

# APARNA SHAH, PH.D.

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School of Neuroscience  
Virginia Tech  
210 Drillfield Drive (0719), Sandy Hall 314  
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## EDUCATION

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<b>PhD</b>	<b>Pharmacology (Neuroscience Track)</b> UT Health San Antonio, TX, USA	<b>2014</b>
<b>MS</b>	<b>Life Sciences (Specialization: Neurobiology)</b> Sophia College for Women, University of Mumbai, India	<b>2007</b>
<b>BS</b>	<b>Life Sciences and Biochemistry (Double Major)</b> St. Xavier's College, University of Mumbai, India Graduated with Honors	<b>2005</b>

## TEACHING EXPERIENCE

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### Courses

<b>Neuroscience of Drug Addiction</b> ( <i>NEUR 3914</i> )	<b>2024</b>
Instructor of Record, Virginia Tech Includes a Community-Engaged Learning component	
<b>Neuroscience Orientation Seminar</b> ( <i>NEUR 1004</i> )	<b>2024</b>
Guest Lecturer for eight class sessions	
<b>Senior Seminar Course: Social Brain Networks</b> ( <i>NEUR 4044</i> )	<b>2022 – 2024</b>
Instructor of Record, Virginia Tech	
<b>Brain-Body Interactions in Health and Disease</b> ( <i>NEUR 3984, NEUR 3054</i> )	<b>2022 – 2024</b>
Instructor of Record, Virginia Tech	
<b>Introduction to Neuroscience 2</b> ( <i>NEUR 2026</i> )	<b>2022 – 2024</b>
Instructor of Record, Virginia Tech	
<b>Study Abroad Program: Social Brain Networks in Copenhagen</b> ( <i>NEUR 4044</i> )	<b>Summer 2023</b>
Program Leader and Instructor of Record, Virginia Tech	
<b>Introduction to Neuroscience 1</b> ( <i>NEUR 2025</i> )	<b>2021 – 2022</b>
Instructor of Record, Virginia Tech	
<b>Cognitive Neuroscience</b> ( <i>NEUR 3084</i> )	<b>2021</b>
Co-Instructor, Virginia Tech	
<b>Anatomy of Scientific Error</b>	<b>2020</b>
Guest Lecturer, R <sup>3</sup> Program, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD	
<b>Introduction to Research Literature</b>	<b>2020</b>
Guest Lecturer, New York Institute of Technology, Long Island, NY	
<b>Genes to Society: Nervous Systems and Special Senses Labs</b>	<b>2020</b>
Co-Instructor, Johns Hopkins University School of Medicine, Baltimore, MD	
<b>Understanding Parkinson's Through the Lens of Neuroscience</b>	<b>2020</b>
Volunteer, Baltimore Underground Science Space, Baltimore, MD	
<b>Psychopharmacology</b>	<b>2018</b>
Collaborative Teaching Fellow, Johns Hopkins University, Baltimore, MD	

**Biochemistry of Gene Expression 2016**

Collaborative Teaching Fellow, Goucher College, Center for Natural Sciences, Baltimore, MD

**Human Learning and Memory 2016**

Collaborative Teaching Fellow, Goucher College, Baltimore, MD

**Medical Neuroscience Discussion Group 2015**

Preceptor, University of Maryland School of Medicine, Baltimore, MD

**Workshops Designed and Conducted**

**NeuroBio Labs: A Springboard for Research & Discovery 2023**

Workshop series to enable students to reach proficiency in basic technical lab skills prior to joining a lab, to decrease the delay in becoming productive, fully integrated members of the lab team and increase research opportunities for all students.

Co-Led with Jennifer Rainville, Ph.D.

**Role-Playing & Cooperative Learning Activity to Teach Fundamental Bio. Concepts 2023**

Practice Session at the 2023 Conference on Higher Education Pedagogy, Virginia Tech, VA

Co-led with Iglia Pavlova, Ph.D.

**Reproducibility for Everyone 2022**

Workshop for graduate students enrolled in the Virginia Tech School of Neuroscience Journal Club

**Reproducibility for Everyone (Online) 2020**

Evolution Community Resources for Early Career Researchers, Society for the Study of Evolution

**Active Learning – Tools and Activities to Engage Your Students 2019**

Johns Hopkins Teaching Academy, Baltimore, MD

**Active Learning Workshop for Faculty Members 2019**

Neuroscience Department, Johns Hopkins University School of Medicine, Baltimore, MD

**Reproducibility for Everyone Professional Development Workshop 2019**

Society for Neuroscience Annual Meeting, Chicago, IL

**How to Critically Read Scientific Literature 2019**

Summer Undergraduate Lunch Series

Neuroscience Department, Johns Hopkins University School of Medicine, Baltimore, MD

**Drosophila (Drosophila Functional Genomics) 2007**

Sophia College for Women, Mumbai University, India

**Zoological Microtechniques 2006**

Sophia College for Women, Mumbai University, India

**Students Mentored** (Trained students to design experiments, conduct research, analyze and interpret data, critically evaluate primary literature, write scientific reports and present their data in talk or poster formats)

**Doctoral Students**

Matilde Castro	2019	Madhura Shah	2017 – 2018
Lionel Rodriguez	2017	Adiel Hernandez	2017
Haishan Wu	2013 – 2014	Richard Ramirez-Garcia	2016 – 2017
		Ta-Chung Morris Mou	2015 – 2017

**Undergraduate Students**

Molly Caron (SoTL#)	2022 – 2024	Haram Joo	2016
Elea Abisamra (SoTL#)	2023	Rebecca Zhang	2016
Meera Bhakta (SoTL#)	2022 – 2023	Gayathri Muthukumar	2015
Nicole Acosta (SoTL#)	2022 – 2023	Marisa DeGuzman	2014
Aidan Fishenden (SoTL#)	2021	Jonathan Chemello	2013
Xianyi Jia	2020 – 2021	Mohona Sadhu	2012
Shannon Gavin*	2019	Hanna Yousuf	2010

