William T Mills IV
Department of Science
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PROFESSIONAL APPOINTMENTS

Assistant Professor, Biochemistry/Bioinformatics (August 2023 – Present)
Mount St. Mary's University (Emmitsburg, MD)

Adjunct Instructor, Biology (Spring 2022 – Fall 2023)
Stevenson University (Owings Mills, MD)

Adjunct Instructor, Chemistry (Fall 2019 – Fall 2023)
Stevenson University (Owings Mills, MD)

EDUCATION

PhD, Biological Chemistry (July 2017 – May 2023)
Johns Hopkins University School of Medicine (Baltimore, MD)
Dissertation Advisor: Mollie K Meffert, MD, PhD
Ruth L. Kirschstein Predoctoral Individual National Research Service Award (F31)
Rigor, Reproducibility, and Responsibility in Scientific Practice Certificate
Johns Hopkins Teaching Academy Certificate of Completion

BS with Distinction, Chemistry with specialization in Biochemistry (2013 – 2017)
University of Virginia (Charlottesville, VA)
American Chemical Society Certification
American Society for Biochemistry and Molecular Biology Certification with Distinction

RESEARCH EXPERIENCE

Predoctoral Fellow (2017 – 2023)
Johns Hopkins University School of Medicine
Advisor: Mollie K Meffert, MD, PhD
Thesis topic: Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain

Oak Ridge Institute for Science and Education (ORISE) Fellow (Summer 2016)
US Food and Drug Administration, Center for Biologics Evaluation and Research
Advisor: Gerardo Kaplan, PhD

Undergraduate Research Assistant (2015 – 2017)
University of Virginia
Advisor: Anthony J Spano, PhD
Research topic: Generating antibodies against Death Receptor 6 (DR6)

PUBLICATIONS

*undergraduate mentee

Research

Mills WT, IV, Eiss E, Powell B, and Meffert MK (2023). Let-7 family miRNAs regulate cellular metabolism through direct interactions with mitochondrial transcripts (*manuscript in preparation*).

Mills WT, IV, Li X, and Meffert MK (2023). Enhanced strategy for sncRNA:target RNA interactions with cell-type selectivity (*manuscript in preparation*).

Subramanian M, **Mills WT, IV**, Paranjpe MD, Onuchukwu US, Inamdar M, Maytin AR, Li X, Pomerantz JL, and Meffert MK (2022). Growth-suppressor microRNA dysregulation mediates synaptic overgrowth and behavioral deficits in the absence of Fragile X mental retardation protein (*under review*).

Mills WT, IV, Eadara S, Jaffee AE, and Meffert MK (2022). SCRAP: a bioinformatic pipeline for the analysis of small chimeric RNA-seq data. *RNA*. doi.org/10.1261/rna.079240.122

Oldach LM, Gorshkov K, **Mills WT, IV**, Zhang J, and Meffert MK (2018). A biosensor for MAPK-dependent Lin28 signaling. *Mol Biol Cell*, 29(10): 1157-1167. doi.org/10.1091/mbc.E17-08-0500

Reviews

Mills WT, IV, Nassar NN*, Ravindra D*, Li X, Meffert MK (2020). Multi-level regulatory interactions between NF-κB and the pluripotency factor Lin28. *Cells*, 9(12): 2710. doi.org/10.3390/cells9122710

PRESENTATIONS

Graduate

Mills WT, IV and Meffert MK. Insights from profiling miRNA-target interactions in the mammalian brain. Department of Biological Chemistry Recruitment Event, Baltimore, MD, January 26, 2023.

Mills WT, IV and Meffert MK. Insights from profiling miRNA-target interactions in the mammalian brain. Biological Chemistry Tuesday Noon Talk, Baltimore, MD, November 29, 2022.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain. Poster presented at the 2022 Graduate Student Association Poster Symposium, Baltimore, MD, May 24, 2022.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain. Poster presented at the Keystone Symposia: Small Regulatory RNAs: From Bench to Bedside, Santa Fe, NM, May 2–5, 2022.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain. Hopkins RNA Meeting, Baltimore, MD, April 29, 2022.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain. Johns Hopkins University School of Medicine Center for Cell Dynamics Virtual Seminar Series, Virtual, June 25, 2021.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain. Lightning talk at the Department of Biological Chemistry Recruitment Event, Virtual, January 29, 2021.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain. SfN Global Connectome, Virtual, January 12, 2021.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian brain. Data Blitz Competition at the 2020 Society for Neuroscience DC Metro Area Chapter Annual Meeting, Virtual, April 18, 2020.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian CNS. Poster presented at the Biological Chemistry Graduate Program Mini-Symposium, Baltimore, MD, February 17, 2020.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian CNS. Poster presented at the Biochemistry, Cellular and Molecular Biology Graduate Program Annual Retreat, Cambridge, MD, October 6-7, 2019.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian CNS. Poster presented at the Department of Biological Chemistry Annual Retreat, Baltimore, MD, September 13, 2019.

