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edu**cation**

2017 – 2021 **Ph.D.** in Biomedical Engineering   McGill University, Montreal, QC
Thesis work supervised by Alan Evans and Tristan Glatard on a project entitled:
This is Your Brain on Disk: The Impact of Numerical Instabilities in Neuroscience. Project involved the development of high performance computing infrastructures, the instrumentation and perturbation of neuroimaging pipelines, the evaluation of these perturbations in an analytic context, and the application of perturbed derivatives towards data augmentation in machine learning applications. All code and data have been made publicly available.

2014 – 2016 **M.S.E** in Biomedical Engineering   Johns Hopkins University, Baltimore, MD
Thesis work was supervised by Joshua T. Vogelstein on a project entitled:
GREMLIN: Graph Estimation from MR images Leading to Inference in Neuroscience. All code and data have been made publicly available.

2010 – 2014 **B.Eng** in Biomedical and Electrical Engineering   Carleton University, Ottawa, ON
Capstone work was supervised by Leonard MacEachern on a project entitled:
Electrical muscle stimulation with concurrent EMG feedback of the upper arm for applications in stroke rehabilitation.

2018 **Software and Data Carpentry Instructor Training**   Compute Canada, Toronto, ON
Running workshops in the context of an evidence-based instructional pedagogy.

2016 **Exploring the Human Connectome**   The Human Connectome Project, Boston, MA
Development and deployment of connectome estimation pipelines.

2015 **Presenting Data and Information**   Edward Tufte, Baltimore, MD
Cultivate skills in effective communication with scientific figures.

exp**erience**

Research Experience

04/21 – now **Child Mind Institute — Center for Data Analytics, Innovation, and Rigor**   New York City, NY
Director, Research Scientist (Senior Scientist Track)
Leads software development and research teams within the Computational Neuroimaging Laboratory to produce tools and resources that support neuroscience through high performance computing, the application of computational statistics, and machine learning. Develops and executes research programs, obtains funding, and communicates scholarly outputs. Research projects involve evaluating and improving the trustworthiness of tools and techniques used to study the brain to inform decision making surrounding robust data collection, image processing, and ultimately biomarker discovery.

05/17 – 04/21 **McGill University — McGill Centre for Integrative Neuroscience**   Montreal, QC
Software Developer & Researcher
Responsible for the exploration and integration of distributed software software services with high performance computing clouds and clusters, providing development, training, and support towards the use of tools and services within international collaborations. Focused on the development of methods for evaluating the trustworthiness and stability of neuroimaging tools and experiments.

04/19 – 07/19 **Empenn — Inria Rennes, Bretagne Atlantique**   Rennes, France
Research Intern
Developed web crawler to scrape public neuroimaging databases for processed functional activation maps. Constructed workflow for metadata-based QC at scale with 10,000s of samples. Designed a convolutional neural network for the identification of consensus activation maps across populations.

09/14 – 05/17 **Johns Hopkins University — Center for Imaging Science** Baltimore, MD
Research Engineer
Development and maintenance of an open-source pipeline for structural connectome estimation in humans and implemented statistical algorithms for quality control of data derivatives. Publicly released data products to lower the barrier to entry for neuroscience research. Chiefly responsible for grant reporting and public presence at conferences and workshops.

06/13 – 09/13 **Carleton University — Dept. of Systems and Computer Engineering** Ottawa, ON
Research Assistant with Dr. Rafik Goubran
Developed wireless medical data publish-subscribe system for viewing patient vital signs remotely.

06/12 – 09/12 **Carleton University — Dept. of Systems and Computer Engineering** Ottawa, ON
Research Assistant with Dr. Andy Adler
Utilized neural networks for inverse modeling of real and simulated biological systems.

06/11 – 09/11 **Carleton University — Dept. of Biology** Ottawa, ON
Research Assistant with Dr. Jeffrey Dawson
Developed robotics platform for studying insect locomotion patterns and behaviour.

01/09 – 09/09 **Ottawa Hospital Research Institute — Cancer Research Center** Ottawa, ON
Research Assistant with Dr. Jim Dimitroulakos
Tested combination therapies of Lovastatin and Cisplatin drugs on colon and breast cancer strains.

Teaching Experience

01/19 – 01/20 **Concordia Continuing Education** Montreal, QC
Instructor & Curriculum Developer
Responsible for the training of working professionals in the basics of "Big Data Technology," including fundamental tools for software development such as Unix, Git, and Docker, and software for numerical analysis such as Python and R. Core contributor in the development of new courses within the "Big Data Solutions for Business" diploma program.

05/17 – 05/21 **McGill University, OHBM, Brainhack School, Brain Intensive, others** Montreal, QC
Neuroinformatics Instructor
Regularly plan and teach a series of workshop introducing neuroscientists and trainees to methods in neuroinformatics. Developed and publicly released all course content on GitHub under the "Brainhack101" moniker and several videos on YouTube under the "BrainIntensive" profile.

09/14 – 05/17 **Dept. of Biomedical Engineering, Johns Hopkins University** Baltimore, MD
Teaching Assistant
Responsible for instruction, evaluation, and content design for: Freshman Modeling and Design for BME (2014, 2015), Systems and Controls (2015), Statistical Connectomics (2015), The Art of Data Science (2016), NeuroData Design (2016). Spent more than 500 hours working with students.

