TimothyVerstynen Ph.D.

contact

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position(s)

Professor
Psychology
Neuroscience Institute
BME (by courtesy)

expertise

decision-making
exploration & curiosity
reinf. learning
basal ganglia circuits
comp neuroimaging
cognitive comp neuro
health neuroscience

education

1996–2001	**BA** in Psychology	University of New Mexico
2001–2006	**Ph.D.** in Psychology [Cognition, Brain and Behavior]	University of California, Berkeley
2006–2009	**Postdoc** in Neuroscience	University of California, San Francisco
2009–2011	**Postdoc** in Cognitive Neuroscience	University of Pittsburgh

experience

2024–now	**Dept. Psychology, Neuro. Institute** *Professor*	Carnegie Mellon University, Pittsburgh, PA
2019–now	**Biomedical engineering (courtesy)** *Professor*	Carnegie Mellon University, Pittsburgh, PA
2018–2024	**Dept. Psychology, Neuro. Institute** *Associate Professor (with tenure)*	Carnegie Mellon University, Pittsburgh, PA
2018–2023	**CMU-Pitt BRIDGE Center** *Co-Director*	Carnegie Mellon University, Pittsburgh, PA
2017–2018	**Dept. Psychology, Neuro. Institute** *Associate Professor (non-tenured)*	Carnegie Mellon University, Pittsburgh, PA
2014–now	**Learning Research & Development Center** *Adjunct Professor*	University of Pittsburgh, Pittsburgh, PA
2012–2017	**Dept. Psychology, Neuro. Institute** *Assistant Professor*	Carnegie Mellon University, Pittsburgh, PA
2011–2012	**Learning Research & Development Center** *Research Associate*	University of Pittsburgh, Pittsburgh, PA
2007–2009	**NeuroScouting LLC** *Co-founder*	San Francisco, CA

awards & honors

2017–2018	**Young Scientist Award**	World Economic Forum
2014	**PROSE Book Award in Biomedicine and Neuroscience**	Assoc. American Publishers
2013	**Distinguished Alumni Award (Lobo Livingroom)**	UNM
2008–2009	**Swartz Foundation Fellowship, Theoretical Neurobiology**	UCSF
2006–2007	**Vision Science Training Grant**	UCSF
2002–2004	**Cognitive Neuroscience Training Grant**	UC Berkeley
2001	**University Honors, Suma Cum Laude**	UNM
2000	**Departmental Honors, Psychology**	UNM
1999–2001	**New Mexico Access to Research Careers-COR Fellowship**	UNM
1996–2000	**University Scholars Scholarship**	UNM

grants & contracts

Submitted	**Co-PI: "CRCNS US-France Research Proposal: Neural and computational substrates of foraging"**	NSF-CRCNS, $1,473,217
2023–2027	**PI: "CRCNS: Decision dynamics in cortico-basal ganglia-thalamic networks"**	NIH-NIDA, $1,582,994
2023–2027	**Co-I: "Dissecting Behavioral and Neural Mechanisms of Hand Dexterity after Stroke for Effective Rehabilitation"**	NIH-NINDS, $468,455
2021–2022	**PI: "Artificial curiosity to inspire real-life learning"**	TRI, $110,123
2020–2023	**PI: "CRCNS: Circuit-level mechanisms of adaptive decision-making"**	NIH-NIDA R01, $1,026,831
2020–2022	**Co-PI: "AI Institute: Planning: From Biological Intelligence to Human Intelligence to Artificial General Intelligence (B2A)"**	NSF-IIS, $500,000
2018–2022	**Co-PI: "Center of Excellence: Trusted Human-Machine Teaming"**	AFRL, $2,000,000
2018–2023	**Co-PI: "Biobehavioral studies of cardiovascular disease, Core-C Lead"**	NIH-NHLBI, $715,331
2016–2021	**Co-I: "Investigating Gains in Neurocognition in an Intervention Trial of Exercise (IGNITE)"**	NIH-NIDDK R01 (AG053952) $21,800,00
2014–2019	**PI: "Action binding during long-term sequential skill learning: computational and neural mechanisms"**	NSF-CAREER, $507,836
2016–2019	**PI: "Local connectome fingerprinting"**	CAN-CTA (DCS Corp), $400,000
2014–2017	**Co-I: "Covert Sensorimotor Mapping for Guiding Brian-Computer Interfaces"**	VHA-RRDA, $808,256
2012–2017	**Co-I: "Influence of Physical Activity and Weight Loss on Brain Plasticity"**	NIH-NIDDK R01, $2,723,812
2015–2016	**Co-I: "Quantitative Big Brain Data: Personalized predictive neuromarkers for stress- related health risks"**	NSF-IIS, $100,000
2013–2016	**Co-I: "BIGDATA: Mid-Scale: DA: Distribution-based machine learning for high dimensional datasets"**	NSF-IIS, $1,000,000
2015–2015	**PI: "ConnPort: A standardized interface accessing human connectome data"**	PRO-SEED/BRAINHub Seed Grant, $45,000
2015–2016	**PI: "Structure-Function Integration in Neural Systems"**	CAN-CTA (DCS Corp), $350,000
2007–2007	**PI: "Translational Neuroscience Research Award"**	Sandler Foundation, $15,000

