

David M. Truong, PhD

Assistant Professor @ New York University | Department of Biomedical Engineering
433 First Ave, 904, NY, NY 10010 | David.Truong@nyu.edu | <https://www.truonglab.com/>

I am a synthetic biologist and genome engineer working at the intersection of cell programming, regenerative immunology, and chromatin-scale genome design. My lab develops human iPSC-based systems for programmable immunity and tissue repair, leveraging large-scale, scar-minimized DNA rewriting to construct functional genomic architectures at the 100–1000 kb scale. We use these technologies to engineer universal donor cell platforms, rewire immune recognition logic, and build therapeutic circuits for T cell education, macrophage reprogramming, and neuroimmune regeneration. Before joining NYU, I led mammalian genome engineering at Neochromosome Inc. (acquired by Opentrons Robotics). My research is currently supported by an NIAID DP2 New Innovator Award, and an NIA R61/R33 on neurodegenerative macrophage therapies.

Education and Employment

Assistant Professor NYU Tandon School of Engineering Department of Biomedical Engineering (core faculty) Programmable Regenerative Immunity Lab Program Director – MS in Bioinformatics – NYU Tandon Online Member, NanoBioX Initiative	09/2021 – present
Assistant Professor NYU Langone Health Department of Pathology (associated appt) Member, Translational Immunology Center Member, Perlmutter Cancer Center	09/2021 – present
Principal Investigator Neochromosome, Inc, New York, NY Synthetic Genomics Company	04/2020 – 08/2021
Postdoctoral Fellow NYU Langone Health Systems & Synthetic Biology - Advisor: Jef D. Boeke, Ph.D, NAS	06/2014 - 05/2020
PhD The University of Texas at Austin Cell and Molecular Biology - Advisor: Alan M. Lambowitz, Ph.D., NAS	09/2007 - 05/2014
Postbacc UC San Diego - School of Medicine Molecular Medicine - Advisor: Sanjay K. Nigam, M.D.	06/2005 - 08/2007
BS University of California San Diego Molecular Biology - Advisor: Geoffrey M. Rosenfeld, M.D., NAS, HHMI	09/2001 - 06/2005

Awards and Honors

Goddard Faculty Fellowship (NYU)	2024
Faculty Innovator Award - Northeast Bioengineering Conference (NEBEC)	2024
NIAID New Innovator Award (DP2)	2021
Breakout Labs Entrepreneurship Prize – Finalist	2019
Delil Nasser Award for Professional Development - Genetics Society of America	2018
Selected Talk and Travel Award - NYU Postdoc Research Day	2017
Best Poster - NYU Cancer Genome Dynamics	2017
Best Talk - NYU Postdoctoral Interdisciplinary Symposium	2016
NIGMS F32 - Ruth L. Kirschstein National Research Service Postdoctoral Award	2015-18
National Science Foundation Graduate Research Fellowship (Honorable Mention)	2009

In Preparation

submission target: 2027

31. Generoso SF, Dara S, Larsen E, **Truong DM***. (2027). Total REWRITE of Human Antigen Processing. to be submitted to *Nature* or *Cell*
30. Dara S, Phu SF, **Truong DM***. (2027). Self-Sustaining Microglia Reveals IL34 and MCSFF Synergy. to be submitted to *Science Advances* or *Cell Systems*
29. Jaramillo SJ, Phu SF, Hu J, **Truong DM***. (2027). Microglia-based Regeneration in an Inducible Neural Assembloid Model. to be submitted to *Nature Biomedical Engineering*
28. Levovitz S, Generoso SF, Jaramillo SJ, **Truong DM***. (2027). Designer HLA-banks of Human iPSCs. to be submitted to *Nature Methods* or *Cell Reports*
27. Pankowicz J, Jaramillo SJ, **Truong DM***, **Sadowski M***. (2027). HMC3 CAR-Microglia Engineered to Clear Amyloid-Beta. to be submitted to *Journal of Experimental Medicine*

submission target: 2026

26. Phen SF, Levovitz S, Dara S, Generoso SF **Truong DM***. (2026). Sequential REWRITE Enables Additive Human Cell Engineering. to be submitted to *Nature Biotechnology* or *Nature Biomedical Engineering*
25. Phen SF[#], Yanagi T[#], Dara S, Jaramillo SJ, **Truong DM***. (2026). Translational Isoform Gating Resolves Fate–Fitness Conflicts in Human Myeloid Programming. to be submitted to *Nature Biomedical Engineering*

Preprints *corresponding author (lab member) #co-first author

24. Generoso SF[#], Levovitz S[#], Jaramillo SJ, Kim M, Dara S, Phen SF, Yi B, Yanagi T, DesMairis TL, Agmon N, Hogan M, Mitchell LA, **Truong DM***. (2025). [bioRxiv. Human Genome REWRITE Enables Off-the-Shelf Stem Cells Revealing an “Epigenetic Ghost”](#). submitted to *Nature Biotechnology*

Publications *corresponding author (lab member) #co-first author

23. Yanagi T, Phen SF, Ayala J, Aydin ED, **Truong DM***. (2025). *Journal of Biological Engineering* (IF 5.7). [Termination sequence between an inducible promoter and ubiquitous chromatin opening element \(UCOE\) reduces gene expression leakage and silencing](#). contribution: corresponding author.
22. Haase MAB, Lazar-Stefanita L, Olafsson G, Shen MJ, **Truong DM**, Boeke JD. (2024). *Cell Reports* (IF 9.9). [macroH2A1 drives nucleosome dephasing and genome instability in histone humanized yeast](#). contribution: mentored first author, performed research, and wrote NSF grant funding the work.
21. **Truong DM***. (Jan 2024). *Synthetic Biology* (IF 3.2). [Writing the Dark Matter of the Human Genome into Mice to better replicate human disease](#). <https://doi.org/10.1093/synbio/ysae003>. News & Views.

