

Samuel David McDougle

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Positions

- 2020 – Present
Yale University
Assistant Professor, Psychology
Program Faculty, Cognitive Science Program
Program Faculty, Interdepartmental Neuroscience Program
Affiliated Faculty, Wu Tsai Institute
- 2018 – 2020
University of California, Berkeley
Postdoctoral Fellow, Helen Wills Neuroscience Institute

Education

- 2013 – 2018
Princeton University
PhD in Psychology & Neuroscience
- 2005 – 2009
Vassar College
BA in Neuroscience & Behavior

Awards, Fellowships, & Honors

- 2024
Early Career Award
The Society for the Neural Control of Movement
- 2019
Ruth L. Kirschstein National Research Service Award
National Institutes of Health
- 2019
Scholarship Award
The Society for the Neural Control of Movement
- 2017
Young Researcher Award
Karniel Computational Motor Control Workshop
- 2015 – 2018
Graduate Research Fellowship
National Science Foundation
- 2015
Presentation Award
Progress in Motor Control
- 2013 – 2017
Centennial Scholar Fellowship
Princeton University

2009 General Honors
 Vassar College

Funding

2025 – 2029 **National Institutes of Health**, R01NS134754
 Total: \$2,277,758
 Fundamental Predictive Computations in Upper-Limb and Speech Adaptation
 Role: MPI (w/ Caroline Niziolek, Benjamin Parrell, & Jordan Taylor)

2024 – 2028 **National Institutes of Health**, R01MH133886
 Total: \$3,652,686
 Neural Computations of Learning, Decision-Making, and Memory
 Role: Co-I (PI: Prof. Ifat Levy)

2023 – 2027 **National Institutes of Health**, R01NS132926
 Total: \$2,093,750
 Generalized Prediction Errors in the Human Cerebellum
 Role: PI

2022 – 2024 **Wu Tsai Institute, Yale University**, Innovation Grant
 Total: \$150,000
 Domain-General Neural Algorithms for Motion Detection
 Role: Co-PI (w/ Prof. Damon Clark)

2023 **Meta**, Unrestricted Research Gift
 Total: \$25,000
 Role: PI

2022 – 2023 **Yale University**, Seesel Endowed Award for Postdoc Recruitment
 Total: \$75,000
 The Role of the Cerebellum in Reward-Based Learning: Implications for Neural Computation
 Role: PI

Publications

1. Juliana E. Trach, Megan T. deBettencourt, Angela Radulescu, & **Samuel D. McDougale** (2025) Rewards Transiently and Automatically Enhance Sustained Attention. *Journal of Experimental Psychology: General*, [In Press]
2. Jonathan S. Tsay, Hyosub E. Kim, **Samuel D. McDougale**, Jordan A. Taylor, Adrian Haith, Guy Avraham, John W. Krakauer, Anne G.E. Collins, & Richard B. Ivry (2024) Fundamental Processes in Sensorimotor Learning: Reasoning, Refinement, and Retrieval. *eLife*, 13:e91839

3. Naser Al-Fawakhiri & **Samuel D. McDougle** (2024) Independent Influences of Movement Distance and Visual Distance on Fitts' Law. *Journal of Experimental Psychology: General*, 153(8): 2160-2173
4. Hanna Hillman, Tabea Botthof, Alexander D. Forrence, & **Samuel D. McDougle** (2024) Dissociable Codes in Motor Working Memory. *Psychological Science*, 35(2): 150-161
5. Sami R. Yousif & **Samuel D. McDougle** (2024) Oblique Warping: A General Distortion of Spatial Perception. *Cognition*, 247: 105762
6. Sami R. Yousif, Alexander D. Forrence, & **Samuel D. McDougle** (2024) A Common Format for Representing Spatial Location in Visual and Motor Working Memory. *Psychonomic Bulletin & Review*, 31(2): 697-707
7. Christopher L. Hewitson, Naser Al-Fawakhiri, Alexander D. Forrence, & **Samuel D. McDougle** (2023) Metacognitive Judgments During Visuomotor Learning Reflect the Integration of Error History. *Journal of Neurophysiology*, 130(2): 264-277
8. Ashleigh V. Rutherford, **Samuel D. McDougle**, & Jutta Joormann (2023) Don't [Ruminate], Be Happy: A Cognitive Perspective Linking Depression and Anhedonia. *Clinical Psychology Review*, 101: 102255
9. Olivia A. Kim, Alexander D. Forrence, & **Samuel D. McDougle** (2022) Motor Learning Without Movement. *Proceedings of the National Academy of Sciences*, 119(30): e2204379119
10. Guy Avraham, Jordan A. Taylor, Assaf Breska, Richard B. Ivry, & **Samuel D. McDougle** (2022) Contextual Effects in Sensorimotor Adaptation Adhere to Associative Learning Rules. *eLife*, 11: e75801
11. Juan A. Gallego, Tamar R. Makin, & **Samuel D. McDougle** (2022) Going Beyond Primary Motor Cortex to Improve Brain-Computer Interfaces. *Trends in Neurosciences*, 45(3): 176-183
12. **Samuel D. McDougle***, Jonathan Tsay*, Benjamin Pitt, Maedbh King, William Saban, Jordan A. Taylor, & Richard B. Ivry (2022) Continuous Manipulation of Mental Representations is Compromised in Cerebellar Degeneration. *Brain*, 145(12): 4246-4263 *co-authorship
13. **Samuel D. McDougle**, Ian C. Ballard, Beth Baribault, Sonia J. Bishop, & Anne G.E. Collins (2022) Executive Function Assigns Value to Novel Goal-Congruent Outcomes. *Cerebral Cortex*, 32(1): 231:247
14. **Samuel D. McDougle**, Sarah A. Wilterson, Nicholas B. Turk-Browne, & Jordan A. Taylor (2022) Revisiting the Role of the Medial Temporal Lobe in Motor Learning. *Journal of Cognitive Neuroscience*, 34(3): 532-549

