

Ishmail Abdus-Saboar

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Faculty Positions

2023 – present HHMI Freeman Hrabowski Scholar
2023 – present Associate Professor, Department of Biological Sciences, Columbia University
2021 – 2023 Assistant Professor, Department of Biological Sciences, Columbia University
2018 – 2021 Mitchell and Margo Blutt Presidential Assistant Professor of Biology, University of Pennsylvania

Education and Training

2014 – 2018 Postdoctoral Fellow, Department of Neuroscience, University of Pennsylvania
Advisor: Wenqin Luo
2012 – 2014 Postdoctoral Fellow, Department of Neuroscience, Weill Cornell Medicine
Advisor: Benjamin Shykind
2006 – 2012 Ph.D. Cell and Molecular Biology, University of Pennsylvania
Advisor: Meera Sundaram
2002 – 2006 B.S. Animal Science, North Carolina A&T State University, *summa cum laude*

Honors and Awards

- HHMI Freeman Hrabowski Scholar, 2023
- McKnight Scholar Award, 2023
- NIH DP2 New Innovator Award, 2022
- Chan Zuckerberg Science Diversity Leadership Award, 2022
- Pew Biomedical Scholar, 2022
- Alfred P. Sloan Research Fellow, 2021
- Kavli Fellow, National Academy of Sciences, 2021
- Rita Allen Foundation Scholar, 2020
- NIH Mitchell Max Award for Pain Research, 2018
- NIH K99/R00 Pathway to Independence Award, 2017
- Burroughs Wellcome Fund PDEP Fellowship, 2015
- Tom Kadesch Prize in Genetics, University of Pennsylvania, 2012

Publications

Principal Investigator:

Peer-reviewed research papers

- 1) Elias L, Succi I, Schaffler M, Foster W, Gradwell M, Bohic M, Fushiki A, Upadhyay A, Ejoh L, Schwark R, Frazer R, Bistis B, Burke J, Saltz V, Boyce J, Jhumka A, Costa R, Abaira V, **Abdus-Saboar, I.** Touch neurons underlying dopaminergic pleasurable touch and sexual receptivity. *Cell* 186, 577–590 (2023).
 - Research highlight *Nature* 614, 10 (2023). How sexual touch triggers pleasant sensations in mice.
 - Research highlight *Washington Post* (2023). The power of social touch: How a loving caress really can ease anxiety.
 - Research highlight *Current Biology* (2023). Socio-sexual touch: On the hunt for a pleasure signal in the mouse brain.
- 2) Bohic M, Pattison L, Jhumka A, Rossi H, Thackray J, Ricci M, Foster W, Ogundare S, Twomey C, Hilton H, Arnold J, Mossazghi N, Yttri E, Tischfield, MA, Smith ESJ, **Abdus-Saboar I.***, Abaira V*. Mapping the neuroethological signatures of pain, analgesia, and recovery in mice. *Neuron* 111, 1-20 (2023) * joint senior authorship

- 3) Bashkirova E, Klimpert N, Pourmorady A, Monahan K, Campbell C, Osinski J, Tan L, Schieren I, Stecky B, Barnea G, Xie XS, **Abdus-Saboor I**, Shykind B, Jones-Marlin B, Gronostajski R, Fleischmann A, Lomvardas S. Opposing, spatially-determined epigenetic forces impose restrictions on stochastic olfactory receptor choice. *eLife* (2023)
- 4) Toussaint A, Foster W, Jones JM, Kaufmann S, Wachira M, Hughes R, Bongiovanni AR, Famularo ST, Dunham B, Schwark R, Karbalaei R, Dressler C, Bavley CC, Fried NT, Wimmer M, **Abdus-Saboor I**. Chronic paternal morphine exposure increases sensitivity to morphine-derived pain relief in male progeny. *Science Advances* eabk2425 (2022).
- 5) Burdge J, Fried N, **Abdus-Saboor I**. Using high-speed videography for objective and reproducible pain measurement on a mouse pain scale. *Star Protocols* 2,100322 (2021). Note: a peer-reviewed protocol paper.
- 6) Jones JM, Foster W, Twomey CR, Burdge J, Ahmed O, Pereira T, Wojick J, Corder G, Plotkin JB, **Abdus-Saboor I**. A machine-vision approach for automated pain measurement at millisecond timescales. *eLife* 9:e57258 (2020).
- 7) Rossi HL, See LP, Foster W, Pitake S, Gibbs J, Schmidt B, Mitchell CH, **Abdus-Saboor I**. Evoked and spontaneous pain assessment in a dental pulp injury model. *Sci Reports* 17;10(1):2759 (2020).
- 8) Pitake S, Middleton LJ, **Abdus-Saboor I**, Mishra SK. Inflammation induced sensory nerve growth and pain hypersensitivity requires the N-type calcium channel Cav2.2. *Front Neurosci* 19;13:1009 (2019).

