

# Matheus Brandão Victor, Ph.D.

HHMI Hanna H. Gray Postdoctoral Fellow

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## EDUCATION AND TRAINING

- 2018-Present     **Postdoctoral Fellow**  
Massachusetts Institute of Technology  
Picower Institute for Learning and Memory | Advisor: Dr. Li-Huei Tsai
- 2011-2017       **Ph.D. in Neuroscience**  
Washington University in St. Louis  
Department of Developmental Biology | Advisor: Dr. Andrew Yoo
- 2004-2008       **B.S. in Biological Sciences**  
Florida State University

## ADDITIONAL RESEARCH EXPERIENCE

- 2009-2011       **Senior Research Technician**  
Columbia University, New York, NY  
Advisors: Dr. Alex Dranovsky and Dr. E. David Leonardo
- Spring 2009     **Post-Baccalaureate Internship**  
Brazilian Institute of Amazonian Research, Manaus, Brazil.  
Advisor: Dr. Jose Alves-Gomes

## PEER-REVIEWED PUBLICATIONS (Graduate Work) [first-author]

- Victor M.B.\***, Richner M.\*, Hermansteyne T.O., Ransdell J.L., Sobieski C., Deng P.Y., Klyachko V.A., Nerbonne J.M., Yoo A.S. Generation of Human Striatal Neurons by MicroRNA-Dependent Direct Conversion of Fibroblasts. *Neuron* (2014)
- Richner M.\*, **Victor M.B.\***, Liu Y., Abernathy D.G., Yoo A.S. MiRNA-based Conversion of Human Fibroblasts to Striatal Medium Spiny Neurons. *Nature Protocols* (2015)
- Huh C.J., Zhang B., **Victor M.B.**, Dahiya S., Batista L.F.Z., Horvath S., Yoo A.S. Maintenance of Age in Human Neurons Generate by microRNA-based Neuronal Conversion of Fibroblasts. *eLife* (2016).
- Victor M.B.**, Richner M., Olsen H., Lee S., Monteyes M.A., Ma C., Huh C., Zhang B., Davidson B.L., Yang X.W. & Yoo A.S. Modeling Huntington's Disease with Directly Converted Patient Neurons. *Nature Neuroscience* (2018)
- Fox L.M., Kim K., Johnson C.W., Chen S., Croce K.R., **Victor M.B.**, Eenjes E., Bosco J.R., Randolph L.K., Dragatsis I., Dragich J.M., Yoo A.S., Yamamoto A. Huntington's Disease Pathogenesis Is Modified In Vivo by *Alfy/Wdfy3* and Selective Macroautophagy. *Neuron* (2020)

## PEER-REVIEWED PUBLICATIONS (Postdoctoral Work)

6. Blanchard J.W., Bula M., Davila-Velderrain J., Akay L.A., Zhu L., Frank A., **Victor M.B.**, Bonner J.M., Mathys H., Lin Y.T., Ko T., Bennett D.A., Cam H.P., Kellis M., Tsai L.H. Reconstruction of the human blood-brain barrier in vitro reveals a pathogenic mechanism of APOE4 in pericytes. *Nature Medicine* (2020)
7. Blanchard J.W.\*, **Victor M.B.\*** & Tsai L.H. Dissecting the complexities of Alzheimer disease with in vitro models of the human brain. *Nature Reviews Neurology* (2022)
8. Welch G.M., Boix C.A., Schmauch E., Davila-Velderrain J., **Victor M.B.**, Dileep V., Bozzelli P.L., Su Q., Cheng J.D., Lee A., Leary N.S., Pfenning A.R., Kellis M., Tsai L.H.. Neurons burdened by DNA double-strand breaks incite microglia activation through antiviral-like signaling in neurodegeneration. *Science Advances* (2022)
9. **Victor M.B.\***, Leary N., Luna X., Meharena H.S., Scannail A.N., Bozzelli P.L., Samaan G., Murdock M.H., Maydell D.V., Effenberger A.H., Cerit O., Wen S.L., Liu L., Welch G., Bonner M. & Tsai L.H. Lipid Accumulation Induced by APOE4 Impairs Microglial Surveillance of Neuronal-Network Activity. *Cell Stem Cell* (2022)
10. Xiong X.\*, James B.T.\*, Boix C.A.\*, Park Y., Galani K, **Victor M.B.**, Sun N., Hou L., Ho L.L., Mantero J., Scannail A.N., Mathys H., Bennett D.A., Tsai L.H.<sup>†</sup>, Kellis M.<sup>†</sup> Single-cell epigenomic dissection of Alzheimer's disease pinpoints causal genetic variants and reveals epigenome erosion. *Cell* (2023)
11. Mathys H. \*, Boix C. \*, Peng, Z. \*, **Victor M.B.**, Leary N., Babu, S., Abdelhady G., Jiang X., Ng A.P., Ghafari K., (...), Kellis M.<sup>†</sup>, Tsai L.H.<sup>†</sup> Single-cell atlas of the aged human brain reveals cellular and molecular correlates of high cognitive function, dementia, and resilience to Alzheimer's disease pathology. *Cell* (2023)
12. Sun N. \*, **Victor M.B. \***, Park Y., Xiong X., Ni Scannail A., Viswanathan S., Leary N., Luna X., Prosper S., Tanigawa Y., Galani K., Mathys H., Jiang X., Ng A.P., Bennett D.A., Tsai L.H.<sup>†</sup> & Kellis M.<sup>†</sup> Human Microglial State Dynamics in Alzheimer's Disease Progression. *Cell* (2023)