trainees

Postdoctoral fellows

2022–now	**Robert Vargas, Ph.D.**	co-mentor with Kevin Jarbo, CMU
2021–2023	**Jyotika Bahuguna, Ph.D.**	co-mentor with Jonathan Rubin, Univ. Pitt
2019–2023	**Javier Rasero, Ph.D.**	co-mentor with Peter Gianaros, Univ. Pitt
2018–2022	**Erik Peterson, Ph.D.**	primary mentor
2017–2019	**Kyle Dunovan, Ph.D.**	primary mentor
2016–2017	**Fatma Uyar, Ph.D.**	primary mentor
2016	**Regina Leckie, Ph.D.**	co-mentor with Peter Gianaros, Univ. Pitt
2014–2018	**Greg Lieberman, Ph.D.**	co-mentor with Jean Vettel, ARL
2014–2017	**Frank Yeh, Ph.D.**	primary mentor

Ph.D. students

2024–now	**Cristina Giossi, (UIB, Math & CS)**	co-primary mentor with Catalina Vich, UIB
2022–now	**Jack Burgess, (CMU PNC)**	primary mentor
2019–2024	**Matthew Clapp, (CMU PNC)**	primary mentor
2021–2023	**Kimberly Nestor, (CMU Psychology)**	primary mentor
2019–2023	**Amy Sentis, (Pitt MSTP, CMU PNC)**	co-mentor with Peter Gianros, Univ. Pitt
2021–2022	**Robert Vargas, (CMU Psychology)**	primary mentor
2017–2022	**Krista Bond, (CMU Psychology)**	primary mentor
2014–2018	**Patrick Beukema, Ph.D. (Pitt CNUP)**	primary mentor
2014–2017	**Kyle Dunovan, Ph.D. (Pitt Psychology)**	primary mentor
2013–2018	**Kevin Jarbo, Ph.D. (CMU Psychology)**	primary mentor
2012–2013	**Brian Kent, Ph.D. (CMU Statistics)**	co-mentor with Alissandro Rinaldo, Statistics

Masters students

2015–2017	**YJ Choe, MS (CMU Statistics-Machine Learning)** MLD/Statistics	co-mentor with Aarti Singh & Shivam Kalhan,

Ph.D. committees

2023–now	**Ricky Choi (CMU Psychology)**	committee member
2023–now	**Kushani Shah (CMU Psychology)**	committee member
2022–now	**Max Kramer (CMU Psychology)**	committee member
2022–now	**Maria Chroneos (CMU Psychology)**	committee member
2021–2024	**Austin Luor (CMU Psychology)**	committee member
2022–2023	**Maxwell Wang (Pitt PNC/MSTP)**	committee member
2020–2023	**Antonija Kolobaric (Pitt CNUP)**	external reader
2019–2023	**Maya Schumer (Pitt CNUP)**	committee member
2018–2023	**Pierre Gianferrara (CMU Psychology)**	committee member
2021–2023	**Felix Proessl (Pitt Physical Therapy)**	external reader
2018–2023	**Alex Hsu (CMU Biology)**	committee member
2018–2023	**Yang Terng Seow (CMU Psychology)**	committee member
2021–2022	**Jennifer Williams (CMU PNC)**	committee member
2021	**Sankirthana Sathiyakumar (Univ. Toronto, BME)**	external reader
2016–2022	**Robert Vargas (CMU Psychology)**	committee member
2015–2020	**Carillon Skrzynski (CMU Psychology)**	committee member
2014–2019	**Dylan Royston (Pitt BME)**	external reader
2014–2019	**Cory Derringer (Pitt Psychology)**	external reader
2013–2019	**Juliet Shafto (CMU Psychology)**	committee member
2014–2017	**Ruben Sanchez Romero (CMU Philosophy)**	committee member
2013–2017	**Bart Larsen (Pitt CNUP)**	external reader
2013–2017	**David Montez (Pitt CNUP)**	external reader
2014–2017	**Scott Marek (Pitt CNUP)**	external reader
2013–2017	**Sarah Lichtenstein (Pitt Psychology)**	external reader

