Lucas Y. Tian, Ph.D.

Assistant Professor (starting Jan 2027)
Center for Neural Science
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EDUCATION

2012 - 2019	Ph.D. in Neuroscience, UC San Francisco, CA (Advisor: Michael Brainard)
2007 - 2011	B.A. with Honors in Biology, specializing in Neuroscience, University of Chicago, IL (Advisor: Douglas Bishop)

EMPLOYMENT

Jan 2027 -	Assistant Professor, New York University, NY Center for Neural Science and Department of Biomedical Engineering.
2019 - 2026	Postdoctoral Scholar, The Rockefeller University, New York, NY Advisor: Winrich Freiwald; Co-advisors: Josh Tenenbaum, Xiao-Jing Wang Topic: Neural basis of compositional generalization, in a macaque drawing task.
2019 (May-Dec)	Visiting Postdoctoral Scholar, MIT, Cambridge, MA Advisor: Josh Tenenbaum; Co-advisors: Winrich Freiwald, Xiao-Jing Wang Topic: Cognitive computational modeling of human drawing.
2012 - 2019	Ph.D. Student, UCSF, San Francisco, CA Advisor: Michael Brainard Thesis: Neural mechanisms of motor skill flexibility in songbirds (link)

AWARDS AND HONORS

General

2026	Simons Empire Faculty Fellowship
2026	Emerging Neuroscientists Seminar Speaker, Sainsbury Wellcome Centre, UCL *(4 awardees worldwide)*
2026	Tri-Institutional Breakout Prize for Junior Investigators *(1 awardee across Rockefeller, all disciplines)*
2025	MSN Extramural Postdoctoral Invited Speaker, Mt. Sinai *(10 awardees countrywide)*
2025	SPiNES Extramural Postdoctoral Invited Speaker, NYU *(8 awardees countrywide)*
2025	NEUROYES Extramural Postdoctoral Invited Speaker, University of Rochester *(4 awardees countrywide; declined, as I was already scheduled to give a talk in this department)*
2023	NINDS K99/R00 Transition to Independence Award
2020	NIH BRAIN F32 NRSA Postdoctoral Fellowship
2014	Herbert W. Boyer PIBS Fellowship, UCSF

Travel awards

2026	Neural Control of Movement Scholarship
2025	Postdoctoral Association Career Development Award, Rockefeller
2025	COSYNE Presenters Travel Grant
2016	Graduate Division Travel Award, UCSF

PEER-REVIEWED PUBLICATIONS

2026 **Tian LY**, Garzón Gupta K, Hanuska DJ, Rouse AG, Eldridge MAG, Schieber MH, Wang XJ, Tenenbaum JB, Freiwald WA. Neural representation of action symbols in primate frontal cortex. ***Nature*** 654, 152–162. Link. Rockefeller News. The Transmitter.

2023 **Tian LY**, Warren TL, Mehaffey WH, Brainard MS. Dynamic top-down biasing implements rapid adaptive changes to individual movements. ***eLife*** 12:e83223. Link

2021 Veit L, **Tian LY**, Monroy Hernandez CJ, Brainard MS. Songbirds can learn flexible contextual control over syllable sequencing. ***eLife*** 10: e61610. Link

2020 **Tian LY**, Ellis K, Kryven M, Tenenbaum JB. Learning abstract structure for drawing by efficient motor program induction. ***Advances in Neural Information Processing Systems***, 33 [*oral presentation; top 1% of submissions*]. Link

2017 **Tian LY**, Brainard MS. Discrete circuits support generalized versus context-specific vocal learning in the songbird. ***Neuron*** 96(5), 1168-1177. Link, Commentary, News

PREPRINTS

2026 Liu Y, **Tian LY**, Tenenbaum JB, Freiwald WA, Wang XJ. A neural circuit algorithm for action grammar. ***bioRxiv*** 2026.10.06.757194. Link

2026 **Tian LY**, Hanuska DJ, Garzón Gupta K, Liu Y, Wang XJ, Tenenbaum JB, Freiwald WA. Neural representation of action grammar structure in primate frontal cortex. ***bioRxiv*** 2026.01.18.700235. Link

MANUSCRIPTS IN PREPARATION

Reviews

Submitted McDougle SD, **Tian LY**, Sun Z, Wong AL. Motor abstraction in mind and brain.