01/{15, 16, 17} **Dept. of Computer Science, Johns Hopkins University** Baltimore, MD
Instructor
Responsible for instruction, evaluation, and content design for intensive 3-week project-based course on an introduction to connectomics research across multiple scales and experimental modalities. Spent more than 300 hours planning, designing course content, and working with students.

09/12 – 05/14 **Student Academic Success Center, Carleton University** Ottawa, ON
Facilitator for Peer-Assisted Study Sessions
Instructed and demonstrated mastery of principles in electromagnetism and power engineering. Spent more than 300 hours working with students.

08/13 – 05/14 **Student Academic Success Center, Carleton University** Ottawa, ON
Facilitator Team Leader
Provided training, mentoring, and coaching to student instructors in a variety of disciplines. Spent more than 100 hours training and working with facilitators.

01/13 – 06/14 **Dept. of Systems and Computer Engineering, Carleton University**   Ottawa, ON
Teaching Assistant
Instructed introductory level C++ programming. Led lab sessions and instructional workshops. Spent more than 300 hours working with students.

grants & awards

grants

2022 – 2025 **NIH NIMH, 1RF1MH130859 | PI: Gregory Kiar**   Awarded Amount: $1,504,004.00
Improving the robustness of neuroimaging through exploitation of variability in processing pipelines

2022 – 2023 **NSF XSEDE, MED220009 | PI: Gregory Kiar**   Awarded Amount: $117,077.80
Preprocessing and sharing of large-scale open neuroimaging datasets

2022 – 2023 **NSF XSEDE, BIO220056 | Role: Co-Investigator | PI: Ting Xu**   Awarded Amount: $30,786.95
Mapping Large-scale Brain Development between Human and Nonhuman Primate

2021 – 2023 **Michael J. Fox Foundation | Role: Consultant | PI: Tristan Glatard**   Awarded Amount: $305,254.00
Improving the generalizability and robustness of MRI-derived biomarker of Parkinson's Disease through analytical and data variability evaluations

2021 – 2022 **NSF XSEDE, CIS210056 | PI: Gregory Kiar**   Awarded Amount: $880.00
Application of uncertainty quantification for neuroimaging software design, testing, and analysis

2018 – 2021 **NSERC Canada, CGSD3-519497-2018 | PI: Gregory Kiar**   Awarded Amount: $105,000.00
Supporting scalable computing in neuroimaging for the exploration of numerical instabilities and their impact

awards

2020	**Research Scholar Award**	Canadian Open Neuroscience Platform, Montreal, QC
2019	**Young Investigator Award**	Sage Bionetworks, Seattle, WA
2019	**Instructor Training Fellowship**	Repronim, Worcester, MA
2019	**Globalink Research Award**	Mitacs, Montreal, QC
2018	**Michael Smith Foreign Study Supplement**	NSERC, Ottawa, ON
2017	**Healthy Brains for Healthy Lives Doctoral Fellowship**	McGill University, Montreal, QC
2017	**CRN Coding Sprint Project Award**	Stanford University, Palo Alto, CA
2017	**OHBM BrainHack Travel Award**	OHBM, Minneapolis, MN
2014 – 2016	**Full-tuition Master's Degree Fellowship**	Johns Hopkins University, Baltimore, MD
2014	**Graduated with Distinction**	Carleton University, Ottawa, ON
2014	**Greatest Social Impact Paper**	Professional Engineering Ontario (PEO), Ottawa, ON
2014	**SEED Fund**	Carleton University Engineering Alumni, Ottawa, ON
2014	**IEEE Papers Showcase Local Winner**	IEEE Ottawa-Carleton Chapter, Ottawa, ON
2014	**Carleton Electronics Project Competition Champion**	Carleton University, Ottawa, ON
2013	**Engineering '65 and '66 Scholarship**	Carleton University, Ottawa, ON
2012	**Clarence C. Gibson Scholarship**	Carleton University, Ottawa, ON

supervision & academic mentorship

1. Reinder Vos de Wael (Scientific Software Generalist, Child Mind Institute; 2023–)
2. Nathalia Bianchini Esper (Postdoctoral Fellow, Child Mind Institute; 2022–)
3. Elizabeth Kenneally (Software Developer, Child Mind Institute; 2022–)
4. Connor Lane (Software Developer, Child Mind Institute; 2022–)
5. Maya Roberts (Research Assistant, Child Mind Institute; 2022–)
6. Florian Rupprecht (Software Developer, Child Mind Institute; 2022–)
7. Jon Clucas (Software Developer, Child Mind Institute; 2021–)
8. Amy Gutierrez (Software Developer, Child Mind Institute; 2021–2023)
9. Teresa George (Software Developer, Child Mind Institute; 2021–2023)
10. Xinhui Li (Software Developer, Child Mind Institute; 2021–2022)
11. Ali Salari (PhD in Computer Science, Concordia University; with Tristan Glatard; 2019–2022)
12. Hamidreza Heidarzadeh (MSc in Computer Science, Concordia University; with Tristan Glatard; 2018–2019)