Research papers submitted or in revision

- 9) Liu D, Rahman M, Johnson A, Tsutsui-Kimura I, Pena N, Talay M, Logeman BL, Finkbeiner S, Choi S, Capo-Battaglia A, **Abdus-Saboor I**, Ginty DD, Uchida N, Watabe-Uchida M, Dulac C. A hypothalamic circuit underlying the dynamic control of social homeostasis. bioRxiv 2023; *Nature* (in revision)
- 10) Inclan-Rico JM, Napuri C, Lin C, Hung LY, Ferguson A, Wu Q, Pastore CF, Stephenson A, Femoe U, Rossi HL, Reed D, Luo W, **Abdus-Saboor I**, Herbert DR. MrgprA3 neurons selectively control myeloid-derived IL-33 for IL-17 dependent cutaneous immunity. bioRxiv 2023; *Immunity* (in revision)
- 11) Ortiz-Carpena J, Inclan-Rico J, Pastore C, Hung L, Wilkerson W, Lin C, **Abdus-Saboor I**, Vaughan A, Rossi H, Herbert D. Neuron-dependent tuft cell expansion initiates sinonasal allergic Type 2 inflammation. bioRxiv 2023; *Immunity* (in revision)
- 12) Sgourdou P, Schaffler M, Choi K, McCall N, Burdge J, Williams J, Corder G, Fuccillo M, **Abdus-Saboor I**, Epstein D. Impaired acute pain response in mice lacking first order posterior medial thalamic neurons. (2023)
- 13) Schaffler M, Johnson M, Hing B, Kahler P, Hultman I, Srivastava S, Arnold J, Blendy J, Hultman R, **Abdus-Saboor, I**. A critical role for touch neurons in a skin-brain pathway for stress resilience. bioRxiv; (2022)

Review articles

- 14) Z. Anissa Jhumka, **Abdus-Saboor I**. Next generation behavioral sequencing for advancing pain quantification. *Curr Opin in Neurobiol.* 76:102598 (2022).
- 15) Burdge J, Jhumka ZA, Bravo I, **Abdus-Saboor I**. Taking a deep breath: How a brainstem pathway integrates pain and breathing. *Neuron* 2;110(5):739-741 (2022).
- 16) Elias LJ, **Abdus-Saboor I**. Bridging skin, brain, and behavior to understand pleasurable social touch. *Curr Opin in Neurobiol.* 73:102527 (2022).

- 17) Inclan-Rico JM, Kim BS*, **Abdus-Saboer I.*** Beyond somatosensation: Mrgprs in mucosal tissues. Neuroscience Letters Feb 11;135689 (2021). * joint senior authorship
- 18) Fried NT, Chamessian A, Zylka MJ, **Abdus-Saboer I.** Improving pain assessment in mice and rats with advanced videography and computational approaches. Pain 161(7):1420-1424 (2020).
- 19) Schaffler M, Elias L, **Abdus-Saboer I.** Mechanisms of tactile sensory phenotypes in autism: current understanding, and future directions for research. Curr Psychiatry Rep. 5;21(12):134 (2019).

Book Chapters

- 20) **Abdus-Saboer I.** Synchronized neuronal activity in peripheral sensory ganglia may drive chronic pain. Principles of Neural Science Online Updates, McGraw Hill, Access Neurology (2023).
- 21) **Abdus-Saboer I,** Luo W. Measuring mouse somatosensory reflexive behaviors with high-speed videography, statistical modeling, and machine learning. Neuromethods (2022).

Postdoctoral Fellow:

- 22) **Abdus-Saboer I,** Fried NT, Lay M, Burdge J, Swanson K, Fischer R, Jones J, Dong P, Cai W, Guo X, Tao YX, Bethea J, Ma M, Dong X, Ding L, Luo W. Development of a mouse pain scale using sub-second behavioral mapping and statistical modeling. Cell Reports 6;28(6):1623-1634 (2019).
- 23) Olson W, **Abdus-Saboer I,** Cui L, Burdge J, Raabe T, Ma M, Luo W. Sparse genetic tracing reveals regionally specific functional organization of mammalian nociceptors. eLife 12;6:e29507 (2017).
- 24) Cui L, Miao X, Liang L, **Abdus-Saboer I,** Olson W, Fleming MS, Ma M, Tao YX, Luo W. Identification of early RET+ deep dorsal spinal cord interneurons in gating pain. Neuron 91, 1-17 (2016).
- 25) **Abdus-Saboer I,** Al Nufal MJ, Agha MV, Ruinart de Brimont M, Fleischmann A, Shykind B. An expression refinement process ensures singular odorant receptor gene choice. Current Biology 26, 1083–90 (2016).
- 26) **Abdus-Saboer I,** Fleischmann A., Shykind B. Setting limits: maintaining order in a large gene family. Transcription 5:e28978 (2014).
- 27) Fleischmann A, **Abdus-Saboer I,** Sayed A, Shykind B. Functional interrogation of an odorant receptor locus reveals multiple axes of transcriptional regulation. PloS Biology 11 (5):e1001568 (2013).