15. **Samuel D. McDougle** (2022) Post-Error Slowing During Instrumental Learning is Shaped by Working Memory-Based Choice Strategies. *Neuroscience*, 486: 37-45
16. Faisal Mushtaq, **Samuel D. McDougle**, Matt P. Craddock, Darius E. Parvin, Jack Brookes, Alexandre Schaefer, Mark Mon-Williams, Jordan A. Taylor, & Richard B. Ivry (2022) Distinct Processing of Selection and Execution Errors in Neural Signatures of Outcome Monitoring. *Journal of Cognitive Neuroscience*, 34(5): 748-765
17. Anne G.E. Collins & **Samuel D. McDougle** (2021) Context is Key for Learning Motor Skills. *Nature*, 600: 387-388 [News & Views]
18. James W. Antony, Thomas H. Hartshorne, Ken Pomeroy, Todd M. Gureckis, Uri Hasson, **Samuel D. McDougle**, & Kenneth A. Norman (2021) Behavioral, Physiological, and Neural Signatures of Surprise During Naturalistic Sports Viewing. *Neuron*, 109(2): 377-390
19. **Samuel D. McDougle** & Anne G.E. Collins (2021) Modeling the Influence of Working Memory, Reinforcement, and Action Uncertainty on Reaction Time and Choice During Instrumental Learning. *Psychonomic Bulletin & Review*, 28: 20-39
20. Lisa Langsdorf, Jana Maresch, Mathias Hegele, **Samuel D. McDougle***, & Raphael Schween* (2021) Prolonged Response Time Helps Eliminate Residual Errors in Visuomotor Adaptation. *Psychonomic Bulletin & Review*, 28: 834-844 *co-authorship
21. Milena Rmus, **Samuel D. McDougle**, & Anne G.E. Collins (2020) The Role of Executive Function in Shaping Reinforcement Learning. *Current Opinion in Behavioral Sciences*, 38: 66-73
22. Raphael Schween, **Samuel D. McDougle**, Mathias Hegele, & Jordan A. Taylor (2020) Assessing Explicit Strategies in Force Field Adaptation. *Journal of Neurophysiology*, 123(4): 1552-1565
23. **Samuel D. McDougle**, Peter A. Butcher, Darius Parvin, Faisal Mushtaq, Yael Niv, Richard B. Ivry, & Jordan A. Taylor (2019) Neural Signatures of Prediction Errors in a Decision-Making Task are Modulated by Action Execution Failures. *Current Biology*, 29(10): 1606-1613
24. **Samuel D. McDougle** & Jordan A. Taylor (2019) Dissociable Cognitive Strategies for Sensorimotor Learning. *Nature Communications*, 10, 40
25. Alexander Mathis, Andrea R. Pack, Rodrigo S. Maeda, & **Samuel D. McDougle** (2019) Highlights From the 29th Annual Meeting of the Society for the Neural Control of Movement. *Journal of Neurophysiology*, 122(4): 1777-1783

26. Darius E. Parvin, **Samuel D. McDougle**, Jordan A. Taylor, & Richard B. Ivry (2018) Credit Assignment in a Motor Decision Making Task is Influenced by Agency and not Sensorimotor Prediction Errors. *Journal of Neuroscience*, 38(19): 4521-4530
27. **Samuel D. McDougle**, Krista M. Bond, & Jordan A. Taylor (2017) Implications of Plan-Based Generalization in Sensorimotor Adaptation. *Journal of Neurophysiology*, 118(1): 383-393
28. **Samuel D. McDougle**, Matthew J. Boggess, Matthew J. Crossley, Darius Parvin, Richard B. Ivry, & Jordan A. Taylor (2016) Credit Assignment in Movement-Dependent Reinforcement Learning. *Proceedings of the National Academy of Sciences*, 113(24): 6797-6802
29. **Samuel D. McDougle**, Richard B. Ivry, & Jordan A. Taylor (2016) Taking Aim at the Cognitive Side of Learning in Sensorimotor Adaptation Tasks. *Trends in Cognitive Sciences*, 20(7): 535-544
30. **Samuel D. McDougle**, Krista M. Bond, & Jordan A. Taylor (2015) Explicit and Implicit Processes Constitute the Fast and Slow Processes of Sensorimotor Learning. *Journal of Neuroscience*, 35(26): 9568-9579
31. Selmaan N. Chettih, **Samuel D. McDougle**, Luis I. Ruffolo, & Javier F. Medina (2011) Adaptive Timing of Motor Output in the Mouse: The Role of Movement Oscillations in Eyelid Conditioning. *Frontiers in Integrative Neuroscience*, 5(72)

