Swati Gupta, PhD

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EDUCATION

University of Alabama at Birmingham
2008 - 2012 Doctor of Philosophy, Neuroscience
Focus: Epigenetics, Systems & Behavioral Neuroscience
Thesis Advisor: Farah D. Lubin, Ph.D.

National Center for Biological Sciences
2006-2008 Integrated PhD program, Biology
Focus: Epigenetics & Behavioral Neuroscience

St. Xavier's College
2003-2006 Bachelor of Science, Double Major: Lifesciences and Biochemistry

RESEARCH AND PROFESSIONAL EXPERIENCES

2019-Present **Postdoctoral Fellow**, Icahn School of Medicine at Mount Sinai
Laboratories of Deanna L. Benson, PhD & George W. Huntley, PhD
Project: *LRRK2-G2019S contributions to AMPA receptor dynamics and synaptic maladaptation*
Techniques: Tissue culture, biochemical techniques (Western blotting, Coimmunopreciptation, surface biotinylation), immunohistochemistry, pharmacology, confocal and super resolution microscopy, chemogentics, stereotaxic surgeries (viral injection), mouse colony maintenance

2018-2019 **Scientist I**, Genewiz, NJ
Project: *Manage genetic, cloning and mutagenesis projects for the entire West Coast of USA*

2013-2016 **Postdoctoral Fellow,** University college London
Laboratory of Josef T. Kittler, PhD
Project: *Regulation of astrocytic glutamate transporter levels and its effect on synapse function*
Techniques: Cloning and mutagenesis, tissue culture, biochemical techniques (coimmunopreciptation, GST-fusion protein assay, surface biotinylation), single particle tracking using quantum dots, calcium imaging, confocal microscopy, mouse colony maintenance and breeding

2008-2012 **Graduate Student**, University of Alabama at Birmingahm
Laboratory of Farah D. Lubin, PhD
Dissertation: *Role of histone methylation in the medial temporal lobe during memory formation*
Techniques: Chromatin immunoprecipitation, histone extraction, pharmacology, qPCR, DNA methylation, confocal microscopy, stereotax surgeries (cannula implantation), tissue sectioning and immunohistochemistry.

HONORS

2023 Invited speaker for the inaugural Zuckerman Institution Postdoctoral Seminar eXtramural (ZipsX), *Columbia University*
2022 Invited speaker for Molecular Mechanisms of Neuronal Connectivity, *Cold Spring Harbor Laboratories*
2022 Invited speaker at Postdoc Research Colloquium series and SciFest, *Brandeis University.*
2022 Selected speaker for Oral Presentation, Alzheimer's, and Parkinson's diseases conference.
2022 Awardee, Justice, Equity, Diversity and Inclusion Award, *Life Science Editors Foundation.*
2022 Awardee, SfN Reviewer Mentor Program, *Journal of Neuroscience.*
2021 Fellow, Poetry of Science, *Boston, MA.*
2016 Selected for spring school in Optical imaging and electrophysiological methods in Neuroscience, *Ecoles des Neurosciences.*
2011 UAB representative for Lindau Meeting
2010-2011 Selected speaker at Nanosymposium Session, Society for Neuroscience

2010 Invited student speaker by Comprehensive Neuroscience Center, *University of Alabama at Birmingham*
2010 Selected for winter school in molecular and cellular cognition, *MCCS Europe*.
2009 Best poster award, Simpson-Ramsey Neurodevelopment Symposium, *University of Alabama at Birmingham*.

ACADEMIC PUBLICATIONS

Google Scholar | *PubMed* |

2023 *(In prep)* **Gupta S.**, Guevara CA, Tielemans A, Huntley GW., Benson DL, Cell-surface trafficking impairment of AMPA receptor subunits in striatal projection neurons carrying a Parkinson's Disease LRRK2-G2019S Knockin Mutation.

2022 **Gupta S.**, Bazargani N., Drew J., Modi S., Marie H., Attwell D., Kittler JT. "The non-adrenergic imidazoline-1 receptor protein Nischarin is a key regulator of astrocyte glutamate uptake" 21;25(4):104127. doi: 10.1016/j.isci.2022.104127. *iScience*

2020 Hussein, A., Guevara, C.A., Del Valle, P., **Gupta S.**, Benson, D.L, Huntley, G.W. Non-motor symptoms of Parkinson's disease: The neurobiology of early psychiatric and cognitive dysfunction, 10738584211011979. The *Neuroscientist*

2016 Al Awabdh S., **Gupta-Agarwal S.**, Sheehan DF, Muir J, Norkett R, Twelvetrees AE, Griffin LD, Kittler JT. et al., Neuronal activity mediated regulation of glutamate transporter GLT-1 surface diffusion in rat astrocytes in dissociated and slice cultures. 64(7):1252-64. *GLIA*

2014 Stephen TL., **Gupta-Agarwal S.**, Kittler JT. Mitochondrial dynamics in astrocytes. Invited Review 42(5):1302-10, *Biochemical Society Transactions*

2014 **Gupta-Agarwal S.**, Jarome TJ., Fernandez J., Lubin FD., NMDA receptor- and ERK-dependent histone methylation changes in the lateral amygdala bidirectionally regulate fear memory formation. 21(7):351-62. *Learning and Memory*

2012 **Gupta-Agarwal S.,** Franklin AV, Deramus T, Wheelock M, Davis RL, McMahon LL, Lubin FD, G9a/GLP histone lysine dimethyltransferase complex activity in the hippocampus and the entorhinal Cortex is required for gene activation and silencing during memory consolidation. 32(16):5440-5453, *Journal of Neuroscience*, recommended by F1000.

2011 Lubin FD, **Gupta S.**, Parrish RR, Grisom NM, Davis RL, Chromatin regulation and its contributions to Memory Formation.The Neuroscientist.