Graduate Student:

- 28) **Abdus-Saboer I,** Stone CE, Murray JI, Sundaram MV. The Nkx5/Hmx homeodomain protein MLS-2 is required for proper tube cell shape in the C.elegans excretory system. Developmental Biology 366, 298–307 (2012).
- 29) **Abdus-Saboer I,** Mancuso VP, Murray JI, Palozola K, Norris C, Hall DH, Howell K, Huang K, Sundaram MV. Notch and Ras promote sequential steps of excretory tube development in C.elegans. Development 138, 3545–3555(2011). *Research Highlight in Nature Reviews Molecular Cell Biology.*

Patents

Abdus-Saboer I. Burdge J, Jhumka ZA, Nazarian J, Tabachnik T. “Automated reproducible mechanical stimulation for animal experiments.” Patent no. 63/521,444 filed on 6-16-2023.

Grant Support

2023–2033	Freeman Hrabowski Scholar, Howard Hughes Medical Institute. “Neural circuits for somatosensation from mice to naked mole-rats.” \$8,600,000. Role: PI
2023–2026	McKnight Scholar Award. “Skin-brain axis for rewarding touch behaviors.” \$225,000 direct costs. PI
2023–2026	Ernest E. Just Faculty Mentor Award. Awarded to IAS to fund a postdoc. Total award: \$465,783.
2022–2027	NIH/NINDS DP2 New Innovator Award (DP2NS130454). “Using mouse pain scales to discover unusual pain sensitivity and new pain targets.” \$2,467,500 total costs. Role: PI
2022–2027	Chan Zuckerberg Initiative Science Diversity Leadership Award. “Uncovering peripheral and central neural circuits for inflammatory pain.” \$1,150,000 total costs. Role: PI
2022–2026	Pew Scholar in the Biomedical Sciences. “Elucidating pain sensation and emotion from circuits to cells to genes.” \$300,000 direct costs. Role: PI
2022–2023	Brain Research Foundation Seed Grant. “Investigating a skin-brain neuronal pathway for rewarding social touch.” \$80,000 direct costs. Role: PI
2022–2023	Columbia University Provost Grant for Junior Faculty. “Does brain activity in the naked mole-rat govern cooperative social life?” \$30,000 direct costs. Role: PI
2022–2023	NIH/NIMH R25. “The short course on the application of machine learning for automated quantification of behavior.” \$55,188 sub-award to I.A.S. Lead PI: Vivek Kumar, Role: MPI
2021–2023	Alfred P. Sloan Research Fellowship in Neuroscience. \$75,000 direct costs. Role: PI
2020–2023	Rita Allen Foundation Scholar in Pain Award. “Discovering behavioral signatures of pain at millisecond timescales.” \$150,000 direct costs. Role: PI
2017–2021	NIH/NIDCR K99/R00 Pathway to Independence Award (DE026807). “Determining the functions of molecularly defined populations of nociceptors in spinal and dental pain.” \$1,116,555 total costs. Role: PI
2015–2018	Burroughs Wellcome Fund Postdoctoral Enrichment Program. “Defining the neural mechanisms mediating crosstalk between touch and pain.” \$60,000 direct costs. Role: PI
2016–2017	Burroughs Wellcome Fund Collaborative Travel Grant. “Optogenetic and brain imaging investigation of pain neural circuitry.” \$8,000 direct costs. Role: PI; Co-I: Jin Lee, Stanford
2014–2017	NIH Institutional Research and Academic Career Development Award (K12 GM081295). “Dissect neural mechanisms underlying the crosstalk between touch and pain.” \$190,488. Role: PI for career development award.

Pending Grant Support

2024–2029	NIH/NINDS R01. “Connecting the skin and brain for rewarding social touch.” \$3,262,301 total costs. Role: PI
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Invited Research Talks**2024**

1. Keystone Meeting, “Mammalian Somatosensation” **Meeting Co-Organizer**

2. Simons Foundation, **Presidential Lecture**
3. Johns Hopkins University, Department of Neuroscience Seminar Series
4. Cornell University, Department of Neurobiology and Behavior Seminar Series
5. Baylor College of Medicine, Neuroscience Seminar Series
6. New York University (NYU), Interdisciplinary Pain Research Program Seminar Series =
7. UC Davis, Neuroscience Seminar Series
8. Cold Spring Harbor Laboratory, Neuroscience Seminar Series
9. Harvard Medical School, Department of Genetics Seminar Series

