Alexander Barnett

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Positions Held

2022 - Present	**Assistant Professor,** Department of Psychology University of Toronto, Canada
2017 – 2021	**Postdoctoral Scholar** University of California at Davis, USA Supervisor: Charan Ranganath

Education

2012–2017	**Doctor of Philosophy**, Psychology, University of Toronto, Canada *The effects of age of onset on cognition and brain network plasticity in temporal lobe epilepsy* Supervisor: Mary Pat McAndrews Thesis link: http://hdl.handle.net/1807/80927
2011–2012	**Master of Arts**, Psychology, Collaborative Program in Neuroscience, University of Toronto, Canada *Memory functioning in patients with unilateral temporal lobe epilepsy: Neuroimaging indicators of functional integrity in the hippocampus and beyond.* Supervisor: Mary Pat McAndrews Thesis link: http://hdl.handle.net/1807/33331
2006–2010	**Honours Bachelor of Science,** Neuroscience and Psychology, High Distinction University of Toronto, Canada

Publications

Peer Reviewed Publications

Antony, J.W., Van Dam, J., **Barnett, A.J.**, Bennion, K. (2022). Long-term, multi-event surprise enhances autobiographical memory. *BioRxiv.*

Audrain, S., **Barnett, A.J.**, McAndrews, M.P. (2022). Leveraging the resting brain to predict memory decline after temporal lobectomy. *BioRxiv*.

Barnett, A.J., Nguyen, M., Spargo, J., Yadav, R., Cohn-Sheehy, B., Ranganath, C. (2022). Dynamic hippocampal-cortical interactions during event boundaries support retention of complex narrative events. *BioRxiv.*

Caravagio, F., **Barnett, A.J.,** Iwata, Y., Nakajima, S., Borlido, C., Plitman, E., Mihashi, Y., Kim, J., Gerretsen, P., Graff, A. (2022). The effects of acute dopamine depletion on resting-state functional connectivity and striatal glutamate in healthy humans. European Neuropsychopharmacology.

Barnett A.J., Reilly W., Dimsdale-Zucker, H., Mizrak, M., Reagh, Z., Ranganath C. (2021). Intrinsic connectivity reveals functionally distinct cortico-hippocampal networks in the human brain. *PLoS Biology.*

Cohn-Sheehy, B. I., Delarazan, A. I., Reagh, Z. M., Crivelli-Decker, J. E., Kim, K., **Barnett, A.J.**, Zacks, J. M., & Ranganath, C. (2021). The hippocampus constructs narrative memories across distant events. *Current Biology.*

Ayoub, L. J., McAndrews, M. P., **Barnett, A.**, Ho, K. C. J., Cioffi, I., & Moayedi, M. (2021). Baseline Resting-State Functional Connectivity Determines Subsequent Pain Ratings to a Tonic Ecologically Valid Experimental Model of Orofacial Pain. *PAIN*.

Barnett, A.J., Man, V., McAndrews, M.P. (2019). Parcellation of the hippocampus using resting functional connectivity in temporal lobe epilepsy. *Frontiers in Neurology*, 10, 920.

Cash, R., Cocchi, L., Anderson, R., Rogachov, A., Kucyi, A., **Barnett, A.J.**, Zalesky, A., Fitzgerald, P. (2019). A multivariate neuroimaging biomarker of individual outcome to transcranial magnetic stimulation in depression. *Human Brain Mapping*.

Sawczak, C., **Barnett, A.J.**, Cohn, M. (2019). Increased cortical thickness in attentional networks in Parkinson's disease with minor hallucinations. *Parkinson's Disease*.

Ayoub, L.J., **Barnett, A.J.,** Leboucher, A., Golosky, M., Seminowicz, D.A., McAndrews, M.P., Moayedi, M. (2019). The medial temporal lobe in nociception: a meta-analytic and functional connectivity study. *PAIN*.

Audrain, S.*, **Barnett, A.J.*,** McAndrews, M.P. (2018). Language network measures at rest predict individual differences in naming decline after surgery for temporal lobe epilepsy. *Human Brain Mapping*. 39 (11), 4404-4419. *indicates equal contribution

Barnett, A.J., Audrain, S.P., McAndrews, M.P. (2017). Applications of Resting State fMRI to Epilepsy. *Neuroimaging Clinics of North America*, 27(4), 697-708.

