

AVINASH RAO VAIDYA

Phone: (215) 970-4972
avinash.vaidya@nih.gov

National Institute on Drug Abuse
Biomedical Research Center
251 Bayview Boulevard
Baltimore, MD 21224

EDUCATION

- PhD** McGill University, Neuroscience 2010-2016
Dissertation: "Frontal Lobe Contributions to Attention in Reward Learning and Decision-Making"
- BSc** Ursinus College, Neuroscience and Psychology 2006-2010
Graduated Summa Cum Laude, Distinguished Honors
Minored in Biology

HONORS AND AWARDS

- Ruth L. Kirschstein National Research Service Award (NRSA)
Individual Postdoctoral Fellowship**
National Institute of Mental Health (NIMH) 2018-2021
- Postdoctoral Fellow Award**
Cognitive Neuroscience Society 2018
- Winner of Computational Modeling Challenge**
Initiative for Computation in Brain and Mind, Brown University 2017
- McGill University Integrated Program Neuroscience Excellence
Award**
McGill University 2015
- Jeanne Timmins Costello Fellowship**
Montreal Neurological Institute, McGill University 2015-2016
- Tom Gevas Student Travel Award**
McGill University 2015
- Kenelm M. Winslow Student Travel Award**
Montreal Neurological Institute, McGill University 2014
- Desjardins Outstanding Student Award**
Integrated Program in Neuroscience, McGill University 2014-2015
- MEG Study Competition (2nd place)**
McGill University 2013

Faculty of Medicine Internal Studentship McGill University	2012-2013
Faculty of Medicine Internal Studentship McGill University	2011-2012
Recruitment Award Integrated Program in Neuroscience, McGill University	2010
Phi Beta Kappa National Honors Society	2010
Individual poster award Annual Lehigh Valley Society for Neuroscience Conference	2010
Working Group for Undergraduate Research Award Ursinus College	2009
Summer Undergraduate Research Fellowship Drexel University College of Medicine	2008
Dean's Honor List Ursinus College	2006-2010

RESEARCH EXPERIENCE

National Institute on Drug Abuse (NIDA/NIH), Baltimore, MD Research fellow, Dr. Thorsten Kahnt Cellular and Neurocomputational Systems Branch	2022-present
Brown University, Providence, RI Postdoctoral Researcher, Dr. David Badre Department of Cognitive, Linguistic and Psychological Sciences	2016-2022
McGill University, Montreal, QC Doctoral Student, Dr. Lesley K. Fellows Department of Neurology and Neurosurgery	2011-2016
University of Pennsylvania, Philadelphia, PA Visiting Scholar, Dr. Joseph W. Kable Department of Psychology	2014
McGill University, Montreal, QC Rotation Student, Integrated Program in Neuroscience	2010-2011
Ursinus College, Collegeville, PA	2008-2010

Honors Research, Dr. Joel P. Bish
Department of Psychology

Drexel University, Philadelphia, PA
Summer Research Fellow, Dr. Olimpia Meucci
Department of Pharmacology and Physiology

2008

TEACHING EXPERIENCE

McGill University, Montreal, QC 2013-2015
Teaching assistant (2013)
Head teaching assistant (2014-2015)
Faculty of Medicine
Medical School Neuroanatomy Unit

- Course curriculum design
- Leading class of over 50 students
- Training fellow teaching assistants in neuroanatomy and dissection

Ursinus College, Collegeville, PA 2009-2010
Teaching Assistant
Introductory Neuroscience (NEUR-120)

- Laboratory assistance
- Facilitating classroom discussion
- Grading exams and presentations

Ursinus College, Collegeville, PA 2008-2010
Biology Tutor

- Tutored seven students in cell biology, genetics, ecology and evolution

PUBLICATIONS (*EQUAL CONTRIBUTIONS)

Scimeca J.M., Katzman P.L. Waters E., **Vaidya A.R.** & Badre D. Value modulates re-encoding during episodic memory retrieval. (*in preparation*).