2011 **Gupta S.**, Parrish RR, Lubin FD, A chapter on the "Epigenetic regulation and translational medicine" for the book, Translational Neuroscience: Applications in Neurology, Psychiatry, and Neurodevelopmental Disorders, Editor: Dr. James E. Barrett, Cambridge University Press. *Book Chapter*.

2011 **Gupta S**.,Kim SY, Artis S, Molfese DL, Schumacher A, Sweatt JD, Paylor RE, Lubin FD, Histone methylation regulates memory formation. 30(10):3589-99, *Journal of Neuroscience*

2010 Lucas EK, Markwardt S., **Gupta S.**, Overstreet-Wadiche L., Cowell RM, Parvalbumin deficiency and GABAergic dysfunction in mice lacking PGC-1α. 30(21):7227-35, *Journal of Neuroscience*

2010 Parrish RR, **Gupta S**., Lubin FD., Commentary on Miller et al. (2010) Cortical DNA methylation maintains remote memory. *Cell Science*

RESEARCH GRANTS & FELLOWSHIPS

2022-2023	30th Anniversity Tau Leaderhsip Fellow Rainwater Charitable Foundation	Total Funding: $10,000
2020	Awarded the National Academy of Science-Women in Science travel fund	Total Funding: $500
2010-2012	NIH T32 GM08111-23 Project title: Role of Histone methylation during memory formation	Total Funding: $42,780

TEACHING

2022, 2023	Course Co-director, Techniques and Approaches in Neuroscience, *Icahn School of Medicine at Mount Sinai, NY*
2021-2022	Preceptor, Molecular Cellular and Genomics Foundation, *Icahn School of Medicine at Mount Sinai, NY*
2021	Invited Lecturer, Advance topics in Synapse, *Icahn School of Medicine at Mount Sinai, NY*
2020-2021	Lecturer for Techniques and Approaches in Neuroscience, *Icahn School of Medicine at Mount Sinai, NY*

MENTORSHIP

Period	Name	Academic Level	Outcomes
2023-2024	Victoria Samojedny	*High School Student (CEYE)*	Rising Senior
2023-2024	Matthew Fields	*High School Student*	Rising Junior
2023	Harper Snyder	*Undergraduate Student*	Rising Senior
2022-2023	Amelia Weiland	*High School Student (CEYE)*	Accepted at Brown University
2022	KG Montes	*PREP student*	Applying for Graduate programs
2020 – 2021	Nikhat Meman	*High School Student (CEYE)*	Posse scholar and accepted at Brandeis University
2020 – 2021	Emily Dodd	*High School Student*	1st place award at Regeneron WESEF and accepted at Washington University
2020-2022	Alexander Tielemans	*Master's Student*	Graduate student at Icahn school of medicine at Mount Sinai
2019 – 2020	Fatema Begum	*PREP Student*	Fulbright US Scholar
2014-2015	James Drew	*Graduate Student*	Consutlant in Citeline, UK
2011	Jordan Fernandez	*Volunteer*	Medical student at University of South Alabama College of Medicine
2009-2010	Sarah Morse	*Master's student*	Research program coordinator at Washington University, St. Louis
2009 – 2010	Thomas DeRamus	*PostBac Student*	Data consultant at MGH Brigham, GA

SERVICE & LEADERSHIP

2022	**Committee Member,** Emerging Scholar reviewing committee, Mount Sinai. This is a scholarship opportunity for advanced graduate students from underrepresented backgrounds that are looking to pursue postdoctoral work in the field of neuroscience. My role comprises reviewing applications, discussing with committee members to finalize two scholars, and coordinating their talk and visit.
2020 – 2021	**Committee member,** MSN seminar series organizing committee, Mount Sinai. This is a seminar series competitive program, much like this one that is organized and led entirely by the postdoctoral fellows at Mount Sinai. We review applications, identify the spearkers that will be invited, network with faculty members to organize the speaker's visit. This has been a great opportunity to network with postdoctoral fellows across the nation.
2019 – 2021	**Committee member**, Neuroscience Postdoc Association, Mount Sinai. This is an entirely postdoc run organization which aims at making more tools and resources available to postdoctoral fellows as trainees and as they transition to a more independent phase. I have been involved in building the Neuroscience postdoc association website which showcases the achievements of postdocs, events organized, useful resources, and advertises job opportunities. For this, I work closely with the Communications and Marketing team at Mount Sinai as well as the Chair and Dean of Academic affairs.
2020-Present	**Committee member**, Leadership Council for URiSM Trainees, Mount Sinai. This committee aims at streamlining communication initiatives between the school and its minority student population. The diversity and inclusion efforts have resulted in the creation of events that foster a space for community and networking for minority trainees.

2020-Present	**Mentor**, Center for Excellence in Youth Education (CEYE), Mount Sinai. The CEYE program operates a range of school-year and summer programs geared to youth belonging to groups that are underrepresented in medicine. I have served as a long-term mentor for high school students that are part of the Biomedical Science enrichment program offered by CEYE. This is a two-year program for juniors and seniors attending the High School for Math, Science, and Engineering, to learn laboratory skills, contribute to research, analyze, and present their data to the Neuroscience department. I also serve as **volunteer for the Brain Awareness Fair** program run in collaboration with CEYE to raise public awareness about the brain and brain research.
2019 – 2021	**Vice president for postdoc,** Women in Science, Mount Sinai. This organization aims at improving resources available to women in science. As the vice president, collectively with other members we were able to install breast feeding pods at research buildings in Mount Sinai, conduct bake sales to raise funds for travel fellowships, organize seminars for successful women in STEM to talk about their journey and provide key insights and advice.