**High School Students**

Micah Frier 2016  
 Madeline Gonzales Morales 2011

\*received the *Dean's Undergraduate Research Award*

#SoTL, Scholarship of Teaching and Learning

**RESEARCH EXPERIENCE**

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**School of Neuroscience, Virginia Tech, VA, USA****July 2021 – Present**

Collegiate Assistant Professor

Research Focus: Scholarship of Teaching and Learning

**Johns Hopkins University, Baltimore, MD, USA****2015 – July 2021**

Postdoctoral Fellow

Research Advisor: Jay Baraban

Research Focus: Roles of a microRNA-degrading enzyme in psychiatric disorders and obesity

**University of Maryland, Baltimore, MD, USA****2014 – 2015**

Postdoctoral Fellow

Research Advisor: Brian Mathur

Research Focus: Role of serotonin in L-DOPA-induced dyskinesia in a mouse model of Parkinson's disease using *ex vivo* electrophysiology and behavior**UT Health San Antonio, TX, USA****2008 – 2014**

Graduate Student

Research Advisor: Alan Frazer

Dissertation Title: Mechanisms underlying the antidepressant and anxiolytic effects of vagal nerve stimulation (VNS): comparison with desipramine

**National Centre for Biological Sciences, Bengaluru, India****2007 – 2008**

Junior Research Fellow

Research Advisor: Mitradas Panicker

Research Focus: Intracellular trafficking of serotonin (5-HT)<sub>2A</sub> receptors**Sophia College for Women, University of Mumbai, India****2005 – 2007**

Masters Student

Research Advisor: M. C. Arunan

Thesis Title: Regenerating brain of earthworm as a model system to study the restoration of monoaminergic neurons in adult animals

**St. Xavier's College, University of Mumbai, India****2003 – 2004**

Undergraduate Honors Student

Research Advisor: Sheela Donde

Honors Thesis Title: PCR amplification of *cellulase* genes**Genetics Laboratory, Reliance Life Sciences, Mumbai, India****2003**

Summer Intern

Research Focus: Cytogenetics using karyotyping and fluorescence in-situ hybridization to detect chromosomal abnormalities, including translocations, amplifications and micro-deletions

**HONORS AND AWARDS**

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**Research and Educational Grants****Materials to Enhance Training in Experimental Rigor (METER)****2022 – 2025****UE5 Education Project, NINDS, NIH, USA**

Title: NeuR3o-LOGIC

Role: Co-Investigator

**HHMI Inclusive Excellence Departmental Mini-Grant****2024**

Title: Advancing Diversity, Equity, and Inclusion in the School of Neuroscience at Virginia Tech

Role: Co-Investigator

**Peace Building and Violence Prevention Program** 2023 – 2024

**Virginia Tech Center for Peace Studies and Violence Prevention (CPSVP)**

Title: Development of the Just Say KNOW Substance Use Outreach and Prevention Program

Role: Co-Investigator

**VT Engage Faculty Fellows Development Grant** 2023 – 2024

**Virginia Tech, USA**

Enabling the incorporation of community engagement in the curriculum

Role: Faculty Fellow (Primary Investigator)

**College of Science Instructional Grant for Innovative Instructional Ideas** 2023 – 2024

**Virginia Tech, USA**

Virtual escape room to review introductory neuroscience concepts

**College of Science Instructional Grant for Innovative Instructional Ideas** 2023 – 2024

**Virginia Tech, USA**

Enabling the use of software for peer assessment in writing-intensive senior seminar courses

**Office of Undergraduate Research Faculty Grant** 2023

**Virginia Tech, USA**

Aimed at scaling and increasing access to authentic undergraduate research experiences at Virginia Tech. Used towards creating and implementing a Neuroscience Lab Skills workshop series.

Role: Co-Investigator

**Bridge Experience** 2022 – 2023

**Center for Excellence in Teaching and Learning, Virginia Tech, USA**

**New Faculty Mentoring Grant** 2022

**Virginia Tech, USA**

**NARSAD Young Investigator Grant** 2018 – 2021

**Brain and Behavior Research Foundation, USA**

Title: Role of translin/trax, a microRNA degrading RNase complex, in mediating the effects of stress and antidepressant treatment in the dentate gyrus

**Junior Research Fellowship and Eligibility for Lectureship in Life Sciences** 2007

**University Grants Commission, India**

For National Eligibility Test (NET)-qualified candidates to conduct research

**Scholarship for Scientific Research** 2007

**Lady Tata Memorial Trust, India**

For young Indian scientists with an outstanding track record in biological sciences, a deep commitment to find innovative solutions to major problems related to human diseases and potential for high quality research

### **Presentation Awards**

**Winner, Promega Art Contest for Creative Scientists** 2019

**Professor S.S. Parmar Research Foundation (USA) Award** 2006

For best paper presented at the poster session

### **Academic Recognition**

**Departmental Award for Excellence in Teaching** 2024

School of Neuroscience, Virginia Tech

**Departmental Award for Outstanding Contribution to Diversity, Equity & Inclusion** 2023

School of Neuroscience, Virginia Tech

**2022 University Sporn Teaching Award Finalist** 2022

Student-nominated awarded for Excellence in Teaching (1 of 5 finalists from over 180 student nominations)

**Dr. Kate E. Marre Prize****2007**

For maintaining a consistently good academic record and participating with a sense of commitment in class and departmental activities in the MS class

**Pragji Purshottam Bhatia Scholarship****2005**

For a Hindu lady student of MS with the highest score at the final year BS examination

