UBADAH SABBAGH, PHD

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CURRENT APPOINTMENTS

2021–present **Postdoctoral Associate & NIH K00 Fellow**
McGovern Institute For Brain Research
Department of Brain and Cognitive Sciences, MIT
Stanley Center for Psychiatric Research, Broad Institute of MIT and Harvard

EDUCATION

2016–2021 **Virginia Tech** *(VT)*
Doctor of Philosophy, Translational Biology, Medicine, and Health
Focus: Molecular & Cellular Neuroscience
Thesis Advisor: Michael A. Fox, Ph.D.

2013–2015 **University of Missouri–Kansas City** *(UMKC)*
Bachelor of Science, Biology, Bioinformatics Focus
Thesis Advisor: Gerald J. Wyckoff, Ph.D.

2009–2012 **Longview Community College,** Lees Summit, MO
General education (non–degree)

PROFESSIONAL EXPERIENCE

2021–present **Postdoctoral Associate**, *McGovern Institute at MIT*
Laboratory of Guoping Feng, Ph.D.
Studying the development and function of thalamocoritcal interactions in health and disease

2016–2021 **Graduate Research Assistant**, *Fralin Biomedical Research Institute (FBRI)*
Laboratory of Michael A. Fox, Ph.D.
Studying the development, structure, and circuitry of the ventral lateral geniculate nucleus

2018 **Graduate Teaching Assistant**, *School of Neuroscience, Virginia Tech*
Taught two classes NEUR2035: Intro to Neuro Lab(immunostaining, microscopy, electrophysiology)

2016–2021 **Contributing Writer**, *Washington Post, Scientific American, others*
Works referenced & quoted in the New York Times, Washington Post, Nature, others

2015–2016 **Medical Laboratory Technologist**, *Laboratory Corporation of America*

2014–2016 **Undergraduate Research Assistant**, *School of Biological Sciences, UMKC*

AWARDS & HONORS

2024 **15 Innovators Under 35,** *MIT Technology Review MENA*
2023 **Young Arab Pioneer,** *Arab Youth Center*
2023 **Merit Award, McGovern** *Institute for Brain Research*
2021 **30 Under 30 in Science,** *Forbes Magazine*
2020 **Young Investigator Award,** *American Society for Neurochemistry*
2020 **Research presentation 1st place award,** *Summer Neuroscience Retreat, Virginia Tech*
2020 **Early Career Policy Fellow,** *Society for Neuroscience*

	2019	Research highlight & interview during Presidential Address, *Virginia Tech*
	2019	Ben Barres Fellowship for Distinguished Scholar, *Cold Spring Harbor Laboratory*
	2019	NIH Blueprint D-SPAN F99/K00 Award, *National Insitute of Neurological Disorders and Stroke*
	2019	Poster award, *Central Virginia Chapter for the Society for Neuroscience*
	2019	Oral presentation award, *Virginia Tech Annual Research Symposium*
	2018	Neuroscience Scholars Fellowship, *Society for Neuroscience*
	2018	Finalist, *Paul and Daisy Soros Fellowship for New Americans (not awarded)*
	2017	(X)po Award, *CityWorks*
	2014	HHMI-SBII, *University of Missouri – Columbia*

TRAVEL GRANTS

		Activity	*Funding*
	2019	*Cold Spring Harbor Course on Vision*	*International Brain Research Org*
	2018	*Alda Center for Communicating Science*	*VT Adaptive Brain & Behavior Award*
	2018	*AAAS Catalysing Advocacy for Science Workshop*	*NIH BEST Award*
	2017	*10th Annual NIH Symposium on Careers in Science*	*NIH BEST Award*
	2017 & 2018	*Hill Day, Rally for Medical Research*	*Coalition for the Life Sciences Award*

ACADEMIC PUBLICATIONS
[Scholar,](Scholar) [PubMed,](PubMed) ORCID

12. *2024* R Kast, S Simmons, N Rome, X Adiconis, L Melamed, K McCabe, D Wang, A Krol, M Krubner, V Prevosto, K Levandowski, **U Sabbagh,** HA Sullivan, I Wickersham, F Wang, J Levin, Z Fu, G Feng. Multimodal analysis reveals cellular diversity and divergent circuits of the zona incerta. ***in prep***