Adnan, A.*, **Barnett, A.***, Moayedi, M.*, McCormick, C., Cohn, M., & McAndrews, M. P. (2016). Distinct hippocampal functional networks revealed by tractography-based parcellation. *Brain Structure and Function*, 221(6), 2999-3012. *indicates equal contribution

Barnett, A. J., Park, M. T. M., Pipitone, J., Chakravarty, M. M., & McAndrews, M. P. (2015). Functional and structural correlates of memory in patients with mesial temporal lobe epilepsy. *Frontiers in Neurology*, 6, 103.

Cohn, M., St-Laurent, M., **Barnett, A.**, & McAndrews, M. P. (2015). Social inference deficits in temporal lobe epilepsy and lobectomy: risk factors and neural substrates. *Social cognitive and affective neuroscience*, 10(5), 636-644.

Barnett, A. J., O'Neil, E. B., Watson, H. C., & Lee, A. C. (2014). The human hippocampus is sensitive to the durations of events and intervals within a sequence. *Neuropsychologia*, 64, 1-12.

McCormick, C., Protzner, A. B., **Barnett, A. J.**, Cohn, M., Valiante, T. A., & McAndrews, M. P. (2014). Linking DMN connectivity to episodic memory capacity: what can we learn from patients with medial temporal lobe damage? *NeuroImage: Clinical*, 5, 188-196.

Barnett, A, Marty-Dugas, J, McAndrews, MP. (2014) Advantages of sentence level fMRI language tasks in presurgical language mapping for temporal lobe epilepsy. *Epilepsy & Behavior*, 32, 114-120.

Book Chapters

Barnett, A.J., Ranganath, C. Learning and Memory. American Psychology Association Handbook of Neuropsychology. (in press).

McAndrews, M.P., **Barnett, A.J.** (2018). Clinical Utility of Resting State Functional MRI. The Neuroimaging of Brain Diseases: Structural and Functional Advances. Springer.

Presentations

Barnett, A.J. "Cortico-hippocampal organization and dynamics influence memory for complex events", WUNIC neuroimaging seminar lecture. Washington University, St. Louis. (Jan 2023).*

Barnett, A.J., Nguyen, M., Spargo, J., Yadav, R., Cohn-Sheehy, B., Ranganath, C. "Dynamic hippocampal-cortical interactions during event boundaries support retention of complex narrative events." Memory disorders research society, Philadelphia, PA. (Oct 2022).

Barnett, A.J. "Hippocampal-PMN interactions during encoding of complex narratives are associated with subsequent recall success and quality", School of Psychology, Sussex University. (May 2022).*

Barnett, A.J. "Cortico-hippocampal networks and episodic memory", Northwestern University, MRI Summer Speaker Series, Chicago, (July 2021).*

Barnett, A.J. "Organization of Cortico-Hippocampal Networks in the Human Brain", Hippocampus Journal Club, Albert Einstein University (June 2021).*

Barnett, A.J. "Cortico-hippocampal network architecture during rest and movie-viewing", Johns Hopkins PBS Early Career Colloquium, Baltimore, Maryland, (April 2021).

Barnett, A.J., "Organization of Cortico-Hippocampal Networks in the Human Brain" Context and Affective Memory Meeting. (April 2021).*

Barnett, A.J., C. Ranganath "Organization of Cortico-Hippocampal Networks in the Human Brain" Cognitive Neuroscience Society Annual Meeting. (March 2021).

Barnett, A.J., McAndrews, M.P. "Functional brain networks in temporal lobe epilepsy and their relation to cognition", Feindel Virtual Brain & Mind Seminar, Montreal, Quebec, (2020).*

Barnett A.J., Reilly W., Dimsdale-Zucker, H., Mizrak, M., Reagh, Z., Ranganath C. "Organization of cortico-hippocampal networks in the human brain", CIC Imaging Lecture Series, The Douglas Research Institute, Montreal, Quebec, (2020).*

Barnett, A.J. "Shared experiences shape shared neural responses" Cognition, Brain, & Behavior area seminar. Albuquerque, New Mexico, (2020).*

Barnett, A., Man, V., McAndrews, M.P. "Network Integration of the anterior and posterior hippocampus in patients with temporal lobe epilepsy", The Krembil Research Day, Toronto, Ontario, (2016).

Barnett, A., McAndrews, M.P. “Material-specific memory impairment in TLE is modulated by age of onset”, Toronto Area Memory Group Meeting, Toronto, Ontario, (2015).