editorial boards

eLife: Review Board Editor (2016-2023); **Frontiers in Human Neuroscience:** Special Topic Editor, "Explicating the interplay between anatomical and functional connectivity in the human brain."; **Proceedings of the National Academy of Sciences:** Guest Editor.

teaching

2016–now	**CMU (85-432/732): Data Science Psychology & Neuroscience**	instructor
2018–now	**CMU (85-435/735): Biologically Intelligent Exploration**	instructor
2017	**CMU (85-732): Volition, Agency, & the Brain**	co-instructor
2014-2015	**Pitt-CMU: Multimodal Neuroimaging Training Program (MNTP)**	specialty instructor
2015	**CMU (85-173): Virtual Neuroanatomy**	instructor
2013–2015	**CMU (85-314): Research Methods in Cognitive Neuroscience**	instructor
2013–2015	**CMU (85-111): Immortui Cerebrum: The neuroanatomy of zombie minds**	instructor
2012	**Pitt (499): Brain Connectivity**	guest instructor
2012	**Brown Univ: In-vivo Fiber Tractography Workshop**	instructor
2011	**Pitt: In-vivo Fiber Tractography Workshop**	guest instructor
2003	**UCB Psychology 101: Research Design and Statistics**	teaching assistant
2002	**UCB Cog Sci. 84: Transcranial Magnetic Stimulation**	teaching assistant

scientific advisory boards

2009–2014	**NeuroScouting LLC**
2010–2020	**Zombie Research Society**

invited talks

2024	**CRCNS PI Meeting, Minneapolis**	invited talk
2023	**Neuroscience Institute Alumni Series**	invited talk
2023	**CRCNS Basal Ganglia Working Group (Mallorca)**	organized talk
2022	**Rutgers-Princeton Brain Health Institute**	vitual talk
2022	**Human Neuro Colloquium, University of Alabama Birmingham**	vitual talk
2022	**INMED/INSERM, Marseille France**	CENTUIR seminar talk
2021	**Toyota Research Institute**	invited talk
2021	**CRCNS PI Meeting, NYC**	invited talk
2021	**Neuroimaging Seminar, Univ. Georgia**	virtual talk
2021	**Society for Mathematical Biology**	virtual talk
2021	**AFRL-CMU COE Seminar**	invited talk
2019	**Cog. Sci Colloquium, Indiana University**	invited talk
2019	**TWIN Colloquium, Western University**	invited talk
2019	**Psychological & Brain Sciences Seminar, Johns Hopkins University**	invited talk