memberships & extracurriculars

2021 – now	**NMIND** Project Leader, Hackathon Organizer	Global
2017 – now	**Various Neuroinformatics-based Hackathons and Courses** Hackathon Chair, Organizer, & Instructor	Montreal, QC
2020 – 2022	**XSEDE, NSF** XSEDE Review Allocation Committee Member	Alexandria, VA
2020	**COVID-19 HPC Consortium** Review Allocation Committee Member	Global
2017 – 2020	**Canadian Open Neuroscience Platform Training Committee** Trainee Representative	Montreal, QC
2017 – 2020	**OHBM Open Science SIG** Treasurer, Educational Committee Liaison	Minneapolis, MN
2018 – 2019	**Ludmer Centre Seeds of Change Campaign** Trainee Ambassador	Montreal, QC
2017 – 2018	**OHBM Open Science SIG** Hackathon Chair	Minneapolis, MN
2017 – 2018	**Healthy Brains for Healthy Lives Trainee Committee** President (Neuroinformatics)	Montreal, QC
2015 – 2017	**College Prep Program** College Mentor, SAT Coach, & Essay Reviewer	Baltimore, MD
2014 – 2016	**Thread** Volunteer supervisor & student mentor	Baltimore, MD
2013 – 2014	**Carleton University Biomedical Engineering Society** President	Ottawa, ON
2010 – 2011	**Carleton University Student Emergency Response Team** Emergency First Responder	Ottawa, ON

reviewed for

publications

pre-prints

1. Functional Connectivity Development along the Sensorimotor-Association Axis Enhances the Cortical Hierarchy
   A. Luo, V. Sydnor, A. Pines, B. Larsen, A. F. Alexander-Bloch, M. Cieslak, … **G. Kiar**, … M. P. Milham, T. D. Satterthwaite
   bioRxiv (2023) pp. 2023–07. Cold Spring Harbor Laboratory.

2. A numerical variability approach to results stability tests and its application to neuroimaging
   Y. Chatelain, L. Tetrel, C. J. Markiewicz, M. Goncalves, **G. Kiar**, O. Esteban, P. Bellec, T. Glatard
   arXiv preprint arXiv:2307.01373 (2023).

3. Numerical Stability of DeepGOPlus Inference
   I. G. Pepe, Y. Chatelain, **G. Kiar**, T. Glatard
   arXiv preprint arXiv:2212.06361 (2022).

4. Pipeline-Invariant Representation Learning for Neuroimaging
   X. Li, A. Fedorov, M. Mathur, A. Abrol, **G. Kiar**, S. Plis, V. Calhoun
   arXiv preprint arXiv:2208.12909 (2022).

5. A Guide for Quantifying and Optimizing Measurement Reliability for the Study of Individual Differences
   Ting Xu, JaeWook Cho, Gregory Kiar, Eric W Bridgeford, Joshua T Vogelstein, Michael P Milham
   bioRxiv (2022). Cold Spring Harbor Laboratory.

6. Batch Effects are Causal Effects: Applications in Human Connectomics
   Eric W Bridgeford, Michael Powell, Gregory Kiar, Ross Lawrence, Brian Caffo, Michael Milham, Joshua T Vogelstein
   bioRxiv (2021). Cold Spring Harbor Laboratory.

7. Moving Beyond Processing and Analysis-Related Variation in Neuroscience
   X. Li, L. Ai, S. Giavasis, … **G. Kiar**, M. P. Milham
   bioRxiv (2021). Cold Spring Harbor Laboratory.

articles in peer-reviewed journals

1. Align with the NMIND consortium for better neuroimaging
   G. Kiar, J. Clucas, E. Feczko, M. Goncalves, D. Jarecka, C. J. Markiewicz, ... M. P. Milham, D. Fair
   Nature Human Behaviour (2023) pp. 1–2. Nature Publishing Group UK London.

2. ReX: an integrative tool for quantifying and optimizing measurement reliability for the study of individual differences
   T. Xu, **G. Kiar**, J. W. Cho, E. W. Bridgeford, A. Nikolaidis, J. T. Vogelstein, M. P. Milham
   Nature Methods (2023) pp. 1–4. Nature Publishing Group US New York.

3. Data and tools integration in the canadian open neuroscience platform
   J. B. Poline, S. Das, T. Glatard, C. Madjar, E. W. Dickie, X. Lecours, ... **G. Kiar**, ... A. C. Evans
   Scientific Data 10.1 (2023) p. 189. Nature Publishing Group UK London.

4. Proceedings of the OHBM Brainhack 2021
   A. Nikolaidis, M. Manchini, T. Auer, K. L. Bottenhorn, E. Alonso-Ortiz, G. Gonzalez-Escamilla, S. Valk, T. Glatard, M. S. Atay, ... **G. Kiar**, ...
   Aperture Neuro 3 (2023) pp. 1–20. Organization of Human Brain Mapping.

5. An analysis-ready and quality controlled resource for pediatric brain white-matter research
   A. Richie-Halford, M. Cieslak, L. Ai, S. Caffarra, S. Covitz, A. R. Franco, ... **G. Kiar**, ... T. D. Satterthwaite, A. Rokem
   Scientific Data (2022). Nature Publishing Group.