Preprints

1. Juliana E. Trach & **Samuel D. McDougle**, Structured Action Preparation During Visuomotor Decision-Making. *PsyArXiv*
2. Benjamin Parrell, Chris Naber, Olivia A. Kim, Caroline A. Nizolek, & **Samuel D. McDougle**, Audiomotor Prediction Errors Drive Speech Adaptation Even in the Absence of Overt Movement. *bioRxiv*
3. Parisa A. Vaziri, **Samuel D. McDougle***, & Damon A. Clark*, Humans Use Local Spectrotemporal Correlations to Detect Rising and Falling Pitch. *bioRxiv* *co-authorship
4. Xiuyuan Zhang, **Samuel D. McDougle**, & Julia A. Leonard, People Accurately Predict the Shape of Skill Learning Curves. *PsyArXiv*
5. Naser Al-Fawakhiri, Sarosh Kayani, & **Samuel D. McDougle**, Evidence of an Optimal Error Rate for Motor Skill Learning. *bioRxiv*
6. Eugene Poh, Naser Al-Fawakhiri, Rachel Tam, Jordan A. Taylor, & **Samuel D. McDougle**, Generalization of Motor Learning in Psychological Space. *bioRxiv*

7. Ham Huang, **Samuel D. McDougale**, & Anne G.E. Collins, Dual Effects of Dual-Tasking on Instrumental Learning. *PsyArXiv*

Peer-Reviewed Conference Proceedings

1. Juliana E. Trach & **Samuel D. McDougale** (2024) Rapid Parallel Processing Dynamics During Hierarchical Category Decisions. *Proceedings of the 46th Annual Conference of the Cognitive Science Society*
2. Juliana E. Trach & **Samuel D. McDougale** (2023) Structured Dynamics of Hierarchical Action Selection. *Proceedings of the 45th Annual Conference of the Cognitive Science Society* [selected for a talk]
3. Sami R. Yousif & **Samuel D. McDougale** (2023) A Common Oblique Bias in Perception and Action. *Proceedings of the 45th Annual Conference of the Cognitive Science Society*
4. Juliana E. Trach & **Samuel D. McDougale** (2022) Climbing the Tree: Structured Hierarchical Representations in Visuomotor Maps. *Proceedings of the 44th Annual Conference of the Cognitive Science Society* [selected for a talk]
5. Sami R. Yousif & **Samuel D. McDougale** (2022) Common Coordinate Systems for Perception and Action. *Vision Sciences Society Annual Meeting*
6. Xiuyuan Zhang, **Samuel D. McDougale**, & Julia A. Leonard (2022) Thinking About Doing: Representations of Skill Learning. *Proceedings of the 44th Annual Conference of the Cognitive Science Society* [selected for a talk]
7. Juliana E. Trach, Jed Burde, Megan T. deBettencourt, Angela Radulescu, & **Samuel D. McDougale** (2022) Reward Prediction Error Modulates Sustained Attention. *Proceedings of the 5th Multidisciplinary Conference on Reinforcement Learning & Decision Making*
8. Sami R. Yousif, **Samuel D. McDougale**, & Robb B. Rutledge (2022) A Task-General Model of Human Randomization. *Proceedings of the 44th Annual Conference of the Cognitive Science Society*
9. Olivia A. Kim, Alexander D. Forrence, & **Samuel D. McDougale** (2021) Sensory Prediction Errors are Sufficient for Implicit Adaptation of Withheld Movements. *Motor Learning & Motor Control*
10. **Samuel D. McDougale** & Jordan A. Taylor (2016) Mental Rotation as a Behavioral and Neural Model of Explicit Aiming During Visuomotor Learning. *Motor Learning & Motor Control*

Book Chapters

Jordan A. Taylor & **Samuel D. McDougale** (2019) Visuomotor Adaptation Tasks as a Window Into the Interplay Between Explicit and Implicit Cognitive Processes. *The Cognitive Neurosciences, 6th edition*, MIT Press (ed. Michael S. Gazzaniga)

Conference Presentations (selected)