Barnett, A., McAndrews, M.P. “Examining hippocampal and white matter abnormalities in patients with TLE using diffusion MRI”, Toronto Western Neuroimaging Rounds, Toronto, Ontario (2014).

Barnett, A., Watson, H.W., Lee, A. "Investigating the neural correlates underlying temporal duration memory”, Toronto Western Neuroimaging Rounds, Toronto, Ontario, (2013).

* denotes invited talk

Conference Abstracts/Posters

Barnett, A.J., Nguyen, M., Spargo, J., Yadav, R., Cohn-Sheehy, B., Ranganath, C. “Dynamic hippocampal-cortical interactions during event boundaries support retention of complex narrative events.” Society for Neuroscience, San Diego, CA (2022)

Barnett, A., Nguyen, M., Ranganath, C., “Multivoxel pattern reinstatement during immediate and delayed recall of naturalistic movie stimuli.”, Context and Episodic Memory Symposium, Philadelphia, Pennsylvania (2020).

Barnett, A., Reilly, W., Ranganath, C., “Community Detection of the default mode network in resting state fMRI reveals nested structure.”, Neuroscience 2019, Chicago, Illinois (2019).

Caravagio, F., Iwata, Y., **Barnett, A.J.**, Nakajima, S., Borlido, C., Plitman, E., Mihashi, Y., Kim, J., Gerretsen, P., Graff, A. “The effects of acute dopamine depletion on resting-state functional connectivity and striatal glutamate in healthy humans”, The American College of Neuropsychopharmacology, Hollywood, Florida (2018).

Barnett, A., Dimsdale-Zucker, H., Reagh, Z., Ranganath, C. “Individual differences in source memory are related to white matter microstructure in healthy young adults”, Neuroscience 2018, San Diego, California (2018).

Dimsdale-Zucker, H.R., Kim, K., **Barnett, A.,** Hsieh, L-T., Reagh, Z.M., Ranganath, C. “Relationships between individual electroencephalography and resting state signatures of memory for items and contexts”, Neuroscience 2018, San Diego, California (2018).

Audrain, S., **Barnett, A.**, McAndrews, M.P. “Predicting post-operative language ability using connectivity measures in temporal lobe epilepsy”, Organization for Human Brain Mapping, Vancouver, British Columbia (2017).

Barnett, A., Man, V., McAndrews, M.P. “Network Integration of the anterior and posterior hippocampus in patients with temporal lobe epilepsy”, Organization for Human Brain Mapping, Switzerland, Geneva. (2016).

Barnett, A., McAndrews, M.P. “Behavioural Evidence of Memory Adaptation in patients with unilateral Temporal Lobe Epilepsy”, Canadian Epilepsy Research Initiative Retreat 2015, Canada, Toronto, Ontario (2015).

Barnett, A., McAndrews, M.P. “Examining hippocampal and white matter abnormalities in patients with TLE using diffusion MRI”, Society for Neuroscience 2014, United States, Washington, D.C. (2014).

Barnett, A., Watson, H.W., Lee, A. "Investigating the neural correlates underlying temporal duration memory", Society for Neuroscience 2013, United States, California, San Diego. (2013).

Barnett, A., Pipitone, J., Park, M.T., Chakravarty, M.M., McAndrews, M.P. "Analysis of neuroimaging indicators of functional integrity of the MTL in Temporal Lobe Epilepsy", Organization for Human Brain Mapping, United States, Washington, Seattle. (2013).

Barnett, A., McAndrews, M.P. "Frontal and temporal-lobe activation in word retrieval in patients with temporal lobe epilepsy", Cognitive Neuroscience Society Annual 2012 Meeting, United States, Illinois, Chicago. (2012).

Barnett, A., McAndrews, M.P. "Investigation of the methods used for language lateralization in patients with temporal lobe epilepsy", UHN Allied Health Annual Research Day, Canada, Ontario, Toronto. (2012).

Barnett, A., McAndrews, M.P. "Memory functioning in patients with temporal lobe epilepsy: Contribution of the medial temporal lobes beyond the hippocampus", Southern Ontario Neuroscience Association Annual Meeting, Toronto, Ontario. (2012).