Vaidya A.R., Pujara M.S. & Fellows L.K. Group Studies in Neuropsychology, in *APA Handbook Of Research Methods in Psychology, Second Edition*. (*In Press*).

Vaidya A.R. & Badre D. Abstract task representations for inference and control. (2022). *Trends in Cognitive Science*. PMID: 35469725

Kassel, M.T., Lositsky, O.,* **Vaidya, A.R.**,* Badre, D., Malloy, P.F., Greenberg, B.D., Marsland, R., Noren, G., Shrman, A., Rasmussen, S.A. & McLaughlin, N.C.R. Differential assessment of frontally-mediated behaviors between self- and informant-report in patients

with Obsessive-Compulsive Disorder following gamma ventral capsulotomy. (2022). *Neuropsychologia*. PMID: 35307368

Vaidya A.R., Jones H.M., Castillo J. & Badre, D. (2021). Neural representation of abstract task structure during generalization. *eLife*. PMID 33729156.

Vaidya A.R. & Badre, D. (2020). Neural systems for memory-based value judgment and decision-making. *Journal of Cognitive Neuroscience*. 32(10), 1896-1923. PMID: 32573379

Vaidya A.R. and Fellows L.K. (2020). Under construction: ventral and lateral frontal lobe contributions to value-based decision-making and learning. *F1000Research*. 9. PMID: 32161644.

Vaidya A.R.,* Pujara M.S.*, Petrides M., Murray E.A. & Fellows L.K. (2019). Lesion studies in contemporary neuroscience. *Trends in Cognitive Science*. 23(8): 653-671. PMID: 31279672

Vaidya A.R. and Fellows L.K. (2019). Ventromedial frontal lobe damage affects interpretation, not exploration, of emotional facial expressions. *Cortex*. PMID: 30716612.

Vaidya A.R., Sefranek, M., and Fellows L.K. (2018). Ventromedial Frontal Lobe Damage Alters how Specific Attributes are Weighed in Subjective Valuation. *Cerebral Cortex*. 28(11): 3857-3867. PMID: 29069371

Vaidya A.R., and Fellows L.K.. The Neuropsychology of Decision-Making: A View From the Frontal Lobes, in *Decision Neuroscience. 1st edition*. Dreher J., Tremblay L., ed. London, UK: Elsevier. (2016). Chapter 22, p.277-289.

Vaidya A.R., and Fellows L.K. (2016). Necessary contributions of human frontal lobe sub-regions to reward learning in a dynamic, multidimensional environment. *Journal of Neuroscience*. 36(38): 9843-9858. PMID: 27656023.

Vaidya A.R., and Fellows L. K. (2015). Testing necessary regional frontal contributions to value assessment and fixation-based updating. *Nature Communications*, 6 :10120. PMID: 26658289.

Vaidya A.R., and Fellows L. K. (2015). Ventromedial frontal damage in humans reduces attentional priming of rewarded visual features. *The Journal of Neuroscience*, 35(37). PMID: 26377468.

Vaidya A.R. Neural mechanisms for undoing the “curse of dimensionality.” (2015). *The Journal of Neuroscience*, 35(35). PMID: 26338319.

Vaidya A.R., Jin, C., and Fellows L. K. (2014). Eye spy: The predictive value of fixation patterns in detecting subtle and extreme emotions from faces. *Cognition*, 133(2). PMID: 25151253.

Hochman E.Y.,* **Vaidya A.R.**,* and Fellows L.K. (2014). Evidence of a role for the dorsal anterior cingulate cortex in disengaging from an incorrect response. *PLoS One*, 9(6). PMID: 24968256.

Khan, MZ., **Vaidya, A.**, and Meucci, O. (2011). CXCL12-mediated regulation of ANP32A/Lanp, a component of INHAT complex, in cortical neurons. *Journal of Neuroimmune Pharmacology*, 6(1). PMID: 20617464.