20. **Truong DM***. (May 2023). *Synthetic Biology* (IF 3.2). [An artificial protein translation language makes bacteria virus resistant](https://doi.org/10.1093/synbio/ysad011). <https://doi.org/10.1093/synbio/ysad011>. News & Views.
19. Haase MAB, Olafsson G, Flores RL, Boakye-Ansah E, Zelter A, Dickinson MS, Lazar-Stefanita L, **Truong DM**, Asbury CL, David TN, Boeke JD. (Apr 2023). *EMBO J* (IF 14). [DASH/Dam1 complex mutants stabilize ploidy by weakening kinetochore-microtubule attachments](https://doi.org/10.15252/embj.2022112600). <https://doi.org/10.15252/embj.2022112600>. contribution: mentored first author, performed research, and wrote NSF grant funding the work.
18. **Truong DM***. (Oct 2022). *Synthetic Biology* (IF 3.2). [Mouse chromosomes get supersized but find their limits](https://doi.org/10.1093/synbio/ysac024). <https://doi.org/10.1093/synbio/ysac024>. News & Views.

pre-NYU

17. Brosh R, Laurent JM, Ordonez R, Huang E, Hogan MS, Hitchcock AM, Mitchell LA, Pinglay S, Cadley JA, Luther RD, Truong DM, Boeke JD, Maurano MT. (Mar 2021). *PNAS* (IF 12.8). A versatile platform for locus-scale genome rewriting and verification.
16. Valencia-Sánchez MI, De Ioannes P, Wang M, Truong DM, Lee R, Armache JP, Boeke JD, Armache KJ. (Jan 2021). *Science* (IF 63). Regulation of Dot1 histone H3K79 methyltransferase by histone H4K16 acetylation.
15. Adney EM, Ochmann MT, Sil S, Truong DM, Mita P, Wang X, Kahler DJ, Fenyo D, Holt L, Boeke JD. (2019). *Genetics* (IF 4.4). Comprehensive scanning mutagenesis of human retrotransposon LINE-1 identifies motifs essential for function. 213(4):1401-1414
14. Haase MAB, Truong DM, Boeke JD. (2019). *G3:Genes/Genomes/Genetics* (IF 3.5). Superloser: a plasmid shuffling vector for *Saccharomyces cerevisiae* with exceedingly low background. g3. 400325.2019
13. Truong DM and Boeke JD. (2017). *Cell* (IF 66). Resetting the yeast epigenome using human nucleosomes. 171(7): 1508-19.e13.
12. Truong DM, Hewitt FC, Hanson JH, Cui X, Lambowitz AM. (2015). *PLOS Genetics* (IF 6.6). Retrohoming of a mobile group II intron in human cells suggests how eukaryotes limit group II intron proliferation. 11(8):e1005422.
11. Mitchell LA, Chuang J, Agmon N, Khunsriraksakul C, Phillips NA, Cai Y, Truong DM, Veerakumar A, Wang Y, Mayorga M, Blomquist P, Sadda P, Trueheart J, Boeke JD. (2015). *Nucleic Acids Research* (IF 14.9). Versatile genetic assembly system (VEGAS) to assemble pathways for expression in *S. cerevisiae*. 43(13) 6620-6630.
10. Truong DM, Sidote DJ, Russell R, Lambowitz AM. (2013). *PNAS* (IF 12.8). Enhanced group II intron retrohoming in magnesium deficient *Escherichia coli* via selection of mutations in the ribozyme core. 110(40):E3800-E3809.
9. Yao J, Truong DM, Lambowitz AM. (2013). *PLOS Genetics* (IF 6.6). Genetic screens and biochemical assays reveal a key role for restart replication in group II intron retrohoming. 9(4):e1003469.
8. Nagle M, Truong DM, Dnyanmote AV, Eraly SA, Wu W, Nigam SK. (2011). *The Journal of Biological Chemistry*. Analysis of 3-dimensional systems for developing and maturing kidney clarifies the role of OAT1 and OAT3 in antiviral handling. 286(1):243-51.
7. Wu W, Kitamura S, Truong DM, Rieg T, Vallon V, Sakurai H, Bush KT, Vera D, Ross RS, Nigam SK. (2009). *AJP Renal Physiology*. β 1 integrin is required for kidney collecting duct morphogenesis and maintenance of renal function. 297(1):F210-7.

6. Vallon V, Eraly SA, Wikoff WR, Rieg T, Kaler G, Truong DM, Ahn SY, Mahapatra NR, Mahata SK, Gangoiti JA, Wu W, Barshop BA, Siuzdak G, Nigam SK. (2008). *Journal of the American Society of Nephrology*. Organic Anion Transporter 3 Contributes to the Regulation of Blood Pressure. 19(9):1732-40.
5. Truong DM, Kaler G, Khandelwal A, Swaan PW, Nigam SK. (2008). *The Journal of Biological Chemistry*. Multi-Level Analysis of Organic Anion Transporters 1, 3, and 6 reveals major differences in structural determinants of antiviral discrimination. 283(13): 8654-63.
4. Kaler G, Truong DM, Khandelwal A, Nagle M, Eraly SA, Swaan PW, Nigam SK. (2007). *The Journal of Biological Chemistry*. Structural Variation Governs Substrate Specificity for Organic Anion Transporter (OAT) homologs: Potential Remote Sensing By OAT Family Members. 282(33): 23841-53.
3. Kaler G, Truong DM, Sweeney DE, Logan DW, Nagle M, Eraly SA, Nigam SK. (2006). *Biochemical Biophysical Research Communications*. Olfactory mucosa-expressed organic anion transporter, Oat6, manifests high affinity interactions with odorant organic anions. 351(4): 872-876.
2. Bhatnagar V, Xu G, Hamilton BA, Truong DM, Eraly SA, Wu W, Nigam SK. (2006). *Journal of Human Genetics*. Analyses of 5' regulatory region polymorphisms in human SLC22A6 (OAT1) and SLC22A8 (OAT3). 51(6): 575-80.
1. Eraly SA, Vallon V, Vaughn DA, Gangioti J, Richter K, Nagle M, Monte JC, Rieg T, Truong DM, Kaler G, Long JM, Barshop B, Nigam SK. (2006). *The Journal of Biological Chemistry*. Decreased renal organic anion secretion and plasma accumulation of endogenous organic anions in OAT1 knockout mice. 281(8): 5072-83.

