



Jacob Vogel

Education

- 2015–2020 **PhD in Neuroscience**, *McGill University*, Montreal, QC.
Supervisor: Alan C Evans
- 2010–2012 **BA in Neuroscience (completed)**, *Hampshire College*, Amherst, MA.
- 2007–2009 **BA (started)**, *Temple University*, Philadelphia, PA.

Experience

Research

- 2016–2020 **PhD Student**, *McGill Centre for Integrative Neuroimaging, McGill University*, Montreal, Canada.
Supervisor: Alan C Evans.
Thesis: Data-driven network models to characterize the distribution of tau in the brain in Alzheimer's disease
- 2017 **Visiting Scholar**, *VU University Medical Center*, Amsterdam, Netherlands.
Principal Investigators: Rik Ossenkopple, Philip Scheltens
Project: Data-driven clustering of tau-PET data
- 2015 **PhD Rotation Student**, *SIMEXP Laboratory, Centre de recherche de l'Institut universitaire de gériatrie de Montréal*, Montreal, Canada.
Principal Investigator: Pierre Bellec
Project: Comparison of resting-state BOLD signal from fMRI and ASL scans
- 2015 **PhD Rotation Student**, *StoP-AD Centre, Douglas Mental Health University Institute*, Montreal, Canada.
Principal Investigators: Sylvia Villeneuve, John Breitner
Project: Predicting time to symptom onset in a sample of individuals with a family history of Alzheimer's disease
- 2012–2015 **Lab Manager/Research Assistant**, *Jagust Lab, Helen Wills Neuroscience Institute, University of California*, Berkeley, USA.
Principal Investigator: Bill Jagust
Project: Relationships between Alzheimer's disease biomarkers and cognitive decline in healthy elderly individuals

Teaching

- 2018-2020 **Organizer/Instructor**, *Montreal BrainHack School*, Montreal, Canada.
<https://brainhackmtl.github.io/school2019/>
- 2018 **Instructor**, *Montreal Artificial Intelligence and Neuroscience 2018 Conference Satellite Event: Machine Learning/Deep Learning Workshop*, Montreal, Canada.
Course available on github: <https://github.com/brainhack101/introML>
- 2018 **Instructor**, *Resting State and Brain Connectivity 2018 Conference Satellite Event: Machine Learning/Deep Learning Workshop*, Montreal, Canada.
Course available on github: https://github.com/illdopejake/RS2018_Nilearn_tutorial
- 2017-2018 **Organizer/Instructor**, *McGill Summer Academy: Neuroscience Track*, Montreal, Canada.
- 2017 **Instructor/Curriculum Designer**, *Beginner's Python Course at VU University Medical Centre*, Amsterdam, Netherlands.
Course available on github: <https://github.com/illdopejake/pycourse>
- 2014-2015 **Mentor for Undergraduate Honor's Thesis Project**, *University of California*, Berkeley, USA.
Student: April Hishinumna. Project: Association of Baseline Beta Amyloid with Longitudinal Glucose Metabolism and Grey Matter Volume in Cognitively Normal Elderly
- 2010 **Undergraduate Teaching Assistant**, *Hampshire College*, Amherst, USA.
Course: Music, Mind and Brain

Co-curricular

- 2016 **External Affairs Executive**, *Graduate Student Association for Neuroscience, McGill University*, Montreal, Canada.
- 2015 **Academic Officer**, *Graduate Student Association for Neuroscience, McGill University*, Montreal, Canada.
- 2015-2017 **Host and Organizer**, *Post Graduate Student Society Trivia Night, McGill University*, Montreal, Canada.

Academic Interests

- Neurodegenerative disease
- Transcriptomics
- Open Science
- Network models
- Polygenetic Risk Scores
- Aging/Lifespan

Skills

OS	Mac, Linux	Languages	Python, R, MatLab (reluctantly)
Modalities	sMRI, rsfMRI, PET	Software	FSL, ANTs, SPM, nilearn
Specialties	Machine learning, imaging genetics, data wrangling, longitudinal analysis		

Peer Review

Journals

- Nature Communications (x3)

- JAMA Neurology
- Neuroimage (x4)
- Cerebral Cortex
- Neuroimage: Clinical (x2)
- Neurobiology of Aging (x4)
- Alzheimer's & Dementia: DADM
- Alzheimer's Research & Therapy (x3)
- Annals CTN
- Theranostics
- Brain (co-review)