1. Parisa A. Vaziri, **Samuel D. McDougale**, & Damon A. Clark (2025) Humans Can Use Positive and Negative Spectrotemporal Correlations to Detect Rising and Falling Pitch. *COSYNE 2025, Montreal, Canada*
2. Juliana E. Trach & **Samuel D. McDougale** (2024) Exploring Non-Motor Prediction Errors in the Human Cerebellum. *Society for Neuroscience 2024, Chicago IL*
3. Sanghoon Kang, Zekun Sun, & **Samuel D. McDougale** (2024) Investigating Structural Learning in a De Novo Motor Skill. *Society for Neuroscience 2024, Chicago IL*
4. Apoorva Sharma, Alexander D. Forrence, & **Samuel D. McDougale** (2024) Covert Attention and Implicit Motor Learning. *Society for Neuroscience 2024, Chicago IL*
5. Zekun Sun & **Samuel D. McDougale** (2024) Repelling Effects of Distractors Persist in Imitated Movements. *Society for Neuroscience 2024, Chicago IL*
6. Parisa A. Vaziri, **Samuel D. McDougale**, & Damon A. Clark (2024) Humans Detect Rising and Falling Pitch using Spectrotemporal Correlations and Opponency. *Society for Neuroscience 2024, Chicago IL*
7. Sabrina J. Abram, Jonathan S. Tsay, Tianhe Wang, **Samuel D. McDougale**, & Richard B. Ivry (2024) Differential Roles of the Cerebellum and Basal Ganglia in Decision-Making. *Neural Control of Movement 2024, Dubrovnik, Croatia* [selected for a talk]
8. Juliana E. Trach, Tristan S. Yates, Dawoon Choi, Lillian Behm, Cameron T. Ellis, **Samuel D. McDougale**, & Nicholas B. Turk-Browne (2024) Striatal and Cerebellar Involvement in Reinforcement Learning in the Human Infant Brain. *Neural Control of Movement 2024, Dubrovnik, Croatia* [selected for a talk]
9. Hanna Hillman, Alexander D. Forrence, Taylor McClure, Samantha Goodcase, & **Samuel D. McDougale** (2024) Parallels Between Motor Working Memory and Motor Learning. *Neural Control of Movement 2024, Dubrovnik, Croatia*

10. Zekun Sun, Wenyan Bi, Ilker Yildirim, & **Samuel D. McDougle** (2024) Breaking Down a Golf Swing: Spatio-Temporal Dynamics of Visual Motion Underlie High-Level Structuring of Observed Actions. *Vision Sciences Society 2024* [selected for a talk]
11. Zekun Sun & **Samuel D. McDougle** (2024) Goal Uncertainty Biases Memory for Observed Actions. *Vision Sciences Society 2024*
12. Hanna Hillman, Tabea Botthof, Alexander D. Forrence, & **Samuel D. McDougle** (2023) Disentangling Visuospatial and Motor Working Memory. *Society for Neuroscience 2023, Washington DC*
13. Juliana E. Trach, Tristan S. Yates, Dawoon Choi, Lillian Behm, Cameron T. Ellis, **Samuel D. McDougle**, & Nicholas B. Turk-Browne (2023) Striatal Involvement in Reward Processing in the Human Infant Brain. *Society for Neuroscience 2023, Washington DC*
14. Tolu A. Adanri, Juliana E. Trach, & **Samuel D. McDougle** (2023) Compression of Hierarchical Cognitive Representations with Extensive Practice. *Society for Neuroscience 2023, Washington DC*
15. Juliana E. Trach & **Samuel D. McDougle** (2023) Hierarchical Action Selection. *Neural Control of Movement 2023, Victoria, Canada*
16. Hanna Hillman, Tabea Botthof, Alexander D. Forrence, & **Samuel D. McDougle** (2023) Interference in Motor Working Memory. *Neural Control of Movement 2023, Victoria, Canada*
17. Naser Al-Fawakhiri & **Samuel D. McDougle** (2023) Instrumental-Motor Transfer. *Neural Control of Movement 2023, Victoria, Canada*
18. Hanna Hillman, Tabea Botthof, & **Samuel D. McDougle** (2022) Evidence for Dual Processes in Motor Working Memory. *Society for Neuroscience 2022, San Diego CA*
19. Juliana E. Trach, Megan deBettencourt, Angela Radulescu, & **Samuel D. McDougle** (2022) Reward Prediction Errors Modulate Attentional Vigilance. *Society for Neuroscience 2022, San Diego CA*
20. Alexander D. Forrence & **Samuel D. McDougle** (2022) Does Human Motor Adaptation Require Conscious Awareness of Errors? *Society for Neuroscience 2022, San Diego CA*
21. Benjamin Parrell, Chris Naber, Olivia A. Kim, Caroline Nizolek, & **Samuel D. McDougle** (2022) Sensory Errors Drive Speech Adaptation Even in the Absence of Overt Movement. *Society for Neuroscience 2022, San Diego CA*
22. Sami R. Yousif & **Samuel D. McDougle** (2022) Common Coordinate Systems for Perception and Action. *Vision Sciences Society 2022*

