# GABRIEL YANCY

*Curriculum Vitae*

*Center for Neural Science*
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## Education

2024–present **PhD, Neural Science**, *New York Univerty*, Center for Neural Science, New York, NY.
Diffusion models, image processing, computational models of vision, psychophysics, fMRI, models of noise
Systems, Cognition, and Computation (SCC) Track

2018–2022 **Bachelor of Science, Natural Sciences**, *Fordham University*, New York, NY.
Dimensionality reduction, multi-region neural recordings, statistical inference, Gaussian processes
Concentration in Cell and Molecular Biology, Minor in Spanish

## Publications

### Conference Abstracts

2026 N Agarwal*, **G Yancy***, Z Kadkhodaie, JD Lieber, JA Movshon, and E Simoncelli, *A generative diffusion model reveals V2's representation of natural images*, COSYNE.
* Equal Contribution

2026 I Ganguly, A Liu, A Gonzalez-Segarra, R Mora, **G Yancy**, AS Diez, V Dalstein, MG Singh, EN Hardy, A Chung, G Alarcon, ML Galloway, A Prakash, K Monzavi, A Litwin-Kumar, and R Behnia, *Neural mechanisms underlying multisensory associative learning*, COSYNE.

2022 **G Yancy**, E Hart, A Bondy, CD Brody, A Huk, J Pillow, and S Keeley, *Multi-region Poisson GPFA isolates shared and independent latent structure in sensorimotor tasks*, COSYNE.

### Journal Articles

2017 K Chen, S Doshi, K Heckel, A Li, E Li, T Li, A Shanehsazzadeh, C Woessner, **G Yancy**, and A Zhou, *BarryBot: An Artificial Intelligence Designed to Play StarCraft*, in *Journal of the Pennsylvania Governor's School for the Sciences*.

## Research Experience

Sept., 2024 – present ***Leveraging Stimuli Generated from Diffusion Models to Explore Representation in V2***.
Developing methods for controlled image synthesis and analysis of corresponding neural population recordings.
Advisor : **Dr. Eero Simoncelli**, *Silver Professor, Center for Neural Science*, New York University

June, 2025 – Jan., 2026 ***Scale-Dependence of Naturalistic Object Recognition***.
Used psychophysics and critical bandwidth masking to assess human object recognition across scales.
Advisor : **Dr. Jon Winawer**, *Professor, Department of Psychology*, New York University

Sept., 2022 – May, 2024 ***Color Sensitivity of $\gamma$D Kenyon Cells***.
Used two-photon imaging to analyze chromatic responses of neurons and characterize population encoding.
Advisor : **Dr. Rudy Behnia**, *Assistant Professor, Zuckerman Institute*, Columbia University

Jan., 2020 – Dec., 2022 ***Multi Region Poisson Gaussian Process Factor Analysis***.
Developed a dimensionality reduction method isolating latent factors in multi-region population neural recordings.
Advisor : **Dr. Stephen Keeley**, *Assistant Professor, Department of Natural Sciences*, Fordham University

March 2021 – June 2021 ***Demystifying Language Program***.
Researched texts on critical pedagogy, language and social justice, and ethnographic writing for grant development.
Advisor : **Dr. Ayala Fader**, *Professor, Department of Anthropology*, Fordham University

## Presentations

Dec. 2025 **Diffusion Models Generate Stimuli Revealing V2's Representation of Natural Images**, *First-Year Neural Science PhD Talks*, New York University.

Sept. 2024 **The Call of Hind's Hall: Eyewitness to the Columbia Student Encampment for Gaza**, *Socialism*, Chicago, IL.

May 2022 **Multi-region Poisson GPFA Isolates Independent and Shared Dynamics in High Dimensional Neural Recordings**, *Fordham Honors Thesis Presentations*, Fordham University.

April 2022 **After Incarceration: Exploring the Community Response**, Fordham University.

Nov. 2021 **Latent Structure in Multi-Region Neural Spike Train Data Using Gaussian Process Factor Analysis**, *Mary G Hamilton Research Symposium*, Fordham University.

April 2021 **Anti-Blackness in the Bronx**, *Student Spotlight Series*, Fordham University.

## Fellowships & Awards

2024 –present ***Henry M MacCracken Fellowship*** as a PhD research scholar at New York University.

2023 **Systems Vision Science School and Symposium** at the Max Planck Institute in Tubingen, Germany.

2022 Graduated from Fordham University with **Honors**.

2022 **COSYNE New Attendees Travel Grant**.

2021 **Natural Science Summer Research Award Grant** at Fordham University.

2021 Accepted into **Spanish Language Study Abroad Program** housed in Mendoza, Argentina.

2018 **National Merit Program Scholarship** award (provided full tuition scholarship to Fordham University).

2017 **Pennsylvania Governor's School for the Sciences** at Carnegie Mellon University in Pittsburgh, PA.

2016 Recieved **STEM Award** from the Roy A. Hunt Foundation.

2015 Invited to **National Leadership Learning Exchange** as Youth Delegate at East Carolina University.

2015 Recipient of **Youth Leadership Scholarship** from Duquesne University.

## Teaching Experience

Fall 2025 **NEURL-UA 302: Computational Neuroscience**, *Graduate Teaching Assistant*, New York University, Dr. David Heeger.

Summer 2025 **Vision and Neural Networks**, *Guest Lecturer*, College and Career Lab, New York University.

## Positions of Responsibility

2025-present **DEI Executive for NeuroPIL**, New York University, Center for Neural Science.

2025-present **High School Student Mentor**, Clear Direction Mentoring, New York, NY.

2025-present **Graduate Admissions Student Representative**, New York University, Center for Neural Science.

2017-2018 **President of Black Student Union**, Pittsburgh Creative and Performing Arts 6-12.

## Skills

Neural Diffusion models, population-level neural data visualization and analysis, experimental psychophysics, methods for dimensionality reduction, two-photon microscopy, Adobe suite, Autodesk Fusion

Programming Python, PyTorch, Matlab, SQL, Swift, R, Unix Shell, HTML, CSS, LaTeX

Languages English (native), Spanish (fluency written and spoken)

## References


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