

# KAELA S. SINGLETON, PHD

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NINDS D-SPAN K00 Fellow, Burroughs Wellcome Fund Postdoctoral Enrichment Fellow,  
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## DEGREES EARNED

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- 2014 - 2020      **Doctor of Philosophy**  
*Interdisciplinary Program in Neuroscience, Georgetown University*
- 2010 - 2014      **Bachelor of Science**  
*Neuroscience & Classical History and Culture, Agnes Scott College*

## PROFESSIONAL EXPERIENCE

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- 2020 – Present      **Postdoctoral Fellow**, Faundez Lab, Department of Cell Biology  
Emory University School of Medicine  
Mentor: Victor Faundez, MD/PhD
- 2020 – 2022      **Adjunct Professor**, Department of Biology,  
Agnes Scott College, Chair: Jennifer F. Larimore, PhD
- 2014 – 2020      **Graduate Student**, Silva Lab, Department of Biology  
Georgetown University, Mentor: Elena Silva, PhD
- 2012 – 2014      **Undergraduate Research Assistant**, Neigh Lab, Department of  
Physiology, Emory University, Mentor: Gretchen N. Neigh, PhD
- 2013 – 2014      **Undergraduate Research Assistant**, Larimore Lab, Department of  
Biology, Agnes Scott College, Mentor: Jenifer F. Larimore, PhD
- 2013 – 2014      **Undergraduate Research Assistant**, Perdue Lab, Department  
Psychology, Zoo Atlanta, Mentor: Bonnie M. Perdue, PhD
- Summer 2013      **Vanderbilt Summer Science Academy Fellow**, Ellacott Lab, Department  
of Physiology, Vanderbilt University, Mentor: Katherine Ellacott, PhD
- Summer 2012      **Behavioral & Behavior Fellow** Black Lab, Neuroscience Institute,  
Georgia State University, Mentor: Michael P. Black, PhD

## FUNDING

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- 2021 – 2024**  
**Burrough Wellcome Fund**  
*Role: Fellow*
- Postdoctoral Enrichment Program (PDEP)**  
As a PDEP fellow, I furthered my training at the bench, in the classroom, and within the STEM community in support of my long-term career goals. From workshops focusing on mentoring, lab and personnel management to national and international conferences, my approach to research, mentorship and service will continue to grow.
- 2020 – 2021**  
**NIH, NIGMS**  
**IRACDA**  
*Role: Associate*
- Fellowship in Research and Science Teaching (FIRST)**  
As a FIRST fellow, I cultivated my teaching, mentoring and service philosophy to prepare for my long term career goal of running my own independent research lab. I am developing a teaching style that reflects the intersectionality of cellular and molecular neuroscience as well as the global community. **NIGMS, 5K12GM000680-20**

**2018 – 2024**  
**NIH, NINDS**  
*Role: PI*

**Blueprint Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) Award (F99/K00)**

This two-phase award facilitated completion of my doctoral degree and transition of to my postdoctoral position. Through DSPAN, I published one paper in iScience, submitted two paper to Journal of Biological Chemistry as well as Genes & Development. I also presented my research at four national meetings and gave two invited talks at national and local conferences. **NINDS, F99NS108539 | 4K00NS108539-03**

**2016 – 2018**  
**NIH, NINDS**  
*Role: Fellow*

**Training in Neural Injury and Plasticity (NIP)**  
**Center for Neural Injury & Regeneration**

Through the NIP fellowship, I added a clinical spin to my dissertation research in the foundations of neural development. I earned authorship on four manuscripts, gave four invited talks and four poster presentations, earned awards for presentation skills, professional development and excellence in teaching. **NINDS, 5T32NS041218**

**2014 – 2015**  
**NIH, NINDS**  
*Role: Fellow*

**Predoctoral Training in Integrative Neuroscience (PTIN)**  
**Georgetown University**

Through didactic coursework, laboratory research, career development training, and instruction in the responsible conduct of research, I identified my strengths in developmental neuroscience research. I presented my work at two national conferences, applied to the NSF GRFP and NIH NRSA (discussed but not awarded). **NINDS, 5T32NS041231-14**