\* Equal Contribution, † Co-corresponding Authors, Direct Mentees

## CURRENT RESEARCH SUPPORT

2018-Present    Hanna H. Gray Fellowship  
Howard Hughes Medical Institute (HHMI)  
Faculty phase of the award: \$270,000 per year for 4 years.

## COMPLETED RESEARCH SUPPORT

2013-2016    Graduate Research Fellowship Program | DGE-1143954  
National Science Foundation (NSF)

2016-2017    Aging Research Dissertation Award | R36AG053444  
National Institute of Aging (NIH/NIA)

## **AWARDS & HONORS**

2023 | Rising Star Award – Brain & Cognitive Sciences, MIT  
2023 | Merit Award – International Society for Stem Cell Research (ISSCR)  
2023 | TigerBrain Symposium Speaker - Princeton University  
2023 | Infinite Expansion Award for Mentoring and Service – MIT  
2022 | Exceptional Postdoctoral Scientists Award – Rockefeller University  
2019 | Koch Institute Image Award – MIT  
2019 | Axiom Biosystems Travel Award  
2018 | Jane Coffin Childs Postdoctoral Fellowship (Declined)  
2016 | NIH Blueprint ENDURE SfN Travel Award  
2015 | Irving Boime Publication Award – Department of Developmental Biology - WUSTL  
2015 | Neuroscience Scholars Program – Society for Neuroscience  
2015 | Inducted into Edward A. Bouchet Graduate Honor Society at Yale University  
2014 | Tom Tatch Award – McDonnell Center for Systems Neuroscience - WUSTL  
2014 | Viktor Hamburger Award – Department of Developmental Biology - WUSTL  
2013 | Wangari Mathaai Graduate Service Award – WUSTL  
2013 | Graduate Research Fellowship – National Science Foundation  
2012 | Honorable Mention - National Science Foundation  
2004 – 2008 | Florida Bright Futures Scholar – Florida State University

## **TEACHING EXPERIENCE**

2023 | Kaufman Teaching Certificate - MIT  
2022 | Guest Lecturer – Neurogenomics: Computational Molecular Neuroscience - MIT  
2017 | Guest Lecturer - Lifelong Learning Institute - WUSTL  
2014 | Guest Lecturer - Exploring Careers in the Biomedical Sciences –WUSTL  
2014 | Instructor - Molecular Biology on the Cutting Edge –WUSTL  
2013 | Guest Lecturer - Science Honors Program - Columbia University  
2012 | Teaching Assistant - Principles of the Nervous System –WUSTL

## **SCIENTIFIC MENTORSHIP AND LEADERSHIP**

2023 | Mentor to Kayla Quinlan – Incoming Freshmen at Wellesley College (LEAH Knox)  
2022-2024 | Mentor to Shaniah Prosper – BCS Post-Bac Student (MIT)  
2022 | Mentor to Anya Viswanathan – Undergraduate at UMBC (MIT MSRP BIO)  
2019 – 2022 | Mentor to Xotchil Luna – Undergraduate at MIT  
2016 – 2018 | Mentor to Hannah Olsen – Undergraduate at WUSTL  
2011 – 2016 | President - Graduate Association of Latin American Students - WUSTL  
2014 | Mentor - NSF GRFP Grant writing workshop - WUSTL  
2014 | Mentor to Aron Soleiman - Undergraduate – WUSTL  
2013 | Mentor to Alexander Lu - Undergraduate – WUSTL  
2011 – 2013 | Mentor - Young Scientist Continued Mentoring Program - WUSTL  
2011 – 2013 | Mentor to Marvin Bowden Jr. - Soldan High School Student, St. Louis MO

## **REFERENCES**

Li-Huei Tsai, Ph.D. Professor and Director  
Picower Institute for Learning and Memory  
Postdoctoral Advisor | [lhtsai@mit.edu](mailto:lhtsai@mit.edu)

Andrew Yoo Ph.D., Professor  
Washington University School of Medicine  
Ph.D. Advisor | [yooa@wustl.edu](mailto:yooa@wustl.edu)