Book Chapters

2. Bush KT, Nagle M, Truong DM, Bhatnagar V, Kaler G, Eraly SA, Wu W, Nigam SK. (2014). Chapter 3: Organic Anion Transporters. *Drug Transporters: Molecular Characterization and Role in Drug Disposition*, Second Edition. p. 25-41 John Willey & Sons Inc.
1. Nagle M, Truong DM, Bhatnagar V, Kaler G, Bush KT, Wu W, Eraly SA, Nigam SK. (2007). Chapter 4: The Organic Anion Transporters. *Drug Transporters: Molecular Characterization and Role in Drug Disposition*, First Edition. p. 51-73 John Willey & Sons Inc.

Patents

4. Patent Disclosure. Antigen Presenting Cells with Customizable HLAs. (2024)
3. Patent Disclosure. Allogeneic Programmable Microglia for Manipulating the Brain Environment. (2023)
2. US/World Patent US20230295668A1. [Methods and Compositions for Integration of a DNA construct](#). Inventor: Truong. filed 03/23/2022. published 09/23/2023
1. US Patent US20190023752A1. [Budding Yeast with Human Chromatin](#). Inventors: Truong, Boeke. filed 07/21/2017, awarded 07/06/2021

Media

4. NYU Office Hours, "[Unlocking the Possibilities in the Human Genome](#)". (2025)

3. IEEE Spectrum, “[Megabase-scale Genetic Engineering](#)”. (2022)
2. Nature Methods 15, 96-97 (2018)
1. Cell Systems 6(1) p2-4 (2018)

Conference Abstracts posters/talks *presenter (lab member)

25. [Levovitz S*](#), [Generoso S](#), [Kim M](#), [Jaramillo S](#), [Dara S](#), Desmairis T, Agmon N, Hogan M, Mitchell LM, [Truong DM](#). Cold Spring Harbor. *Cold Spring, NY*. (2025). Human iPSC Genome Engineering at 100+ kilobases for Universal-donor Cell Therapies. ***Oral Presentation**
24. [Levovitz S*](#), [Generoso S](#), [Kim M](#), [Jaramillo S](#), [Dara S](#), Desmairis T, Agmon N, Hogan M, Mitchell LM, [Truong DM](#). Northeast Bioengineering Conference. *Brooklyn, NY*. (2025). Human iPSC Genome Engineering at 100+ kilobases for Universal-donor Cell Therapies. ***Oral Presentation**
23. [Dara S*](#), [Williams B](#), [Jaramillo S](#), [Truong DM](#). Northeast Bioengineering Conference. *Brooklyn, NY*. (2025). Leveraging Endogenous and Engineered miRNA Systems to Enhance Gene Circuit Precision. Poster.
22. [Phen SF*](#), Katari M, [Truong DM](#). Northeast Bioengineering Conference. *Brooklyn, NY*. (2025). Computationally Identifying Master Transcription Factors of Cell Fate. Poster.
21. [Jaramillo S*](#), [Yanagi T](#), [Jimenez F](#), [Patel R](#), [Truong DM](#). NY Stem Cell Foundation Meeting. *Brooklyn, NY*. (2025). Modeling the Brain Using Inducible Genetic Circuits. Poster.
20. [Jaramillo S*](#), [Yanagi T](#), [Jimenez F](#), [Patel R](#), [Truong DM](#). Northeast Bioengineering Conference. *Brooklyn, NY*. (2025). Modeling the Brain Using Inducible Genetic Circuits. Poster.
19. [Generoso S](#), [Levovitz S](#), [Kim M](#), [Jaramillo SJ](#), [Dara S](#), [Yanagi T](#), DesMairis TL, Philips E, Shubin C, Agmon N, Hogan M, [Truong DM*](#). SynBYSS meeting. *Honolulu, HW*. (2024). Genomic REWRITE Enables Designer Class-I HLA Off-the-Shelf Human iPSCs. ***Plenary Oral Presentation**
18. [Levovitz S*](#), [Generoso S](#), [Kim M](#), [Jaramillo S](#), [Dara S](#), Desmairis T, Agmon N, Hogan M, Mitchell LM, [Truong DM](#). AiChe Annual meeting. *San Diego, CA*. (2024). Human iPSC Genome Engineering at 100+ kilobases for Universal-donor Cell Therapies. ***Plenary Oral Presentation**
17. [Levovitz S*](#), [Kim M](#), [Jaramillo S](#), [Generoso S](#), [Dara S](#), [Yanagi T](#), [Truong DM](#). Northeast Bioengineering Conference. *Hoboken, NJ*. (2024). Deletion and Sequential Insertion of Large DNA in the Human Genome for Cell Therapy Applications. Poster.
16. [Kim M](#), [Levovitz S](#), [Generoso S](#), [Jaramillo S](#), [Dara S](#), [Yanagi T](#), Desmairis T, Agmon N, Hogan M, [Truong DM*](#). Northeast Bioengineering Conference. *Hoboken, NJ*. (2024). Human Genome Writing HLA-matched iPSCs for Off-the-shelf Smart Therapeutic Cells. ***Plenary Oral Presentation**
15. [Levovitz S*](#), [Kim M](#), [Jaramillo S](#), [Truong DM](#). ISCCR: International Society for Stem Cell Research. *Boston, MA*. (2023). Megabase Genome Engineering in Human iPSCs. Poster.
14. [Kim M](#), [Levovitz S](#), [Jaramillo S](#), Desmairis T, Agmon N, Hogan M, [Truong DM*](#). SEED, Synthetic Biology: Engineering, Evolution & Design. *DC, USA*. (2022). Programming Off-the-Shelf Human iPSCs Using Genome Writing. ***Plenary Oral Presentation**