2019	**Kavli Neuro. Disc. Inst. Seminar, Johns Hopkins University**	invited talk
2018	**Visual Brain Core, University of Alabama at Birmingham**	virtual talk
2017	**Statistical Analysis of Neural Data (SAND8), Carnegie Mellon University**	invited talk
2017	**Department of Psychological & Brain Sciences, Univ. Mass., Amherst**	invited talk
2016	**Café Sci Lecture. Carnegie Science Center, Pittsburgh**	invited talk
2016	**Natural History Museum of Los Angeles County**	invited talk
2016	**Stanford Cognitive & Systems Neuroscience Group, Stanford Univ.**	invited talk
2016	**Department of Psychology Colloquium, Univ. California, Berkeley**	invited talk
2016	**Cent. for Mol. & Beh. Neuro. Colloquium, Rutgers Univ.**	invited talk
2015	**Hooks Books Events, Janelia Farm Research Center**	invited talk
2015	**Molecular, Cellular & Int. Neuro, Colorado State Univ.**	invited talk
2015	**Neuroimaging Center Symposium, Colorado University, Boulder**	invited talk
2015	**Students Seminar, West Virginia University**	invited talk
2015	**Magnetic Resonance Research Center Lecture, UPMC**	invited talk
2014	**Pittsburgh MRI Retreat, University of Pittsburgh**	invited talk
2014	**Google Cambridge**	invited talk
2014	**Harvard Bookstore, Cambridge**	invited talk
2013	**Cognitive Lunch Seminar, Princeton University**	invited talk
2013	**Lobo Living Room Lecture, University of New Mexico**	invited talk
2013	**Cafe Sci Lecture, Carnegie Science Center, Pittsburgh**	invited talk
2011	**Bio & Health Psych Brown Bag, University of Pittsburgh**	invited talk
2010	**Psychology Afternoon Lecture Series, University of New Mexico**	invited talk
2010	**ZombiCon, Seattle, WA**	invited talk
2009	**Sloan-Swartz Comp. Neuro. Meeting, Harvard University**	invited talk
2008	**Cog. Neuro Seminar, University California, San Francisco**	invited talk
2006	**Human Motor Control Seminar, National Institute of Health**	invited talk
2006	**Department of Psychology Seminar, University of Auckland, New Zealand**	invited talk
2006	**CBB Symposium, University of California, Berkeley**	invited talk

publications

Books

Verstynen, T., & Voytek, B. (2014). Do Zombies Dream of Undead Sheep?. Princeton University Press.

Preprints

Giossi, C., Bahuguna, J., Rubin, J., Verstynen, T., & Vich, C. (2024) Arkypallidal neurons in the external globus pallidus can mediate inhibitory control by altering competition in the striatum. bioRxiv

Kasarda, J. P., Zhang, A., Tong, H., Tan, Y., Wang, R., Verstynen, T., & Tarr, M. (2024). The Oomplet Dataset Toolkit: A flexible and extensible system for large-scale, multi-category image generation.

Peterson, E. J., & Verstynen, T. D. (2019). A way around the exploration-exploitation dilemma. bioRxiv

Agarwal, A., Kumar, V., Dunovan, K., Peterson, E., Verstynen, T., & Sycara, K. (2018). Better Safe than Sorry: Evidence Accumulation Allows for Safe Reinforcement Learning. arXiv

Millette, A., Lynch, B., & Verstynen, T. (2017). Abdominal adiposity negatively associates with the rate of long term sequential skill learning. bioRxiv

Verstynen, T., & Sabes, P. N. (2011). An analysis of the emergence of adaptive Bayesian priors from Hebbian learning in a simple attractor network model. arXiv

Reviews, perspectives, & chapters

Giossi, C., Rubin, J. E., Gittis, A., Verstynen, T., & Vich, C. (in press). Rethinking the external globus pallidus and information flow in cortico-basal ganglia-thalamic circuits. European Journal of Neuroscience

Verstynen, T., & Kording, K. P. (2023). Overfitting to 'predict' suicidal ideation. Nature Human Behaviour, 1-2.

Rubin, J. E., Vich, C., Clapp, M., Noneman, K., & Verstynen, T. (2021). The credit assignment problem in cortico basal ganglia thalamic networks: A review, a problem and a possible solution. European Journal of Neuroscience, 53(7), 2234-2253.

Porter, A., Leckie, R., & Verstynen, T. (2018). White matter pathways as both a target and mediator of health behaviors. Annals of the New York Academy of Sciences, 1428(1), 71-88.

Beukema, P., & Verstynen, T. (2018). Predicting and binding: interacting algorithms supporting the consolidation of sequential motor skills. Current opinion in behavioral sciences, 20, 98-103.

Vettel, J. M., Cooper, N., Garcia, J. O., Yeh, F. C., & Verstynen, T. D. (2017). White Matter Tractography and Diffusion Weighted Imaging. eLS, 1-9.

Lichenstein, S. D., Verstynen, T., & Forbes, E. E. (2016). Adolescent brain development and depression: a case for the importance of connectivity of the anterior cingulate cortex. Neuroscience & Biobehavioral Reviews, 70, 271-287.