11. *2024* K Stebbins, RD Somaiya, **U Sabbagh,** Y Liang, J Su & MA Fox. Retinal input is required for the maintenance of neuronal laminae in the ventral lateral geniculate nucleus. ***bioRxiv (under review).*** [link]

10. *2023* **Sabbagh, U.** The postdoc experience is broken. Funders such as the NIH must help to reimagine it. ***Nature,*** 624(7992), pp.475–475. [link]

9. *2021* Su J, **Sabbagh U,** Liang Y, Olejnikova L, Russell AL, Chen J, Pan YA, Triplett JW & Fox MA. A cell-ECM mechanism for connecting the ipsilateral eye to the brain. ***PNAS.*** [link]

8. *2021* Somaiya RD, Huebschman N, Chaunsali L, **Sabbagh U,** Tewari B & Fox MA. Development of astrocyte morphology & function in mouse visual thalamus. ***Journal of Comparative Neurology***.[link]

7. *2020* **Sabbagh U,** Govindaiah G, Somaiya RD, Wei JC, Ha RV, Guido W & Fox MA. (2020). Diverse GABAergic neurons form subtype-specific sublaminae in the ventral LGN. ***J Neurochem***. [Cover] [link]

6. *2020* Rasmussen R & **Sabbagh U[#]. (2020).** Neural Polyamory: One cell forms meaningful connections with hundreds of partners. ***Cell Systems***, 10(5), 381–383. [#corr. author] [link]

5. *2020*	Su J, Charalambakis NE, **Sabbagh U**, Somaiya RD, Monavarfeshani A, Guido W & Fox MA. (2020). Retinal inputs signal astrocytes to recruit interneurons into visual thalamus. ***PNAS***. [link]
4. *2018*	**Sabbagh U,** Monavarfeshani A, Su K, Zabet–Moghadam M, Cole J, Su J, Mirzaei M, Gupta V, Salekdeh GH & Fox MA. (2018). Distribution and development of molecularly distinct perineuronal nets in visual thalamus. ***J Neurochem***. [Cover] [link]
3. *2017*	Monavarfeshani A, Knill CN, **Sabbagh U,** Su J, & Fox MA. (2017). Region–and Cell–Specific Expression of Transmembrane Collagens in Mouse Brain. ***Frontiers in Integrative Neuroscience***. [link]
2. *2017*	Monavarfeshani A, **Sabbagh U** & Fox MA. (2017). Not a one–trick pony: Diverse connectivity and functions of the rodent lateral geniculate complex. ***Visual Neuroscience***. [link]
1. *2016*	**Sabbagh U,** Mullegama S & Wyckoff GJ. (2016). Identification and evolutionary analysis of potential candidate genes in a human eating disorder. ***BioMed Research International,*** 2016. [link]

RESEARCH GRANTS

07/01/2021 – 6/30/2025	NIH K00NS113459	Role: **PI (Sabbagh)**
Project Title: The Development Of Subnetworks Of The Trn		$449,979.00
07/01/2019 – 6/30/2021	NIH F99NS113459	Role: **PI (Sabbagh)**
Project Title: Identification Of Retinogeniculate Circuits In Ventral Thalamus		$45,496.00

INVITED RESEARCH SEMINARS

jun 2024	**Keynote.** Title TBD
	Society For Behavioral Neuroendocrinology, Columbus, OH
may 2024	**Keynote.** Neurons to Narratives: Reimagining the future of biomedical research
	The Jackson Laboratory Annual Retreat, Portland, Maine
apr 2024	Developing effective therapeutics for autism spectrum disorders
	Autism Conference, Abu Dhabi, UAE
mar 2024	Building new neuroscience tools, building a better academic culture
	University of Memphis, Memphis, TN
dec 2023	Novel viral and genetic tools for studying neural circuits
	King Abdullah University of Science and Technology
aug 2023	تصنيف خلايا الدماغ وبناء تكنولوجيا جديدة لدراستها (in arabic)
	Computational Neuroscience Summer Program, Arabs in Neuroscience
apr 2023	Classifying brain cells and building new technology to study them
	Annual Life Sciences Congress, Scientific Arab Forum
apr 2023	Novel viral and genetic tools for studying cell type–specific inhibitory circuits
	Center for Neurobiology Research, Fralin Biomedical Research Institute, Roanoke VA
nov 2021	Subtype specific circuits of the ventral lateral geniculate nucleus
	Society for Neuroscience, Washington DC [minisyposium]
sep 2021	Thalamic inhibition: Diversity in architecture, development, and function