**2012 – 2014**  
**NIH, NINDS**  
*Role: Fellow*

**Enhancing Undergraduates in Neuroscience Research Fellowship (ENDURE)**

Through ENDURE, I gained my first authentic mentored research experience at Georgia State University with the Behavioral Research in Advancements in Neuroscience Fellowship. I went on to earn summer research fellowships at Vanderbilt and Emory University and published one scientific manuscript. I presented my findings yearly at Agnes Scott College's Research Symposium, Georgia State ENDURE Symposium and Society for Neuroscience. **NINDS, 8R25NS080688-03, Sub-Award SP00010548**

## **PUBLICATIONS**

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Wynne M\*, Lane AR\*, **Singleton KS\*** Zlatic S, Gokhale A, Werner E, Duong D, Kwong J, Crocker A, Faundez V. Heterogeneous Expression of Nuclear Encoded Mitochondrial Genes Distinguishes Inhibitory and Excitatory Neurons. eNeuro **2021** [[Link](#)]

\*authors contributed equally

**Singleton KS**, Murray DRK, Dukes AJ, Richardson LNS. A year in review: are DEI initiatives fixing systemic barriers? Neuron, NeuroView **2021**. Invited Editorial [[Link](#)]

**Singleton KS**, Faundez VF. Robustness and Innovation Along the Endocytic Route: Lessons from Darkness. Journal Cell Biology. **2021**. [[Link](#)]

**Singleton KS**, Tesfaye R, Dominguez E, Dukes A. An Open Letter to past, current and future mentors of Black neuroscientist. Nature Reviews Neuroscience. **2020**. [[Link](#)] Invited Editorial

Lee CE, **Singleton KS**, Wallin M, Faundez VF. Rare Genetic Diseases, Nature's Experiment on Human Development. iScience **2020**. [[Link](#)]

**Singleton KS**, Silva PR, Silva EM. Novel Interaction Domains and Partner Proteins of Sox11 during neurogenesis. **2020**. BioRxiv [[Link](#)]

Larimore J, Zlatic SA, Arnold M, **Singleton KS**, Cross R, Rudolph H, Bruegge MV, Sweetman A, Garza C, Whisnant E and Faundez V. Dysbindin Deficiency Modifies the Expression of GABA Neuron and Ion Permeation Transcripts in the Developing Hippocampus. *Front. Genet.* **2017** [\[Link\]](#)

Rudolph H., Cross RD., Segura L, **Singleton KS.**, Larimore, J. Neuronal Endosomal Trafficking: One of the common molecular Pathways Disrupted in Autism Spectrum Disorders and Schizophrenia. *Journal of Neurology and Psychology.* **2016.** [\[Link\]](#)

Arnold M\*, **Singleton KS\***, Cross RD\*, Chapleau D, Mullin AP, Rolle I, Moore C, Theibert A, Pozzo-Miller L, Faundez V, Larimore J. The Endosome Localized AGAP1 Modulates Spine Morphology Downstream of the Neurodevelopmental Disorder Factor Dysbindin. *Frontiers in Cellular Neuroscience.* **2016.** [\[Link\]](#) \*Authors contributed equally

Kalidindi A, Kelly SD, **Singleton KS**, Guzman D, Merrill L, Willard SL, Shively CA, Neigh GN. Reduced marker of vascularization in the anterior hippocampus in a female monkey model of depression. *Physiol Behav.* **2016.** [\[Link\]](#)

Larimore J, Zlatic SA, Gokhale A, Tornieri K, **Singleton KS**, Mullin AP, Tang J, Talbot K, Faundez V. Mutations in the BLOC-1 Subunits Dysbindin and Muted Generate Divergent and Dosage-Dependent Phenotypes. *J Biol Chem.* **2014.** [\[Link\]](#)

## **INVITED SEMINARS**

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Systems Biology and -omics Approaches to Neurodevelopmental Disorders, University of Georgia, Department of Biology 2022

**Keynote**, Systems Biology: a holistic approach to early career training and neurodevelopment disorders, Fralin Biomedical Research Institute at VTC, 2022