Granting Agencies

- Alzheimer's Society UK

Open Science Contributions

Published Datasets

- [TauRUS Atlas](#)
- [MAIN Nilearn Tutorial Dataset](#)

Contributed libraries

- [Nilearn](#)

Secured Funding

- 2017-2020 **Vanier CGS Doctoral Award (\$150,000 CAD)**, *Canadian Institute of Health Research*.
- 2017-2019 **Alzheimer's Society Canada Research Competition (\$60,000 CAD) (declined)**, *Alzheimer's Society Canada*.
- 2017 **Alzheimer Nederland Fellowship (10,000 Euro)**, *Alzheimer Nederland*.
- 2015 **McGill Rotation Student Stipend (\$30,000 CAD)**, *McGill University*.
- 2015-2018 **Stop-AD PhD Scholarship (\$105,000 CAD) (Declined)**, *Prevent-AD Centre*.
- 2012 **Culture, Brain & Development Fellowship Award (\$2500)**, *Hampshire College*.

Distinctions

- 2020 **Young Investigator Award**, *Human Amyloid Imaging Conference*.

Awards

- 2019 – Integrated Program in Neuroscience Star Award
- 2019 – Human Amyloid Imaging Conference Travel Fellowship
- 2018 – Alzheimer's Association International Conference Travel Fellowship
- 2018 – McGill Graduate Mobility Award
- 2017 – Integrated Program in Neuroscience GREAT Travel Award

- 2016 – Alzheimer’s Association International Conference Poster Finalist
- 2016 – Alzheimer’s Imaging Consortium Travel Award
- 2016 – Alzheimer’s Association International Conference Travel Fellowship
- 2015 – McGill Recruitment Award
- 2012 – Culture, Brain & Development Project Fund
- 2011 – Culture, Brain & Development Internship Fund
- 2011 – Hampshire College Tara Nelson Award
- 2011 – Ray and Lorna Coppinger Endowment Grant
- 2011 – Hampshire College Merit Prize
- 2010 – Hampshire College Cognitive Science Grant
- 2010 – Hampshire College Merit Prize

Publications

- [1] Justine Y Hansen, Ross D Markello, **Vogel, Jacob W**, Jakob Seidlitz, Danilo Bzdok, and Bratislav Misic. Molecular signatures of cognition and affect. *bioRxiv*, pages 1–21, 2020.
- [2] **Vogel, Jacob W.**, Yasser Iturria-Medina, Olof T. Strandberg, Ruben Smith, Elizabeth Levitis, Alan C. Evans, and Oskar Hansson. Spread of pathological tau proteins through communicating neurons in human Alzheimer’s disease. *Nature communications*, 11(1):2612, 2020.
- [3] Colin Groot, B.T. Thomas Yeo, **Vogel, Jacob W**, Xiuming Zhang, Nanbo Sun, Elizabeth C Mormino, Yolande A.L Pijnenburg, Bruce L Miller, Howard J Rosen, Renaud La Joie, Frederik Barkhof, Philip Scheltens, Wiesje M van der Flier, Gil D Rabinovici, and Rik Ossenkoppele. Latent atrophy factors related to phenotypical variants of posterior cortical atrophy. *Neurology*, page 10.1212/WNL.000000000010362, jul 2020.
- [4] **Vogel, Jacob W**, Renaud La Joie, Michel J Grothe, Alexandr Diaz-Papkovich, Andrew Doyle, Etienne Vachon-Presseau, Claude Lepage, Reinder Vos de Wael, Rhalena A Thomas, Yasser Iturria-Medina, Boris Bernhardt, Gil D Rabinovici, and Alan C Evans. A molecular gradient along the longitudinal axis of the human hippocampus informs large-scale behavioral systems. *Nature Communications*, 11(1):960, dec 2020.
- [5] Alexa Pichet Binette, Julie Gonneaud, **Vogel, Jacob W.**, Renaud La Joie, Pedro Rosa-Neto, D. Louis Collins, Judes Poirier, John C.S. Breitner, Sylvia Villeneuve, Etienne Vachon-Presseau, Jennifer Tremblay-Mercier, and Cécile Madjar. Morphometric network differences in ageing versus Alzheimer’s disease dementia. *Brain*, 143(2):635–649, 2020.
- [6] AmanPreet Badhwar, Yannik Collin-Verreault, Pierre Orban, Sebastian Urchs, Isabelle Chouinard, **Vogel, Jacob**, Olivier Potvin, Simon Duchesne, and Pierre Bellec. Multivariate consistency of resting-state fMRI connectivity maps acquired on a single

individual over 2.5 years, 13 sites and 3 vendors. *NeuroImage*, 205:116210, jan 2020.