13. Kim M, Levovitz S, Jaramillo S, Desmairis T, Agmon N, Hogan M, Truong DM*. American Chemical Society Annual Meeting. San Diego, CA. (2022). Programming off-the-shelf personalized human iPSCs using genome writing. ***Oral Presentation**
12. Levovitz S*, Kim M, Jaramillo S, Truong DM. Northeast Bioengineering Conference. NY, NY. (2022). Megabase Genome Engineering in Human iPSCs. Poster.
11. Truong DM*, Haase MB, Boeke JD. Gordon Research Conference: Chromatin Structure and Function. Newry, ME. (2018). Towards total conversion of yeast-to-human chromatin architecture.
10. Truong DM*, Haase MB, Boeke JD. Genome Integrity Meeting - New York Academy of Sciences. New York, NY. (2018). Towards total conversion of yeast-to-human chromatin architecture.
9. Truong DM*, Boeke JD. (2018). Cold Spring Harbor Meetings: The Biology of Genomes. Cold Spring, NY. Resurrection of histone H3 K27 methylation in brewer's yeast by human PRC2 and plant ATXR6.
8. Truong DM*, Boeke JD. Cancer Genome Dynamics Symposia. New York, NY. (2017). Resetting the yeast epigenome using human nucleosomes. ***Winner: Best Poster Prize.**
7. Truong DM*, Boeke JD. (2017). Gordon Research Seminar: Mechanisms of Epigenetic Inheritance Through Taxa. Holderness, NH. Resetting the yeast epigenome using human nucleosomes.
6. Truong DM*, Boeke JD. (2017). Keystone Symposia: Epigenetics and Human Disease. Seattle, WA. Resetting the yeast epigenome using human nucleosomes.
5. Truong DM*, Boeke JD. Gordon Research Conference: Chromatin Structure and Function. Les Diablerets, Switzerland. (2016). A yeast that packages its DNA using human histones.
4. Truong DM*, Lambowitz AM. Keystone Symposia: Precision Genome Engineering and Synthetic Biology. Breckenridge, CO. (2013). Directed evolution of mobile group II introns at low magnesium concentrations for eukaryotic genome engineering.
3. Eraly SA*, Vallon V, Kaler G, Rieg T, Truong DM, Swaan P, Nigam SK. Journal of Investigative Medicine Conference: Annual Combined Meeting. Washington DC. (2009). Discovery of Novel Anti-Hypertensives Via Pharmacophore-Based Screens For Organic Anion Transporter Inhibitors.
2. Truong DM*, Eraly SA, Vallon V, Kaler G, Rieg T, Swaan P, Nigam SK. The West Coast Salt and Water Club. Morro Bay, CA. (2007). Analyses of Organic Anion Transporters in Adult and Embryonic Kidney Tissue.
1. Truong DM*, Eraly SA, Nigam SK. The American Society of Nephrology Conference. San Diego, CA. (2006). The mouse olfactory-mucosa expressed organic anion transporter, Oat6, handles a distinct set of organic anions and odorants from its homolog Oat1.

Talks

23. Invited Seminar, (2025). Department of Biomedical Engineering, Johns Hopkins University. Baltimore, MA.
22. Plenary Talk, (2024). SynBYSS. Honolulu, HI
21. Lightning Talk, (2024). NHLBI Synthetic Biology Workshop. *online*.
20. Plenary Talk, (2024). NEBEC Faculty Innovator presentation. Hoboken, NJ
19. Panel Talk (2024). GOGEC conferences (*online*).

18. Invited Talk, (2023). NYU Immunology retreat. Bronx, NY
17. Selected Talk, (2023). Biomedical Engineering Society (BMES) Annual Meeting. Seattle.
16. Invited Talk, (2022). Synthetic Biology Young Speaker Series (SynBYSS) - *online*
15. Selected Talk, (2022). SEED, Synthetic Biology: Engineering, Evolution & Design. DC.
14. Invited Seminar, (2022). Dept of Pathology, NYU School of Medicine.
13. Invited Talk, (2022). American Chemical Society Annual Meeting. BioT. San Diego, CA.
12. Invited Seminar, (2022). BME colloquium. NYU Tandon School of Engineering.
11. Invited Seminar, (2021). Translational Immunology Institute, NYU School of Medicine.
10. Invited Seminar, Honorarium (2021). Dept of Molecular Pathobiology, NYU Dentistry.
9. Invited Seminar, Honorarium (2021). Lauffer Center, Stony Brook University.
8. Talk winner, (2018). Gordon Research Seminar: Chromatin Structure and Function. Newry, ME. ***Winner:** Best Poster – upgraded to Talk.
7. Invited Seminar, (2018). Icahn School of Medicine at Mount Sinai.
6. Talk, (2018). Cold Spring Harbor Meetings: The Biology of Genomes. Cold Spring, NY.
5. Talk winner, (2017). NYU Postdoctoral Research Day. New York, NY. ***Winner:** Travel Award.
4. Talk (2017). Gordon Research Seminar: Mechanisms of Epigenetic Inheritance Through Taxa. Holderness, NH.
3. Invited Talk, (2017). ISG Social Hour. New York, NY.
2. Invited Talk, (2017). Keystone Symposia: Epigenetics and Human Disease. Seattle, WA.
1. Talk winner, (2017). NYU Postdoctoral Interdisciplinary Symposium. New York, NY.
***Winner:** Best Oral Presentation.