Cellular and Molecular Mechanisms in Neural Development and Neurodevelopmental disorders. Middlebury College, Program in Neuroscience, 2021

**Keynote**, A Systems Biology Approach to professional development and neurodevelopmental disorders, Georgetown University, Medical Center Graduate Student Organization Student Research Day, 2021

Systems Biology approach to neurodevelopmental disorders. University of Massachusetts Lowell, Biology Department 2021

Systems Biology approach to cellular and molecular phenotypes in neurodevelopmental disorders Oberlin College, Neuroscience Department, 2021

Understanding Copper Regulation in Pediatric Neurodegeneration. Wellesley College, Neuroscience Department, 2021

Mitochondria Dynamics & Metabolic Mapping of Menkes Disease. Department of Genome Sciences. University of Washington, 2021

Systems Biology Approach to Neuron Formation. UC San Diego, Graduate Diversity and Science Lecture Series, 2021

**Distinguished Lecture**, Control of Neuron Formation in Neurodevelopmental & Neurodegenerative Disorders. Bay Path University 2021

Understanding Copper Regulation in Neurodegeneration. Morehouse College, Department of Biology, 2021

Mitophagy in Menkes Disease. University of Washington, Department of Biology, 2021

Menkes Disease: Mediating Copper Homeostasis in the developing brain. Georgia State University Neuroscience Institute, 2021

Defining Neuronal and Professional Identity using systems biology and principles of Equity Diversity and Inclusion. Department of Biological Sciences at Columbia University, 2020

Mitochondria Integrity & Localization in Menkes disease. Tulane University, BRAIN Institute, 2020

Molecular Signals & Cellular Events in Neural Development. University of Oregon, Department of Biology, 2020

Mismatched Sox: Sox11 Regulation and Function across species. Emory University, Cell Biology, 2018

Knocking your Sox off: Disruption of Sox11 function in embryogenesis. Agnes Scott College, Department of Biology, 2018

## **CONFERENCE PRESENTATIONS**

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**Poster Presentation**, Mitochondria Integrity and Localization in Menkes Disease. Burroughs Wellcome Fund Symposium, 2021

**Selected Talk**, Downstream Targets of Sox11 in Neural Development. Gordon Research Seminar Neural Development, 2018

**Poster Presentation**, Downstream Targets of Sox11 in Neural Development. Gordon Research Conference Neural Development, 2018

**Selected Talk**, Nanosymposium, Cross Species function and regulation of Sox11 in neural development. Society for Neuroscience; Nanosymposium #448: Neuronal Differentiation Mechanisms, Abstract #5813, 2017

**Poster Presentation**, Pairing your Sox: Cross species function of Sox11 in neural development. Scientista Symposium, 2017

**Selected Talk**, Pairing your Sox: Cross species function of Sox11 in neural development. Mid-Atlantic Society for Developmental Biology, Nanosymposium 2017

**Poster Presentation**, Function and Post-Translational Modifications of Sox11 in neural development. Society for Neuroscience DCMA Chapter Symposium, 2017

**Poster Presentation**, Post-transcriptional Regulation of Sox11 in Neural Development. Diversity Poster Session, Society for Neuroscience, 2017

**Poster Presentation**, Matching your Sox: Cross species functional analysis of Sox11 during Neural Development. Mid-Atlantic Society for Developmental Biology, 2016

**Invited Seminar**, Sox11 aids Differentiation in Multiple Systems. National Institute of Health, Zebrafish Frog Integrative Group, 2016

**Selected Talk**, Pairing your Sox: Regulation of Sox11 in Neurodevelopment. Georgetown University Student Research Day, 2016

**Poster Presentation**, The Role of Endosomal Trafficking in Rett Syndrome. Agnes Scott College Spring Annual Research Symposium, 2014

**Oral Presentation**, The Tragic Medical Woman: A manipulation of Greek ideals and medical concepts by Euripides. Agnes Scott College, Spring Annual Research Symposium, 2014

**Poster Presentation**, Self-Groom and Resting Behavior: The Effects of Weather on Red Kangaroos. Agnes Scott College Spring Annual Research Symposium, 2014

