

John A. E. Anderson

Researcher: Cognitive Neuroscience of Aging

Studying the aging brain and mind

Research Focus

My research examines factors affecting attention and memory in the aging process. Cognition is often described in terms of point estimates. One can for instance, either “pass” or “fail” the MMSE. However factors affecting ability such as sleep, time of day, emotions, stress, and physical health all have bearing on an individual’s performance. Performance is therefore closer to a spectrum than a point. A goal of my research is to help understand how much variance these factors contribute individually and collectively so that researchers and clinicians can better assess a person’s true ability.

Education & Employment

2018-present **Postdoctoral Fellowship**, *Voineskos Lab, Centre for Addiction and Mental Health*, Toronto, Ontario Canada.

2016-2018 **Postdoctoral Fellowship**, *Bialystok Lab, York University*, Toronto, Ontario Canada.

2016 **Ph.D. Psychology**, *University of Toronto*, Toronto, Ontario Canada.

2010 **M.A. Psychology**, *University of Toronto*, Toronto, Ontario Canada.

2008 **BS.c. (Hons.) Psychology/History/English**, *University of Toronto*, Toronto, Ontario Canada.

Honours and Awards

2019 **CIHR Institute of Aging Fellowship Prize of Excellence in Research on Aging**.

2019 - 2022 **CIHR Postdoctoral Fellowship**.

2014 - 2015 **Doctoral Completion Award**.

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2014 - 2015 **Finkler Graduate Student Fellowship.**

2011 - 2014 **NSERC Postgraduate Graduate Scholarship Doctoral level.**

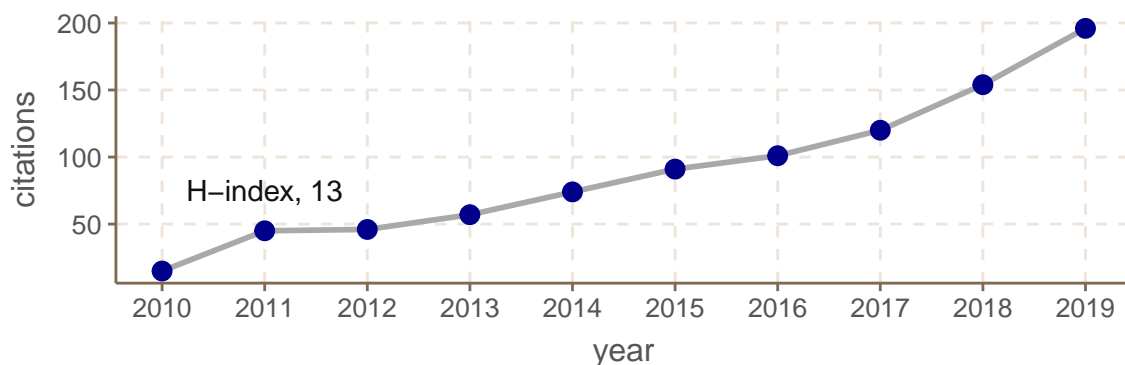
2011 - 2014 **Ontario Graduate Scholarship (declined).**

2010 - 2011 **NSERC Canada Graduate Scholarship Master's Level.**

2009 - 2010 **Helen Sawyer Hogg Graduate Admission Award.**

2007 **Sickkids Summer Research Program Poster Prize.**

2004 - 2008 **Albert C. Strickler MD Award for academic achievement in the face of a disability.**



Journal Articles (28, 10 First Author)

○ citations

2019 **Intrinsic neurocognitive network connectivity differences between normal aging and mild cognitive impairment are associated with cognitive status and age**, MD Sullivan, JAE Anderson, GR Turner, RN Spreng, ..., Neurobiology of aging.

○ 2

2019 **Sex differences in the relationship between cardiorespiratory fitness and brain function in older adulthood**, CJ Dimech, JAE Anderson, AW Lockrow, RN Spreng, GR Turner, Journal of Applied Physiology.

○ 1

2019 **The relation between brain signal complexity and task difficulty on an executive function task**, JG Grundy, RM Barker, JAE Anderson, JM Shedden, Elsevier.