Dunovan, K., & Verstynen, T. (2016). Believer-Skeptic meets Actor-Critic: Rethinking the role of basal ganglia pathways during decision-making and reinforcement learning. Frontiers in neuroscience, 10, 106.

Verstynen, T. D. (2015). How form constrains function in the human brain. Emerging Trends in the Social and Behavioral Sciences: An Interdisciplinary, Searchable, and Linkable Resource, 1-16.

Erickson, K. I., Creswell, J. D., Verstynen, T. D., & Gianaros, P. J. (2014). Health neuroscience: defining a new field. Current directions in psychological science, 23(6), 446-453.

Diedrichsen, J., Verstynen, T., Schlerf, J., & Wiestler, T. (2010). Advances in functional imaging of the human cerebellum. Current opinion in neurology, 23(4), 382-387.

Verstynen, T., Oliver, M., & Ivry, R. B. (2010). Experiencing the future: the influence of self-initiation on temporal perception. Space and Time in Perception and Action.

Peer reviewed articles

Rasero, J., Verstynen, T. D., DuPont, C. M., Kraynak, T. E., Barinas-Mitchell, E., Scudder, M. R., ...& Gianaros, P. J. (in press). Stressor-evoked brain activity, cardiovascular reactivity, and subclinical atherosclerosis in midlife adults. Journal of the American Heart Association.

Clapp, M., Bahuguna, J., Giossi, C., Rubin, J. E., Verstynen, T.,& Vich, C. (in press). CBGTPy: An extensible cortico-basal ganglia-thalamic framework for modeling biological decision making. PLoS One.

Banuelos, C., Creswell, K., Walsh, C., Manuck, S. B., Gianaros, P. J., & Verstynen, T. (2024). D2 dopamine receptor expression, sensitivity to rewards, and reinforcement learning in a complex value-based decision-making task. Social, Cognitive, and Affective Neuroscience, 19(1).

Rasero, J., Betzel, R., Sentis, A. I., Kraynak, T. E., Gianaros, P. J., & Verstynen, T. (2024). Similarity in evoked responses does not imply similarity in macroscopic network states. Network Neuroscience, 1-20.

De Silva, A., Ramesh, R., Ungar, L., Shuler, M. H., Cowan, N. J., Platt, M., ... & Vogelstein, J. T. (2023). Prospective Learning: Principled Extrapolation to the Future. In Conference on Lifelong Learning Agents (pp. 347-357). PMLR.

Bond, K.A., Rasero, J., Madan, R., Bahuguna, J., Rubin, J., & Verstynen. T. (2023). Competition between action plans tracks with evidence accumulation during flexible decision-making. eLife, 12, e85223 *** **peer reviewed, before new model**

Vich, C., Clapp, M., Rubin, J. E., & Verstynen, T. (2022). Identifying control ensembles for information processing within the cortico-basal ganglia-thalamic circuit. PLOS Computational Biology, 18(6), e1010255.

Sentis, A. I., Rasero, J., Gianaros, P. J., & Verstynen, T. (2022). Integrating Multiple Imaging Modalities does not Boost Prediction of Carotid Artery Intima-Media Thickness in Midlife Adults. Neuroimage: Clinical, 35, 103134.

Tsay, J. S., Kim, H. E., Saxena, A., Parvin, D. E., Verstynen, T., & Ivry, R. B. (2022). Dissociable use-dependent processes for volitional goal-directed reaching. Proceedings of the Royal Society B, 289(1973), 20220415.

Gianaros, P.J., Rasero, J., DuPont, C.M., Kraynak, TE., Gross, J.L., McRae, K., Wright, A., Verstynen, T., & Barinas-Mitchell, E. (2022). Multivariate Brain Activity while Viewing and Reappraising Affective Scenes Does Not Predict the Multiyear Progression of Preclinical Atherosclerosis in Otherwise Healthy Midlife Adults. Affective Science, 3(2), 406-424

Bond, K., Dunovan, K., Porter, A., Rubin, J. E., & Verstynen, T. (2021). Dynamic decision policy reconfiguration under outcome uncertainty. eLife, 10, e65540. *** **peer reviewed, before new model**

Banihashemi, L., Peng, C. W., Verstynen, T., Wallace, M. L., Lamont, D. N., Alkhars, H. M., ... & Germain, A. (2021). Opposing relationships of childhood threat and deprivation with stria terminalis white matter. Human brain mapping, 42(8), 2445-2460.