**Oral Presentation**, Reduced Vascularization of Anterior Hippocampus in a Female Monkey Model of Depression. BP-ENDURE Symposium, 2014

**Poster Presentation**, Expression of HIV-1 causes depressive-like behaviors and decreased cell proliferation in the dentate gyrus of adolescent female rats. BP-ENDURE Symposium, 2014

**Oral Presentation**, The Susceptibility of Tragic Women to Eros: A Commentary on Hippocratic Definition. Agnes Scott College, Spring Annual Research Symposium, 2013

**Poster Presentation**, The effects of acute and repeated cocaine administration on *Procambrius clarkia*. Diversity in Neuroscience Poster Session and Faculty for Undergraduate Neuroscience Research, 2012

## **FELLOWSHIPS, HONORS & AWARDS**

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2022	30 under 30 in Science (Forbes Magazine)
2022	Allison Doupe Fellowship (McKnight Endowment Fund)
2021	NIH Loan Repayment Program, Pediatric Research (NINDS)
2021	Postdoctoral Enrichment Program Fellow (Burroughs Wellcome Fund)
2020	1,000 Inspiring Black Scientist, Rising Star (Cell Mentor)
2020	Trainee Spotlight (Department of Cell Biology, Emory University School of Medicine)
2020	100 More Inspiring Black Scientists, Rising Star (Cell Press)
2020	Outstanding Young Alumna (Agnes Scott College, Alumnae Board)
2019	Nominated Karen Gale Exceptional PhD Award (Georgetown University Medical Center)
2018	Nominated Zukowska & Smulson Excellence in Thesis Research Award (Georgetown University Medical Center)
2018	Biomedical Graduate Education Award Recipient Spotlight (Georgetown University)
2018	Carl Storm Minority Fellowship (Gordon Research Conference)
2018	MCGSO Travel Award (Georgetown University)
2017	Neuroscience Scholars Program Professional Development Award (Society for Neuroscienc)
2017	3 <sup>rd</sup> Place, Poster Presentation (Scientista Symposium)
2016	Outstanding Teaching Fellow (Georgetown University)
2016	1 <sup>st</sup> Place, Molecular Biology Poster Presentation (Georgetown University)
2014	Lillian Dale Thomas Achievement Award (Agnes Scott College)
2013	Vanderbilt Summer Science Academy Fellowship (Vanderbilt University)
2012	Behavioral Research in Advancements in Neuroscience Fellowship (Georgia State University)
2012	Center for Behavioral Neuroscience Fellowship (Agnes Scott College & Georgia State University)
2011	Achievement Scholarship (Organization for Chinese Americans & Pacific Islanders)
2010	Generating Excellence in Math and Science Fellowship (Agnes Scott College)

## **TEACHING EXPERIENCE**

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2021 – 2022	<b>Guest Lecturer</b> , Icahn School of Medicine at Mount Sinani <i>Lectures: Effective Science Communication, Science online: Twitter and mobilizing community via social media platforms</i>
2020 – 2022	<b>Adjunct Professor</b> , Agnes Scott College, Department of Biology <i>Courses: Integrative Biology Lab, Foundations in Neuroscience, Diseases of the Nervous System</i>
2016 – 2017	<b>Teaching Fellow</b> , Georgetown University, Biology Department. <i>Course: Foundations in Neural Development</i>
2015 – 2017	<b>Instructor</b> , Georgetown University, Neuroscience Department, Graduate student course in the fundamentals of neuroscience. <i>Topics: Neural Development, Spinal Cord and Brain Stem Anatomy, Autonomic and Homeostatic Control</i>
2014 – 2016	<b>Guest Lecturer</b> , Georgetown University, Foundations in Developmental Neuroscience, Biology Department. <i>Lectures: Neurogenesis, Synaptogenesis, Mechanisms of Neurodevelopmental Disorders</i>

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## WORKSHOPS AND CERTIFICATES

Antiracist Pedagogy Across the Curriculum (St. Cloud State University), Building Antiracist Labs (Emory Office of Postdoctoral Education)