○ 1

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- 2019 **Time-Saving Comparison of Wound Measurement Between the Ruler Method and the Swift Skin and Wound App**, Y Au, B Beland, JAE Anderson, D Sasseville, SC Wang, *Journal of Cutaneous Medicine and Surgery*.
 o 0
- 2018 **The language and social background questionnaire: Assessing degree of bilingualism in a diverse population**, JAE Anderson, L Mak, AK Chahi, E Bialystok, *Behavior research methods*.
 o 42
- 2018 **Effects of bilingualism on white matter integrity in older adults**, JAE Anderson, JG Grundy, J De Frutos, RM Barker, C Grady, E Bialystok, *NeuroImage*.
 o 26
- 2018 **Language and cognitive control networks in bilinguals and monolinguals**, JAE Anderson, A Chung-Fat-Yim, B Bellana, G Luk, E Bialystok, *Neuropsychologia*.
 o 12
- 2018 **Who is bilingual? Snapshots across the lifespan**, JAE Anderson, K Hawrylewicz, E Bialystok, *Bilingualism: Language and Cognition*.
 o 4
- 2018 **Do young adults show conceptual knowledge of previous distractors?**, T Amer, JAE Anderson, L Hasher, *Memory*.
 o 3
- 2018 **Interpreting cognitive decline in the face of cognitive reserve: Does bilingualism affect cognitive aging?**, E Bialystok, JAE Anderson, JG Grundy, *Linguistic Approaches to Bilingualism*.
 o 1
- 2017 **Neural correlates of cognitive processing in monolinguals and bilinguals**, JG Grundy, JAE Anderson, E Bialystok, *Annals of the New York Academy of Sciences*.
 o 43
- 2017 **Point-of-care wound visioning technology: reproducibility and accuracy of a wound measurement app**, SC Wang, JAE Anderson, R Evans, K Woo, B Beland, D Sasseville, ..., *PloS one*.
 o 15
- 2017 **Neuropsychological assessments of cognitive aging in monolingual and bilingual older adults**, JAE Anderson, S Saleemi, E Bialystok, *Journal of neurolinguistics*.
 o 13
- 2017 **Bilinguals have more complex EEG brain signals in occipital regions than monolinguals**, JG Grundy, JAE Anderson, E Bialystok, *NeuroImage*.
 o 10

- 2017 **Task-linked diurnal brain network reorganization in older adults: A graph theoretical approach**, *JA E Anderson, S Sarraf, T Amer, B Bellana, V Man, KL Campbell, ...*, Journal of cognitive neuroscience.
 o 8
- 2017 **Commentary: The Relationship of Bilingualism Compared to Monolingualism to the Risk of Cognitive Decline or Dementia: A Systematic Review and Meta-Analysis**, *JG Grundy, JA E Anderson*, Frontiers in aging neuroscience.
 o 3
- 2016 **DeepAD: Alzheimer' s disease classification via deep convolutional neural networks using MRI and fMRI**, *S Sarraf, G Tofghi*, BioRxiv.
 o 61
- 2016 **Laterality effects in functional connectivity of the angular gyrus during rest and episodic retrieval**, *B Bellana, Z Liu, JA E Anderson, M Moscovitch, CL Grady*, Neuropsychologia.
 o 22
- 2016 **Age differences in the neural correlates of distraction regulation: A network interaction approach**, *T Amer, JA E Anderson, KL Campbell, L Hasher, CL Grady*, NeuroImage.
 o 13
- 2016 **Patient perception of wound photography**, *SC Wang, JA E Anderson, DVB Jones, R Evans*, International wound journal.
 o 7
- 2016 **Age-related deficits in inhibition in figure-ground assignment**, *JA E Anderson, MK Healey, L Hasher, MA Peterson*, Journal of vision.
 o 6
- 2014 **Timing is everything: Age differences in the cognitive control network are modulated by time of day.**, *JA E Anderson, KL Campbell, T Amer, CL Grady, L Hasher*, Psychology and aging.
 o 59
- 2014 **Brain network extraction from probabilistic ICA using functional Magnetic Resonance Images and advanced template matching techniques**, *S Sarraf, C Saverino, H Ghaderi, J Anderson*.
 o 19
- 2014 **Left to Recollect? Laterality Effects in Whole-Brain Functional Connectivity of the Angular Gyrus During Rest and Recall**, *B Bellana, Z Liu, J Anderson, M Moscovitch, C Grady*, Canadian Journal of Experimental Psychology.
 o 0
- 2011 **Neural correlates of recognition memory for emotional faces and scenes**, *ML Keightley, KS Chiew, JA E Anderson, CL Grady*, Social Cognitive and Affective Neuroscience.
 o 55