**J.J. & G.J. Lalwani and Hiloo Scholarship****2004**

For excellence in academics, co-curricular and extra-curricular activities

**PUBLICATIONS****Journal Publications**

1. A. Shah, E. Leininger, S. Pandey (2025). Integrating neuroscience and immunology core concepts to develop a neuroimmunology curriculum Manuscript under review at *Frontiers in Education*
2. Neuwirth, L. S., Quadros-Mennella, P. S., Abrams, M., Nahmani, M., Bates, S., Tobiansky, D. J., Seraphin, S. B., Maeng, L. Y., **Shah, A.**, Penton, R., Tan, T., Cabañas, E., Linden, M., & Kang, Y. Y. (2024). Approaching diversity, equity, and inclusion in the faculty for undergraduate neuroscience: are we there yet? *Journal of Undergraduate Neuroscience Education (JUNE)*, 23(1):E5-E16
3. Hartvigsen, S., Burnett, T., Fox, C. F., Matney, C., Pham, D., Simley, C. E., **Shah, A. P<sup>#</sup>** (2024). Mini-Symposium: Training the trainers of the next generation of neuroscience advocates *Journal of Undergraduate Neuroscience Education (JUNE)*, 22(2):A131-A136. (<sup>#</sup>indicates Corresponding Author)
4. Akiyoshi, K., Fujimori, T., Fu, X., **Shah, A. P.**, Yamaguchi, A., Steenbergen, C., Santhanam, L., Berkowitz, D., Tuday, E., Baraban, J. M., & Das, S. (2023). Adenosine A2A receptor regulates microRNA-181b expression in aorta: therapeutic implications for large-artery stiffness. *Journal of the American Heart Association*, 12(14), e028421.
5. Sarabipour, S.<sup>\$</sup>, Hainer, S. J.<sup>\$</sup>, Arslan, F. N.<sup>\$</sup>, de Winde, C. M.<sup>\$</sup>, Furlong, E.<sup>\$</sup>, Bielczyk, N.<sup>\$</sup>, Jadavji, N. M.<sup>\$</sup>, **Shah, A. P.<sup>\$</sup>**, Davla, S.<sup>\$</sup> (2022). Building and sustaining mentor interactions as a mentee. *FEBS J.* (<sup>\$</sup>indicates equal contribution)
6. Sarabipour, S.<sup>\$</sup>, Hainer, S. J.<sup>\$</sup>, Furlong, E.<sup>\$</sup>, Jadavji, N. M.<sup>\$</sup>, de Winde, C. M.<sup>\$</sup>, Bielczyk, N.<sup>\$</sup>, **Shah A. P.<sup>\$</sup>** (2022). Writing an effective and supportive recommendation letter. *FEBS J.* (<sup>\$</sup>indicates equal contribution)
7. Fu, X., **Shah, A. P.**, Keighron, J., Mou, T. M., Ladenheim B., Alt, J., Fukudome, D., Niwa, M., Sawa, A., Cadet, J-L, Rais, R., Tanda, G., Baraban, J. M. (2021). Elevated body fat increases amphetamine accumulation in brain: evidence from genetic and diet-induced forms of adiposity. *Transl Psychiatry* 11, 427
8. Auer, S., Haelterman, N., Weissgerber, T. L., Erlich, J. C., Susilaradeya, D., Julkowska, M., Gazda, M. A., Abitua, A., Niraulu, A., **Shah, A.**, et. al. (2021). Science Forum: A community-led initiative for training in reproducible research. *eLife*, 10:e64719
9. Tuday, E., Nakano, M., Akiyoshi, K., Fu, X., **Shah, A. P.**, Yamaguchi, A., Steenbergen, C., Santhanam, L., An, S. S., Berkowitz D. E., Baraban, J. M., Das, S. (2021). Degradation of premature-miR-181b by the translin/trax RNase increases vascular smooth muscle cell stiffness. *Hypertension*, 78, 831-839.
10. Fu, X., **Shah, A. P.**, Li, Z., Li, M., Tamashiro, K. L., & Baraban, J. M. (2020). Genetic inactivation of the translin/trax microRNA-degrading enzyme phenocopies the robust adiposity induced by *Translin (Tsn)* deletion. *Molecular Metabolism*, 101013.
11. **Shah, A. P.<sup>\$</sup>**, Johnson, M. D.<sup>\$</sup>, Fu, X.<sup>\$</sup>, Boersma, G. J., Shah, M., Wolfgang, M. J., Tamashiro, K. L., & Baraban, J. M. (2020). Deletion of *Translin (Tsn)* induces robust adiposity and hepatic steatosis without impairing glucose tolerance. *International Journal of Obesity*, 44(1), 254–266. (<sup>\$</sup>indicates equal contribution)
12. Tuday, E., Nomura, Y., Ruhela, D., Nakano, M., Fu, X., **Shah, A.**, Roman, B., Yamaguchi, A., An, S. S., Steenbergen, C., Baraban, J. M., Berkowitz, D. E., Das, S. (2019). Deletion of the microRNA-degrading

nuclease, translin/trax, prevents pathogenic vascular stiffness. *American Journal of Physiology-Heart and Circulatory Physiology*, 317(5), H1116–H1124.

13. Chern, Y., Chien, T., Fu, X., **Shah, A. P.**, Abel, T., & Baraban, J. M. (2019). Trax: a versatile signaling protein plays key roles in synaptic plasticity and DNA repair. *Neurobiology of Learning and Memory*, 159, 46–51.
14. Fu, X., **Shah, A.**, & Baraban, J. M. (2016). Rapid reversal of translational silencing: Emerging role of microRNA degradation pathways in neuronal plasticity. *Neurobiology of Learning and Memory*, 133, 225–232.
15. **Shah, A. P.**<sup>#</sup>, Carreno, F. R., Wu, H., Chung, Y. A., & Frazer, A. (2016). Role of TrkB in the anxiolytic-like and antidepressant-like effects of vagal nerve stimulation: Comparison with desipramine. *Neuroscience*, 322, 273–286. (<sup>#</sup>indicates Corresponding Author)
16. **Shah, A.**<sup>#</sup>, Carreno, F. R., & Frazer, A. (2014). Therapeutic modalities for treatment resistant depression: focus on vagal nerve stimulation and ketamine. *Clinical Psychopharmacology and Neuroscience: The Official Scientific Journal of the Korean College of Neuropsychopharmacology*, 12(2), 83. (<sup>#</sup>indicates Corresponding Author)
17. **Shah, A.**<sup>#</sup>, & Frazer, A. (2014). Influence of acute or chronic administration of ovarian hormones on the effects of desipramine in the forced swim test in female rats. *Psychopharmacology*, 231(18), 3685–3694. (<sup>#</sup>indicates Corresponding Author)
18. Li, J.-X., **Shah, A. P.**, Patel, S. K., Rice, K. C., & France, C. P. (2013). Modification of the behavioral effects of morphine in rats by serotonin (5-HT) 1A and 5-HT 2A receptor agonists: antinociception, drug discrimination, and locomotor activity. *Psychopharmacology*, 225(4), 791–801.
19. Roth, M. K., Bingham, B., **Shah, A.**, Joshi, A., Frazer, A., Strong, R., & Morilak, D. A. (2012). Effects of chronic plus acute prolonged stress on measures of coping style, anxiety, and evoked HPA-axis reactivity. *Neuropharmacology*, 63(6), 1118–1126.
20. Furmaga, H., **Shah, A.**, & Frazer, A. (2011). Serotonergic and noradrenergic pathways are required for the anxiolytic-like and antidepressant-like behavioral effects of repeated vagal nerve stimulation in rats. *Biological Psychiatry*, 70(10), 937–945.