6. PyTracer: Automatically profiling numerical instabilities in Python
   Y. Chatelain, N. Yong, **G. Kiar**, T. Glatard
   IEEE Transactions on Computers (Nov. 2022). IEEE.

7. Toward next-generation primate neuroscience: A collaboration-based strategic plan for integrative neuroimaging
   M. P. Milham, C. Petkov, P. Belin, ... **G. Kiar**, ...
   Neuron (2021). Elsevier.

8. Evaluating the reliability of human brain white matter tractometry
   J. Kruper, J. D. Yeatman, A. Richie-Halford, D. Bloom, M. Grotheer, S. Caffarra, **G. Kiar**, I. I. Karipidis, E. Roy, B. Q. Chandio
   Aperture (2021). Organization for Human Brain Mapping.

9. Data Augmentation Through Monte Carlo Arithmetic Leads to More Generalizable Classification in Connectomics
   G. Kiar, Y. Chatelain, A. Salari, A. C. Evans, T. Glatard
   Neurons, Behavior, Data Analysis, and Theory (2021).

10. Numerical Instabilities in Analytical Pipelines Lead to Large and Meaningful Variability in Brain Networks
    G. Kiar, Y. Chatelain, P. Oliveira Castro, E. Petit, A. Rokem, G. Varoquaux, B. Misic, A. C. Evans, T. Glatard
    PLOS One (Sept. 2021). Public Library of Science.

11. Eliminating accidental deviations to minimize generalization error: applications in connectomics and genomics
    E. W. Bridgeford, S. Wang, Z. Yang, Z. Wang, T. Xu, C. Craddock, J. Dey, **G. Kiar**, W. .R. Gray-Roncal, C. Coulantoni
    PLOS Computational Biology (Sept. 2021). Public Library of Science.

12. Centering inclusivity in the design of online conferences—An OHBM–Open Science perspective
    E. Levitis, C. D. G. Praag, R. Gau, S. Heunis, E. DuPre, **G. Kiar**, K. L. Bottenhorn, T. Glatard, A. Nikolaidis, K. J. Whitaker
    GigaScience 10.8 (Aug. 2021) giab051. Oxford University Press.

13. Brainhack: Developing a culture of open, inclusive, community-driven neuroscience
    R. Gau, S. Noble, K. Heuer, K. L. Bottenhorn, ... **G. Kiar**
    Neuron (June 2021). Elsevier.

14. Comparing perturbation models for evaluating stability of neuroimaging pipelines

    G. Kiar, P. de Oliveira Castro, P. Rioux, E. Petit, S. T. Brown, A. C. Evans, T. Glatard

    The International Journal of High Performance Computing Applications (2020) p. 109434202092623.

15. A quantitative EEG toolbox for the MNI Neuroinformatics ecosystem: normative SPM of EEG source spectra

    J. Bosch-Bayard, E. Aubert-Vazquez, S. T. Brown, C. Rogers, **G. Kiar**, T. Glatard, L. Scaria, L. Galan-Garcia, M. L. Bringas-Vega, T. Virues-Alba

    Frontiers in Neuroinformatics 14 (2020). Frontiers Media SA.

16. File-based localization of numerical perturbations in data analysis pipelines

    A. Salari, **G. Kiar**, L. Lewis, A. C. Evans, T. Glatard

    GigaScience 9.12 (Dec. 2020) giaa106. Oxford University Press.

17. Neural correlates of polygenic risk score for autism spectrum disorders in general population

    B. Khundrakpam, U. Vainik, J. Gong, N. Al-Sharif, N. Bhutani, **G. Kiar**, Y. Zeighami, M. Kirschner, C. Luo, A. Dagher, A. C. Evans

    Brain Communications (July 2020). fcaa092.

18. Brain status modeling with non-negative projective dictionary learning

    M. Zhang, C. Desrosiers, Y. Guo, B. Khundrakpam, N. Al-Sharif, **G. Kiar**, P. Valdes-Sosa, J. B. Poline, A. C. Evans

    Neuroimage (Oct. 2019) p. 116226.

19. PyBIDS: Python tools for BIDS datasets

    T. Yarkoni, C. Markiewicz, A. Vega, K. Gorgolewski, T. Salo, Y. Halchenko, Q. McNamara, K. DeStasio, J. B. Poline, D. Petrov, V. Hayot-Sasson, D. Nielson, J. Carlin, **G. Kiar**, K. Whitaker, E. DuPre, A. Wagner, L. Tirrell, M. Jas, M. Hanke, R. Poldrack, O. Esteban, S. Appelhoff, C. Holdgraf, I. Staden, B. Thirion, D. Kleinschmidt, J. Lee, M. Castello, M. Notter, R. Blair

    JOSS 4.40 (Aug. 2019) p. 1294.

20. A Serverless Tool for Platform Agnostic Computational Experiment Management

    G. Kiar, S. T. Brown, T. Glatard, A. C. Evans

    Frontiers in Neuroinformatics 13 (Mar. 2019) p. 12.

21. Container-Based Clinical Solutions for Portable and Reproducible Image Analysis

    J. Matelsky, **G. Kiar**, E. Johnson, C. Rivera, M. Toma, W. Gray-Roncal

    Journal of Digital Imaging 31.3 (May 2018) pp. 315–320. Springer Nature.