Kaas, B. **Vaidya A.R.**, Leatherman A., Schleidt S. and Kohn R.E. (2010). Technical Report: Exploring the basis of congenital myasthenic syndromes in an undergraduate course, using the model organism, *Caenorhabditis elegans*. *Invertebrate Neuroscience*, 10(1). PMID: 20431904.

PRESENTATIONS AND INVITED LECTURES

Neural systems supporting value judgment and decision-making. Guest lecture at the Kahnt Lab, Northwestern University, 2022.

Neural systems supporting value judgment and decision-making. Guest lecture at Drexel University, 2022.

Neural systems supporting inference and generalization of values during decision-making. Guest lecture at the Center for Cognitive Neuroscience, Ghent University, 2021.

Effects of focal frontal lobe lesions on attention in multi-dimensional reward learning tasks. Lecture in the Special Symposium in Honor of Donald Stuss, Annual Meeting of the Cognitive Neuroscience Society, 2020.

Accounting for taste: effects of human frontal lobe damage on valuation and decision-making. Guest lecture for Fundamentals of Human Neuropsychology Course at Columbia University, 2020.

Testing the role of the ventromedial frontal lobe in value judgment and emotion recognition. Social Brown Bag, Brown University, 2017

Accounting for taste: effects of human frontal lobe damage on valuation and decision-making. Tata Institute for Fundamental Research, 2016.

Preference is bought by judgment of the eye: Frontal lobe contributions to value judgment and updating. Northwestern University, 2016.

Effects of frontal lobe damage on attention in reward-learning and decision-making. Columbia University, 2016.

Effects of frontal lobe damage on attention in reward-learning and decision-making. Brown University, 2016.

Frontal lobe contributions to attention in reward learning and decision-making. Moss Rehabilitation Research Institute, 2016.

Frontal lobe contributions to attention in learning and decision-making. University of Pennsylvania, 2015.

Effects of prefrontal damage on value updating. McGill University Integrated Program in Neuroscience Retreat, 2015.

Testing effects of reward priming on attention. MEG@McGill Training Session, Montreal Neurological Institute, 2015.

POSTER PRESENTATIONS (*PRESENTING AUTHOR)

Vaidya A.R.*, & Badre D. Investigating individual differences in structure learning. Conference on Cognitive and Computational Neuroscience, 2022.

Vaidya A.R.*, Castillo J., Torres A. & Badre D. Influences of recall and familiarity on risky decision-making. Multi-disciplinary Conference on Reinforcement Learning and Decision-Making, 2022.

van Geen C.*, Kazinka R., **Vaidya A.R.**, Kable J.W. & McGuire J.T. Lesions to Value Responsive Brain Regions Lead to Impairments in Voluntary Persistence. Multi-disciplinary Conference on Reinforcement Learning and Decision-Making, 2022

Vaidya A.R.* & Badre. D. Neural representations supporting valuation based on schemas and experience, Presented at the 51st annual meeting of the Society for Neuroscience, 2021

Castillo J*., **Vaidya A.R.** & Badre. D. Memory matters: Its impact on value-based decisions. Annual Convention of the Association for Psychological Sciences, 2020

Vaidya A.R.* Castillo J. & Badre D. Testing orbitofrontal state and value representations during generalization. Presented at the Fourth Quadrennial meeting on Orbitofrontal Cortex Function, 2019

Vaidya A.R.*, Jones H. & Badre D. Testing neural representations of value and task space. Presented at the 49th annual meeting of the Society for Neuroscience, 2019.

Vaidya A.R.* & Badre D. Neural systems for memory-based value judgment and decision-making. Presented at the 4th Multidisciplinary Conference on Reinforcement Learning and Decision-Making in 2019.

Vaidya A.R.* & Badre D. Mechanisms for sampling distinct memory stores during decision-making. Presented at the 25th annual Cognitive Neuroscience Society Meeting, 2018.

Vaidya A.R.* & Fellows, L.K. *Mechanistic contributions of the ventromedial frontal lobe to the exploration and recognition of emotional expressions*. Presented at the 47th annual meeting of the Society for Neuroscience, 2017.