#### **Book Chapters**

21. Baraban, J. M., **Shah, A.**, & Fu, X. (2018). Multiple Pathways Mediate MicroRNA Degradation: Focus on the Translin/Trax RNase Complex. In *Advances in Pharmacology* (Vol. 82, pp. 1–20). Academic Press.
22. Patton, M. H.<sup>§</sup>, **Shah, A. P.**<sup>§</sup>, & Mathur, B. N. (2016). Alcohol Effects on the Dorsal Striatum. In *The Basal Ganglia - Novel Perspectives on Motor and Cognitive Functions* (pp. 289–315). Springer International. (<sup>§</sup>indicates equal contribution)

#### **Open Education Resources**

23. Basta, H., Coleman, S., Pavlova, I., & Shah, A. (2023). When tests disagree, how do I know if I have COVID-19? *QUBES Educational Resources*. <https://doi.org/10.25334/JEB5-Y738>

List of my published work on [Google Scholar](#)

#### **INVITED TALKS AND POSTER PRESENTATIONS**

##### **Talks**

**Talk at the Faculty for Undergraduate Neuroscience (FUN) Booth, Annual Society for Neuroscience Meeting, Chicago, IL, October 2024**

Title: Integrating community-engaged learning into a neuroscience course

**Community for Rigor (C4R) Annual Meeting, Philadelphia, PA, September 2024**

Annual Update for the NINDS Materials to Enhance Training in Experimental Rigor (METER) grant

**Virginia Tech College of Science Center for Advancing Undergraduate Science Education (CAUSE)**

**Launch Event**

Title: Virtual escape room to review introductory neuroscience concepts – an update on the Instructional Grant for Innovative Instructional Ideas

**Re-Imagining Neuroscience Education, Faculty for Undergraduate Neuroscience (FUN) Summer Workshop, Bellingham, WA, July 2023**

Title: Training the trainers of the next generation of neuroscience advocates

Organized and Co-chaired a mini-symposium with a panel of experts

**ImmunoReach: Interdisciplinary Immunology Education Consortium Symposium, December 2022**

Title: When tests disagree, how do I know if I have COVID-19?

**NINDS Initiative to Improve Education in the Principles of Rigorous Research kick-off, Philadelphia, PA, September 2022**

Annual Meeting for the NINDS Materials to Enhance Training in Experimental Rigor (METER) grant

**University of Minnesota Neuroscience Seminar Series (virtual), March 2021**

Title: Role of the translin/trax microRNA-degrading RNase in regulating plasticity

**Bucknell University Neurobiology Seminar (virtual), February 2021**

Title: Of mental disorders and the microRNA system

**Baltimore Brain Series, National Institute on Drug Abuse, Baltimore, MD, 2017**

Title: Translin/trax, a microRNA degrading complex, in the mesolimbic dopamine system

**Intramural Research Program Branch Meeting, National Institute on Drug Abuse, Baltimore, MD, 2017**

Title: Translin/trax, a microRNA degrading complex, in the mesolimbic dopamine pathway

**Cold Spring Harbor Laboratory Course on the Cellular Biology of Addiction, Cambridge, UK, 2016**

Title: Regulation of dopaminergic signaling by the microRNA system

**International Symposium on Cellular Signaling during Development, Pune, India, 2006**

Title: Regenerating brain of earthworm as a model system to study differentiation of dopaminergic neurons in adult animals

**Posters**

**A. Shah**, I. Pavlova, S. Coleman, A. Lal, H. Basta, S. Pandey Implementing a simulated biomedical conference on COVID-10 diagnosis at various institutions: impact on student learning of Vision and Change core concepts and competencies **American Society for Microbiology Conference for Undergraduate Educators** (2024) Pittsburgh, PA

H. Basta, **A. Shah**, I. Pavlova, S. Coleman, A. Lal, S. Pandey Immunology for non-immunologists: COVID-19 diagnosis role play activity **Professional Development Conference of the National Association of Biology Teachers** (2024) Anaheim, CA

J. Baty-McMillan, R. Budowle, **A. Shah**, E. Hwang Charting pathways for sustainable community engaged learning: a faculty fellows cohort's reflections **Engagement Scholarship Consortium International Conference** (2024) Portland, OR

**A. Shah**, J. Browning, E. Gilbert Trading cards to introduce the breadth and diversity of neuroscience Program No. TJP03.19SU. 2024 Neuroscience Meeting Planner. Chicago, IL: **Society for Neuroscience** (2024)

**A. Shah**, J. Browning, E. Gilbert Trading cards to introduce the breadth and diversity of neuroscience **Neuroscience Teaching Conference** (2024) Winston-Salem, NC

**A. Shah**, J. Browning, E. Gilbert Trading cards to introduce the breadth and diversity of a field **Conference on Higher Education and Pedagogy** (2024) Blacksburg, VA

H. Basta, I. Pavlova, **A. Shah**, A. Lal, S. Coleman A jigsaw and role-play based open educational resource over COVID-19 tests increases student understanding of antigens, antibodies, and viral testing **American Society for Microbiology Conference for Undergraduate Educators** (2023) Phoenix, AZ