FUNDING

2023 - 2029 **NINDS K99/R00 Transition to Independence Award**
Title: Investigating Symbolic Computation in the Brain: Neural Mechanisms of Compositionality (5K99NS131585) (PI: **Tian, LY**)
Total Award Amount (including Indirect Costs): **$268,542** (2-year K99 phase), **$747,000** (3-year R00 phase)

2021 - 2026 **Simons Foundation SCGB Pilot Award** (key personnel – contributing co-author)
Title: Investigating Symbol-like Reasoning in the Brain: Neural Mechanisms of Compositional Action Planning (876120SPI) (PI: Freiwald, WA)
Total Award Amount (including Indirect Costs): **$770,000**

2020 - 2023 **NIH BRAIN F32 NRSA Postdoctoral Fellowship**
Title: The planning of new compositional action sequences guided by interpretation of ambiguous sensory data in a novel drawing task (F32MH125573) (PI: **Tian, LY**)
Total Award Amount: **$209,778**

MEDIA COVERAGE

2026 "The grammar of movement", Sainsbury Wellcome Centre. Link

2026 "Cortical area remixes macaques' knowledge blocks to solve new problems", The Transmitter. Link

2023 "Researcher spotlight: F32 recipient Dr. Lucas Tian" (Q&A), NIH BRAIN Initiative. Link

INVITED TALKS

Competitively selected conference talks

2026 Cognitive Computational Neuroscience (Contributed Talk), New York, USA

2026 Gordon Research Seminar (Neurobiology of Cognition), New Hampshire, USA

2026 Neural Control of Movement Team Oral (Panel), Kobe, Japan

2025 Society for Neuroscience Nanosymposium, San Diego, USA

2025 COSYNE Main Meeting (3% of submissions), Montreal, Canada (video)

2024 Ascona Circuits Meeting, Ascona, Switzerland

2020 NeurIPS (1% of submissions) (video)

Symposia

2027 The Neural Geometry of Mental Representations in Humans and Other Animals, Collège de France, Paris, France

2027 Cognitive Area Current Works Symposium, Yale University, New Haven, USA

2026 GCNI Annual Symposium, The Chinese University of Hong Kong, China

2026 Tri-I Breakout Prize Symposium, Memorial Sloan Kettering, New York, USA

2025	Kavli Internal Symposium, Rockefeller, New York, USA
2025	Lipschultz Symposium, Icahn School of Medicine (Mt. Sinai), New York, USA
2025	The Social Brain Symposium, Rockefeller and Columbia, New York, USA
2021	Object Cognition Workshop, Yale, New Haven, USA (virtual)
2018	Birds Bats Brains Meeting, UC Berkeley, USA

Department talks

2026	CompCog Speaker Series, Yale, USA
2026	Vision Research (SIVR) Colloquium Series, SUNY, USA
2026	Sainsbury Wellcome Centre, UCL, UK
2026	Center for Neural Science and Tandon Bioengineering, NYU, USA
2026	Weill Institute for Neurosciences, UCSF, USA
2026	Astera Neuro, San Francisco, USA
2026	Department of Neuroscience, Washington University in St. Louis, USA
2026	Centre for Integrative Neuroscience, University of Tübingen, Germany
2026	Department of Experimental Psychology, University of Oxford, UK
2026	SPiNES Postdoctoral Invited Speaker, Department of Neuroscience, NYU, USA
2026	Departments of Neuroscience and Computer Science, UT Austin, USA
2026	Department of Brain and Cognitive Sciences, University of Rochester, USA
2025	Enigma Project, Stanford University, USA (virtual)
2025	MSN Extramural Postdoctoral Invited Speaker, Mt. Sinai, USA
2025	Department of Neurobiology, University of Pittsburgh, USA
2025	German Primate Center, Leibniz Institute for Primate Research, Göttingen, Germany
2023	Kavli Internal Seminar Series, Rockefeller, New York, USA
2021	Center for Brains, Minds & Machines, MIT, Cambridge, USA (video)
2021	PDA Summer Seminar Series, Rockefeller, New York, USA
2016	Asilomar Neuroscience Retreat, UC San Francisco, USA

Lab talks

2026	University of Wisconsin–Madison, Stephen Ferrigno (virtual)
2025	UCSD, Bria Long
2025	Western University, Diedrichsen, Gribble, and Pruszynski (virtual; video)
2025	Netherlands Institute for Neuroscience, Pieter Roelfsema
2025	Princeton, Tim Buschman
2025	NYU, Marcelo Mattar
2025	MIT, Ev Fedorenko
2025	Newcastle University, Stuart Baker (virtual)
2025	NYU, Michael Long
2022	UCSF, Michael Brainard
2021	Yale, Ilker Yildirim (virtual)