Rasero, J., Sentis, A. I., Yeh, F. C., & Verstynen, T. (2021). Integrating across neuroimaging modalities boosts prediction accuracy of cognitive ability. PLoS computational biology, 17(3), e1008347.

Skrzynski, C. J., Creswell, K. G., Verstynen, T., Bachrach, R. L., & Chung, T. (2021). The influence of negative mood on solitary drinking preference: An experiment with young adult solitary drinkers. PloS one, 16(2), e0247202.

Verstynen, T., Dunovan, K., Walsh, C., Kuan, C. H., Manuck, S. B., & Gianaros, P. J. (2020). Adiposity covaries with signatures of asymmetric feedback learning during adaptive decisions. Social Cognitive and Affective Neuroscience, 15(10), 1145-1156.

Jarbo, K., Colaço, D., & Verstynen, T. (2020). Contextual framing of loss impacts harm avoidance during risky spatial decisions. Journal of Behavioral Decision Making, 33(5), 657-670.

Peterson, E., Müyesser, N. A., Verstynen, T., & Dunovan, K. (2020). Combining Imagination and Heuristics to Learn Strategies that Generalize. Neurons, Behavior, Data analysis, and Theory, 3(4), 1-19.

Gianaros, P. J., Kraynak, T. E., Kuan, D. C., Gross, J. J., McRae, K., Hariri, A. R., ... & Verstynen, T. D. (2020). Affective brain patterns as multivariate neural correlates of cardiovascular disease risk. Social cognitive and affective neuroscience, 15(10), 1034-1045.

Vich, C., Dunovan, K., Verstynen, T., & Rubin, J. (2020). Corticostriatal synaptic weight evolution in a two-alternative forced choice task. Communications in Nonlinear Science and Numerical Simulation, 105048.

Bañuelos, C., & Verstynen, T. (2019). How structural brain network topologies associate with cognitive abilities in a value-based decision-making task. Impulse (19343361).

Erickson, K. I., Grove, G. A., Burns, J. M., Hillman, C. H., Kramer, A. F., McAuley, E., ... & Huang, H. (2019). Investigating gains in neurocognition in an Intervention Trial of Exercise (IGNITE): Protocol. Contemporary clinical trials, 85, 105832.

Beukema, P., Diedrichsen, J., & Verstynen, T. (2019). Binding during sequence learning does not alter cortical representations of individual actions. Journal of Neuroscience, 2669-18.

Ashourvan, A., Telesford, Q. K., Verstynen, T., Vettel, J. M., & Bassett, D. S. (2019). Multi-scale detection of hierarchical community architecture in structural and functional brain networks. PloS one, 14(5), e0215520.

Dunovan, K., Vich, C., Clapp, M., Verstynen, T., & Rubin, J. (2019). Reward-driven changes in striatal pathway competition shape evidence evaluation in decision-making. PLoS computational biology, 15(5), e1006998.

Bansal, K., Garcia, J. O., Tompson, S. H., Verstynen, T., Vettel, J. M., & Muldoon, S. F. (2019). Cognitive chimera states in human brain networks. Science Advances, 5(4), eaau8535.

Dunovan, K., & Verstynen, T. (2019). Errors in action timing and inhibition facilitate learning by tuning distinct mechanisms in the underlying decision process. Journal of Neuroscience, 39(12), 2251-2264.

Balakrishnan, S., Choe, Y. J., Singh, A., Vettel, J., & Verstynen, T. (2018). Local White Matter Architecture Defines Functional Brain Dynamics. In 2018 IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 595-602). IEEE. * Co-winner of Franklin V. Taylor Memorial Award

Yeh, F. C., Panesar, S., Fernandes, D., Meola, A., Yoshino, M., Fernandez-Miranda, J. C., ... & Verstynen, T. (2018). Population-averaged atlas of the macroscale human structural connectome and its network topology. NeuroImage, 178, 57-68.