Current Grant Support

NYU Discovery Research Fund for Human Health direct costs \$300,000
 Early Research Award
Truong (PI), Sadowski (Co-PI)
 Aug 2025 - Aug 2027
Project: Programmable Macrophage–Neuron Interfaces for Neuroimmune Repair in Alzheimer’s Disease

National Institute of Aging (NIA)
 R61/R33 - Phased Research Project Grant
Truong (MPI), Sadowski (MPI, contact), Mathews (MPI)
 #1R61AG090384-01 total costs \$4,257,045
 Feb 2025 - Feb 2030 Truong total costs \$1,519,197
 Status: currently in 2y R61 phase. total costs include 3y R33 add-on.
Project: Off-the-shelf CAR-Engineered Macrophage Therapy for Alzheimer’s Disease

Clinical & Translational Science Institute (CTSI) NYU Grossman School of Medicine
 CTSI Pilot Project
Truong (PI), Kirsch (PI)
 Jan 2025 - Dec 2025 total costs \$66,200
Project: Engineering Human iPSC-derived Regenerative Macrophages to Resolve Post-traumatic Osteoarthritis (PTOA) after Joint Injury

National Institute of Allergy and Infectious Diseases (NIAID)

NIH New Innovator Award (DP2)

Truong (PI)

#1DP2AI154417-01

total costs \$1,795,000

Sep 2021 - Aug 2026

direct costs \$1,350,000

Project: Programmable Off-the-Shelf Dendritic Cells as an Immunotherapy Discovery Platform

National Institute of Allergy and Infectious Diseases (NIAID)

NIH Director's New Innovator Award (DP2) - Diversity Supplement

Truong (PI)

#1DP2AI154417-01S1

total costs \$213,584

Jan 2023 - Aug 2026

direct costs \$132,800

Project: Programmable Off-the-Shelf Dendritic Cells as an Immunotherapy Discovery Platform

Diversity Supplement Trainee: Susanna Jaramillo.

Completed Grant Support

National Institute of Biomedical Imaging and Bioengineering (NIBIB)

R13 - Conference Support Grant

#1R13EB036915-01

Moon (PI), **Truong** (Co-PI)

total costs \$10,000

Dec 2024

Project: The 1st International SynBYSS Conference

NYU Mega Grants

Seed Funding

Truong (PI)

Oct 2023 - July 2024

direct costs \$35,000

Project: Smart CAR-microglia for treating Alzheimer's

**Seeded funding for successful NIA R61/R33 award in 2025

National Institute of Allergy and Infectious Diseases (NIAID)

R43 Small Business Innovative Research, Phase I Award

Truong (PI)

#1R43AI148008-01A1

total costs \$100,000

Sep 2021 - Apr 2022

direct costs \$72,200

Project: Plug-and-Play HLA for Safer and Personalized Off-the-Shelf Cell Therapies using

Big-DNA Tech

**Subcontract Award of below to NYU / Truong Lab

National Institute of Allergy and Infectious Diseases (NIAID)

R43 Small Business Innovative Research, Phase I Award

Truong (PI)

#1R43AI148008-01A1

total costs \$600,000

May 2020 - Apr 2022

Project: Plug-and-Play HLA for Safer and Personalized Off-the-Shelf Cell Therapies using

Big-DNA Tech

**Award to Neochromosome Inc a biotech startup company

National Science Foundation (NSF)

Understanding the Rules of Life: Epigenetics

Boeke (PI)

#1921641

Sep 2019 - Sep 2024

total costs \$2,999,996

Project: Reverse Engineering Human Epigenetic Machinery in Budding Yeast

***Led writing and conceptualization of successful grant — Senior Personnel*

National Institute of General Medical Sciences (NIGMS)

F32 Ruth L. Kirschstein National Research Service Award Postdoctoral Fellowship

Truong (PI)

#1F32GM116411

Jul 2015 - Jul 2018

direct costs \$156,000

Project: Humanized Synthetic Chromosomes Built in Yeast for Organ Xenotransplantation

Pending Grant Support

National Science Foundation (NSF)

CAREER - Molecular Cell Biology (Genetic Mechanisms)

Truong (PI)

#xxxxxxxxxx

total costs \$1,647,767

Sep 2026 - Aug 2031

Status: Pending Review

Project: CAREER: SynTACS - Testing Rules for Engineering Genome Architecture in Human iPSCs

National Heart Lung and Blood Institute (NHLBI)

R01 - Research Project Grant

Ma (MPI, contact), **Truong** (MPI), Cooney (MPI)

#1R01HL184978-01

total costs \$3,805,950

April 2026 - March 2031

Truong total costs \$1,046,500

Status: Pending Review

Project: Designer Exosomes for Acute Lung Respiratory Disorder

American Brain Foundation

Cure One, Cure Many Breakthrough Prize

Maimon (PI, contact), **Truong** (PI), Hubbell (PI), Thompson (PI)

total costs \$2,000,000

Feb 2026 - Jan 2028

Truong total costs \$575,000

Status: Pending Review

Project: Unleashing Neurogenesis with Programmable Immune Cells in Aging and Huntington's Disease

National Institute of Allergy and Infectious Diseases (NIAID)

R01 - Research Project Grant

Truong (PI)

#1R01AIxxxxxx-01

total costs \$3,200,000

Jun 2026 - Oct 2031

Status: Pending Review

Project: Engineering a Human Platform to Model HLA-Driven TCR Selection and Central Tolerance

National Institute of Aging (NIA)
R01 - Research Project Grant
Truong (MPI, contact), Sadowski (MPI)
#1R01AGxxxxxx-01
Jun 2026 - Oct 2031

total costs \$4,000,000
Truong total costs \$2,500,000

Status: Pending Review

Project: REPHRESH: Programmable Macrophages for Adaptive Synapse Protection in Alzheimer's Disease

Education Innovation

3. Engineering Tissue Regeneration - BEGY9453. Developed course from first principles without aid of a textbook. This ensures we stay up to date with the latest research.
2. UGSRP. *New York, NY.* (2021 - present). Developed stem cell differentiation methods accessible for undergraduates and master's students to learn and work with.
1. Middle School Outreach. *Bronx, NY.* (2022 - present). Visiting middle schools and bringing students in to play with genetically engineered "yeast art".