2020	NYU, Brenden Lake and Todd Gureckis (virtual)
2020	MIT, Laura Schulz (virtual)
2016	UCSF, John Houde

PROFESSIONAL SERVICE

2023 -	Ad hoc peer review for: Science, eLife, Cognitive Science Society, Cognitive Computational Neuroscience
2026	Workshop co-organizer (w/ Mathias Sablé-Meyer), COSYNE, "Symbols as foundational to the biological basis of intelligent behavior"
2014 - 2019	Co-organizer, Systems Neuroscience Research in Progress Seminar Series, UCSF
2013 - 2019	Co-organizer, Special Topics Seminar Series, UCSF

SELECT CONFERENCE POSTERS

2026	Cognitive Computational Neuroscience, New York, USA
2026	Gordon Research Conference (Neurobiology of Cognition), New Hampshire, USA
2026	Society for the Neural Control of Movement, Kobe, Japan
2025	Cognitive Computational Neuroscience, Amsterdam, The Netherlands
2025	Society for the Neural Control of Movement, Panama City, Panama
2024	Society for Neuroscience, Chicago, IL (Link to poster)
2024	Ascona Circuits Meeting, Ascona, Switzerland

MENTORSHIP

Research assistants

2024 - 2026	Daniel Hanuska, research assistant, Rockefeller *(Current position: MSTP Student at Case Western)*
2022 - 2024	Kedar Garzón Gupta, research assistant, Rockefeller *(Current position: Ph.D. Student at Columbia)*

Ph.D. rotation students

2024	Siddhartha Sharma, Freiwald lab, Rockefeller
2021	Yanis Tazi, Freiwald lab, Rockefeller
2018	Eszter Kish, Brainard lab, UCSF
2014	Rachel Care, Brainard lab, UCSF

Interns and other mentorship

2026 -	Kateryna Panikhina, Bard-Rockefeller intern, Rockefeller
2024 - 2025	Valerie Calligy, Shenoy Undergraduate Research Fellow (SURFiN), Simons Foundation, Rockefeller
2024 - 2025	Xuan Ma, Bard-Rockefeller intern, Rockefeller
2024	Daniel Dolnik, intern, Cornell Tech Master's Program

2024	Thea Wu, summer intern (Summer Undergraduate Research Fellowship, SURF), Rockefeller
2022	Alejandra Urquieta, summer intern, SURF, Rockefeller
2021	Sam Coolsaet, medical intern, Rockefeller
2021	Alex Gu, summer intern, SURF, MIT
2017	Christian Jose Monroy Hernandez, HHMI Exceptional Research Opportunities Program (EXROP), UCSF (co-mentor: Lena Veit)

OUTREACH

2024 - 2025	Mentor, Simons Foundation SURFiN, Rockefeller *(Mentee: Valerie Calligy)*
2021	Mentor, Neuromatch Academy (virtual) *(Mentees: Jimmy Pulido Arias, Lourdes Baztan Bitopoulos, Joseph Gonzalez, May Xia, Mark Zarutin)*
2017	Mentor, HHMI EXROP, UCSF *(Mentee: Christian Jose Monroy Hernandez (co-mentor: Lena Veit)*)
2014	Judge, Synopsys Science and Technology Championship, San Jose, CA
2013	Invited speaker, PITCH, Center for Education Partnerships (CEP), UCSF
2013 - 2014	Mentor, Fairposium at Burton High School, CEP, UCSF

TEACHING

2014	TA, BMS117: Infection & Host Response (Neurophysiology unit), UCSF
2012 - 2013	Scientist-Teacher, Raoul Wallenberg High School, Science and Health Education Partnership, UCSF
2012	English Teacher, San Gabriel Kindergarten, Los Nogales, Peru
2010	Teacher, Neuroscience of Illusions, Cascade!, University of Chicago

ADVANCED COURSES

2019	Methods in Computational Neuroscience, Marine Biological Laboratory, MA
2018	Jr. Workshop on Mechanistic Cognitive Neuroscience, Janelia Research Campus, VA
2018	Brains, Minds and Machines, Marine Biological Laboratory, MA
2017	Mining and Modeling of Neuroscience Data, Redwood Center, UC Berkeley, CA