22. Boutiques: a flexible framework to integrate command-line applications in computing platforms

    T. Glatard, **G. Kiar**, T. Aumentado-Armstrong, N. Beck, P. Bellec, R. Bernard, A. Bonnet, S. T. Brown, S. Camarasu-Pop, F. Cervenansky, S. Das, R. Ferreira da Silva, G. Flandin, P. Girard, K. J. Gorgolewski, C. R. G. Guttmann, V. Hayot-Sasson, P. O. Quirion, P. Rioux, M. E. Rousseau, A. C. Evans

    GigaScience 7.5 (Mar. 2018). Oxford University Press (OUP).

23. BIDS apps: Improving ease of use, accessibility, and reproducibility of neuroimaging data analysis methods

    K.J. Gorgolewski, F. Alfaro-Almagro, T. Auer, P. Bellec, M. Capotă, M. M. Chakravarty, N. W. Churchill, A. L. Cohen, R. C. Craddock, G. A. Devenyi, A. Eklund, O. Esteban, G. Flandin, J. S. Guntupalli, M. Jenkinson, A. Keshavan, **G. Kiar**, P. R. Raamana, D. Raffelt, C. J. Steele, P. O. Quirion, R. E. Smith, S. Strother, G. Varoquaux, T. Yarkoni, Y. Wang, R. A. Poldrack

    PLOS CB 13.3 (2017) e1005209. Public Library of Science.

24. Science In the Cloud (SIC): A use case in MRI Connectomics

    G. Kiar, K. J. Gorgolewski, D. Kleissas, W. R. Gray Roncal, B. Litt, B. Wandell, R. A. Poldrack, M. Wiener, R. J. Vogelstein, R. Burns, J. T. Vogelstein

    GigaScience gix013 (Mar. 2017).

25. To the Cloud! A Grassroots Proposal to Accelerate Brain Science Discovery
    J. T. Vogelstein, B. Mensh, M. Häusser, N. Spruston, A. C. Evans, K. Kording, K. Amunts, C. Ebell, J. Muller, M. Telefont, S. Hill, S. P. Koushika, C. Calı, P. A. Valdés-Sosa, P. B. Littlewood, C. Koch, S. Saalfeld, A. Kepecs, H. Peng, Y. O. Halchenko, **G. Kiar**, M. M. Poo, J. B. Poline, M. P. Milham, A. P. Schaffer, R. Gidron, H. Okano, V. D. Calhoun, M. Chun, D. M. Kleissas, R. J. Vogelstein, E. Perlman, R. Burns, R. Huganir, M. I. Miller
    Neuron 92.3 (Nov. 2016) pp. 622–627. Elsevier, requested article.

proceedings in international peer-reviewed conferences

1. Reducing numerical precision preserves classification accuracy in Mondrian Forests
   M. Vicuna, M. Khannouz, **G. Kiar**, Y. Chatelain, T. Glatard
   2021 IEEE International Conference on Big Data (Big Data) (2021) pp. 2785–2790.

2. Accurate Simulation of Operating System Updates in Neuroimaging Using Monte-Carlo Arithmetic
   A. Salari, Y. Chatelain, **G. Kiar**, T. Glatard
   Uncertainty for Safe Utilization of Machine Learning in Medical Imaging (UNSURE, MICCAI) (2021) pp. 14–23. Springer Publishing.

3. A Recommender System for Scientific Datasets and Analysis Pipelines
   M. Mazaheri, **G. Kiar**, T. Glatard
   16th Workshop on Workflows in Support of Large-Scale Science (2021). SuperComputing.

4. Deploying Large Fixed File Datasets with SquashFS and Singularity
   P. Rioux, **G. Kiar**, A. Hutton, A. C. Evans, S. T. Brown
   PEARC '20 (2020) pp. 72–76. Association for Computing Machinery.

5. Organization for Human Brain Mapping Open Science Hackathons: Accessible and Inclusive Neuroinformatics
   E. DuPre*, **G. Kiar***, R. C. Craddock, K. J. Gorgolewski, F. Hoffstaedter, A. Keshavan, J. B. Poline, M. Visconti di Oleggio Castello, K. Whitaker, P. Bellec
   2nd Workshop on Hacking and Making at Time-Bounded events (Jan. 2018). Computer Human Interaction.

6. Electric localization of weakly electric fish using neural networks
   G. Kiar, Y. Mamatjan, J. Jun, L. Maler, A. Adler
   Journal of Physics: Conference Series vol. 434 (May 2013).

book chapters

1. The Montreal Neurological Institute Ecosystem: Enabling Reproducible Neuroscience from Collection to Analysis in the Web
   G. Kiar, C. Makowski, J. B. Poline, S. Das, A. C. Evans
   (Nov. 2017) pp. 51–56. Society for Neuroscience.

invited talks & organized workshops

1. NMIND: Align, Test, Engage
   Organization for Human Brain Mapping (June 2023), Presentation.

2. UNIQUE Student Symposium for Neuro-AI
   UNIQUE MILA (June 2023), Panelist.

3. Variation in Brain Imaging – when is it meaningful? (and what can we do about it)
   The Center for Biomedical Imaging and Neuromodulation, Nathan Kline Institute (Aug. 2022), Presentation.