Neuroscience Seminar Series, Tufts University School of Medicine, Boston, MA

jul 2021 **Diverse GABAergic neurons form subtype–specific layers in vLGN**
American Society for Neurochemistry, Virtual Conference

dec 2020 **The development, structure, and circuitry of the ventral LGN**
Institute of Neuroscience, University of Oregon

aug 2020 **Subtype–Specific Layers of GABAergic Neurons in Visual Thalamus**
Neuroscience Summer Retreat, School of Neuroscience, Virginia Tech, Blacksburg VA

may 2020 **Diverse GABAergic neurons form subtype–specific sublaminae in the vLGN**
Inaugural Thalamus Trainees Meeting

feb 2020 **Dissecting the structure and circuitry of the ventral LGN**
Gordon Research Conference on Thalamocortical Interactions, Ventura CA

oct 2019 **Diverse cytoarchitecture of the rodent visual thalamus**
Research in Progress seminar series, Fralin Biomedical Research Institute, Roanoke VA

mar 2019 **Sweaters for brain cells**
Graduate Research Symposium, Virginia Tech, Blacksburg VA

mar 2019 **Development and distribution of perineuronal nets in visual thalamus**
Neuroscience seminar series, School of Neuroscience, Virginia Tech, Blacksburg VA

dec 2018 **Circuitry and cytoarchitecture of the vLGN**
Research in Progress seminar series, Fralin Biomedical Research Institute, Roanoke VA

INVITED PANELS

jul 2024 Panel on science policy
ComSciCon, Boston

apr 2024 Exploring Systemic Issues Facing the Biomedical Research Training Community
Frontiers in Research Metrics and Analytics

nov 2023 Navigating Mentoring Relationships
NIH – Society for Neuroscience

oct 2023 Addressing global socioeconomic inequalities in neuroscience
ALBA – International Brain Research Organization

jun 2023 To do or not to do a postdoc
American Society for Cell Biology

jun 2023 Race, Gender and Science
Rockefeller University, New York, NY

nov 2022 The Role of Scientific Data in Navigating Difficult Advocacy Discussions
Society for Neuroscience, San Diego CA

dec 2021 The transition from graduate student to postdoc
Grad Chat Podcast, PhD Balance

jun 2021 Science Communication Week, Yale BBS Diversity and Inclusion Collective
Yale University, New Haven CT

feb 2021	Re-envisioning Postdoctoral Training in Neuroscience	
	National Academies of Sciences, Engineering, and Medicine, Washington DC	
oct 2020	Social activism and your career	
	Get To Know Noke, Roanoke VA	
aug 2020	NINDS strategic planning panel to enhance training of the workforce	
	National Institute of Neurological Disorders and Stroke, Bethesda MD	
mar 2020	Careers in health sciences	
	Big Lick of Science, Melrose Library, Roanoke VA	
feb 2020	Disseminating your research through social media & beyond	
	ComSciCon Virginia Tech	