Jarbo, K., Flemming, R., & Verstynen, T. D. (2018). Sensory uncertainty impacts avoidance during spatial decisions. Experimental brain research, 236(2), 529-537.

Powell, M. A., Garcia, J. O., Yeh, F. C., Vettel, J. M., & Verstynen, T. (2018). Local connectome phenotypes predict social, health, and cognitive factors. Network neuroscience, 2(1), 86-105.

Larsen, B., Verstynen, T. D., Yeh, F. C., & Luna, B. (2017). Developmental changes in the integration of affective and cognitive corticostriatal pathways are associated with reward-driven behavior. Cerebral Cortex, 28(8), 2834-2845.

Gianaros, P. J., Sheu, L. K., Uyar, F., Koushik, J., Jennings, J. R., Wager, T. D., ... & Verstynen, T. D. (2017). A brain phenotype for stressor evoked blood pressure reactivity. Journal of the American Heart Association, 6(9), e006053.

Lynch, B., Beukema, P., & Verstynen, T. (2017). Differentiating visual from response sequencing during long-term skill learning. Journal of cognitive neuroscience, 29(1), 125-136.

Muraskin, J., Dodhia, S., Lieberman, G., Garcia, J. O., Verstynen, T., Vettel, J. M., ... & Sajda, P. (2016). Brain dynamics of post task resting state are influenced by expertise: Insights from baseball players. Human brain mapping, 37(12), 4454-4471.

Yeh, F. C., Vettel, J. M., Singh, A., Poczos, B., Grafton, S. T., Erickson, K. I., ... & Verstynen, T. D. (2016). Quantifying differences and similarities in whole-brain white matter architecture using local connectome fingerprints. PLoS computational biology, 12(11), e1005203.

Yeh, F. C., & Verstynen, T. D. (2016). Converting multi-shell and diffusion spectrum imaging to high angular resolution diffusion imaging. Frontiers in neuroscience, 10, 418.

Lichenstein, S. D., Bishop, J. H., Verstynen, T. D., & Yeh, F. C. (2016). Diffusion capillary phantom vs. human data: outcomes for reconstruction methods depend on evaluation medium. Frontiers in neuroscience, 10, 407.

Muraskin, J., Sherwin, J., Lieberman, G., Garcia, J. O., Verstynen, T., Vettel, J. M., & Sajda, P. (2016). Fusing multiple neuroimaging modalities to assess group differences in perception–action coupling. Proceedings of the IEEE, 105(1), 83-100.

Barredo, J., Verstynen, T. D., & Badre, D. (2016). Organization of cortico-cortical pathways supporting memory retrieval across subregions of the left ventrolateral prefrontal cortex. Journal of neurophysiology, 116(3), 920-937.

Oberlin, L. E., Verstynen, T. D., Burzynska, A. Z., Voss, M. W., Prakash, R. S., Chaddock-Heyman, L., ... & Phillips, S. M. (2016). White matter microstructure mediates the relationship between cardiorespiratory fitness and spatial working memory in older adults. Neuroimage, 131, 91-101.

Yeh, F. C., Badre, D., & Verstynen, T. (2016). Connectometry: a statistical approach harnessing the analytical potential of the local connectome. Neuroimage, 125, 162-171.

Rofey, D. L., Arslanian, S. A., El Nokali, N. E., Verstynen, T., Watt, J. C., Black, J. J., ... & Erickson, K. I. (2015). Brain volume and white matter in youth with type 2 diabetes compared to obese and normal weight, non-diabetic peers: A pilot study. International Journal of Developmental Neuroscience, 46, 88-91.

Beukema, P., Yeh, F. C., & Verstynen, T. (2015). In vivo characterization of the connectivity and subcomponents of the human globus pallidus. NeuroImage, 120, 382-393.

Dunovan, K., Lynch, B., Molesworth, T., & Verstynen, T. (2015). Competing basal ganglia pathways determine the difference between stopping and deciding not to go. eLife, 4, e08723. *** **peer reviewed, before new model**

Fernández-Miranda, J. C., Wang, Y., Pathak, S., Stefaneau, L., Verstynen, T., & Yeh, F. C. (2015). Asymmetry, connectivity, and segmentation of the arcuate fascicle in the human brain. Brain Structure and Function, 220(3), 1665-1680.

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