Vaidya A.R.*, Sefranek M. & Fellows, L.K. *Deconstructing the aesthetic brain: Effects of prefrontal damage on the weighting of art attributes during value judgment*. Presented at the 46th annual Cognitive Neuroscience Society Meeting, 2016.

Vaidya A.R.* & Fellows, L.K. *Effects of damage to human prefrontal cortex on learning in a dynamic, multidimensional environment*. Presented at the Third Quadrennial Meeting on Orbitofrontal Cortex function, 2015.

Vaidya A.R.* & Fellows, L.K. *Choice is bought by judgment of the eye: Necessary prefrontal contributions to value updating during decision-making*. Presented at the Society for Neuroeconomics Annual Meeting 2015.

Vaidya A.R.,* & Fellows, L.K. *Testing orbitofrontal contributions to formation of a value-based attentional set in a two dimension probabilistic reversal-learning task*. Presented at the 44th annual meeting of the Society for Neuroscience, 2014.

Vaidya A.R.,* & Fellows L.K. *Look me in the eye: An in-depth investigation of fixation patterns to emotional faces in patients with prefrontal damage*. Presented at the 21st annual Cognitive Neuroscience Society Meeting, 2014.

Vaidya A.R.,* Hochman E.Y., Yu L.Q. & Fellows L.K. *Measuring inhibition by locking event-related potentials to unexecuted responses: estimating known unknowns using known knowns in the brain*. Presented at the 20th annual Cognitive Neuroscience Society Meeting, 2013.

Vaidya A.R.,* Hochman E.Y. & Fellows L.K. *A butterfly in Brazil: error inhibition is a local process with global effects*. Presented at the 42nd annual Society for Neuroscience Conference, 2012.

Yu L.Q.*, **Vaidya A.R.**, Hochman E.Y. & Fellows L.K. *A Novel Approach to Studying Endogenously Triggered Response Inhibition*. Presented at the Montreal Neurological Institute Neuropsychology Day, 2012.

Vaidya A.R.,* Hochman E.Y. & Fellows L.K. Within-trial dissociation of error inhibition and volitional response inhibition in a patient with damage to the right inferior frontal gyrus. Presented at the 19th annual Cognitive Neuroscience Society Meeting, 2012.

Vaidya A.R.,* Hochman E.Y. & Fellows L.K. Challenging the error-correct mismatch hypothesis of the ERN: Preliminary evidence that the error-related negativity is more sensitive to the representation of the error than to the correct response. Presented at the 41st annual Society for Neuroscience Conference, 2011.

Vaidya A.R.,* Hochman E.Y. & Fellows L.K. The error-related negativity reflects behavioral adjustment, not the evaluation of response outcome. Presented at the McGill University Integrated Program in Neuroscience Retreat, 2011.

Yusuf A. *, Sussex R., Whatley B., **Vaidya A.**, & Koski L. Cortical Inhibition and Cognitive Fatigue in Multiple Sclerosis. 17th Annual Meeting of the Organization for Human Brain Mapping, 2011.

Bish J.P., Dougherty K.A., Meeley L.E., Brenner S., Powers C. & **Vaidya A.R.*** An Electroencephalographic Investigation of Automaticity in Grapheme-color Synesthesia. Presented at the Association for Psychological Science 23rd Annual Convention, 2011.

Bish J.P., **Vaidya A.R.,*** Dougherty K. & Meeley L. Seeing 'T's' of Green, Red 'O's' Too, 'I' and 'C' are Blue, same for 'E' and 'U': the Wonderful World of Synesthesia. Presented at the 40th annual Society for Neuroscience Conference, 2010. (Selected for press conference at event).

Vaidya A.R.,* Dougherty K.A. & Bish J.P. Seeing 'T's' of Green, Red 'O's' Too, 'I' and 'C' are Blue, same for 'E' and 'U': the Wonderful World of Synesthesia. Presented at the 1st Annual Lehigh Valley Society for Neuroscience Conference, 2010.