Teaching Experience

Instructor – NYU Tandon School of Engineering Biology and Biotechnology for Bioinformatics (Graduate) – 21 students teaching evaluation: 4.x / 5	Fall 2025
Instructor – NYU Tandon School of Engineering Engineering Tissue Regeneration (Graduate) – 26 students teaching evaluation: 4.75 / 5	Spring 2025
Instructor – NYU Tandon School of Engineering Biology and Biotechnology for Bioinformatics (Graduate) – 31 students teaching evaluation: 4.6 / 5	Fall 2024
Instructor – NYU Tandon School of Engineering Engineering Tissue Regeneration (Graduate) – 21 students teaching evaluation: 5.0 / 5	Spring 2024
Instructor – NYU Tandon School of Engineering Biology and Biotechnology for Bioinformatics (Graduate) – 29 students teaching evaluation: 4.9 / 5	Fall 2023
Instructor – NYU Tandon School of Engineering Engineering Tissue Regeneration (Graduate) – 16 students teaching evaluation: 4.7 / 5	Spring 2023
Instructor – NYU Tandon School of Engineering Biology and Biotechnology for Bioinformatics (Graduate) – 32 students teaching evaluation: 4.6 / 5	Fall 2022
Instructor – NYU Tandon School of Engineering Biology and Biotechnology for Bioinformatics (Graduate) – 24 students teaching evaluation: 4.8 / 5	Fall 2021
Teaching Assistant - The University of Texas at Austin Graduate Genetics - Instructor: Jeff Gross Ph.D. and Jeff Chen Ph.D.	Spring 2012

Led doctoral level discussion sections on current literature and topics in Genetics

Teaching Assistant - The University of Texas at Austin

Fall 2008

Undergraduate Genetics - Instructor: Jennifer Moon Ph.D.

Led discussion sections on Genetics, graded exams, and produced weekly quizzes

Other teaching

Guest Lecture: Fall 2023 - General Engineering (Undergrad) - "Health Engineering"

Guest Lecture: Spring 2023 - General Engineering (Undergrad) - "Health Engineering"

Guest Lecture: Fall 2022 - General Engineering (Undergrad) - "Health Engineering"

Guest Lecture: Spring 2022 - Engineering Tissue (Grad) - "Gene Edited Stem Cells"

Guest Lecture: Fall 2021 - Biomaterials (Grad) - "Genome Writing"

Mentoring

Primary Mentor

Postdoctoral Scholars

- | | |
|-------------------------------------|------------------|
| 3. Tomoki Yanagi, MD, PhD. | 04/23' – 11/25' |
| 2. Serena Generoso, PhD. | 09/22' – present |
| 1. Minjoo Kim, PhD. | 12/21' – 11/24' |
| - after: research scientist at UCSF | |

PhD students

- | | |
|---|------------------|
| 4. Shean Fu Phen, MS. NYU Tandon BME PhD student. | 09/25' – present |
| 3. Susanna Jaramillo, MS. NYU Tandon BME PhD student. | 09/23' – present |
| 2. Sumanth Dara, MS. NYU Tandon BME PhD student. | 09/22' – present |
| 1. Sarah Levovitz, MS. NYU Tandon BME PhD student. | 09/21' – present |

MS students

- | | |
|--|------------------|
| 12. Emily Larsen, NYU Tandon Biotechnology. | 09/25' – present |
| 11. Deniz Ece Aydin, NYU Tandon BME. | 09/25' – present |
| 10. Bryan Yi, NYU Tandon Bioinformatics. Capstone. | 01/25' – present |
| - working at Universal Cells | |
| 9. Brianna Williams, NYU Tandon BME. Guided Studies. | 09/24' – 05/25' |
| - after: AstraZeneca | |
| 8. Alasia Miller, NYU Tandon Bioinformatics. Guided studies. | 01/23' – 05/23' |
| - after: working at Columbia University | |
| 7. Daniela Quijano, NYU Tandon Bioinformatics. Guided studies. | 09/22' – 12/22' |
| - after: working at Tempus Labs | |
| 6. Charlee Cobb, NYU Tandon Bioinformatics. Guided studies. | 09/22' – 05/23' |
| - after: working at Pfizer | |
| 5. Sruthi Metukuru, NYU Tandon Biotech. Volunteer. | 06/22' – 01/23' |
| - after: working at Mt Sinai | |
| 4. Sheila Atieno, NYU Tandon BME. Guided studies. | 01/22' – 05/23' |
| - after: working at Duke University | |
| 3. Eunice Chai, NYU Tandon Biotech. Guided studies. | 01/22' – 05/22' |
| 2. Robert Moebius, NYU Tandon BME. Guided studies. | 01/22' – 05/22' |
| - after: working at Stem Cell Technologies | |
| 1. Susanna Jaramillo, NYU Tandon Biotech. Lab assistant. | 10/21' – 08/23' |