2023

10. Society for Neuroscience Annual Meeting, **SFNova Lecture**
11. American Society for Cell Biology Annual Meeting, **Plenary Speaker**
12. Princeton University, Neuroscience Institute Seminar Series
13. Caltech, Chen Institute Neuroscience Symposium
14. Barnard College, Department of Biological Sciences Seminar Series
15. National Institutes of Health (NIH), HEAL Initiative Headliners Seminar Series
16. Columbia University, Dermatology Grand Rounds
17. Columbia University, HICCC Cancer-relevant Chemistry and Biology Symposium
18. Mount Sinai School of Medicine, Brain and Body Lecture Series
19. Oregon Health & Science University (OHSU), Neuroscience Futures Seminar Series
20. National Institutes of Health (NIH), Pain in Animals Meeting
21. Columbia University, Integrative Animal Behavior Seminar Series
22. Brown University, Neuroscience Seminar Series
23. Stanford University, Wu Tsai Neuroscience Institute Seminar Series

2022

24. University of Pennsylvania, Cell & Molecular Biology Grad Group Symposium, **Keynote Speaker**
25. Rockefeller University, Symposium on the Social Brain
26. American College of Neuropsychopharmacology Annual Meeting
27. New York University (NYU), Department of Biology Seminar Series
28. UC Berkeley, Brain Imaging in the Bay Symposium
29. Gordon Conference, Optogenetic Approaches to Neural Circuits and Behavior, Maine
30. Washington University in St. Louis, Anesthesiology Research Seminar Series
31. Northwestern University, Department of Physiology and Pain Center Seminar Series
32. Brandeis University, M. R. Bauer Foundation Colloquium Seminar Series
33. University of Washington, Department of Biological Structure Seminar Series
34. Yale University, Neuroscience Seminar Series

2021

35. Harvard Medical School, Department of Neurobiology Seminar Series
36. Johns Hopkins University, Blaustein Pain Grand Rounds
37. Penn State College of Medicine, Neural and Behavioral Sciences Department Seminar Series
38. Johns Hopkins University, Department of Molecular and Comparative Pathobiology Seminar Series
39. University of California San Francisco (UCSF), Neuroscience Seminar Series
40. Brown University, Samuel M. Nabrit Conference for Early Career Scholars
41. Newcastle University (UK), Centre for Behaviour and Evolution Seminar Series
42. NIH Brain Initiative Investigator's Meeting, Social Brain Symposium
43. Columbia University, Department of Biological Sciences Seminar Series
44. Salk Institute, Thursday Seminar Series
45. Williams College, Class of 1960 Scholar Speaker Series
46. University of Southern California (USC), Neurobiology Seminar Series
47. Texas Pain Research Consortium, Seminar Series
48. George Washington University, IBS Neuroscience Seminar Series
49. University College London, Gatsby Computational Neuroscience Series
50. University of Chicago, Neuroscience Seminar Series
51. New York University (NYU) School of Medicine, Marie Daly Speaker Series
52. Duke University, Department of Neurobiology Seminar Series

53. Allen Institute for Brain Science, Inaugural Black History Month Seminar Series
54. Middlebury College, Neuroscience Seminar Series
55. University of California San Diego (UCSD), Neuroscience Seminar Series

2020

56. Weill Cornell Medicine, Frontiers in Neuropsychiatry Seminar Series
57. Johns Hopkins University, Department of Biology Seminar Series
58. Northeastern University, Biology Colloquium
59. Washington University in St. Louis, Anesthesiology Research Seminar Series
60. University of Pittsburgh & Carnegie Mellon University, CNBC ERC Series
61. UT Health San Antonio, Department of Pharmacology & Center for Biomedical Neuroscience
62. University of Iowa, Neuroscience Institute Seminar Series
63. Columbia University, Zuckerman Institute, Breakthroughs in Neuroscience Series
64. National Institutes of Health (NIH), Animal Genetics Consortium
65. Drexel University, Department of Neurobiology and Anatomy Seminar Series
66. Georgetown University, Department of Pharmacology and Physiology
67. National Institutes of Health (NIH), Early Career Investigators in Addiction Neuroscience Series
68. Johns Hopkins University, Department of Pharmacology & Molecular Sciences
69. University of Virginia, Neuroscience Department, Inaugural Juneteenth Lecture
70. Temple University, Neuroscience Seminar Series
71. Keystone Symposium, "Pain: Aligning the Target", Colorado
72. University of Pennsylvania, Dermatology Research Seminar Series
73. University of Michigan, Department of Molecular, Cell, Developmental Biology
74. Johns Hopkins University, Department of Biochemistry and Molecular Biology