INVITED LECTURES & WORKSHOPS	*mar 2024*	The Eye: Neurophysiology of the Retina
		School of Medicine, Al-Quds University
	mar 2024	Careers in neuroscience research
		Brain Awareness Week, Lebanon
	jan 2024	Effective Science Communication Course
		Friedman Brain Institute, Icahn School of Medicine
	jul 2023	Crafting your application to grad school
		McLean Hospital, Harvard Medical School
	may 2023	Writing, pitching, and placing an op-ed
		Early Career Policy Fellows program, Society for Neuroscience
	apr 2023	Journey from Community College to MIT
		Health Sciences Exploration Day, TBMH, Virginia Tech
	feb 2023	Effective Science Communication Course
		Friedman Brain Institute, Icahn School of Medicine at Mount Sinai
	dec 2022	Building an online presence as a scientist
		Kansas University Medical Center
	may 2022	Writing, pitching, and placing an op-ed
		Early Career Policy Fellows program, Society for Neuroscience
	jun 2021	Creating a parts list for the brain
		neuroSURF program, Fralin Biomedical Research Insititute at VTC
	jul 2019	Communicating science to the public
		neuroSURF program, Fralin Biomedical Research Insititute at VTC
	apr 2019	Neurotransmitter receptors and intracellular signaling pathways (two lectures)
		NEUR 3044, School of Neuroscience, Virginia Tech
	feb 2019	Careers in neuroscience
		NEUR 1984, School of Neuroscience, Virginia Tech
	jan 2018	Career development in neuroscience
		NEUR 2984, School of Neuroscience, Virginia Tech
	aug 2017	AP biology
		William Fleming High School, Roanoke, VA

LEADERSHIP & SERVICE	*mar 2023– present*	Member, Advisory Board to Community for Rigor
		Community for Rigor (C4R) is a new NIH/NINDS-funded initiative that aims to teach scientific rigor at national scale.
	nov 2022– present	Chair, Training Advisory Committee, Society for Neuroscience

Making recommendations for SfN Council on how Society initiatives can be designed, enhanced, or modified to address the needs and concerns of the Society's trainee members

jul 2020–present **Co-Founder & Board Member, Black in Neuro**
Black in Neuro is a grassroots movement turned non-profit organization that aims to celebrate and empower Black scholars in neuroscience related fields. We have organized a several webinars, journal clubs, and online content, in addition to building an online database of Black scholars at all career levels. Among my roles as an appointed Board member are fundraising, strategic planning, and financial development. I currently serve on the Board.[Covered in Forbes, USAToday, & others]

dec 2022–dec 2023 **Member, Advisory Committee WG to the NIH Director**
Working group charged with re-envisioning NIH-supported postdoctoral training and the postdoctoral system nationwide

nov 2021 **Chair and Organizer, Society for Neuroscience minisymposium**
Title: "Building Vision: Lessons from Cell-type Specific Subcortical Circuits for Sensory Processing and Behavior"

oct 2020–nov 2022 **Member, Training Advisory Committee, Society for Neuroscience**
Making recommendations for SfN Council on how Society initiatives can be designed, enhanced, or modified to address the needs and concerns of the Society's trainee members

2017–2020 **Director of Judging, Virginia State Science and Engineering Fair (Annual)**
Recruited 90+ judges annually from various academic backgrounds across the state of Virginia and facilitated community partnerships, outreach, & oversaw event logistics ($30k+ budget)

2017–2020 **Science Policy Advocate, Washington DC**
Meeting with lawmakers at least once a year on Capitol Hill to advocate for increased funding to the NIH and other federal agencies which support biomedical and basic research. Efforts undertaken with colleagues from various scientific societies, including the Society for Neuroscience, American Association for the Advancement of Science, and the Coalition for the Life Sciences

2016–2019 **Founding Chair, VTC Student Outreach Program**
Founded the first science communication and outreach program at the FBRI. Organized science communication workshops for grad students, post-docs, and faculty, and built partnerships with local schools, breweries, and museums

2017–2018 **Science Coordinator, Roanoke CoLab**
Organized local STEM outreach community activities and developed "Star City Science": first public lecture series in Roanoke featuring graduate/medical student speakers

2017–2018 **Student Services Committee, Roanoke Graduate Student Association (RGSA), VT**
Developed an online forum for Roanoke graduate students to connect with peers and mentors, and to facilitate their professional development

2016–2018 **Student Representative, VT-BEST Career Events Nominating Committee**

Identified, organized, and hosted professional development speakers for students and faculty

2016–
2018
Interest Ambassador for Science Outreach, RGSA, VT
Served on the executive board of the RGSA to represent all Virginia Tech graduate and medical students engaged in science outreach and community service in Roanoke VA