- [7] Niklas Mattsson, Sebastian Palmqvist, Erik Stomrud, **Vogel, Jacob**, and Oskar Hansson. Staging β -Amyloid Pathology With Amyloid Positron Emission Tomography. *JAMA Neurology*, 76(11):1319, nov 2019.
- [8] Yeo Jin Kim, Seong-Kyoung Cho, Hee Jin Kim, Jin San Lee, Juyoun Lee, Young Kyoung Jang, **Vogel, Jacob W.**, Duk L. Na, Changsoo Kim, and Sang Won Seo. Data-driven prognostic features of cognitive trajectories in patients with amnesic mild cognitive impairments. *Alzheimer's Research & Therapy*, 11(1):1–9, 2019.
- [9] **Vogel, Jacob W.**, Niklas Mattsson, Yasser Iturria-Medina, Olof T. Strandberg, Michael Schöll, Christian Dansereau, Sylvia Villeneuve, Wiesje M. van der Flier, Philip Scheltens, Pierre Bellec, Alan C. Evans, Oskar Hansson, and Rik Ossenkoppele. Data-driven approaches for tau-PET imaging biomarkers in Alzheimer's disease. *Human Brain Mapping*, 40(2):638–651, 2019.
- [10] Byoung Seok Ye, Hee Jin Kim, Yeo Jin Kim, Na Yeon Jung, Jin San Lee, Juyoun Lee, Young Kyoung Jang, Jin Ju Yang, Jong Min Lee, **Vogel, Jacob W.**, Duk L. Na, and Sang Won Seo. Longitudinal outcomes of amyloid positive versus negative amnesic mild cognitive impairments: A three-year longitudinal study. *Scientific Reports*, 8(1):1–11, 2018.
- [11] Anna Catharina Van Loenhoud, Colin Groot, **Vogel, Jacob William**, Wiesje Maria Van Der Flier, and Rik Ossenkoppele. Is intracranial volume a suitable proxy for brain reserve? Rik Ossenkoppele. *Alzheimer's Research and Therapy*, 10(1):1–12, 2018.
- [12] **Vogel, Jacob W.**, Etienne Vachon-Presseau, Alexa Pichet Binette, Angela Tam, Pierre Orban, Renaud La Joie, Mélissa Savard, Cynthia Picard, Judes Poirier, Pierre Bellec, John C S Breitner, and Sylvia Villeneuve. Brain properties predict proximity to symptom onset in sporadic Alzheimer's disease. *Brain*, 141(6):1871–1883, jun 2018.
- [13] Sylvia Villeneuve, **Vogel, Jacob W.**, Julie Gonneaud, Alexa Pichet Binette, Pedro Rosa-Neto, Serge Gauthier, Randall J. Bateman, Anne M. Fagan, John C. Morris, Tammie L.S. Benzinger, Sterling C. Johnson, John C.S. Breitner, and Judes Poirier. Proximity to parental symptom onset and amyloid- β burden in sporadic Alzheimer disease. *JAMA Neurology*, 75(5):608–619, 2018.
- [14] Pierre Orban, Angela Tam, Sebastian Urchs, Melissa Savard, Amanpreet Badhwar, Christian Dansereau, **Vogel, Jacob**, and Amir Schmucl. Subtypes of functional brain connectivity as early markers of neurodegeneration in Alzheimer ' s disease. *Biorxiv*, pages 1–28, 2017.
- [15] **Vogel, Jacob W.**, Monika Varga Doležalová, Renaud La Joie, Shawn M. Marks, Henry D. Schwimmer, Susan M. Landau, and William J. Jagust. Subjective cognitive decline and β -amyloid burden predict cognitive change in healthy elderly. *Neurology*, 89(19):2002–2009, nov 2017.