Mills WT, IV and Meffert MK. Using miRNA- target chimeras to study post-transcriptional gene regulation in the mammalian CNS. Poster presented at the Research Rounds during the 2019 School of Medicine Reunion and Alumni Weekend, Baltimore, MD, May 31, 2019.

Mills WT, IV and Meffert MK. Using miRNA- target chimeras to study post-transcriptional gene regulation in the mammalian CNS. Poster presented at the 2019 Graduate Student Association Poster Symposium, Baltimore, MD, May 8, 2019.

Mills WT, IV and Meffert MK. Using miRNA- target chimeras to study post-transcriptional gene regulation in the mammalian CNS. Poster presented at the 2019 Society for Neuroscience DC Metro Area Chapter Annual Meeting, College Park, MD, May 4, 2019.

Mills WT, IV and Meffert MK. Using miRNA-target chimeras to study post-transcriptional gene regulation in the mammalian CNS. Poster presented at the Department of Biological Chemistry Recruitment Event, Baltimore, MD, March 1, 2019.

Mills WT, IV and Meffert MK. Use of miRNA-target chimeras in the study of learning, memory and brain disorders. Presentation at the Department of Biological Chemistry Annual Retreat, Baltimore, MD, September 14, 2018.

Undergraduate

Brodie KV, Hentzen CE, Klein RJ, **Mills WT, IV**, Nishath T, Zhang MZ, Columbus L, and Price C (2016). Lysine 99: A critical residue for catalytic activity in aspartate aminotransferase from *Thermatoga maritima*. Poster presented at the conclusion of CHEM 4411/4421 in the Chemistry Building at the University of Virginia. (Charlottesville, VA)

AWARDS & HONORS

Graduate
Graduate Student Association Travel Award (2022)
February Student Spotlight (Graduate Student Association) (2021)
Ruth L. Kirschstein Predoctoral Individual National Research Service Award (F31MH124282)
Society for Neuroscience Trainee Professional Development Award (2020)
2nd Place – Data Blitz Competition (SfN DCMA Annual Meeting) (2020)
Turock Travel Award (2019)
Graduate Student Poster Prize (Department of Biological Chemistry Annual Retreat) (2019)
Junghea Park Memorial Award (Graduate Student Association Poster Symposium) (2019)

Undergraduate
Gilbert J. Sullivan Scholarship (2015 – 2017)
National Society of Collegiate Scholars (2014 – 2017)
Dean's List (2013 – 2016)
Intermediate Honors (2015)

RESEARCH FUNDING

Undergraduate
Small Research and Travel Grant (College of Arts and Sciences) (Fall 2016)
Small Research and Travel Grant (College of Arts and Sciences) (Spring 2016)
Raven Society Fellowship (The Raven Society) (2016)
Semester Scholars Award (College Council) (Spring 2016)

TEACHING EXPERIENCE

Adjunct Instructor (Biology) (Spring 2022 – Fall 2023)
Stevenson University (Owings Mills, MD)
BIO-203L-ON6: Microbiology Lab (1/23/2023 – 5/14/2023)
BIO-203L-ON7: Microbiology Lab (1/23/2023 – 5/14/2023)
BIO-113L-ON5: General Biology I: Cell/Genetics Lab (8/29/2022 – 12/18/2022)
BIO-203-ON7: Microbiology (Laboratory) (1/24/2022 – 5/15/2022)

Adjunct Instructor (Chemistry) (Fall 2019 – Fall 2023)
Stevenson University (Owings Mills, MD)
CHEM-115L-ON1: General Chemistry I Lab (1/23/2023 – 5/14/2023)
CHEM-115L-ON5: General Chemistry I Lab (8/29/2022 – 12/18/2022)
CHEM-110L-ON3: Foundations of General Organic and Biochemistry Lab (8/29/2022 – 12/18/2022)
CHEM-115L-ON1: General Chemistry I Lab (1/24/2022 – 5/15/2022)
CHEM-115L-ON6: General Chemistry I Lab (8/30/2021 – 12/19/2021)
CHEM-115L-ON1: General Chemistry I Lab (1/26/2021 – 5/16/2021)
CHEM-115L-ON6: General Chemistry I Lab (8/31/2020 – 12/20/2020)
CHEM-116S-ON3: Gen Chem II Problem Session (1/27/2020 – 5/17/2020)
CHEM-115S-ON7: Gen Chem I Problem Session (8/26/2019 – 12/15/2019)