23. Hanna Hillman & **Samuel D. McDougle** (2022) Two Components of Motor Working Memory. *Neural Control of Movement 2022, Dublin, Ireland*
24. Olivia A. Kim, Alexander D. Forrence, & **Samuel D. McDougle** (2021) Sensory Prediction Errors are Sufficient for Implicit Adaptation of Withheld Movements. *Neural Control of Movement 2021* [online]
25. Guy Avraham, Jordan A. Taylor, Richard B. Ivry, & **Samuel D. McDougle** (2019) Is Visuomotor Adaptation Classical Conditioning? *Neural Control of Movement 2019, Toyama, Japan*
26. **Samuel D. McDougle**, Sonia Bishop, & Anne G.E. Collins (2019) Behavioral and Neural Signatures of Reinforcement Learning With Arbitrary Pseudo-Rewards. *Society for Neuroscience 2019, Chicago IL*
27. William Ryan, **Samuel D. McDougle**, & Anne G.E. Collins (2019) Working Memory Contributions to Probabilistic Reinforcement Learning. *RLDM 2019, Montreal, Canada*
28. James W. Antony, **Samuel D. McDougle**, Tom Harthshorne, Todd Gureckis, Uri Hasson, & Kenneth A. Norman (2019) March Madness: Behavioral, Physiological, and Neural Effects of Continuously Updated Surprise and Suspense. *Society for Neuroscience 2019, Chicago IL*
29. **Samuel D. McDougle** & Anne G.E. Collins (2019) Uncertainty in Choice Policy Explains Reaction Time: Toward a Unified Account of Set Size, Repetition, Delay, and Learning Effects on Choice Reaction Time. *Cognitive Neuroscience Society 2019, San Francisco CA*
30. **Samuel D. McDougle**, Peter A. Butcher, Darius Parvin, Faisal Mushtaq, Yael Niv, Richard B. Ivry, & Jordan A. Taylor (2018) Neural Signatures of Reward Prediction Errors in a Decision-Making Task are Modulated by Action Execution Failures. *Society for Neuroscience 2018, San Diego CA*
31. **Samuel D. McDougle** & Jordan A. Taylor (2018) Parametric Versus Discrete Working Memory Representations in Sensorimotor Learning. *Neural Control of Movement 2018, Santa Fe NM*
32. **Samuel D. McDougle**, Richard B. Ivry, & Jordan A. Taylor (2017) Dissociable Effects of Cerebellar Degeneration on Continuous Versus Discrete Working Memory Transformations. *Gordon Research Conference: Cerebellum 2017, Lewiston ME*
33. **Samuel D. McDougle** & Jordan A. Taylor (2017) Leveraging the Motor System to Reveal Intermediate Cognitive States. *Society for Neuroscience 2017, Washington DC*
34. **Samuel D. McDougle** & Jordan A. Taylor (2017) Between Zero and One: Evidence for an Analog Computation in the Re-Planning of Movements. *Neural Control of Movement 2017, Dublin, Ireland*

35. **Samuel D. McDougle**, Nicholas B. Turk-Browne, & Jordan A. Taylor (2016) Recalibration, Heuristics, and Learning *de novo*: On the Multiple Processes of Sensorimotor Learning and the Role of the Medial Temporal Lobe. *Society for Neuroscience 2016, San Diego CA*
36. **Samuel D. McDougle**, Krista M. Bond, & Jordan A. Taylor (2016) The Consequences of Aim-Based Generalization on Visuomotor Adaptation. *Neural Control of Movement 2016, Montego Bay, Jamaica*
37. **Samuel D. McDougle**, Matthew J. Crossley, Matthew B. Boggess, Richard B. Ivry, & Jordan A. Taylor (2015) Credit Assignment in Movement-Dependent Reinforcement Learning. *Learning & Memory 2015, Austin TX*
38. **Samuel D. McDougle**, Krista M. Bond, & Jordan A. Taylor (2015) The Role of Reward, Punishment, and Movement Direction on Implicit Sensorimotor Learning. *Progress in Motor Control 2015, Budapest, Hungary* [best poster award]
39. **Samuel D. McDougle**, Krista M. Bond, & Jordan A. Taylor (2015) Explicit and Implicit Processes Underlie Fast and Slow Processes of Motor Learning. *Neural Control of Movement 2015, Charleston SC*
40. Peter A. Butcher, Richard B. Ivry, **Samuel D. McDougle**, Sheng-Han Kuo, David Rydz, John W. Krakauer, & Jordan A. Taylor (2015) Cerebellar Degeneration Disrupts Aiming Strategies and Motor Adaptation in a Sensorimotor Learning Task. *Gordon Research Conference, Cerebellum: Circuit Physiology, Computation and Disease 2015, Lewiston ME*
41. **Samuel D. McDougle**, Richard B. Ivry, & Jordan A. Taylor (2014) Sensory Prediction Errors Affect Reinforcement Learning. *Society for Neuroscience 2014, Washington DC*
42. Charlotte Arlt, Farzaneh Najafi, **Samuel D. McDougle**, Samuel S.-H. Wang, Ilker Ozden, & Javier F. Medina (2010) Eyeblink Conditioning and In Vivo Calcium Imaging in Mice Walking on a Floating-Ball Apparatus. *Society for Neuroscience 2010, San Diego CA*