- after: PhD student in Truong lab

MS Thesis students

- | | |
|--|-----------------|
| 3. Federico Jimenez, NYU Biomedical Engineering | 01/24' – 12/24' |
| - interned at Endless Frontiers Lab | |
| 2. Shean Fu Phen, NYU Biology. | 09/23' – 12/24' |
| - interned at Thermofisher, now PhD Student Truong Lab | |
| 1. Sinuo (Alice) Yu, NYU Biomedical Engineering | 01/23' – 05/24' |
| - after: PhD student University of Hong Kong | |

Undergraduates

- | | |
|---|------------------|
| 12. Jing Hu, NYU Tandon. Biomolecular Sciences. | 09/25' – present |
| 11. Denys Vasyutyn, NYU Tandon. Chemical & Biomolecular Eng. | 09/25' – present |
| 10. Heesung Tae, NYU Abu Dhabi. Bioengineering. | 09/25' – present |
| 9. Darin Kim, Brown University. UGSRP. | 05/25' – 08/25' |
| 8. Sabina Phanova, NYU Tandon Biomolecular Sciences. UGSRP. | 05/25' – 08/25' |
| 7. Riya Patel, NYU Tandon Biomolecular Sciences. UGSRP. Thesis | 06/24' – 05/25' |
| 6. Jonah Ayala, UT El Paso, Biomedical Engineering, UGSRP | 06/24' – 08/24' |
| - after: MS at Cornell University | |
| 5. Brianna Williams, NYU Tandon Biomolecular Sciences. UGSRP. Thesis | 06/23' – 08/24' |
| - interned at AstraZeneca, best senior thesis award | |
| 4. Kacie Carrier, NYU Tandon Chemical & Biomolecular Eng. UGSRP | 06/23' – 08/23' |
| - interned at Eli Lilly, now PhD student Carnegie Mellon Chemical Engineering | |
| 3. Aarushi Varshney, NYU Tandon Biomolecular Sciences. Thesis | 09/22' – 05/23' |
| - working at Johnson and Johnson, now PhD student UVA | |
| 2. Iris Bibolli, NYU Tandon Biomolecular Sciences. UGSRP. | 06/22' – 08/23' |
| - interned at Eli Lilly, now associate researcher Mt Sinai - Wu lab | |
| 1. Deniz Ece Aydin, NYU Tandon Biomolecular Sciences. UGSRP. Thesis | 06/22' – 05/25' |
| - best senior thesis award | |

Student Awards

- | | |
|---|--------|
| 10. Deniz Ece Aydin, NYU Tandon, Senior Thesis Award | 05/25' |
| 9. Riya Patel, Jonah Ayalah, Deniz Ece Aydin. NYU Tandon undergraduates. 2nd place Most Creative Health. | 08/24' |
| 8. Shean Fu Phen, NYU Biology MS. Thesis Award | 05/24' |
| 7. Brianna Williams, NYU Tandon. Senior Thesis Award | 05/24' |
| 6. Brianna Williams, Iris Bibolli, Deniz Ece Aydin, Kacie Carrier. NYU Tandon undergraduates. 1st place Most Creative Health. 1st place People's Choice | 08/23' |
| 5. Susanna Jaramillo, MS. PhD student. School of Engineering Fellowship. | 09/23' |
| 4. Susanna Jaramillo, MS/technician. NIH Diversity Supplement Award | 01/23' |
| 3. Sumanth Dara, MS. PhD student. School of Engineering Fellowship. | 09/22' |
| 2. Deniz Ece Aydin, NYU Tandon, sophomore. 1st place Innovative Health | 08/22' |
| 1. Sarah Levovitz, MS. PhD student. Future Leaders Fellowship. | 09/21' |

Other students

PhD Dissertation Committees

- | | |
|--|------------------|
| 6. Maxwell La Forest, NYU Tandon BME PhD student. advisor: Ruggles | 08/25' – present |
| 5. Caichen Duan, NYU Tandon BME PhD student. advisor: Schluter | 05/25' – present |
| 4. Rachel Pollard, NYU Tandon BME PhD student. advisor: Pinkerton | 05/25' – present |
| 3. Shaza Karaman, NYU Abu Dhabi BME PhD student. advisor: Teo | 04/24' – present |

- | | |
|--|------------------|
| 2. Catherosette Meas, NYU Tandon BME PhD student. advisor: Boeke | 11/22' – present |
| 1. Kate Luu, NYU Tandon BME PhD student. advisor: Chen | 11/22' – present |

PhD Qualifying Exams

- | | |
|---|------|
| 22. Yue Xiao, NYU Tandon BME. advisor: Haogong Cao | 2025 |
| 21. Noura Sayed, NYU Tandon BME. advisor: Jeremy Teo | 2025 |
| 20. Helberth Quysbert, NYU Tandon BME. advisor: Teresa Davoli | 2025 |
| 19. James Li, NYU Tandon BME. advisor: Andras Gyorgy | 2025 |
| 18. Xingyu Liu, NYU Tandon BME. advisor: Wosczyzna | 2024 |
| 17. Nongyun Wang, NYU Tandon BME. advisor: Lionnet/Holt | 2024 |
| 16. Maxwell LaForest, NYU Tandon BME. advisor: Ruggles | 2024 |
| 15. Eleni Miliotou, NYU Tandon BME. advisor: De Lazaro | 2024 |
| 14. Yiren Zhou, NYU Tandon BME. advisor: Andras Gyorgy | 2024 |
| 13. Ruiqi Chen, NYU Tandon BME. advisor: Weiqiang Chen | 2024 |
| 12. Susanna Jaramillo, NYU Tandon BME. advisor: Truong | 2024 |
| 11. Brian Quartey, NYU Tandon BME. advisor: Teo | 2024 |
| 10. Caichen Duan, NYU Tandon BME. advisor: Schluter | 2023 |
| 9. Dominika Wawrzyniak, NYU Tandon BME. advisor: Boeke | 2023 |
| 8. Nanzhong Deng, NYU Tandon BME. advisor: Cai | 2023 |
| 7. Rachel Pollard, NYU Tandon BME. advisor: Pinkerton | 2023 |
| 6. Sumanth Dara, NYU Tandon BME. advisor: Truong | 2023 |
| 5. Minghan Yang, NYU Tandon BME. advisor: Lionnet | 2023 |
| 4. Benteng Ma, NYU Tandon BME. advisor: Chen | 2022 |
| 3. Kate Luu, NYU Tandon BME. advisor: Chen | 2022 |
| 2. Catherosette Meas, NYU Tandon BME. advisor: Boeke | 2022 |
| 1. Sarah Levovitz, NYU Tandon BME. advisor: Truong | 2022 |