2017
Host, Career Panel and Workshop on Science Policy
Invited & hosted panelists Dr. Meredith A. Fox, NIMH Director of Science Policy; Dr. Gregory Frank, BIO Director of Infectious Disease Policy; and Dr. Michael A. Fox, FBRI Director of the Center for Neurobiology Research

2016
Organizer, VT–BEST Science Communication workshop
Hosted Dr. Sheyna Gifford to train graduate students in science communication skills

2014–
2015
Senate Representative, Student Government Association, UMKC
Invited, guest speakers and discussed topics including Islamophobia, white privilege, raising the minimum wage, Title IX, and the state of diversity and inclusion on campus

2014–
2015
Global Health Speaker, GlobeMed, UMKC
Talks included: Impact of Mexican Drug Wars, Is the Right to Health a Human Right?, Ebola Crisis, and Three Parent Babies: Mitochondrial Replacement Therapy

SELECT OP–EDS IN POPULAR PRESS

2024
The GCC's opportunity to pioneer new ways of doing science
Arab News

2023
The postdoc experience is broken. Funders such as the NIH must help to reimagine it
Nature

2020
Science is better when we open our doors to immigrants
The Washington Post

2017
How evolution could produce a sophisticated eye
This View of Life Magazine

2017
Science has always been inseparable from politics
Scientific American

2017
Immigration bans handicap science globally
This View of Life Magazine

2016
We need to talk about the impact of open borders on science
Huffington Post

2016
What we didn't see in the first presidential debate
Huffington Post

INVITED PUBLIC LECTURES

jul 2018
Science and art
Fine Arts in Rockbridge, Lexington, VA

jun 2018
Lies of our eyes
Soaring Ridge Brewery, Roanoke, VA

dec 2017
Missing the big picture: limits in human vision
Altus Chocolate Cafe, Roanoke VA

aug 2017
On the origin: how our eyes evolved
Roanoke CoLab, VA

| | | jul 2017 | Visual perception and art
Fine Arts in Rockbridge, Lexington, VA |

MENTORSHIP

	Name	Academic level	Outcomes
2023	Ali Gibbs	*Undergraduate Student, MIT*	o *successfully wrote program for engineering viral constructs*
2022–present	Lisa Melamed	*Postbac Technician, MIT*	o *authorship on pending article* o *pending applications for PhD progs*
2022–present	Michael Yao	*Highschool Student, MIT*	o *authorship on pending article* o *accepted to RSI @ MIT 2023*
2019–2020	Jessica Wei	*Highschool Student, Virginia*	o *coauthor on published research article* o *accepted into University of Virginia*
2018–2020	Ryan Ha	*Undergraduate Student, VT*	o *coauthor on published research article* o *accepted into medical school 2023*

CONFERENCE PRESENTATIONS

july 2021   **Sabbagh U,** Wei J, Ha R, Somaiya RD, & Fox MA. Diverse GABAergic cell-types form discrete retinorecipient laminae in the ventral LGN. *American Society for Neurochemistry.*

feb 2020   **Sabbagh U** & Fox MA. A subset of vLGN neurons require retinal input to form discrete laminae. *Gordon Conference on Thalamocortical Interactions.* Ventura, CA, US.

oct 2019   **Sabbagh U,** Wei J, Ha R, & Fox MA. Diverse inhibitory neurons form specialized laminae in the ventral LGN. *Society for Neuroscience*. Chicago, IL, US.

oct 2019   Somaiya, RD, Su J, Charalambakis N, Monavarfeshani A, **Sabbagh U,** Guido W, & Fox MA. Retinal inputs signal through astrocytes to recruit interneurons into mouse visual thalamus. *Society for Neuroscience.* Chicago, IL, US.

aug 2019   **Sabbagh U,** Wei J, & Fox MA. Diverse inhibitory neurons in the ventral LGN. *Virginia Tech Annual Neuroscience Symposium.* Blackbsburg, VA, US.

nov 2018   **Sabbagh U,** Monavarfeshani A, & Fox MA. Distribution and development of molecularly distinct perineuronal nets in visual thalamus. *Society for Neuroscience.* San Diego, CA, US.

apr 2019   **Sabbagh U,** Wei J, & Fox MA. Diverse inhibitory neurons form specialized laminae in the ventral LGN. *Central Virginia Chapter of the Society for Neuroscience.* Charlottesville, VA, US. [poster award]

oct 2017   **Sabbagh U,** Knill C, Monavarfeshani A, & Fox MA. Examining region-specific transmembrane collagen expression in the mouse brain. *Translational Biology, Medicine, and Health Symposium.* Blackbsburg, VA, US.