4. Fuzzy environments for the perturbation evaluation and application of uncertainty quantification.
   Chinese Open Science Network (July 2022), Presentation.

5. Variation in Brain Imaging - when is it meaningful? (and what do we do about it)

   Center for Neurodevelopmental and Imaging Research, Kennedy Krieger Institute (Apr. 2022), Presentation.

6. Fuzzy Environments for the perturbation, evaluation, and application of uncertainty quantification via Monte Carlo Arithmetic

   Scipy Conference (July 2021), Presentation.

7. Evaluating the Stability of Neuroimaging Pipelines

   National Institute of Mental Health (Feb. 2020), Presentation.

8. Comparing Perturbation Models for Evaluating Stability of Neuroimaging Pipelines

   Computational Reproducibility at Exascale (Nov. 2019), Super Computing, Presentation.

9. From "Open Science" to "Science": Shifting the status quo in data sharing, software, and publishing

   Organization for Human Brain Mapping (June 2019), Symposium and presentation.

10. Introduction to Scientific Software Development and Machine Learning

    Healthy Brains for Healthy Lives (Feb. 2019), McGill University, Workshop.

11. A FAIR Approach to Neuroimaging Analysis with Boutiques

    Organization for Human Brain Mapping (June 2018), Presentation.

12. Connectome Coding: what is it, how do we do it, and why do we care?

    Data science in Neuroscience Symposium (June 2018), Organization for Human Brain Mapping, Presentation.

13. OHBM Annual BrainHack & TrainTrack

    Open Science Special Interest Group (June 2018), Organization for Human Brain Mapping, Workshop.

14. Brainhack Global: Montreal Edition

    McGill University & Universite de Montreal (June 2018), Workshop.

15. A Data Driven Approach for Tackling Big Data Connectomics

    Feindel Brain Imaging Lecture (Feb. 2018), Montreal Neurological Institute, Presentation.

16. Coding for Neuroscientists: An Introduction to Neuroscience Informatics

    Graduate Student Association for Neuroscience (Jan. 2018), McGill University, Workshop.

17. BigNeuro 2017: Analyzing brain data from nano to macroscale

    Neural Information Processing Systems (Dec. 2017), Workshop.

18. Enabling Accessible and Scalable Neuroscience

    Healthy Brains For Healthy Lives (Nov. 2017), McGill University, Presentation.

19. Platforms for high performance computing in neuroscience

    Neuroinformatics in the Age of Big Data: Working with the Right Data and Tools (Nov. 2017), Society for Neuroscience, Workshop.

20. Brainhack101 & Exploratory Data Analysis

    Online Intensive for Brain Science: Computation and Imaging (Sept. 2017), National Institute of Health, Presentation.

21. ClowdControl: Integrating Quality Control and Pipeline Deployment in the Cloud

    Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Presentation.

22. Open Science Session Chair

    Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Workshop.

23. Science in the Cloud (SIC): A use-case in MRI Connectomics

    Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Presentation.

24. Brain Hacking 101

Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Presentation.

25. NeuroStorm: Accelerating Brain Science Discovery in the Cloud

Johns Hopkins University (June 2017), National Science Foundation, Workshop.

posters at international conferences

1. Refinement of Functional Connectivity in Development Aligns with the Sensorimotor-Association Axis

A. Luo, V. Sydnor, A. Pines, B. Larsen, A. F. Alexander-Bloch, M. Cieslak, ... **G. Kiar**, ... M. P. Milham, T. D. Satterthwaite

Organization for Human Brain Mapping (July 2023).

2. NMIND: A Grassroots Collaborative to Elevate Neuroimaging Software

G. Kiar, J. Clucas, E. Feczko, M. Goncalves, D. Jarecka, C. J. Markiewicz, ... M. P. Milham, D. Fair

Organization for Human Brain Mapping (July 2023).

3. A protocol for visual quality control applied to the Reproducible Brain Chart database

N. Bianchini-Esper, S. Covitz, A. Castro, ... **G. Kiar**, M. P. Milham, T. Satterthwaite, A. Franco

Organization for Human Brain Mapping (July 2023).

4. Pipeline-Invariant Representation Learning for Neuroimaging

X. Li, A. Federox, M. Mathur, A. Abrol, **G. Kiar**, S. Pils, V. Calhoun

Organization for Human Brain Mapping (July 2023).

5. Causal Reasoning is Critical to Understanding Batch Effects

E. W. Bridgeford, M. Powell, **G. Kiar**, S. Noble, ... J. T. Vogelstein

Organization for Human Brain Mapping (July 2023).

6. Variations in variability: a word of caution for those navigating the multiverse of methods

G. Kiar, E. W. Bridgeford, J. Clucas, N. Bianchini-Esper, C. Lane, F. Rupprecht, T. Xu, M. P. Milham

Organization for Human Brain Mapping (July 2023).

7. Developer tools for neuroimaging workflow creation and pre-deployment

F. Rupprecht, A. Gutierrez, J. Clucas, S. Giavasis, M. P. Milham, **G. Kiar**

Organization for Human Brain Mapping (July 2023).