- A. Shah**, H. Adwanikar, A. Ibrahim and K. Clark The Defining Features Matrix as a review strategy for basic concepts in a Psychopharmacology course **Undergraduate Biology Education Research Gordon Research Seminar and Conference** (2019) Lewiston, ME
- A. P. Shah**<sup>\$</sup>, M. D. Johnson<sup>\$</sup>, X. Fu, G. J. Boersma, M. Shah, M. J. Wolfgang, K. L. Tamashiro, J. M. Baraban *Translin (Tsn)* deletion induces robust adiposity and hepatic steatosis without impairing glucose tolerance **Mid-Atlantic Nutrition Obesity Research Center Annual Symposium** (2018) (<sup>\$</sup>indicates equal contribution) Baltimore, MD
- A. Shah**, X. Fu, J. Keighron, M. Mou, J. Alt, R. Rais, G. Tanda, J. M. Baraban *Translin* deletion impairs cocaine-induced enhancement of evoked dopamine release **83<sup>rd</sup> Cold Spring Harbor Laboratory Symposium on Quantitative Biology - Brains & Behavior: Order & Disorder in the Nervous System** (2018) Cold Spring Harbor, NY
- X. Fu, **A. Shah**, M. Niwa, D. Fukudome, A. Sawa, J.-L. Cadet, J. Keighron, G. Tanda, J. M. Baraban. Absence of translin/trax, a microRNA degrading RNase complex, blocks cocaine's ability to increase dopamine tone. Program No. 286.12. 2017 Neuroscience Meeting Planner. Washington, DC: **Society for Neuroscience** (2017)
- M. D. Johnson, **A. Shah**, X. Fu, G. J. Boersma, K. L. Tamashiro, J. M. Baraban Role of *Translin*, an essential subunit of the translin/trax microRNA degrading enzyme, in metabolic energy balance **25<sup>th</sup> Annual Meeting of the Society for the Study of Ingestive Behavior** (2017) Montreal, Quebec, Canada
- A. Shah**, X. Fu, J. Keighron, G. Tanda, J. Baraban Absence of translin/trax, a microRNA degrading RNase complex, impairs the dopamine response to cocaine **Catecholamines Gordon Research Seminar and Conference** (2017) Newry, ME
- A. P. Shah**, F. R. Carreno, H. Wu, M. DeGuzman, Y. Chung, A. Frazer Mechanisms underlying the antidepressant and anxiolytic effects of vagal nerve stimulation (VNS) Program No. 321.01. 2014 Neuroscience Meeting Planner. San Diego, CA: **Society for Neuroscience** (2014)
- A. P. Shah**, Y. Chung, F. R. Carreno, A. Frazer Mechanisms underlying the effects of vagal nerve stimulation Program No. 541.21. 2013 Neuroscience Meeting Planner. San Diego, CA: **Society for Neuroscience** (2013)
- B. C. Bingham, **A. P. Shah**, J. M. Chemello, D. M. Morilak Rodent cognitive training as a model for therapeutic intervention in affective disorders Program No. 665.18. 2012 Neuroscience Meeting Planner. New Orleans, LA: **Society for Neuroscience** (2012)
- A. P. Shah**, A. Frazer Female sex steroids interfere with the antidepressant-like effects of selective noradrenergic reuptake inhibitors Program No. 70.11. 2012 Neuroscience Meeting Planner. New Orleans, LA: **Society for Neuroscience** (2012)
- A. Shah**, S. Benmansour, A. Frazer Interaction between ovarian hormones and antidepressants acting at serotonergic or noradrenergic transporters. Program No. 905.07. 2011 Neuroscience Meeting Planner. Washington, DC: **Society for Neuroscience** (2011)
- M. K. Green, A. Joshi, **A. Shah**, A. Frazer, J. R. Strong, D. A. Morilak Effects of prenatal stress and combined chronic plus acute adult stress on anxiety-like behavior and evoked HPA axis activity in rats Program No. 190.06. 2011 Neuroscience Meeting Planner. Washington, DC: **Society for Neuroscience** (2011)
- H. Truong, **A. Shah**, A. Frazer Behavioral effects of vagal nerve stimulation in the rat Program No.886.16 2010 Neuroscience Meeting Planner. San Diego, CA: **Society for Neuroscience** (2010)
- H. Truong, **A. Shah**, A. Frazer Behavioral effects of vagal nerve stimulation in the rat **NARSAD symposium 'Healthy Minds Across America'** a public forum on mental health at UT Health San Antonio (2010)
- A. Shah**, A. Kundnani, J. Jacob, A. Mane, D. Sengupta, M.C. Arunan Regenerating brain of earthworm as a model system to study differentiation of dopaminergic neurons in adult animals **International Symposium on Cellular Signaling during Development** - Selected for a Talk (2006) Pune, India



**Posters by Mentored Students**

M. Young, S. McHugh, A. Fishenden, H. Dyche, D. Phan, M. Lindenmuth, **A. Shah** fMRI/MRI presentation and demonstration for *Hokie for a Day* and *Brain Day* events **Dennis Dean Undergraduate Research and Creative Scholarship Conference** (2024) Blacksburg, VA

A. Rana, C. Schlotter, H. Headrick, E. Harshbarger, M. Galligan, **A. Shah** Neuroscience demos for elementary and high school students **Dennis Dean Undergraduate Research and Creative Scholarship Conference** (2024) Blacksburg, VA

S. Styles, M. Clary, J. Anderson, P. Harikrishnan, J. Carter, V. Frank, K. Williams, **A. Shah** A community approach to combating the opioid epidemic: integrating education and action **Dennis Dean Undergraduate Research and Creative Scholarship Conference** (2024) Blacksburg, VA

T. Ridgway-Davis, S. Cunningham, S. Bannwart, R. Anderson, C. Cullen, S. Kempker-Margherio, **A. Shah** Expanding the *Just Say Know* substance use education program to Southwest Virginia elementary and high school students **Dennis Dean Undergraduate Research and Creative Scholarship Conference** (2024) Blacksburg, VA