Invited Talks (selected)

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| 2025 | Chaucer Club Series – University of Cambridge, Cambridge, UK
"Cognitive-Motor Borderlands" |
| 2024 | Neuroscience Seminar – EPFL, Lausanne, Switzerland
"Spatiotemporal Indexing of Motor Memory" |
| 2024 | Early Career Award Keynote Talk – Neural Control of Movement, Dubrovnik, Croatia
"Cognitive Shaping of Motor Behavior" |

- 2024 Cognitive Seminar – Dartmouth College
“Cognitive Algorithms for Sensorimotor Action Selection”
- 2024 Boston Action Club - Northeastern University
“Motor Working Memory”
- 2024 Fifth International Convention on the Mathematics of Neuroscience and AI – Rome, Italy
“Abstractions in Motor Memory and Planning”
- 2024 Control Processes – University of Birmingham, Birmingham, UK
“Structured Visuomotor Representations and Cognitive-Motor Information Flow”
- 2024 Cognitive Control of Action Workshop – Princeton University
“Cognitive-Motor Interactions During Structured Action Selection”
- 2023 The 8th CiNet Conference: Beyond Motor Control – Center for Information and Neural Networks, Osaka, Japan
“A Broader View of Motor Adaptation”
- 2022 Society for Neuroscience Minisymposium: The Cerebellum Beyond Motor Control: Insights Into Health and Disease – San Diego CA
“Top-Down Approaches to Cerebellar Cognition”
- 2022 Johns Hopkins Cerebellum Seminar – Johns Hopkins University
“The Cerebellum and Mental Kinematics”
- 2021 Gatsby Computational Neuroscience Unit – University College London, UK
“Space and Time in Movement Planning and Sensorimotor Adaptation”
- 2021 World Wide Neuro: The Learning Salon
“What’s in a Learning Curve?”
- 2021 Neuroeconomics Forum – Yale University
“Executive Function Assigns Value to Abstract Reward Outcomes”
- 2020 University of Birmingham Centre for Human Brain Health Seminar – Birmingham, UK
“Strategic Processes in Human Motor Skill Learning”
- 2020 Biological Sciences Training Program Seminar – Yale Psychiatry
“The Cognitive-Motor Interface”
- 2020 University of Leeds Research Colloquium – Leeds, UK
“Cognitive Representations in Visuomotor Learning”
- 2019 Neural Control of Movement – Toyama, Japan
“Cerebellar Contributions to Visuomotor Cognition”
- 2018 Yale Psychology Seminar
“The Steep Part of the Curve: Cognitive Representations in Human Learning”
- 2018 Stanford Psychology Cognition and Neuroscience Seminar Series – Stanford University
“Dynamics of Working Memory Reinforcement Learning Interactions”
- 2018 Berkeley Neuroscience Retreat – UC Berkeley
“Parametric and Discrete Representations in Motor Learning”

- 2018 Berkeley Cognition and Computation Colloquium – UC Berkeley
“Dissociable Roles for Working Memory in Sensorimotor Learning”
- 2017 Karniel Computational Motor Control Workshop – Beer-Sheva, Israel
“Analog Computations Drive Strategic Re-Aiming of an Intended Movement”
- 2017 Motor Learning and Motor Control – San Diego CA
“Mental Rotation as a Behavioral and Neural Model of Explicit Aiming During Visuomotor Learning”
- 2015 Gordon Research Conference, Cerebellum: Circuit Physiology, Computation and Disease – Lewiston ME
“Examining the Various Processes Driving Sensorimotor Learning”

Teaching

Yale

- Fall 2024 Primary Instructor, *Introduction to Psychology* (enrollment: 240)
- Fall 2023 Primary Instructor, *Introduction to Psychology* (enrollment: 194)
- Fall 2022 Primary Instructor, *The Science & Culture of Memory** (enrollment: 23) *[selected by FAS Dean’s office in a competitive cross-divisional course proposal call; Psychology + English Department]
- Spring 2022 Primary Instructor, *Learning & Memory* (enrollment: 102)
- Fall 2021 Primary Instructor, *Human Skill Learning* (enrollment: 19)
- Spring 2021 Primary Instructor, *Cognitive Psychology* (enrollment: 14; graduate course)
- Fall 2020 Primary Instructor, *Human Skill Learning* (enrollment: 17)
- 2022 – Present Guest Instructor, *Foundations of Psychology I: Cognitive Psychology & Neuroscience*
- 2021 – Present Guest Instructor, *Principles of Neuroscience*