- [16] Anne S. Berry, Vyoma D. Shah, Suzanne L. Baker, **Vogel, Jacob W.**, James P. O'Neil, Mustafa Janabi, Henry D. Schwimmer, Shawn M. Marks, and William J. Jagust. Aging Affects Dopaminergic Neural Mechanisms of Cognitive Flexibility. *The Journal of Neuroscience*, 36(50):12559–12569, 2016.
- [17] Stefanie Schreiber, **Vogel, Jacob**, Henry D. Schwimmer, Shawn M. Marks, Frank Schreiber, and William Jagust. Impact of lifestyle dimensions on brain pathology and cognition. *Neurobiology of Aging*, 40:164–172, 2016.
- [18] Jeremy A. Elman, Cindee M. Madison, Suzanne L. Baker, **Vogel, Jacob W.**, Shawn M. Marks, Sam Crowley, James P. O'Neil, and William J. Jagust. Effects of Beta-Amyloid on Resting State Functional Connectivity Within and between Networks Reflect Known Patterns of Regional Vulnerability. *Cerebral Cortex*, 26(2):695–707, 2016.
- [19] Rik Ossenkoppele, Daniel R. Schonhaut, Michael Schöll, Samuel N. Lockhart, Nagehan Ayakta, Suzanne L. Baker, James P. O'Neil, Mustafa Janabi, Andreas Lazaris, Averill Cantwell, **Vogel, Jacob**, Miguel Santos, Zachary A. Miller, Brianne M. Bettcher, Keith A. Vossel, Joel H. Kramer, Maria L. Gorno-Tempini, Bruce L. Miller, William J. Jagust, and Gil D. Rabinovici. Tau PET patterns mirror clinical and neuroanatomical variability in Alzheimer's disease. *Brain*, 139(5):1551–1567, 2016.
- [20] Michael Schöll, Samuel N. Lockhart, Daniel R. Schonhaut, James P. O'Neil, Mustafa Janabi, Rik Ossenkoppele, Suzanne L. Baker, **Vogel, Jacob W.**, Jamie Faria, Henry D. Schwimmer, Gil D. Rabinovici, and William J. Jagust. PET Imaging of Tau Deposition in the Aging Human Brain. *Neuron*, 89(5):971–982, 2016.
- [21] Rik Ossenkoppele, Yolande A.L. Pijnenburg, David C. Perry, Brendan I. Cohn-Sheehy, Nienke M.E. Scheltens, **Vogel, Jacob W.**, Joel H. Kramer, Annelies E. Van Der Vlies, Renaud La Joie, Howard J. Rosen, Wiesje M. Van Der Flier, Lea T. Grinberg, Annemieke J. Rozemuller, Eric J. Huang, Bart N.M. Van Berckel, Bruce L. Miller, Frederik Barkhof, William J. Jagust, Philip Scheltens, William W. Seeley, and Gil D. Rabinovici. The behavioural/dysexecutive variant of Alzheimer's disease: Clinical, neuroimaging and pathological features. *Brain*, 138(9):2732–2749, 2015.
- [22] Rik Ossenkoppele, Brendan I. Cohn-Sheehy, Renaud La Joie, **Vogel, Jacob W.**, Christiane Möller, Manja Lehmann, Bart N.M. Van Berckel, William W. Seeley, Yolande A. Pijnenburg, Maria L. Gorno-Tempini, Joel H. Kramer, Frederik Barkhof, Howard J. Rosen, Wiesje M. Van der Flier, William J. Jagust, Bruce L. Miller, Philip Scheltens, and Gil D. Rabinovici. Atrophy patterns in early clinical stages across distinct phenotypes of Alzheimer's disease. *Human Brain Mapping*, 36(11):4421–4437, 2015.
- [23] Bryce A. Mander, Shawn M Marks, **Vogel, Jacob W**, Vikram Rao, Brandon Lu, Jared M Saletin, Sonia Ancoli-Israel, William J Jagust, Bryce A Mander, and Matthew P Walker. β -amyloid disrupts human NREM slow waves and related hippocampus-dependent memory consolidation. *Nature Neuroscience*, 18(7):1–10, 2015.