2019

75. University of Pennsylvania, Psychology Department Colloquium Series
76. Annual Biomedical Conference for Minority Students (ABRCMS), California
77. University of Texas at Dallas, School of Behavioral and Brain Sciences
78. Fox Chase Cancer Center, Molecular Therapeutics Department
79. University of Maryland Baltimore County, Departments of Biology; Chemistry & Biochemistry
80. University of Washington, Neuroscience Seminar Series
81. North Carolina A&T State University, Department of Biology
82. University of California Santa Cruz, Dpt. Molecular, Cell, Developmental Biology
83. University of Illinois at Chicago, Integrative Neuroscience Seminar Series

2018

84. Rockefeller University, Sense to Synapse Conference
85. Vanderbilt University School of Medicine, Emerging Scholars Lecture
86. St. Joseph's University, Department of Biology
87. University of Pennsylvania, Center for Neurobiology and Behavior Seminar
88. Mid-Atlantic Pharmacology Society Meeting, Philadelphia, PA
89. University of Pennsylvania, mindCORE Seminar Series
90. Gordon Conference, Molecular and Cellular Neurobiology, Hong Kong
91. National Institutes of Health (NIH), Pain Consortium Symposium
92. Meharry Medical College, Department of Biochemistry and Cancer Biology
93. Bryn Mawr College, Chemistry Colloquia Series
94. Duke University, Department of Pharmacology
95. New York University (NYU), Department of Oral Surgery
96. University of Pennsylvania, Department of Biology

2017

97. University of Pennsylvania, Department of Oral Surgery & Pharmacology
98. Johns Hopkins University, Department of Pharmacology & Molecular Sciences
99. Temple University, Center for Substance Abuse Research
100. Society for Neuroscience Meeting, "Touch, Pain, Itch Nanosymposium"
101. Haverford College, Department of Biology
102. Syracuse University, Department of Biology
103. University of Pennsylvania, SACNAS Chapter Science Café Seminar Series

104. Rutgers University Camden, Department of Biology
105. Swarthmore College, Department of Biology
106. MIT, Rising Stars in Biomedical Science Symposium

2016

107. Mount Holyoke College, Department of Biological Sciences
108. University of Pennsylvania Dental School, Levy Series
109. Bucknell University, Department of Biology
110. Rutgers University Camden, Department of Biology
111. Virginia Tech University, Department of Biochemistry

2011 – 2013

112. 2nd International Symposium on Olfaction, Paris
113. University of Pennsylvania, Genetics Symposium
114. University of Pennsylvania, Cell and Molecular Biology Annual Symposium
115. International *C.elegans* Meeting, Los Angeles, CA
116. Society for Developmental Biology Meeting, Phila., PA, **award for best graduate student talk**

Media

- 1) Feature interview. “Lab mice go wild: making experiments more natural to decode the brain.” **Nature** (2023).
- 2) Feature interview. “An end to chronic pain? Future treatment could look very different” **USA Today** (2022).
- 3) Q&A feature interview. **Neuron** (2021) <https://doi.org/10.1016/j.neuron.2021.09.026>

Professional Service

Meeting Organization

- Co-Organizer (w/ Diana Bautista & Becky Seal), Keystone Meeting: Mammalian Somatosensation (2024)
- Co-Organizer (w/ Vanna Zachariou and Victoria Abaira), Northeast Pain Meeting (2023)

Scientific or Other Advisory Boards

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| 2022–present | Scientific Advisory Board, Doloromics Inc., |
| 2022–present | Advisory Board, Burroughs Wellcome Fund PDEP Postdoctoral Fellowship |
| 2021–present | Editorial Board, Neurobiology of Pain |
| 2020–present | Editorial Board, Cell Reports |
| 2020–2023 | Board of Reviewing Editors, eLife |

Grant Review Panels

- Ad hoc reviewer, NIH HEAL Initiative R01 review panel on “Discovery of Novel Pain Targets” (2023)
- Ad hoc reviewer, NIH/NIDDK R01 review panel on “Mechanisms and Management of Pain” (2023)
- Department of Defense (DoD) Neurophysiology of Cognition review panel (2023)
- Simons Foundation Autism Research Initiative (SFARI) “Cross-Species Studies of ASD” (2023)
- Burroughs Wellcome Fund PDEP Postdoctoral Fellowship review panel (2023)
- Ad hoc reviewer, NIH BRAIN Initiative R01 review panel (2022)
- Chan Zuckerberg Initiative Biohub Investigators (Stanford/Berkeley/UCSF) review panel (2021)
- Department of Defense (DoD) Neurophysiology of Cognition review panel (2020)
- Ad hoc reviewer, NIH/NINDS F99/K00 Blueprint D-SPAN Award review panel (2020)
- Burroughs Wellcome Fund Graduate Diversity Enrichment Program review panel (2019)