8. Connecting neuroimaging to the broader data science ecosystem

C. Lane, J. Clucas, N. Bianchini-Esper, T. Xu, M. P. Milham, **G. Kiar**

Organization for Human Brain Mapping (July 2023).

9. NodeBlocks: Lowering the Barriers to Building into C-PAC

J. Clucas, **G.** Giavasis, M. P. Milham

Organization for Human Brain Mapping (July 2023).

10. Moving Beyond Processing and Analysis-Related Variation in Neuroscience

X. Li, L. Ai, S. Giavasis, H. Jin, E. Feczko, ... **G. Kiar**, M. P. Milham

Organization for Human Brain Mapping (June 2022).

11. Batch Effects are Causal Effects: Applications in Human Connectomics

E. W. Bridgeford, M. Powell, **G. Kiar**, R. Lawrence, T. Xu, B. Caffo, M. P. Milham, J. T. Vogelstein

Organization for Human Brain Mapping (June 2022).

12. Shiny Reliability Explorer (ReX): Quantifying and Optimizing Reliability for the Study of Individual Differences

T. Xu, **G. Kiar**, J. W. Cho, E. W. Bridgeford, J .T. Vogelstein, M. P. Milham

Organization for Human Brain Mapping (June 2022).

13. A hitchhiker's guide (or checklist) to capturing neuroimaging variability
    G. Kiar, J. Mumford, T. Xu, J. T. Vogelstein, T. Glatard, M. P. Milham
    Organization for Human Brain Mapping (June 2022).

14. Testing the long-term reproducibility of fMRIPrep results
    Y. Chatelain, L. Tetrel, C. J. Markiewicz, **G. Kiar**, O. Esteban, P. Bellec, T. Glatard
    Organization for Human Brain Mapping (June 2022).

15. Leveraging Numerical Instabilities In Connectome Estimation For More Generalizable Models
    G. Kiar, Y. Chatelain, A. Salari, ... A. C. Evans, T. Glatard
    Organization for Human Brain Mapping (June 2021).

16. Validation of an epidemic spreading model to simulate A⬚ spread in familial Alzheimer's disease
    E. Levitis, J. Vogel, **G. Kiar**, T. Funck, Y. Ituria, A. C. Evans
    Organization for Human Brain Mapping (June 2020).

17. Exploring the Relationship Between Early Psychosis Verbal Memory Deficits and White Matter Integrity
    C. Henri-Bellemare, **G. Kiar**, K Lavigne, R. Patel, M. M. Chakravarty, M. Lepage
    Organization for Human Brain Mapping (June 2020).

18. Human Structural Connectomes are Heritable
    J. Chung, J. Dey, **G. Kiar**, C. E. Priebe, J. T. Vogelstein
    Organization for Human Brain Mapping (June 2020).

19. Incorporating quantitative EEG analysis into the MNI Open Science neuroinformatics ecosystem
    J. Bosch-Bayard, C. Rogers, E. Aubert, S. T. Brown, **G. Kiar**, T. Glatard, L. Galán-García, T. Bringas Vega, S. Das, C. Madjar, Z. Mohades, L. MacIntyre, A. C. Evans, P. Valdes-Sosa
    Organization for Human Brain Mapping (June 2020).

20. Fuzzy: An Ecosystem for Evaluating the Stability of Pipelines Through Monte Carlo Arithmetic
    G. Kiar, A. Salari, R. Hannema, M. Vadariya, M. Dugre, P. Rioux, P. Douglas, S. T. Brown, P. Oliveira Castro, E. Petit, A. C. Evans, T. Glatard
    Organization for Human Brain Mapping (June 2020).

21. Optimal Experimental Design for Big Data: Applications in Brain Imaging
    E. Bridgeford, S. Wang, Z. Yang, Z. Wang, T. Xu, C. Craddock, J. Dey, **G. Kiar**, W. R. Gray-Roncal, C. E. Priebe, B. Caffo, M. Milham, X. N. Zuo, J. T. Vogelstein
    Organization for Human Brain Mapping (June 2020).

22. New Open Science features in the CBRAIN Platform
    N. Beck, P. Rioux, **G. Kiar**, S. T. Brown, C. Czech, S. Boroday, X. Lecours-Boucher, D. Quesnel, C. Rogers, N. Khalili-Mahani, R. Adalat, T. Glatard, S. Das, A. C. Evans
    Organization for Human Brain Mapping (June 2020).

23. Nilearn and Nistats: Machine learning and statistics for fMRI in Python
    J. Dockès, K. Chawla, A. Abraham, T. Bazeille, M. Boos, S. Bougacha, D. Bzdok, J. A. Chevalier, K. Dadi, G. de Hollander, C. Delettre, E. DuPre, D. Gale, K. Gorgolewski, A. Gramfort, A. Grigis, R. Guidotti, R. Hammonds, A. Hoyos-Idrobo, J. Huntenburg, **G. Kiar**, E. Larson, G. Lemaitre, F. Liem, C. Markiewicz, T. B. Nguyen, A. L. Pinho, D. Pisner, M. Rahim, P. Sanz-Leon, S. Takerkart, B. Thirion, J. Vogel, J. Wiesner, G. Varoquaux
    Organization for Human Brain Mapping (June 2020).