- 2010 **A multivariate analysis of age-related differences in default mode and task-positive networks across multiple cognitive domains**, *CL Grady, AB Protzner, N Kovacevic, SC Strother, B Afshin-Pour, ..., Cerebral Cortex.*
 - 284
- 2010 **Distinct neural correlates for two types of inhibition in bilinguals: Response inhibition versus interference suppression**, *G Luk, JAE Anderson, FIM Craik, C Grady, E Bialystok, Brain and cognition.*
 - 201
- 2009 **Behavioral Variability Reveals Broad Network Expression in Young and Older Adults**, *DD Garrett, CL Grady, N Kovacevic, M Wojtowicz, J Anderson, Neuroimage.*
 - 0

--- Departmental Talks

- 2018 **Freeing bilingualism's form: How a lifetime of second language experience remodels the brain**, *Rotman Rounds, Rotman Research Institute, Toronto, Canada.*
- 2017 **fMRI analysis of older adult working memory performance**, *MRI Day, York University, Toronto, Canada.*
- 2017 **Imaging the Aging Bilingual Brain**, *McMaster, Linguistics Department (Invited Talk), Hamilton, Canada.*
- 2017 **Age Effects in Cognition, Now You See Them, Now You Don't**, *Ryerson University, Brain, perception, and cognition rounds (Invited Talk), Toronto, Canada.*
- 2015 **Only Time Will Tell: Time of Day and the Cognitive Neuroscience of Executive Control in Aging**, *Rotman Rounds, Rotman Research Institute, Toronto, Canada.*
- 2014 **Timing Is Everything: Age Differences in the Cognitive Control Network Are Modulated by Time of Day**, *Baycrest Psychology Rounds, Toronto, Canada.*
- 2014 **The Brain Resonant: Aging and Time of Day Alters the Frequency of BOLD Fluctuations**, *Toronto Western Imaging Rounds session, University of Toronto, Toronto, Canada.*
- 2014 **The Brain Resonant: Aging and Time of Day Alters the Frequency of BOLD Fluctuations**, *Ebbinghaus Empire Datablitz session, University of Toronto, Toronto, Canada.*

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- 2012 **Practical analysis of correlational data in Excel**, *PSY201 Statistics I*, University of Toronto, Toronto, Canada.
- 2012 **Age differences in the frontoparietal cognitive control network: Implications for distractibility**, *fMRI Rounds at Baycrest Hospital*, Toronto, Canada.
- 2011 **Introduction to the independent sample t-test and resampling methods**, *PSY202 Statistics II*, University of Toronto, Toronto, Canada.

Conference Presentations (Asterisks Denote First Author Presentations)

- 2019 **Anderson J.A.E.**, *Language and social backgrounds across the lifespan: a retrospective and a view forward**, Capturing and Quantifying Individual Differences in Bilingualism Workshop in Tromsø; Keynote Speaker.
- 2018 **Dimech, C.J., Anderson, J.A.E., Lockrow, A.W., Spreng, R.N., & Turner, G.R.**, *Sex differences in the relationship between cardiorespiratory fitness and brain function in older adulthood*, International Conference on Promoting Healthy Brain Aging and Preventing Dementia: Research and Translation Banff, Alberta, Canada.
- 2018 **Anderson J.A.E.**, *Modifiable Factors Affecting Neural Decline in Aging: The Role of Bilingual Experience**, Cognitive Reserve: An interdisciplinary workshop (University of Geneva); invited talk.
- 2016 **Grundy J.G., Anderson J.A.E., Bialystok, E.**, *Brain signal variability in monolinguals and bilinguals**, Society for Neuroscience Annual Meeting.
- 2016 **Anderson J.A.E., Campbell K.L., Hasher L., Grady C.**, *Time of Day Differences in Resting & Task Functional Connectivity in Older Adults**, OHBM Annual Meeting.
- 2014 **Anderson J.A.E., Churchill .W., Campbell K.L., Hasher L., Strother S., Grady C.**, *A PLS Spectral Analysis Reveals Time Of Day Differences In Endogenous Bold Signal In Older Adult Resting & Task fMRI**, OHBM Annual Meeting.
- 2014 **Anderson J.A.E., Churchill .W., Campbell K.L., Hasher L., Strother S., Grady C.**, *A PLS Spectral Analysis Reveals Time Of Day Differences In Endogenous Bold Signal In Older Adult Resting & Task fMRI**, Rotman Research Conference.