Vaidya A.R.,* Meeley L.E., Pall, M.J., Ramsey, S.J. & Bish, J.P. Oz comes to Kansas: behavioral effects of grapheme-color associations among non-synesthetes. Presented at the 1st Annual Lehigh Valley Society for Neuroscience Conference, 2010.

Vaidya A.R.,* Hartl A., Pall M. & Bish J. Inhibition, Maturation, Memory and Synesthesia. Presented at Drexel University College of Medicine: Discovery Day 2009.

Hartl A. *, **Vaidya A.**, Pall M. & Bish J. Neurocognitive Correlates of the Development of Obsessive Compulsive Disorder and Attention Deficit/Hyperactivity Disorder. Drexel University College of Medicine: Discovery Day 2009.

Khan M.Z.*, **Vaidya A.** & Meucci O. Regulation of LANP/ANP32A by the chemokine CXCL12 and its role in neuronal survival. Drexel University College of Medicine: Discovery Day 2009.

PROFESSIONAL TRAINING

Sheridan Teaching Seminar Sheridan Center for Teaching and Learning, Brown University	2021
Fundamentals and Applications of TMS Brainbox Initiative	2021
MRI Operator Certification Brown University	2019

MENTORSHIP

Student and program	Dates	Project(s)
Gray Jin Neuroscience Independent research	Spring 2012	Face scanning patterns of healthy individuals
David Benrimoh McGill Faculty of Medicine Summer research project	Summer 2013	Monitoring attention during decision-making
Alexandra Tighe Psychology Honors project	Fall 2013-Spring 2014	Effects of feature priming in decision-making
Andras Lenart Cognitive Science Independent research	Spring 2014	Behavioral measures of post-error control
Marcus Sefranek Summer research student	Summer 2015	Attributes underlying value judgment following prefrontal damage
Matthew Satterthwaite, Cognitive Science Independent research	Fall 2015-Winter 2016	Role of partisanship in political decision-making
Henry Jones Cognitive Science Honors Research and Summer Student	Spring 2017-Spring 2019	Contrasting state and value representations in orbitofrontal cortex
Emily Waters Neuroscience Honors Research	Fall 2018-Spring 2020	Effects of feedback and task goals on re-encoding during retrieval

Johanny Castillo NIH Post-baccalaureate Research Education Program (PREP)	Summer 2019-Summer 2020	Influence of memory strength on risk assessment; Neural representation of latent task states during generalization
Alejandro Torres Cognitive Science Independent Research	Fall 2020 – Spring 2022	Influences of recollection and familiarity on value- based decision-making

VOLUNTEER TEACHING

First Year Undergraduate Research Experience Computational Modeling Workshop

Brown University, Providence, RI 2021

BrainReach Volunteer

McGill University, Montreal, QC 2012

Brain Awareness Day Volunteer

Montreal Neurological Institute, Montreal, QC 2011

ADHOC REVIEWER

- *Biological Psychiatry*
- *Brain*
- *Brain Communications*
- *Cerebral Cortex*
- *Cortex*
- *Cognitive, Affective and Behavioral Neuroscience*
- *Cognitive Research: Principles and Implications*
- *Emotion*
- *eLife*
- *Human Brain Mapping*
- *Journal of Alzheimer's Disease*
- *Journal of Cognitive Neuroscience*
- *Journal of Neurophysiology*
- *Journal of Neuropsychology*
- *Journal of Neuroscience*
- *Nature Communications*
- *Neurobiology of Learning and Memory*
- *Neuropsychologia*
- *Philosophical Psychology*
- *PLoS One*
- *Psychonomic Bulletin & Review*
- *Social Cognitive and Affective Neuroscience*
- *Scientific Reports*
- *Translational Psychiatry*

DEPARTMENTAL SERVICE

Seminar Series Co-organizer

Cognitive, Linguistic and Psychological Sciences Department
Brown University, Providence, RI 2021-2022

Graduate Student Liaison

