholder's decision-making and to provide guidance on the development, implementation and ongoing improvement of CERC-TA EDI Action Plan.

Program Co-coordinator *Science In Space, Trottier Space Institute* *since 2025*
- 16 week program to visit elementary schools in the greater Montreal area weekly to mentor 10–12 year old girls
- Program design is to teach students about space science, focusing on telescopes and astrophysical bodies, and then build and design telescopes in Minecraft in groups of 2–4.

Referee since 2024
I regularly accept requests to serve as a peer reviewer for leading astronomy journals, including *Astronomy & Astrophysics*. the *Astrophysical Journal Letters*, and the *Astrophysical Journal*

CHORD/FRB Collaboration Member since 2024
Roles/Responsibilities include:
- Pipeline Developer: Writing the analysis pipeline that will be used to process baseband data from CHORD/FRB
- Assisting with deployment, feed assembly and dish instrumentation

CHIME/FRB Collaboration Member since 2019
Roles/Responsibilities include:

- System Admin: Address issues escalated by system monitors and assist the system/science experts to help resolve system issues.
- Pipeline Expert: maintenance and continued development of number of pipelines and software 'actors' within the telescope, including the 'known source sifter' which identifies any associated sources with each detected pulse in real time, the L4 pipeline, which coordinates the actions taken by the system (intensity/baseband callbacks) according to the science priorities of the team and stores a database of astrophysical events
- Convener of biweekly "Counterparts Working Group" (2020–2024) and "Probes Working Group" (since 2024) meetings, oversee relevant projects

PREVIOUS SERVICE ROLES

Local Organizing Committee Member McGill University, "Dynamic Radio Sky" 2026

Summer Undergraduate Research Awards Selection Committee Trottier Space Institute 2026

Program Chair Elect *Astrostatistics Interest Group, American Statistical Association* 2025-2026

Co-Chair Annual Fast Radio Burst Conference "FRB 2025" 2024–2025

In a duo of co-chairs, was selected to host the 2025 edition of the annual FRB conference. FRB 2025 was a five-day, international, hybrid meeting in July 2025 with an attendance of 200. Responsibilities included oversight of a scientific and local organizing committee with 25 total members.

Chandra Peer Review Time Allocation Committee Member Center for Astrophysics 2024

Instrumentation Summer School Admissions Committee Dunlap Institute 2023

Local Organizing Committee Member Dunlap Institute & CHIME/FRB 2023

"Multi-wavelength follow-up of fast radio bursts in the era of routine (sub)arcsecond localizations"

Public Outreach Volunteer Dunlap Institute/University of Toronto 2019-2024

Highlights include (i) speaking at Cawthra High School STEM conference, (ii) filming three episodes of 'Cosmos on your Couch', a YouTube series aimed at non-astronomers, (iii) hosting a panel of experts to speak about the Ethics of Space Colonization at the Dunlap Institute's 2021 'Planet Party'. This event drew 2.3k viewers (iv) panels on graduate school/becoming an astronomer.

Executive Committee, *President*, Graduate Astronomy Students Association, DADDAA 2021-2022

- Assisted in organizing opportunities for graduate students to meet candidates and collating the student's feedback for three astronomy faculty hires.
- Negotiated a $5.3k (19%) stipend increase for graduate students, the largest in department history
- Acted as advocate for graduate student interests and as a liaison between graduate students and astronomy department executives. Priorities included student mental health and ensuring PhD success in the final months of and return from large-scale COVID-19 isolation
- Acted as department student representative for prospective and incoming graduate students

Executive Committee, *Secretary*, Graduate Astronomy Students Association, DADDAA 2020-2021

Editor, Delta Epsilon, McGill Journal of Undergraduate Mathematics 2017-2019

Graduate Student Mentor University of Toronto 2020-2022

- Provided support and mentorship for three undergraduate students and a graduate student.

Public Outreach Volunteer Astro McGill 2017-2019