Tutor (Spring 2020, Fall 2021, Fall 2022, Spring 2023)
Goucher College (Baltimore, MD), Goucher Prison Education Partnership
Maryland Correctional Institution for Women (Jessup, MD)
Maryland Correctional Institution – Jessup (Jessup, MD)

Teaching Assistant (Summer 2022, Winter 2022)
Johns Hopkins University School of Medicine, Office of Graduate Biomedical Education
Facilitated school's transition to new learning management system (Canvas)

Educator (2019 – 2021)
Numerade (Los Angeles, CA)
Creator of online problem-solving videos in chemistry

Co-Instructor (Spring 2019)
Johns Hopkins University School of Medicine (Baltimore, MD)
ME.200.650: Genes to Society - Nervous System and Special Senses
Lesson on Translational Neuroscience

Mentor (July 2019 – Present)
Virginia Alumni Mentoring
Mentoring current students at the University of Virginia with education and career planning

Peer Teacher (Fall 2015, Fall 2016)
Department of Biology, University of Virginia (Charlottesville, VA)
BIOL 2030: Introductory Biology Laboratory I
BIOL 2100: Introduction to Biology Laboratory: Cell Biology and Genetics

Peer Advisor (Fall 2015)
University of Virginia (Charlottesville, VA)
University Peer Advising Link (ULink)

Tutor (Fall 2015)
Albemarle High School (Charlottesville, VA)
Advancement via Individual Determination (AVID) Program

OUTREACH AND SERVICE

Training New Lab Members

Trainee Name	Institution	Major/Program	Position	Time Frame	Current Position
James Kiraly	Johns Hopkins University School of Medicine	Biological Chemistry, Cellular and Molecular Biology	Rotating Graduate Student	Fall 2020	PhD Candidate, JHSOM
Dzung Pham	University of Texas, Austin	Biochemistry	Basic Science Institute Summer Internship Program*	Summer 2020	PhD Candidate, UPenn
Jackie Griswold	Johns Hopkins University School of Medicine	Biological Chemistry, Cellular and Molecular Biology	Rotating Graduate Student	Fall 2019	PhD Candidate, JHSOM
Manasi Inamdar	Johns Hopkins University School of Medicine		Incoming Research Technician	Fall 2019	PhD Candidate, UI Urbana-Champaign

Anushka Ghosh	Johns Hopkins University School of Medicine	Biological Chemistry	Rotating Graduate Student	Fall 2019	PhD Candidate, JHSOM
Kira Griffith	University of North Carolina, Chapel Hill	Neuroscience	Basic Science Institute Summer Internship Program*	Summer 2019	MD Student, UNC Chapel Hill
Deepa Ravindra	Johns Hopkins University	Molecular and Cellular Biology	Undergraduate Research Assistant	Spring 2019 – Spring 2022	MD Student
Noor Nassar	Johns Hopkins University	Molecular and Cellular Biology	Undergraduate Research Assistant	Fall 2018 – Spring 2021	MD Student
Amanda Maytin	Johns Hopkins University	Neuroscience	Undergraduate Research Assistant	2018 – 2022	MD Student, WU St. Louis

*The Summer Internship Program (SIP) provides experience in research laboratories to students of diverse backgrounds, including underrepresented minority students, students from economically disadvantaged and underserved backgrounds and students with disabilities that have completed one - two or more years of college.

Volunteer (Summer 2022)
Frederick Rescue Mission
Bread of Life Kitchen

Judge (Spring 2019)
Stevenson University Undergraduate Poster Session
Collaborative Teaching Fellowship Program

Volunteer (Fall 2018, Fall 2019, Fall 2021)
Department of Biological Chemistry, Johns Hopkins University School of Medicine
New Student Orientation

ORGANIZATIONAL ACTIVITIES

Johns Hopkins Student Advisory Committee for Security (2020 – 2022)
Johns Hopkins University Police Accountability Board Nominating Committee (2021 – 2023)
Department of Biological Chemistry Retreat Planning Committee (2019, 2020)

PROFESSIONAL ASSOCIATIONS AND LEADERSHIP

Society for Neuroscience D.C. Metro Area Chapter, President (2023 – 2024)
Society for Neuroscience D.C. Metro Area Chapter, Secretary (2020 – 2023)
Society for Neuroscience D.C. Metro Area Chapter, Member (2019 – Present)
Society for Neuroscience, Member (2018 – 2021)
American Society for Biochemistry and Molecular Biology, Member (2017 – 2021)

ADDITIONAL COURSEWORK

- Practical Genomics Workshop: From Biology to Biostatistics (Center for Computational Genomics at Johns Hopkins)
- Advancing Learning Through Evidence-Based STEM Teaching (edX course: BUx - CIRTL.2x)