Journal Reviewer: Nature, Cell, Neuron, Nature Neuroscience, Nature Communications, Science Advances, Nature Reviews Neuroscience, eLife, Pain, PLoS Biology, Neuropsychopharmacology, Journal of Neuroscience, Cell Reports, Methods in Cell Biology, Molecular Pain, Neuroscience, Neuroscience Letters, Pain Reports, PLoS One, Star Protocols, Annals of the New York Academy of Sciences, Aging Cell

University Service

Columbia University

2023–present	Member, Executive Committee, Department of Biological Sciences
2023–present	Faculty Advisor, BUMP Biology (Black Undergraduate Mentorship Program in the Biological Sciences)
2022–present	Diversity, Equity, Inclusion (DEI) Committee, Department of Biological Sciences
2023	Reviewer (for internal Columbia competition), Rita Allen Foundation Scholar
2022 –	Member, University Task Force on Historically Black Colleges and Universities (HBCUs)
2022	Reviewer (for internal Columbia competition), Brain Research Foundation Seed Grant Program
2022	Reviewer (for internal Columbia competition), J&J WiSTEM2D program
2022	Reviewer, Research Initiatives in Science & Engineering (RISE) competition
2022	Reviewer, Presidential Scholars in Society and Neuroscience Postdoctoral Fellowship
2021–2022	Faculty Search Committee, Zuckerman Mind Brain Behavior Institute

University of Pennsylvania

2020–2021	Seminar Committee, Biology Department
2020	Ad hoc Faculty Recruitment Committee, Biology Department
2020	Recruitment Day Chair for Ph.D. admissions weekend, Biology Department
2020–2021	Member, Dean’s Council on Diversity
2020–2021	Seminar Committee, Department of Neuroscience
2020–2021	Faculty Advisory Board, E.E. Just Biomedical Society for URM PhD students
2019–2020	Member, Dean’s Committee for “Mapping the Mind”
2018–2020	Co-Director, Mentoring Circle Program for underrepresented minority (URM) students

Graduate Student Qualifying Exam and/or Thesis Advisory Committees (15 total)

Valentine Andreu, 2023– present; Abby Wood, 2023– present; Nova Qi, 2022– present; Aaron Limoges, 2021– present; Eliza Jaeger, 2021– present; Yasmin Ramadan, 2021– present; *Erin Jean, 2022– present; Brandon Bastien, 2020 – present; Michelle Klima, 2020 – 2022; Jessica Wojick, 2020; Melina Gyparaki, 2019 – 2021; Bishwas Sharma, 2019 – 2021; Luigim Cifuentes, 2019; Yongjun Li, 2019; Linyang Ju, 2019

Community Outreach and Service

- **Director and Founder** “*Hildrus Poindexter Scholars*” summer program for HBCU undergraduates (2024–2028)
- **Keynote Speaker**, “*Black in Neuro Week*” (2023)
- **Panelist**, Interviewed by Richard Axel at Brain Series Lecture at Columbia’s Zuckerman Institute (2022)
- **Panel Leader**, DEI in the machine learning and behavior community at the JAX short course (2022)
- **Keynote Speaker**, BRAINYAC Columbia University high school summer intern graduation ceremony (2022)
- **Speaker**, ASSURE Summer Scholars Program for URM students at Washington University in St. Louis (2022)
- **Speaker**, “*Stories in Science*”, Columbia University Neuroscience Society & Black in Neuro Manhattan (2022)
- **Speaker**, UNC Chapel Hill, Society for Black Biomedical Scientists Black History Month (2022)
- **Speaker**, Columbia’s Zuckerman Institute, Diversity Funding Opportunities at NIH (2021)
- **Speaker**, Black-in-Stem conversation with Rutgers Camden University MARC students (2021)
- **Inaugural Speaker**, Harvard Medical School Black Postdoctoral Association (2020)
- **Session Chair**, Inclusivity and Diversity in the Field, Keystone Meeting on Pain (2020)
- **Speaker**, Monell Chemical Senses Center, *Diversity Journal Club* (2020)
- **Feature Interview**, Philadelphia middle school book project “*Healthy NewsWorks*” (2020)
- **Panelist**, Postdoc Association (BPP) event, “*Pursuing an Academic Career*” (2020)
- **Speaker**, University of Pennsylvania, Neuroscience Graduate Group Public Lecture on Pain (2019)
- **Speaker**, NIH Director’s Conference on “*Advancing Diversity Programs*” (2019)
- **Panelist**, NIH/ENDURE program for underrepresented minority trainees (2019)
- **Panelist**, mindCORE event, “*Navigating the academic job market*” (2019)
- **Lab Host**, Abdus-Saboor lab Science Day for 25 elementary students in West Philly (2019)
- **Panelist**, Center for Teaching and Learning “*Workshop on Inclusive Teaching*” (2018)
- **Panelist**, Lasalle University STEM underrepresented minority day (2018)
- **Speaker**, SMASH STEM program for high school minority students (2018)
- **Panelist**, Society for Neuroscience Meeting, NIH Blueprint Diversity F99/K00 fellows (2018)
- **Panelist**, Inaugural PennView Postdoc Diversity Initiative (2018)
- **Speaker**, “*March for Science*” Philadelphia, PA (2017)