Other

- Co-Instructor, *Introduction to Psychology* (Yale Prison Education Initiative; co-instructor: Prof. Yarrow Dunham)
- Co-Instructor, *The Cerebellum & Cognition* (UC Berkeley, co-taught online course; co-instructor: Prof. Richard B. Ivry)
- Lead Lecturer, *Introduction to Psychology* (Princeton Prison Teaching Initiative)

Mentoring

Yale

Postdoctoral Scholars

2023 – Present	Zekun Sun
2022-2024	Christopher Hewitson (now Research Scholar at Macquarie University)
2020-2022	Olivia Kim (visiting PD; now Assistant Professor at Bates College)

PhD Students

2023 – Present	Sanghoon Kang
2023 – Present	Apoorva Sharma
2023 – Present	Jay Gandhi (INP; co-advised with Prof. Al Powers)
2020 – Present	Hanna Hillman
2020 – Present	Juliana Trach
2022 – 2023	Liang Zhou (visiting graduate student, University College London)

Dissertation Committees

2024	Vlad Chituc
2024	Rowena Chin
2023	Kathryn Graves
2023	Michael Lopez-Brau
2023	Ashleigh Rutherford
2023	Siqi Fan
2022	Sami Yousif
2022	Lena Skalaban

Prospectus/Qualifying Exam Committees (or equivalent)

2020 – Present	Amanda Royka; Erica Busch; Jamie Masthay; Helen Borges; Prabaha Gangopadhyay; Ashleigh Rutherford; Hanna Hillman; Juliana Trach; Wanchen Zhao; Aalap Shah; Krystian Loetscher (INP); Max Greenwald (INP); Marie McCusker (INP); Neil Savalia (INP); Emily Burke (INP); Muhammad Noman Almani (BME)
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Undergraduate RAs

2024 – Present	Catalina Ossmann
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2024 – Present	Christen McCann
2024 – Present	Hyder Jafri (visiting undergraduate from Wesleyan University)
2023 – Present	Taylor McClure
2023 – Present	Tess Levy
2022 – Present	Tolu Adanri
2021 – Present	Parisa Vaziri
2023 – 2024	Liz Pandolpho
2023 – 2024	Stephanie Hu
2023	Luke Smith, (visiting undergraduate from Cal Poly)
2022 – 2024	Samantha Goodcase
2022 – 2023	Ophelia Pilkinton (now medical student at U. of Tennessee)
2022	Sarosh Kayani (now RA at Yale Neuroscience)
2022	Sabrina Santos De-Leon (visiting undergraduate from University of Puerto Rico)
2021 – 2022	Addison Beer (now postbac RA at WTI Brainworks center)
2021 – 2022	Tal Boger (now PhD student at Johns Hopkins)
2021 – 2022	Katherine Chou
2021 – 2022	Michael Irias (now PhD student at U. of Florida)
2021 – 2022	Tabea Buthof (Now professional hockey player in Sweden)
2021 – 2022	Jed Burde
2021 – 2022	Cameron Berg (now software engineer at Meta)
2020 – 2021	Eddie Yu
2020 – 2021	David Zheng

Senior Thesis Advising

2020 – Present	Taylor McClure; Zack Haaland; Emma Kohlmayer; Samantha Goodcase; Tal Boger; Tabea Botthof; Ophelia Pilkinton; Aparajita Chauhan; Addison Beer; Yehia Elkersh; Sarosh Kayani; Cameron Berg (Yale Cognitive Science 2022 Yale Glushko prize winning thesis); Patrick Brown; Alex Lance; Sonia Lingos-Utley; Sam Ryan; Arielle Tessier
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Academic Advising

2020 – Present	Santiago Calderon; Mark Akladious; Liya Kebede; Ke Ren Tan; William Wei; Daniela Naumov; Samantha Goodcase; Derek Song; Owen Hacker; Anjal Jain; Modupe Karimi; Hugo Lehrach; Katie Shin; Ali Otuzoglu; Sam Tucker-Smith
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External Dissertation Committees

2024 Sébastien Hausmann (EPFL)
2023 Lisa Langsdorf (Justus-Liebig-University Giessen)

UC Berkeley

2018 – 2019 Eliana Shaulson; Ham Huang (Now PhD student at Princeton); Helen Lu (Now research scientist at GIT); Seo Yoon Oh

Princeton

2014 – 2018 Mitashee Das; André Belarmino (Now resident MD at UCLA); Krista Bond (Now PD at Yale)

Service to Yale

Department Committees

2022 – 2023 Co-chair, Committee for Racial Equity & Justice (CREJ)
2024 – Member, Cognitive Science Executive Committee
Present
2024 – Member, Brainworks Steering Committee
Present
2024 – Member, Graduate Program Advisory Committee
Present
2024 Member, Psychology Clinical Area Search Committee
2023 Member, Wu Tsai Institute Search Committee
2023 Member, Psychology Neuroscience Area Search Committee
2023 Member, Psychology Clinical Area Search Committee
2022 Member, Psychology Neuroscience Area Search Committee
2021 Member, Psychology Open Area Search Committee
2023 Member, Wu Tsai Institute Speaker Series Committee
2023 Member, Wu Tsai Institute Conference Committee
2020 – 2023 Member, Committee for Racial Equity & Justice (CREJ)
2020 – 2022 Member, Psychology Hiring Reading Group
2020 – 2021 Member, Psychology Student Awards Committee