24. Enabling FAIR Scientific Tool Development, Dissemination, and Consumption with Boutiques
    G. Kiar, E. Benderoff, J. Charrière, S. Dubé, L. O. Guérin, A. Bonnet, S. Camarasu-Pop, N. Beck, P. Rioux, S. Boroday, S. T. Brown, J. B. Poline, A. E. Evans, T. Glatard
    Sage Assembly (July 2019).

25. A FAIR Approach to Neuroimaging Analysis with Boutiques
    G. Kiar, E. Benderoff, J. Charrière, S. Dubé, L. O. Guérin, A. Bonnet, S. Camarasu-Pop, N. Beck, P. Rioux, S. Boroday, S. T. Brown, J. B. Poline, A. E. Evans, T. Glatard
    Organization for Human Brain Mapping (June 2019).

26. Reverse Engineering the Human Connectome: Learning Function from Structure
    L. E. Suarez, **G. Kiar**, R. A. Doyle, A. C. Evans, B. Misic
    Resting State Brain Connectivity (Sept. 2018).

27. PIVT: A Platform Independent Visualization Tool
    A. Taheri, J. Lurie, R. Abou-Haidar, S. T. Brown, S. Das, A. Doyle, N. Khalili-Mahani, **G. Kiar**, P. Kostopoulos, C. Lepage, L. Lewis, C. Makowski, C. Rogers, P. Toussaint, A. C. Evans
    Organization for Human Brain Mapping (June 2018).

28. Pybids: Python tools for manipulation and analysis of BIDS datasets
    T. Yarkoni, A. de la Vega, E. DuPre, O. Esteban, Y. Halchenko, M. Hanke, V. Hayot-Sasson, A. Ivanov, **G. Kiar**, C. Markiewicz, Q. McNamara, D. Petrov, J. B. Poline, R. Poldrack, K. J. Gorgolewski
    Organization for Human Brain Mapping (June 2018).

29. A Principled Approach to Statistical Connectomics and Mega-Analysis
    E. Bridgeford, **G. Kiar**, V. Chandrashekhar, C. Shen, C. E. Gray Roncal, B. Caffo, J. Vogelstein
    Organization for Human Brain Mapping (June 2018).

30. Exploring whole-brain structural connectivity and cognitive performance in typical development
    N. Al-Sharif, **G. Kiar**, B. Khundrakpam, A. C. Evans
    Organization for Human Brain Mapping (June 2018).

31. Clowdr: a micro-service model for scalable, reproducible, and accessible neuroinformatics
    G. Kiar, T. Glatard, S. .T. Brown, A. C. Evans
    Organization for Human Brain Mapping (June 2018).

32. Creativity is Unrelated to Intelligence and Personality: A Machine Learning Study
    A. Doyle, **G. Kiar**, P. Toussaint, P. Lemaitre, A. C. Evans
    Organization for Human Brain Mapping (June 2018).

33. An Extensible Application Programming Interface for Querying Distributed Neuroscience Datasets
    G. Kiar, T. Glatard, J. B. Poline
    Organization for Human Brain Mapping (June 2018).

34. Heterogeneous tau-PET signal in the hippocampus resolves discrepancies between imaging and pathology
    J. Vogel, R. Ossenkoppele, **G. Kiar**, O. Hansson, A. C. Evans
    Organization for Human Brain Mapping (June 2018).

35. Numerical error propagation in the HCP structural pre-processing pipelines
    A. Salari, L. Scaria, **G. Kiar**, T. Glatard
    Organization for Human Brain Mapping (June 2018).

36. BIDS apps: Improving ease of use, accessibility, and reproducibility of neuroimaging data analysis methods
    K.J. Gorgolewski, F. Alfaro-Almagro, T. Auer, P. Bellec, M. Capotă, M. M. Chakravarty, N. W. Churchill, A. L. Cohen, R. C. Craddock, G. A. Devenyi, A. Eklund, O. Esteban, G. Flandin, J. S. Guntupalli, M. Jenkinson, A. Keshavan, **G. Kiar**, P. R. Raamana, D. Raffelt, C. J. Steele, P. O. Quirion, R. E. Smith, S. Strother, G. Varoquaux, T. Yarkoni, Y. Wang, R. A. Poldrack
    Organization for Human Brain Mapping (June 2017).

37. MR Graph with Rich attribUTEs DataBase (Mr. GruteDB)

G. Kiar, W. R. Gray Roncal, D. Mhembere, E. W. Bridgeford, S. Wang, C. E. Priebe, R. Burns, J. T. Vogelstein

Organization for Human Brain Mapping (June 2016).

38. The Open Connectome Project & NeuroData: Enabling Data Driven Neuroscience at Scale

Joshua T. Vogelstein, et al.

Society for Neuroscience (Oct. 2015).

39. Community Connectomics via Cloud Computing Utilizing m2g: a Reference Pipeline

G. Kiar, W. R. Gray Roncal, D. Mhembere, E. W. Bridgeford, D. Clark, M. P. Milham, R. C. Craddock, R. Burns, J. T. Vogelstein

Organization for Human Brain Mapping (June 2015).

published code

For an up-to-date list of published code projects, please visit the GitHub profile of myself (https://github.com/gkiar) or my lab (https://github.com/cmi-dair).