MS thesis defenses

- | | |
|--|------|
| 3. Federico Jimenez, NYU Tandon BME. advisor: Truong | 2024 |
| 2. Chloe Geng, NYU Tandon BME. advisor: Kirsch | 2024 |
| 1. Sinuo (Alice) Yu, NYU Tandon BME. advisor: De Lazaro/Truong | 2024 |

Prior to NYU

- | | |
|---|-----------------|
| 5. Laura McCulloch, NYU SoM MD/PhD student. | 01/18' – 02/20' |
| 4. Max Haase, NYU SoM PhD student. | 06/18' – 02/20' |
| 3. Emily M. Adney, Johns Hopkins PhD student. | 10/17' – 12/18' |
| 2. Yi Fu, MS, NYU SoM PhD rotation student. | 04/16' – 07/16' |
| 1. Tomoyuki Ohno, MS. Tokyo U PhD student intern. | 11/15' – 03/16' |

BS and MS Theses (primary advisor)

7. Deniz Ece Aydin. NYU Tandon Biomolecular Sciences. (2025). Thesis title: Optimizing the Directed Differentiation of Human iPSCs into Microglia Through Inducible Expression of CEBPA and SPI1. *Best Senior Thesis Award
6. Riya Patel, BS. NYU Tandon Biomolecular Sciences. (2025). Thesis title: Engineering a Gene Circuit for Nerve Growth Factor Secretion in Human Induced Pluripotent Stem Cells

5. Shean Fu Phen, MS, NYU CAS Biology. (2025). Thesis title: Development of a Computational Pipeline for Profiling Human Cell Transcription Factors as Candidates for Direct Conversion.
4. Federico Jimenez, MS, NYU Tandon Biomedical Engineering. (2025). Thesis title: Development of a Tet-On System for Endothelial Forward Programming from Induced Pluripotent Human Stem Cells.
3. Brianna Williams, BS, NYU Tandon Biomolecular Sciences. (2024). Thesis title: A MicroRNA-based Logic Approach to Regulating Synthetic Gene Circuits. *Best Senior Thesis Award
2. Sinuo Yu, MS, NYU Tandon Biomedical Engineering. (2024). Thesis title: Modified mRNA for in vitro reprogramming.
1. Aarushi Varshney, BS, NYU Tandon Biomolecular Sciences. (2023). Thesis title: In vitro CRISPR/Cas9 RNPs for Capturing Human Genomic DNA.

Internal Service and Leadership

NE BioE Conference committee	2025
BME Laboratory Manager hiring committee	2025
BME Faculty Search Committee	2024–2025
Chair*, BME PhD Graduate Studies Committee	2023–2024
Chair*, BME annual event	2023
Chair*, PhD student admissions	2022–2024
Tandon Undergraduate Summer Research Program	2022–present
BME Faculty Search Committee	2021–2022
BME Department event organization	2021
PhD student admission committee	2021–2022
Assoc. Director of Facilities Operations search committee	2021
BME Faculty Meeting Scribe	2021–2023
ECR mentorship program (Wsq)	2021–present
Tandon ECR mentorship program	2021–present
Program Director*, MS in Bioinformatics	2021–present

External Service and Leadership

Grant Reviews

Alzheimer's Association - Grant Reviewer	2023
Biomedical Engineering Society (BMES) - Annual Meeting Abstract Reviewer	2022–23
Northeast Bioengineering Conference - Session Chair (Synthetic Biology)	2022
Grant Reviewer - NYU Pilot Project Program	2022
Technical Judge - Endless Frontiers Lab	2020
Grant Reviewer - Utah - University Technology Acceleration Grant Program	2018

Journal Reviews

Peer Review - <i>Nature</i> <i>Cell</i> <i>Science</i> <i>Elife</i> <i>PLOS Genetics</i> <i>Epigen and Chrom</i> <i>Mol Cell Bio</i> <i>G3</i> <i>Cell Reports Methods</i> <i>Nature Methods</i> <i>iScience</i>	
Guest Editor - <i>Elife</i>	2019

Committee Work

Committee Member - Mammalian Synthetic Biology Workshop. Irvine, CA	2025
Co-Chair - SynBYSS Speaker Series Conference. Hawaii	2023 - 2024
Advanced Group II - Academy for Future Science Faculty	2012 - 2022
Chairman - Gottlieb Lecture Series, (hosted Dr. Mark Ptashne)	2009-2010
Logistics Officer - Scientists and Engineers for America	2009-2010
Table Facilitator - Clinton Global Initiative U., Global Health and Environment	2009
Student Committee - Gottlieb Lecture Series	2008-2014
Co-Chair - ICMB Graduate Student Recruitment	2008

Society Membership

Biomedical Engineering Society (BMES)	2021-present
Engineering Biology Research Consortium (EBRC)	2021-present
Society for Biological Engineering (SBE)	2021-present
American Institute of Chemical Engineering (AIChE)	2021-present
American Chemical Society	2021-2023
New York Academy of Sciences	2018-present
Genetics Society of America	2017-2021
NYU Postdoctoral Association	2014-2020