OUTREACH

2017–present   Semesterly Q&A sessions on preparing for graduate school

Advise undergraduates navigating higher education & purusing careers in science, organized at Hollins University, Virginia Western Community College, Virginia Tech

2017– Co-organizer, Brain Awareness Week, FBRI
2019   *Organized exhibits on neuroanatomy, history of brain research, visual perception, attended by 300 community members*

oct 2017 STEM Day at the Taubman Museum of Fine Art
Organized exhibits on virtual reality, microscopy, and neuroanatomy, attended by over 900 elementary and middle school students attended

apr 2017 Workshop: Learn to engage the next generation of scientists
Organized a workshop to train scientists on how share their research with local schools and engage kids in STEM fields

mar 2017 West Salem Elementary School STEM Night

mar 2017 Workshop: Science Outreach in Your Community
Organized a workshop for graduate students and post-docs to learn the basics of youth program development, how to effectively communicate research to a young audience, and create contacts with area schools and teachers

SELECT MEDIA COVERAGE

2023 Arab Youth Centre announces members of 2nd edition of Young Arab Pioneers
Emirates News Agency [link]

2023 "One scientist's journey from the Middle East to MIT"
MIT News [link]

2022 "Appointment of six researchers as members of saf"
saf [link-en][link-ar]

2021 "Transition to a Postdoc"
PhD Balance — Grad Chat [link]

2021 Two brothers, both community college graduates, follow a winding, fulfilling path for their education
IMPACT Magazine [link]

2021 Virginia Tech scientists identify beacon molecule that prevents vision, behavioral problems in mice
EurekAlert [link]

2021 Virginia Technology Today: Ubadah Sabbagh
WFIR Radio [link]

2020 VT Fralin student recognized by Forbes '30 Under 30'
WDBJ7 TV (CBS affiliate) [link]

2020 Forbes names graduate student at Fralin Biomedical Research Institute at VTC to list of '30 under 30' to watch
Virginia Tech News [link]

2020 Building a science story
NINDS's Building Up the Nerve Podcast [link]

2020 Scientists discover cellular structure of poorly understood visual brain region
Virginia Tech News [link]

2020 ComSciCon returns to Virginia Tech
Virginia Tech News [link]

2020 Doctoral Student named Society for Neuroscience policy fellow

Virginia Tech News [link]

2020 New class of neuroscientists selected to advocate for federal research funding
Society for Neuroscience [link]

2020 Health science careers
Big Lick of Science Podcast [link]

2020 Scientists shed light on surprising visual development patterns
National Eye Institute [link]

2019 Ubadah Sabbagh thrives on collaboration
Virginia Tech News [link]

2019 Exploring Parts Unknown: Vision & Grad School
Big Lick of Science Podcast [link]

2019 Graduate student earns prestigious NIH award to map unexplored brain region, study optic nerve regeneration
Virginia Tech News [link]

2019 Neuroscience PhD student receives prestigious Cold Spring Harbor Laboratory Ben Barres Fellowship
Virginia Tech News [link]

2018 Virginia Tech graduate student selected as a Society for Neuroscience fellow
EurekAlert [link]

2017 Ubadah Sabbagh: An American scientist from the Middle East
The Scientist [link]

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

2019–present	International Society for Neurochemistry
2019–present	American Society for Neurochemistry
2017–present	Society for Neuroscience
2017–present	American Association for the Advancement of Science
2017–present	Coalition for the Life Sciences
2017–2021	Virginia Neuroscience Initiative
2017–2021	Central Virginia Chapter – Society for Neuroscience