Honours and Awards

2020	Human Brain Mapping Editors' Choice Award
2018	Natural Sciences and Engineering Research Council Postdoctoral Fellowship ($90,000)
2016	ORT Travel Award, Krembil Research Institute ($500) Doctoral Completion Award, University of Toronto ($5180) 1st Place Award, Oral Presentation, The Krembil Research Day ($75)
2015	Morris Moscovitch Award, Toronto Area Memory Group ($75)
2014	Ontario Graduate Scholarship ($15,000)
2013	School of Graduate Studies Conference Grant ($500)
2012	School of Graduate Studies Conference Grant ($500) Allied Health Travel Grant ($1000)
2011 – Present	University of Toronto Fellowship ($3500 annually for 5 years)
2010	James A. Priestley Scholarship ($750)
2009 – 2010	Dean's Honor Roll
2007 – 2008	Millennium Scholarship ($2000)
2006	Linda Sagar Award ($2500) Governor General's Award Queen Elizabeth Aiming for the Top Scholarship ($3500) Class Valedictorian

Peer Review for Journals

Nature Communications	NeuroImage	Pain
Human Brain Mapping	Neurocase	eLife
Cerebral Cortex	Journal of Neuroimaging	Brain Sciences
	NeuroImage: Clinical	Hippocampus

Neurobiology of Learning and Memory | Neuropsychologia | Frontiers in Neurology

Teaching Experience

2022 – Present	Course Instructor – Cognitive Neuroscience, University of Toronto – Cognitive Dysfunction in Neurological Disorders, University of Toronto
2018 – 2019	Course Instructor – Memory and Plasticity Mentorship Program, University of California, Davis
2018	Guest Lecturer – Introduction to Neuroimaging – Diffusion MRI, University of California, Davis
2018	Guest Lecturer – Introduction to Psychology – Working memory, University of California, Davis
2016	Course Instructor – Cognitive Neuroscience, University of Toronto
2015 – 2016	Teaching Assistant – Cognitive Neuroscience, University of Toronto
2014	Teaching Assistant – Neurobiology of Learning and Memory, University of Toronto
2014	Teaching Assistant – Introduction to Perception, University of Toronto
2013 – 2014	Teaching Assistant – Introduction to Abnormal Psychology, University of Toronto
2011 – 2013	Teaching Assistant – Neurochemical Basis of Behaviour, University of Toronto

Student and research assistant supervision

2022-present	Joshua Koh, Graduate Student, University of Toronto, primary supervisor
2022-present	Katrina Chini, Graduate Student, University of Toronto, Outside project supervisor
2022-present	Ariana Yuom, Graduate Student, University of Toronto, Graduate committee advisor
2022-present	Aafiya Somani, Research Assistant, University of Toronto
2022-present	Joseph Merante, Research Assistant, University of Toronto
2022-present	Marcus Meng, Research Assistant, University of Toronto
2019-2021	Radhika Dhanak, Junior Specialist, UC Davis
2019- 2021	James Spargo, Research Assistant, UC Davis
2019- 2021	Reesha Yadav, Research Assistant, UC Davis
2018-2021	Mitchell Nguyen, Junior Specialist, UC Davis

2018-2020	Angelique Delarazan, Junior Specialist, UC Davis
2019	Elizabeth Torres, Predoctoral Success Initiative Summer student, UC Davis
2018-2019	Laura Terlau, visiting undergraduate researcher, UC Davis
2017-2018	Nichole Bouffard, Junior Specialist, UC Davis
2016-present	Lizbeth Ayoub, Masters Student, University of Toronto
2014-2015	Sonja Stojanovski, Research Assistant, University of Toronto
2013-2014	Michael Humeniuk, Research Assistant, University of Toronto
2012-2013	Jeremy Marty-Dugas, Research Assistant, University of Toronto

Volunteer Positions and Outreach

2021-present	Ad Hoc Member – Organization for Human Brain Mapping Diversity and Inclusion Committee
2018	Guest Speaker – Seminar Outreach for Minority Advocacy, UC Davis
2016 – 2018	Secretary – Organization for Human Brain Mapping Student and Postdoc Special Interest group
2013 – 2015	Meeting Coordinator – Toronto Western Neuroimaging Rounds
2012 – 2013	Graduate Student Union Representative – Psychology Graduate Student Association
2011 – 2013	Orientation Coordinator – Psychology Graduate Student Association
2011 – 2013	Volunteer exhibiter – Science Rendezvous (largest science festival in Canada)