Other

2021 – Instructor and initiator of YPEI's Psychology curriculum, Yale Prison Educa-
Present tion Initiative

2024	Panelist, Yale Schwarzman Center, the Wu Tsai Institute, & The Dance Theater of Harlem: “Brain and the Barre: Human Cognition Made Visible Through Dance”
2024	Member, Yale Fulbright Research Grants Committee
2023 – 2024	Reviewer, Yale College Dean’s Summer Research Fellowship
2021 – 2022	Organizer, Current Works in Developmental & Cognitive Psychology
2021 – Present	Reader, Senior Essays (Psychology)
2021 – Present	Reader, Senior Essays (Cognitive Science)
2021 – Present	Reader, Senior Theses (Neuroscience)
2022	Panelist, Yale Postgrad Research Symposium
2023 – 2024	Judge, NSCI Major Neuroscience Prize: Kavli Institute of Neuroscience
2022	Judge, Spring Minorities Symposium
2021	Judge, Angier Prize, Psychology Department
2020	Judge, Senior Showcase

Service to Scientific Field

Chaired Conferences & Workshops

2024 – Present	CoCoA: Cognitive Control of Action, Co-chair and founder Princeton University (biannual workshop) Co-chairs: Adrian Haith & Jordan Taylor
2023 – Present	Motor Learning & Motor Control, Co-chair Society for Neuroscience (annual satellite meeting) Co-chairs: Gelsy Torres-Oviedo, Kurt Thoroughman, & Maurice Smith
2022	The Cerebellum Beyond Motor Control: Insights Into Health & Disease, Co-chair Society for Neuroscience (Minisymposium) Co-chair: Caroline Nettekoven
2017	Cerebellar Function and Pathology: Progress on Cellular, Behavioral and Computational Principles, Co-chair Gordon Research Seminar Co-chair: Lauren McElvain

Boards & Panels

2023 – Present	Elected Board Member, The Society for the Neural Control of Movement
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2022 –
Present

Faculty Advisor, Innovators in Cognitive Neuroscience Organizing Committee

Reviewing & Editing

Editing

Open Mind (Associate Editor)

eLife (Guest Reviewing Editor)

Editorial Board

Journal of Neurophysiology

Journal Reviewing

Behavioral Neuroscience

Brain

Cerebral Cortex

Cognition

Cognitive, Affective, and Behavioral Neuroscience

Consciousness & Cognition

Current Biology

Current Opinion in Behavioral Sciences

eLife

eNeuro

Experimental Brain Research

Journal of Cognitive Neuroscience

Journal of Experimental Child Psychology

Journal of Experimental Psychology: General

Journal of Experimental Psychology: Human Perception & Performance

Journal of Mathematical Psychology

Journal of Neurophysiology

Journal of Neuroscience

Journal of Vision

Molecular Psychiatry

Nature Communications

Nature Human Behavior

Neural Computation

NeuroImage

Neuroscience

Neuroscience and Biobehavioral Reviews
npj Science of Learning
PLoS Biology
PLoS Computational Biology
PLoS ONE
PNAS
Psychonomic Bulletin & Review
Quarterly Journal of Experimental Psychology
Scientific Reports
Trends in Cognitive Sciences
Trends in Neurosciences

Conference Proceeding Reviewing

COSYNE

Motor Learning & Motor Control

Grant Reviewing

Domestic:

NIH: Learning, Memory, and Decision Neuroscience study section (panelist)

NSF/NIH: Collaborative Research in Computational Neuroscience Program (panelist)

NSF (ad hoc reviewer)

International:

Wellcome Trust, UK (ad hoc reviewer)

Israel Science Foundation (ad hoc reviewer)

Other Activities

2011 – 2014

Science Journalist/Contributor

Writing for media outlets including *The Atlantic*, *Motherboard (Vice Media)*, and *The World Science Festival*

Working for Samsung/Razorfish LLC developing a tech and culture mobile app

2004 –
Present

Musician & Music Educator

Competition fiddler/mandolinist/guitarist: Roxbury Fiddle Contest (Blue ribbon in band competition 2022 & 2023; Blue ribbons in old-time fiddle and mandolin; Red ribbon in bluegrass guitar); Charlie Poole Music Festival (Red ribbon in old-time fiddle; Red ribbon in bluegrass guitar); Former member (fiddle/guitar) of musical groups "The Powder Kegs" and "Tumbling Bones;" European and US touring at folk festivals and venues, including an appearance on American Public Media's A Prairie Home Companion (2007) where we were winners of the "Band's in their Twenties" competition; private fiddle/mandolin/guitar instructor (2009-2012); Current member, "Audrey Mae" (CT-based bluegrass band)