- **Panelist**, Alpha Kappa Alpha Sorority Ascend high school career fair for URM students (2017)
- **Facilitator and Speaker**, Penn URM summer interns, “*Writing Your 1st Manuscript*” (2017)
- **Panelist**, Career Panel, Penn Cell and Molecular Biology PhD Program Symposium (2017)
- **Facilitator and Speaker**, HHMI BioInteractive Teaching Workshop for Faculty (2017)
- **Panelist**, “*Diversity in STEM workshop*”, Penn Center for Teaching and Learning (2016)
- **Organizer and Speaker**, Penn URM summer interns “*Graduate School Admissions Process*” (2016)
- **Panelist**, “*Penn Honors Diversity Symposium*” (2016)
- **Science Fair poster judge**, Lincoln University & Penn (2016)
- **Science Fair poster judge**, Diversity session, American Society for Cell Biology Meeting (2012)
- **Panelist**, McNair Scholars forum for undergraduate URM seniors at Penn (2011)
- **Volunteer**, Science Education Academy middle-school URM students (2008-2010; 2016-2018)
- **Panelist and Lab Tour Host**, Upward Bound program for high school students (2008)
- **Outreach Chair**, E.E. Just Biomedical Society for underrepresented minority graduate students (2007)

Teaching

Columbia University

Instructor (75 students): BIOL UN3004 Neurobiology I: Cellular and Molecular Neurobiology (Fall 2023)

Instructor (150 students): BIOL UN3004 Neurobiology I: Cellular and Molecular Neurobiology (Fall 2022)

The Jackson Laboratory

Co-Organizer (50 students): The Short Course on the Application of Machine Learning for Automated Quantification of Behavior (Fall 2022, 2023)

University of Pennsylvania

Instructor (150 students): BIOL 221: Molecular Biology and Genetics (Spring 2019, 2020, 2021)

Guest lectures in various courses

Columbia University (undergraduate course): BIO UN1908: First-Year Seminar in Biology (Fall 2023)

Columbia University (graduate course): G4340: Survey of Neuroscience (Spring 2022, 2023)

Columbia University (graduate course): G4100: Biology of Neurologic and Psychiatric Disorders (Spring 2023)

Columbia University (graduate course): BIOL GR9301: Pre-research seminar (Fall 2021)

University of Pennsylvania (graduate course): NGG 588: Topics in Translational Neuroscience (Spring 2020)

Mentorship: (*underrepresented minority)

Current

Postdoctoral Fellows

- 1) 2024 – present Alexander Kaplan (Ph.D. Hebrew U. Israel)
- 2) 2023 – present Briana Nixon (Ph.D. Cornell University)
- 3) 2023 – present *Sasha Fulton (Ph.D. Mount Sinai Medicine)
- 4) 2022 – present Anastasia-maria Zavitsanou (Ph.D. NYU)
- 5) 2022 – present *Andre Toussaint (Ph.D. Temple University)
- 6) 2021 – present Z. Anissa Jhumka (Ph.D. Aix-Marseilles U. France)

Doctoral Students

- 1) 2023 – present William Foster (Neurobiology & Behavior)
- 2) 2023 – present Preston Sheng (Biological Sciences)
- 3) 2023 – present Isabella Succi (Biological Sciences), joint with Itamar Kahn
- 4) 2022 – present Brittany Bistis (Biological Sciences)
- 5) 2021 – present *Rachel Frazer (Neurobiology & Behavior)
- 6) 2020 – present Ryan Schwark (Biological Sciences)
- 7) 2020 – present Justin Burdge (Biological Sciences)

Technician

- 1) 2023 – present *Alexis Knight (B.S. Columbia University)

Undergraduates

- 1) 2023 –present *Maximillian Comfere, Computer Science
- 2) 2023 –present Amanda Arnold (Barnard), Neuroscience
- 3) 2023 –present *Leah Yadessa, Neuroscience and Behavior
- 4) 2023 –present *Sofia Marin-Quiros, Computer Science
- 5) 2023–present *Aishat Bakare, Neuroscience and Behavior
- 6) 2023–present *Olaedo Udensi (Barnard), BUMP Biology
- 7) 2023–present Ashar Khan
- 8) 2023–present Jake Kothandaraman (NYU), Biology
- 9) 2022–present *Melody Gomez, Neuroscience and Behavior
- 10) 2022–present Sarah Ogata, Religion
- 11) 2022–present *Abednego Delinois, Neuroscience and Behavior
- 12) 2021–present *Simon Ogundare, Neuroscience and Behavior