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- 2014 **Bellana, B., Anderson J., Moscovitch, M., Grady, C. L.**, *Left to Recollect? Laterality Differences in Resting Whole-Brain Functional Connectivity of the Angular Gyrus*, Rotman Research Conference.
- 2014 **Sarraf, S., Saverino, C., Ghaderi, H., & Anderson, J.**, *Brain network extraction from probabilistic ICA using functional Magnetic Resonance Images and advanced template matching techniques*, In Electrical and Computer Engineering (CCECE), 2014 IEEE 27th Canadian Conference on (pp. 1-6). IEEE..
- 2014 **Sekeres, M., McKelvey, K., St-Laurent, M., Blommestein, J., Anderson, J., Winocur, G., Moscovitch, M., Grady, C.**, *Brain Activations Predicted by The Transformation Theory of Memory Consolidation*, Rotman Research Conference.
- 2013 **Anderson, J.A.E., Campbell, K.L., Grady, C.L., Hasher, L.**, *Time of Day Affects Functional Connectivity in the Elderly**, OHBM Annual Meeting.
- 2012 **Anderson, J.A.E., Campbell, K.L., Grady, C.L., Hasher, L.**, *Timing Is Everything: Age Differences In The Frontoparietal Cognitive Control Network Are Modulated By Time Of Day**, Society for Neuroscience.
- 2010 **Luk, G., Anderson, J., Bialystok, E., Craik. F., Grady, C.**, *Distinct neural correlates for monolinguals and bilinguals for efficient cognitive control*, Cognitive Neuroscience Society.
- 2009 **Luk, G., Anderson, J., Bialystok, E., Craik. F., Grady, C.**, *Distinct neural correlates for cognitive control and motor inhibition in bilinguals*, Society for Neuroscience.
- 2009 **Garrett D, Grady CL, Kovacevic N, Wojtowicz M, Anderson J.**, *Behavioural Variability Reveals Broad Network Expression in Young and Older Adults*, OHBM Annual Meeting.
- 2007 **Anderson, J. A., Willoughby, K., & Joanne, R.**, *Little Time Travellers: Time of Day Effects on Autobiographical Memory in School Age Children**, Sickkids Symposium. Toronto: Sickkids..

F1000 Reviews as an Associate Faculty Member

- 2015 **Grady C and Anderson J**, *F1000Prime Recommendation of [Chan MY et al., Proc Natl Acad Sci U S A 2014, 111(46):E4997-5006]. In F1000Prime; DOI: 10.3410/f.725223424.793504952. F1000Prime.com/725223424#eval793504952.*