N. Hafeez, L. Smith, A. Harvey, B. O'Neill, **A. Shah** *Never Enough*: A community engagement project **Dennis Dean Undergraduate Research and Creative Scholarship Conference** (2024) Blacksburg, VA

Z. Elbash, K. Williams, B. O'Neill, V. Frank, **A. Shah** Integrating neuroscience and community engagement in drug addiction awareness **Dennis Dean Undergraduate Research and Creative Scholarship Conference** (2024) Blacksburg, VA

A. Hernandez, **A. Shah**, X. Fu, M. Shah, J. M. Baraban Impact of *Translin* deletion on the dopamine system **Johns Hopkins University CARES Symposium** (2017) Baltimore, MD

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**PROFESSIONAL TRAINING**

**Neuroscience**

**Neural Circuits for Anxious Actions, 2020**

Online Retreat, Neuroscience School of Advanced Studies, Venice, Italy

**Cellular Biology of Addiction, 2016**

Cold Spring Harbor Laboratory Course, Cambridge, UK

**Electrophysiology in Neuroscience Research, 2013**

UT Health San Antonio, TX

**Clinical Practicum in Neurosurgery, 2010**

UT Health San Antonio, TX

**Neurobiology of Disease Workshop: Neurobiology of Depression, 2009**

Society of Neuroscience Annual Meeting, Chicago, IL

**Zoological Microtechniques, 2006**

CHM College, Mumbai, India

**Frontiers of Cellular Imaging in Neurobiology, 2005**

National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, India

**Science Communication**

**Social Media for Science Communication, 2020**

3-week Professional Development Course, Alan Alda Center for Communicating Science, NY

**Massive Science Consortium, 2019 – 2020**

Provided feedback on articles written by peers for the public on various science topics

**ClubSciWri, 2018 – 2019**

Served as Lead Editor and edited several articles written by scientists for the public

**The Story Collider Workshops on Telling Your Story and Writing For General Audiences, 2017**

Johns Hopkins University, Baltimore, MD

**PLOS Neuro at Society for Neuroscience, 2015**

Selected by PLOS Neuro Community Editors to cover the annual meeting on Twitter and on the PLOS Neuro blog. Published a [blogpost](#) titled, 'Sex differences in preclinical neuroscience research: Snippets from #SfN15 with Catherine Woolley'

**Pedagogy**

**Inclusive Pedagogy Pathway, 2024 – 2025**

Virginia Tech

A year-long cohort course that introduces participants to the core principles of inclusive pedagogy: facilitating respect and hospitality for all, creating an environment where everyone learns, and fostering cultural competence

**Cultivating Inclusive Pedagogy: Addressing the Needs of APIDA and Indigenous Students, 2024 – 2025**

Virginia Tech

A course to equip faculty members with a comprehensive understanding of inclusive pedagogy while addressing the unique challenges encountered by Asian Pacific Islander Desi American (APIDA) and Indigenous students within the academic setting

**American Society for Microbiology Conference for Undergraduate Educators, 2024**

Pittsburgh, PA

**Neuroscience Teaching Conference, 2024**

Winston-Salem, NC

**Teaching in the Age of Generative AI, Summer 2024**

Technology-enhanced Learning and Online Strategies (TLOS), Virginia Tech

Selected to participate in a 2-day faculty workshop followed by weekly meetings throughout summer

**Conducting Research on Your Teaching, 2024**

Center for Excellence in Teaching and Learning (CETL), Virginia Tech

**Course Design Clinic, 2024**

Center for Excellence in Teaching and Learning (CETL), Virginia Tech

**Faculty for Undergraduate Neuroscience (FUN) Final Friday Seminars and Meetups (virtual), 2022 – 2024**

- Asset-Based and Transparent Teaching Methods / Teaching Courses That Enroll Students With Considerably Different Levels of Experience
- The Importance of Faculty Wellbeing
- Program Review – from all sides – preparing for, running, and responding to a review
- Workshop on Neuroscience Core Concepts and Competencies
- Incorporating Empirical Research Articles into your Coursework
- Course Embedded Research Experiences for Upper-level courses
- Core Concepts in Neuroscience - ongoing work by faculty at various institutions toward implementing core concepts in courses and programs
- Let's Reimagine Neuroscience Education
- Cross and Inter-disciplinary Neuroscience Courses
- Solving the Rigor Equation

**Re-Imagining Neuroscience Education, FUN Summer Workshop, 2023**

Bellingham, WA

**FUN at Allen Institute – Satellite Workshop, Summer 2023**

Allen Institute, Seattle, WA

Lab tours, a scientific talk, and a demo of a curriculum unit that uses Allen Institute open data and tools

**Annual Summer Institute, 2023**

Office of Undergraduate Education, Virginia Tech

**Deep Teaching Residency, 2022**

Year-long faculty development program in inclusive pedagogy that aims to meaningfully transform faculty mindsets and practices. ‘Deep Teaching’ is an inclusive pedagogical philosophy that seeks to engage faculty in a critical evaluation of how instructor self-awareness, students’ personal histories, and broad social structures impact the development of an equitable pedagogy. Included in the year-long experience is a five-day immersive in-person workshop at HHMI Headquarters (Chevy Chase, MD – July/August 2022)

**Welcome Back Symposium 2022: Teaching Strategies for Increased Student Engagement, 2022**

Virginia Tech

**Conference on Higher Education Pedagogy, 2022 – 2024**

Virginia Tech

**Neuroscience Teaching Conference (virtual), 2022**

**Society for the Advancement of Biology Education Research (SABER) National Meeting (virtual), 2022**

**2022 University STEM-focus Grading Conference (virtual), 2022**

**JHU Inclusive Pedagogy Series: *What Inclusive Instructors Do* Book Talk with Dr. Khadijah Mitchel, 2022**

**The Chronicle of Higher Ed ‘Talking About Teaching: The Future of Grading and Assessment’, 2022**

**Teaching Neuroscience: Reviving Neuroanatomy, SfN Webinar, 2022**

**The Chronicle of Higher Education ‘What Students Need to Feel Supported in 7 Key Areas’, 2022**

**Neuroscience Teaching Conference (virtual), 2021**

**Mastery Grading in Higher Ed Conference (virtual), 2021**

**Culturally Responsive Teaching Series, 2021**

Johns Hopkins Teaching Academy, Baltimore, MD

**Johns Hopkins Teaching Institute, 2020**

4-Day Online Workshop, Johns Hopkins Teaching Academy, Baltimore, MD

**3<sup>rd</sup> Annual Summer Institute for Education Equity and Justice, 2020**

Virtual Conference, American University School of Education, Washington, DC

Teaching Young Women of Color: Antiracist Practices and Strategies

**Transforming Your Teaching with *Perusall* (an Online Social Annotation Tool), 2020**

Online Training with Dr. Eric Mazur, Harvard University

**Teaching with Technology, 2019**

Online Seminar, Center for the Integration of Research, Teaching and Learning (CIRTL) Network