- [24] Jeremy A. Elman, Hwamee Oh, Cindee M. Madison, Suzanne L. Baker, **Vogel, Jacob W.**, Shawn M. Marks, Sam Crowley, James P. O'Neil, and William J. Jagust. Neural compensation in older people with brain amyloid- β deposition. *Nature Neuroscience*, 17(10):1316–1318, 2014.
- [25] Miranka Wirth, Claudia M. Haase, Sylvia Villeneuve, **Vogel, Jacob**, and William J. Jagust. Neuroprotective pathways: Lifestyle activity, brain pathology, and cognition in cognitively normal older adults. *Neurobiology of Aging*, 35(8):1873–1882, 2014.

--- Oral Presentations

Invited Talks

- 2020 **Molecular gradients in the human brain coordinate spatial organization of functional systems**, *Gradients in Brain Organization Workshop*, Montreal, Canada (online).

First Author Oral Conference Presentations

- 2020 **Accounting for systematic spatial variation improves connectome-based models**, *Alzheimer's Association International Conference*, Amsterdam, Netherlands (online).
- 2020 **Spatiotemporal imaging phenotypes of tau pathology in Alzheimer's disease**, *Alzheimer's Association International Conference*, Amsterdam, Netherlands (online).
- 2020 **Principal axes of gene regulated spatial organization in the human brain**, *Organization for Human Brain Mapping*, Montreal, Canada (online).
- 2020 **Spatiotemporal imaging phenotypes of tau pathology in Alzheimer's disease**, *Human Amyloid Imaging*, Miami, USA.
- 2019 **A molecular gradient along the longitudinal axis of the human hippocampus informs brain function**, *Organization for Human Brain Mapping*, Rome, Italy.
- 2019 **Epidemic spreading of tau through human functional connections**, *Human Amyloid Imaging*, Miami, USA.
- 2018 **Data-driven Tau-PET covariance networks enhance associations with cognition in Alzheimer's disease**, *Human Amyloid Imaging*, Miami, USA.
- 2016 **Regional gray matter volume and default mode network connectivity are associated with age relative to parental symptom onset in sporadic Alzheimer's disease**, *Alzheimer's Association International Conference*, Toronto, Canada.
- 2015 **Brain and cognitive correlates of subjective memory complaint differ between healthy elderly with and without β -amyloid pathology**, *Alzheimer's Association International Conference*, Washington DC, USA.
- 2014 **Brain and cognitive correlates of subjective memory complaint differ between healthy elderly with and without β -amyloid pathology**, *Society for Neuroscience*, Washington DC, USA.

--- Media & Press

2020 **Paper Coverage in Alzforum.**

After publishing our article in Nature Communications (Vogel et al. 2020), I was interviewed by Alzforum.

o [Link to article](#)

2018 **Paper Coverage in Nature Reviews Neuroscience.**

After publishing our article in Brain (Vogel et al. 2018), Nature Reviews Neuroscience wrote a summary of the work, including interviews with myself and Dr. Sylvia Villeneuve.

o [Link to article](#)

2016 **TV Appearance and Newspaper interview for World Alzheimer's Day.**

Appeared on CityTV Breakfast Television Live and CTV 6pm News to represent Alan Evans' lab and to help raise awareness of the Montreal Alzheimer's Research for a Cure foundation, and was interviewed for the Montreal Gazette.

Links to media content:

o [CityTV Breakfast television interview](#)

o [CTV 6pm News segment](#)

o [Montreal Gazette article](#)

Non-Academic Interests

- o Music (Guitar, Drums, Songwriting)
- o Beer
- o Boulderling
- o Philly Sports Teams
- o Tea
- o Biking

References

Name

- o Dr. Ted Satterthwaite
- o Dr. Alan Evans
- o Dr. Oskar Hansson
- o Dr. William Jagust
- o Dr. Gil Rabinovici
- o Dr. Sylvia Villeneuve
- o Dr. Pierre Bellec

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Other Collaborators

- o Renaud La Joie
- o Yasser Iturria-Medina
- o Gaël Varoquaux
- o Rik Ossenkoppele
- o Bratislav Misic
- o Mallar Chakravarty
- o Sang Won Seo
- o Neil Oxtoby
- o Chris Gaiteri
- o Michel Grothe
- o Etienne Vachon-Pressseau
- o JB Poline
- o Philip Scheltens
- o Boris Bernhardt
- o Niklas Mattson-Calgren
- o Michael Schöll
- o Daniel Alexander
- o Gaël Chetelat