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## MANUSCRIPT REVIEWER

eNeuro

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## SERVICE AND LEADERSHIP

2022	<b>Speaker</b> , “What does DEI mean to you?” Emory University, Biochemistry, Cell, and Developmental Biology Professional Development Workshop
2022	<b>Speaker</b> , PATHS Interview, LGBT+ in STEAM
2022	<b>Panelist</b> , “Black Queer Town Hall in STEMH” University of Iowa and UPenn
2022	<b>Panelist</b> , “Fix the Gap” 500 Women Scientist
2022	<b>Panelist</b> , “STEM Career Development Workshop” University of Vermont
2022	<b>Speaker</b> , “How to find a mentor” Building up the Nerve Podcast
2022	<b>Panelist</b> , “Out in STEM” Rockefeller University
2021	<b>Speaker</b> , “Transitioning to PostDoc,” Grad Chat Podcast
2021	<b>Speaker</b> , “Creating Inclusive Environments in Neuroscience” Neurology and Neurosurgery Special Interest Group
2021	<b>Panelist</b> , “LGBTQ+ in Academia,” My Fave Queer Chemist Podcast
2021	<b>Panelist</b> , “Career Perspectives in STEM,” Neuroscience Program, Emory University
2021	<b>Speaker</b> , “Reflecting on Diversity, Equity & Inclusion,” Neuroscience Program, Emory University
2021	<b>Panelist</b> , “Women in Neuroscience,” UT Neuroscience Department and Dell Medical Neurology Department
2021	<b>Panelist</b> , “Diversity, Equity & Inclusion Panel,” Georgia State University, Neuroscience Institute Retreat
2021	<b>Speaker</b> , “Crafting your Grad School Applications Workshop,” Harvard University, McLean Mental Health Research Summer Program

2021 **Speaker**, “STEM Talks: Bold Conversations & The Importance of Representation in STEM” Society for Neuroscience

2021 **Panelist**, “Personal Experiences, Intersectionality, and Call to Action” University of Amsterdam

2021 **Speaker**, International Diversity Network’s “Intersectionality within the LGBTQ+ Community” Series

2021 **Speaker**, “Science Night Keynote, Upper School Assembly Series” Germantown Friends School

2021 **Panel**, “Real Careers Have Curves” Columbia University

2021 **Panel**, “Growing Up in Science” University of Rochester [\[Link\]](#)

2021 **Panel**, “Current State of Diversity & Inclusion in Postdoctoral Population” National Postdoctoral Association [\[Link\]](#)

2021 **Panel**, “Mentors & Mocktails” Howard University’s Out in Stem

2021 **Panel**, Black In Neuroscience: Advocating for yourself and others, Georgia State Neuroscience Diversity, Equity and Inclusion Committee

2021 **Organizer**, “Re-envisioning Postdoctoral Training in Neuroscience” National Academies of Sciences, Engineering, and Medicine’s Action Collaborative on Neuroscience Training [\[Link\]](#)

2021 **Speaker**, “Building your Scientific Brand” Georgia State University, Neuroscience Institute.

2021 **Speaker**, “Effective Scientific Communication on Social Media” Icahn School of Medicine at Mt. Sinai, Friedman Brain Institute.

2021 **Council Member**, Atlanta Chapter of Society for Neuroscience. [\[Link\]](#)

2020 **Panel**, “Queer, Trans, Black, Indigenous, People of Color in STEM”

2020 **Panel**, “Queer and Trans in Neuro” NeuroMatch Conference [\[Link\]](#)

2020 **Consultant**, Diversity, Equity, and Inclusion Committees of two institutions: Georgia State University & Max Planck Institute

2020 **Co-Founder & President-Elect** Black In Neuro [\[Link\]](#)

2020 **Member**, National Academies of Sciences, Engineering, and Medicine’s Action Collaborative on Neuroscience Training: Developing a Nimble and Versatile Workforce. [\[Link\]](#)

2020 **Speaker**, “Using Neuroscience to Foster a Sense of Belonging in STEM” International Society for Optics and Photonics.