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- 2014 **Grady C and Anderson J**, *F1000Prime Recommendation of [Zhou J et al., Neuron 2012, 73(6):1216-27]. In F1000Prime, 24 Jul 2014; DOI: 10.3410/f.718497895.793497497. F1000Prime.com/718497895#eval793497497.*
- 04/25/2014 **Grady C and Anderson J**, *F1000Prime Recommendation of [Hsieh LT et al., Neuron 2014, 81(5):1165-78]. In F1000Prime; DOI: 10.3410/f.718304626.793493725. F1000Prime.com/718304626#eval793493725.*
- 2013 **Grady C and Anderson J**, *F1000Prime Recommendation of [Mander BA et al., Nat Neurosci 2013, 16(3):357-64]. In F1000Prime; DOI: 10.3410/f.717983146.793485678. F1000Prime.com/717983146#eval793485678.*
- 2013 **Grady C and Anderson J**, *F1000Prime Recommendation of [Mueller S et al., Neuron 2013, 77(3):586-95]. In F1000Prime; DOI: 10.3410/f.717993419.793477976. F1000Prime.com/717993419#eval793477976.*
- 2013 **Grady C and Anderson J**, *F1000Prime Recommendation of [Staresina BP et al., Nat Neurosci 2012, 15(8):1167-73]. In F1000Prime; DOI: 10.3410/f.717982096.793471989. F1000Prime.com/717982096#eval793471989.*
- 2012 **Grady C and Anderson J**, *F1000Prime Recommendation of [Seidl KN et al., J Neurosci 2012, 32(34):11812-9]. In F1000Prime; DOI: 10.3410/f.717955568.793460584. F1000Prime.com/717955568#eval793460584.*
- 2012 **Grady C and Anderson J**, *F1000Prime Recommendation of [Macdonald SW et al., J Neurosci 2012, 32(24):8186-91]. In F1000Prime; DOI: 10.3410/f.717948606.793453707. F1000Prime.com/717948606#eval793453707.*
- 2012 **Grady C and Anderson J**, *F1000Prime Recommendation of [Jackson JD et al., Neuropsychologia 2012, 50(3):357-66]. In F1000Prime; DOI: 10.3410/f.13896956.15346056. F1000Prime.com/13896956#eval15346056.*
- 2012 **Grady C and Anderson J**, *F1000Prime Recommendation of [Kong D et al., Neuroimage 2012, 61(1):50-5]. In F1000Prime; DOI: 10.3410/f.714797858.790202845. F1000Prime.com/714797858#eval790202845.*
- 2012 **Grady C and Anderson J**, *F1000Prime Recommendation of [Qin S et al., J Neurosci 2012, 32(12):4032-41]. In F1000Prime, ; DOI: 10.3410/f.14263976.15777071. F1000Prime.com/14263976#eval15777071.*
- 2011 **Grady C and Anderson J**, *F1000Prime Recommendation of [Jost K et al., Cereb Cortex 2011, 21(5):1147-54]. In F1000Prime; DOI: 10.3410/f.13395969.14765093. F1000Prime.com/13395969#eval14765093.*

- 2011 **Grady C and Anderson J**, *F1000Prime Recommendation of [Tamber-Rosenau BJ et al., J Cogn Neurosci 2011, 23(10):2905-19]. In F1000Prime; DOI: 10.3410/f.13335006.14702062. F1000Prime.com/13335006#eval14702062.*

Teaching Assistantships (University of Toronto)

- Biological Psychology
- Introduction to Psychology
- Environmental Psychology
- Statistics I - 7 Times
- Statistics II

Courses Taught

- 2018 **PSYC2021, Introduction to Statistics**, York University, Toronto, ON, CA.
- Winter 2017 **PSYC2021, Introduction to Statistics**, York University, Toronto, ON, CA.
- Fall 2017 **PSYC2021, Introduction to Statistics**, York University, Toronto, ON, CA.
- 2016 **PSYC3260, Introduction to Cognition**, York University, Toronto, ON, CA.
- 2016 **PSYC2021, Introduction to Statistics**, York University, Toronto, ON, CA.
- 2015 **PSY201HF, Introduction to Statistics**, University of Toronto, Toronto, ON, CA.
- 2014 **PSY201HF, Introduction to Statistics**, University of Toronto, Toronto, ON, CA.

References (Ordered by Recency)

- Dr. Aristotle Voineskos **Professor Department of Psychiatry**, University of Toronto, 250 College, Toronto, ON M5T 1L8, aristotle.voineskos@camh.ca.
- Dr. Ellen Bialystok **Distinguished Research Professor Department of Psychology**, York University 5030 TEL Building York University 4700 Keele St., Toronto, ON, M4P 1P3, ellenb@yorku.ca.
- Dr. Cheryl Grady **Professor Departments of Psychology and Psychiatry**, University of Toronto 3560 Bathurst Street, Toronto, ON M6A 2E1, cgrady@rotman-baycrest.on.ca.

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Dr. Lynn **Professor Department of Psychology**, *University of Toronto 100 St. George*
Hasher *Street Toronto, ON M5S 3G3*, hasher@psych.utoronto.ca.