**Pizza and Pedagogy, 2019**

Workshop Series, Johns Hopkins Teaching Academy, Baltimore, MD

**Equity in STEM for All Genders, 2019**

Course, CIRTL Network

**Teaching as Research, 2018 – 2019**

Johns Hopkins Teaching Academy, Baltimore, MD

**Johns Hopkins Preparing Future Faculty Teaching Academy Program Certificate, 2017**

Johns Hopkins Teaching Academy, Baltimore, MD

**Teaching at the University Level, 2017**

Course, Johns Hopkins School of Public Health, Baltimore, MD

**Teaching Topics and Tapas, 2016 – 2017**

Workshop Series, Johns Hopkins Teaching Academy, Baltimore, MD

**College Science Teaching Seminars, 2016**  
Seminars, Towson University, Baltimore, MD

**Introduction to the Science of Teaching, 2012**  
Course, UT Health San Antonio, TX

**Other**

**Mental Health First Aid USA Certification, 2022 – 2025**

**REVIVE! Opioid Overdose Emergency Response Training, 2024**  
Opioid Overdose and Naloxone Education (OONE) program for the Commonwealth of Virginia

**PROFESSIONAL SERVICE**

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**Member, School of Neuroscience (SoN) Awards and Scholarships Committee, November 2023 – Present**

**Member, College of Science IDEA Committee, Fall 2023 – Present**  
College of Science, Virginia Tech, Blacksburg, VA

**Chair, SoN DEI Committee, August 2023 – Present**  
School of Neuroscience, Virginia Tech, Blacksburg, VA

**Councilor, FUN Executive Committee, November 2023 – Present**

**Committee Member, SoN Undergraduate Curriculum Committee, June 2022 – Present**  
School of Neuroscience, Virginia Tech, Blacksburg, VA

**Faculty for Undergraduate Neuroscience Co-Chair, FUN Public Policy Committee, Fall 2022 – Present**  
Faculty for Undergraduate Neuroscience (FUN)

**Committee Member, FUN DEI Committee, Fall 2022 – Present**  
Faculty for Undergraduate Neuroscience (FUN)

**Faculty Advisor, Virginia Tech Scientista Chapter, August 2022 – Present**

**Peer-Reviewer for Scientific Journals, 2014 – Present**  
Neuropharmacology, Brain Stimulation, Journal of Affective Disorders, Neuropsychiatric Disease and Treatment, Neuroscience Letters, and Physiology and Behavior, International Journal of Neuropsychopharmacology, Journal of Undergraduate Neuroscience Education (JUNE), Journal of Microbiology and Biology Education

**Organizer, SoN Undergraduate Research and Science Art Mixer, Fall 2024**

**Abstract Reviewer, 17<sup>th</sup> Annual Conference on Higher Education Pedagogy, Fall 2024**

**Presenter, Workshop on Applying to Graduate School, October 2024**  
Scientistas, Virginia Tech, Blacksburg, VA

**Organizing Team Member, Central Virginia Chapter of the Society for Neuroscience (CVCSN), April 2024**

**Organizer, SoN Undergraduate Research Poster Mixer, Spring 2024**

**Invited Panelist, ‘Life After Grad School: Pursuing a Career in Academia and Beyond!’, February 2024**  
Teaching Academy at Johns Hopkins University, Baltimore, MD

**Member, Oxford University Press Advisory Board – Introductory Focus Group, Fall 2023**

**Invited Panelist, Panelists of Diverse Careers/fields of Study, November 2023**  
Scientistas x SASE, Virginia Tech, Blacksburg, VA

**Faculty Advisor, Interdepartmental student-led Undergraduate Research Club, 2022 – 2023**  
Virginia Tech, Blacksburg, VA

**Committee Member, SoN DEI Committee, July 2021 – May 2023**  
School of Neuroscience, Virginia Tech, Blacksburg, VA

**Committee Member, SoN Executive Committee, July 2021 – May 2023**

School of Neuroscience, Virginia Tech, Blacksburg, VA

**Invited Guest Speaker, VT Neuroscience Club, 2022**

School of Neuroscience, Virginia Tech, Blacksburg, VA

**Invited Panelist, ‘Decisions, decisions, decisions: a look at your future career’, 2022**

Young Investigators Forum at the 52<sup>nd</sup> Annual American Society for Neurochemistry Meeting, Roanoke, VA

**Invited Panelist, ‘Life After Grad School: Transitioning into a Faculty Position’, 2022**

Teaching Academy at Johns Hopkins University, Baltimore, MD

**Faculty Panelist, NEUR 1004 Neuroscience Orientation Seminar, 2022**

School of Neuroscience, Virginia Tech, Blacksburg, VA

**Committee Member, SoN Graduate Program Committee, July 2021 – May 2022**

School of Neuroscience, Virginia Tech, Blacksburg, VA

**Chair, Reproducibility for Everyone Social at Society for Neuroscience (SfN) Global Connectome, 2021**

**Committee Member, Departmental Committee on Diversity and Inclusion, 2018 – 2021**

Department of Neuroscience, Johns Hopkins University, Baltimore, MD

**Panelist, 2<sup>nd</sup> Katherine E. Welsh Symposium on Graduate Education in the Era of Open Science, 2020**

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

**Ambassador, Protocols.io, 2020**

**Ambassador, eLife, 2018 – 2020**

**Event Panelist, Women in STEM Panel, 2019**

Johns Hopkins University Carey Business School, Baltimore, MD

**Invited Discussant, Rigor Reproducibility and Responsibility Course for Graduate Students, 2019**

Department of Neuroscience, Johns Hopkins University, Baltimore, MD

**Early Career Researchers’ Seminar Series Co-Organizer, Baltimore Brain Series, 2018 – 2020**

Collaboration between Johns Hopkins University, National Institute on Drug Abuse, and University of Maryland