2020 **Panel**, Agnes Scott College’s Alumnae Career Panel

2020 **Panel**, National Academy of Science Engineering & Medicine “Workshop & Discussion on Racial Justice, Diversity, Equity, and Inclusion in Neuroscience.” [\[Link\]](#)

2020 **Panel**, BlackInNeuro’s “Grad Journey: Making the Most of Your Degree Experience Panel.” [\[Link\]](#)

2019 **Panel**, “Pathways and Perspectives on Being a Researcher.” NINDS Society for Neuroscience

2017 – 2019 **Writer**, Georgetown University’s Career Catalyst. **Topics:** Receiving Strong letters of recommendation, choosing a PhD Program, succeeding in Graduate School, Crafting a Strong CV. [\[Link\]](#)

2017 **Panel**, Enhancing Neuroscience Diverse in Undergraduate Research Experience (ENDURE), “Succeeding in Graduate School Panel”, NINDS

2016 **Panel**, “Creating Balance: Women in Science and Technology” Washington DC International School

2016 – 2020 **Member**, Student Advisory Committee, Interdisciplinary Program in Neuroscience

2014 – 2020 **Judge**, Georgetown University’s Junior Science & Humanities Symposium  
 2014 – 2020 **Volunteer**, Georgetown University’s Brain Awareness Week  
 2014 – 2020 **Peer Mentor**, Interdisciplinary Program in Neuroscience  
 2013 **Panel**, Discovering Undergraduate Training Experiences Panel

## **MEDIA & PRESS**

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2022 **GO Magazine** “100 Women We Love” [\[Link\]](#)  
 2022 **Forbes Magazine** “30 under 30: Science”  
 2021 **National Geographic TV** “LGBTQIA+ Innovators in Science” [\[Link\]](#)  
 2021 **Real Scientists** “#BlackInNeuro Week 2021: Dr Kaela Singleton hosts Real Scientists” [\[Link\]](#)  
 2021 **MedPage Today**, by Amanda D’Ambrosio “#BlackInNeuro: How a Hashtag Forged Community for Black Scientists” [\[Link\]](#)  
 2021 **Nature Medicine**, by Rodrigo Pérez Ortega “Black scientists gather to form communities and boost diversity in science” [\[Link\]](#)  
 2021 **Neuro Central**, “Womxn to Watch Series” [\[Link\]](#)  
 2021 **Young Scientists’ Journal**, “LGBTQ Spotlight” [\[Link Forthcoming\]](#)  
 2021 **With a Science Degree**, “Understanding Career Options” [\[Link\]](#)  
 2021 **Chemical & Engineering News**, “Pandemic Stress: The toll it’s taking on students” [\[Link\]](#)  
 2020 **Cell Mentor**, “1,000 Inspiring Black Scientists” [\[Link\]](#)  
 2020 **Society for Neuroscience’s Neuronline**, “Advice for Navigating Academia as a Black Woman” [\[Link\]](#)  
 2020 **Scientist on the Subway Profile** by Briana Chen. [\[Link\]](#)  
 2020 **Nature Careers** by Kendall Powell. “How LGBT+ scientists would like to be included and welcomed in STEM workplaces” [\[Link\]](#)  
 2020 **Insider Higher ED** by Colleen Flaherty. “Female academics saw their own experiences with #maninterrupting in this week’s vice presidential debate [\[Link\]](#)”  
 2020 **Trainee Spotlight** by Emory University’s Department of Cell Biology. [\[Link\]](#)  
 2020 **Cell Press’s** “100 More Inspiring Black Scientists” [\[Link\]](#)  
 2020 **Forbes** by Nicole Fisher. “New #BlackInNeuro Campaign Connects Bright Minds From Around The World.” [\[Link\]](#)  
 2020 **The Onxy** Agnes Scott College “Outstanding Young Alumna Spotlight.” [\[Link\]](#)  
 2018 **Student Spotlight** Georgetown’s Biomedical Graduate Education. [\[Link\]](#)

## **MEMBERSHIPS IN PROFESSIONAL SOCIETIES**



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National Postdoc Association, Black in Neuro, Society for Developmental Biology, American Association for Advancement of Science, New York Academy of Science, Science Alliance, Nu Rho Psi National Honors Society in Neuroscience, Society for Neuroscience