Alumni**Postdoctoral Fellow**

- 1) 2018 – 2021 Heather Rossi (Ph.D. U. Florida), now Senior Research Investigator at UPenn

Doctoral Students

- 1) 2018 – 2022 *Melanie Schaffler (Neuroscience), now Regular Affairs Associate at Teva Pharmaceuticals
- 2) 2018 – 2022 Leah Elias (Neuroscience), now Jane Coffin Child Fellow at Johns Hopkins University

Technicians

- 1) 2022 – 2023 Victoria Saltz (B.A. Williams College), next PhD student at Columbia University
- 2) 2021 – 2022 *Jared Boyce (B.S. Dartmouth College), now MD/PhD student at Wisconsin-Madison
- 3) 2020 – 2022 Isabella Succi (B.S. St. Joseph’s U.), now PhD student in the Abdus-Saboor lab
- 4) 2018 – 2021 William Foster (B.A. Haverford College), now PhD student in Abdus-Saboor lab
- 5) 2018 – 2020 *Jessica Jones (B.S. UCSC), now HHMI Gilliam Fellow/PhD student at UW

Undergraduates

- 1) 2022–2023 *Alexis Knight, Neuroscience and Behavior, next technician in Abdus-Saboor lab
- 2) 2022–2023 *Jonathan Ettricks, Neuroscience and Behavior
- 3) 2021–2023 *Alexis Marshall, Neuroscience and Behavior, next technician at Columbia University
- 4) 2021–2023 *Wadzanayi Michelle Mayiseni, Neuroscience and Behavior, next post-bac at Yale U.
- 5) 2021–2023 Phaelen Chang, Neuroscience and Behavior, next post-bac at Memorial Sloan Kettering
- 6) 2019–2021 *Justin Arnold, Biological Basis of Behavior, now MD student at Northwestern U.
- 7) 2019–2021 Lucie Pham, Biology, now MD student at Rutgers University
- 8) 2019–2020 Samuel Kaufmann, Biology
- 9) 2015–2019 Justin Burdge, Health and Societies, now PhD student in Abdus-Saboor lab
- 10) 2019 Emma Lu, Biology
- 11) 2018–2019 *Migyana Thomas

Summer Interns

- 1) 2023 *Zennetta Hinojosa, UT San Antonio, Leadership Alliance Intern
- 2) 2023 Noah Loran, University of Southern California, Leadership Alliance Intern
- 3) 2023 Misha Nair, Harvard University, SPURS Intern
- 4) 2023 Francesca Whitecross, Middlebury College
- 5) 2023 *Alexa Cuvilly, high school student; BRAINYAC Scholar
- 6) 2023 James Reed, high school student; BRAINYAC Scholar
- 7) 2022 *Teresa Osorio, Rutgers Camden University MARC Scholar; now PhD student at Hopkins

- 8) 2022 *Adetokunboh Osineye, Morehouse College; EE Just Scholar
- 9) 2022 *Ralph Anderson Jr., Morehouse College; EE Just Scholar
- 10) 2022 Ziad Eltabakh, LaGuardia High School; BRAINYAC Scholar
- 11) 2020 *Kayla Dennis, Penn Lens program high school student
- 12) 2020 *Camille Harrison, North Carolina A&T State University; SUIP intern, now tech at UPenn
- 13) 2020 *Meghan Wachira, Rutgers Camden University; post-bac at UPenn
- 14) 2019 Isabella Succi, St. Joseph's University, now PhD student at Columbia U.
- 15) 2019 *Syphane Gibbs, North Carolina A&T U, SUIP intern, now PhD student at U. Virginia
- 16) 2019 *Racquel Amadi, Xavier University in Louisiana; DAPPG intern
- 17) 2019 *Mariatu Fayia, Penn Lens program high school student

Awards to graduate students and postdocs

- 2023–2025 NIH F31 NRSA Fellowship to Justin Burdge (graduate student) \$123,449 total costs
- 2023–2026 EE Just Postdoc Fellowship in the Life Sciences to Sasha Fulton (postdoc) \$465,783 total costs
- 2023–2027 NIH F99/K00 DSPAN Award to Sasha Fulton (postdoc) \$341,256 total costs
- 2022–2025 Burroughs Wellcome Fund PDEP Fellowship to Andre Toussaint (postdoc) \$60,000 direct costs
- 2022–2025 Junior Fellow, Simons Society of Fellows to Andre Toussaint (postdoc) \$435,847 total costs
- 2020–2023 NSF Graduate Research Fellowship to Rachel Frazer (graduate student) \$147,000 total costs
- 2021–2022 NIH F31 NRSA Fellowship to Melanie Schaffler (graduate student) \$140,250 total costs
- 2020–2022 NIH F31 NRSA Fellowship to Leah Middleton Elias (graduate student) \$140,250 total costs