**Research Scholar, TEDMED, 2018**

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**SCIENCE OUTREACH**

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**Presenter, Health Sciences Career Advisory Summit, 2024**

Blue Ridge Partnership for Health Science Careers

Facilitated an interactive session to demonstrate the goals and activities of ‘Brain Day’, a field trip designed to educate middle and high school students about how substances impact the brain and its functions

**Presenter, School of Neuroscience Preview Day, 2024**

Presented at the departmental preview day to communicate with, recruit, and yield prospective students

**Judge, Central Virginia Chapter of the Society for Neuroscience (CVCSN), 2024**

**Brain Day, 2024**

Organized and facilitated a full-day field trip for high school students from Pulaski County, focused on educating them about the effects of substances on the brain and its functions. The program featured an interactive educational session titled Just Say Know, an fMRI demonstration, and various hands-on neuroscience activities

**Hokie for a Day, 2024**

Organized and facilitated an educational experience for middle school students from Falling Branch Elementary School children, focused on educating them about the effects of substances on the brain and its functions

**Volunteer, Brilliant Brains Bonanza, 2024**

Led hands-on neuroscience demos for Blacksburg Girl Scouts, ages 5 – 12

**Advisor, Kids Can Write, 2023 – 2024**

Student-led program to teach children how to write and self-publish their own books. The neuroscience edition helps them learn about the brain and write a story incorporating what they learn  
Blacksburg, VA

**Volunteer, Gilbert Linkous Elementary School Science Fair, 2023 & 2024**

Led hands-on neuroscience demos at a station called ‘Amazing Brain’

**Judge, Brain Bee VT, 2023 & 2024**

School of Neuroscience, Virginia Tech, Blacksburg, VA

**Judge, Student Research Posters at VT Alliance for Neurodevelopment Research Symposium, 2022**

Virginia Tech, Blacksburg, VA

**Professional Development Workshop Leader, Tips for Navigating Grad School Applications and Interviews for Biology Programs in the US, 2022**

Hosted by UG STEMPeers, a support network for undergraduate STEM students at St. Xavier’s College, Mumbai, India

**Career Guide, UT System Career Exploration Network, 2022**

Virtual

**Panelist, Scientist AMA with Middle School Students, 2021**

Berkley Middle School, Williamsburg, VA

**COMPASS Outreach Award, American Society for Cell Biology, 2020**

**Mentor, Freedom Employability Academy, 2019**

Online platform for disadvantaged youth (15-27 y) on the verge of entering the labor force in India

**Association for Women in Science (AWIS) Representative, Maryland STEM Festival Girl Empowerment Program, 2019**

Deer Park Middle School, Randallstown, MD

**Electronic Poster Judge, AAAS Annual Meeting, 2019**

Washington DC

**Volunteer, Skype A Scientist, 2018 & 2019**

Platform for connecting scientists with classrooms. Conducted three sessions with 4<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup>-12<sup>th</sup> graders

**Class Leader, Baltimore Brain Connect (Project Bridge), 2018 & 2019**

A program to teach local elementary school children the basics of Neuroscience, Baltimore, MD

**Volunteer, AAAS USA Science and Engineering Festival, 2018**

Washington DC

**Volunteer, Video Conversation with Middle School Science Teacher and her Students to discuss Neuroscience Research, 2018**

P.S. 007 Samuel Stern, East Harlem, NYC, NY

**Volunteer, #SciStuChat, 2018**

Discussion on Twitter between high school students and scientists about science and art

**Volunteer, Baltimore Brain Awareness Week Festival, 2018**

Port Discovery Museum, Baltimore, MD

**Speaker, Baltimore Science Gong Show, 2018**

Charm City Meadworks, Baltimore, MD

**Writer, Mentor Foundation USA, 2017**

An organization that works with innovative, evidence-based intervention approaches to reduce youth substance use and promote health and wellbeing

**Judge, Poster Competition for Undergraduate Students from Stevenson University, 2017**

Johns Hopkins University, Baltimore, MD

**Volunteer, Science At the Market, 2017**

Local Farmers' Market Science Demonstrations Stall organized by Project Bridge, Baltimore, MD

**Volunteer, STEAM Night, 2017**

After-school program organized by Project Bridge, Henderson-Hopkins School (K-8), Baltimore, MD

**Volunteer, Science Outside the Lines (Project Bridge), 2017**

A community "art-infused" science education program organized by Project Bridge in collaboration with Art with a Heart at Henderson-Hopkins School (K-8), Baltimore, MD

**Association for Women in Science (AWIS) Representative, BrainFest, 2016 & 2017**

A science festival organized by Project Bridge for local school children in Baltimore, MD

**Scientist, Research Remix, 2016**

Collaboration between an artist and a scientist to create artwork inspired from research, Johns Hopkins University, Digital Media Center, Baltimore, MD

**Scorekeeper and Timer, Brain Bowl, 2010 – 2012, 2014**

Neuroscience quiz for undergraduate students, San Antonio, TX

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**PROFESSIONAL AFFILIATIONS**

**Faculty for Undergraduate Neuroscience (FUN)**

Member, 2020 – Present

**Society for the Advancement of Biology Education Research**

Member, 2022 – Present

**Society for Neuroscience**

Member, 2009 – 2017, 2019 – 2021, 2023 – Present

**American Society for Microbiology**

Member, 2024

**American Society for Cell Biology**

Postdoctoral Member, 2020 – 2021

**Association for Women in Science**

President of Baltimore Chapter, 2018 – 2021

Vice President of Social Media, 2016 – 2018