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Education

2014–2018 Postdoctoral Fellow, Wenqin Luo Lab, University of Pennsylvania
2012–2014 Postdoctoral Fellow, Ben Shykind Lab, Weill Cornell Medicine
2006–2012 Ph.D. in Cell and Molecular Biology, University of Pennsylvania (Advisor: Meera Sundaram)
2002–2006 B.S. in Animal Science, North Carolina A&T State University

Appointments

2023–present Freeman Hrabowski Scholar, Howard Hughes Medical Institute
2023–present Associate Professor, Department of Biological Sciences, Columbia University (*tenured in 2025*)
2021–2023 Assistant Professor, Department of Biological Sciences, Columbia University
2018–2021 Mitchell and Margo Blutt Presidential Assistant Professor of Biology, University of Pennsylvania

Honors and Awards

2025 NIH Director's Pioneer Award
2025 Kavli-Grossman Scholar
2024 One Mind Rising Star Award
2024 Cell *50 Scientists That Inspire* (50th Anniversary)
2023 Young Investigator Award, Society for Neuroscience
2023 HHMI Freeman Hrabowski Scholar
2023 McKnight Scholar Award
2022 NIH New Innovator Award
2022 Pew Biomedical Scholar
2022 Chan Zuckerberg Initiative SDL Award
2021 Alfred P. Sloan Fellow
2021 Kavli Fellow, National Academy of Sciences
2020 Rita Allen Foundation Scholar
2017 NIH Pathway to Independence Award

Distinguished & Named Lectureships

2025 Wayne E. Crill Lecture, University of Washington
2024 Presidential Lecture, Simons Foundation
2023 SFNova Lecture, Society for Neuroscience Annual Meeting

Plenary & Keynote Lectures

2025 Keynote Lecture, Young Memorial Symposium, Emory University (2025)
2025 Keynote Lecture, UAB School of Medicine, Neuroscience Center Retreat (2025)
2023 Plenary Lecture, American Society for Cell Biology Annual Meeting (2023)
2022 Keynote Lecture, University of Pennsylvania, Cell & Molecular Biology Grad Group Symposium (2022)

Teaching

Columbia University:
Instructor (75-150 students): BIOL UN3004 Neurobiology I: Cellular and Molecular Neurobiology (2022 – present)

University of Pennsylvania:
Instructor (150 students): BIOL 221: Molecular Biology and Genetics (2019 – 2021)

Columbia University Service

2025–present Member, Executive Committee, Department of Biological Sciences
2025–present Member, ARC Review Committee, Department of Biological Sciences
2025–present Lecturer Review Committee, Department of Biological Sciences

2024–present	Member, PhD Graduate Committee, Department of Biological Sciences
2024	Member, Department of Neuroscience Chair Search Committee
2023–present	Member, Executive Committee, Department of Biological Sciences
2023–present	Faculty Advisor, BUMP Biology
2023	Organizer (with Laura Duvall), Department of Biological Sciences Annual Retreat
2021–2022	Faculty Search Committee, Zuckerman Mind Brain Behavior Institute

Professional Service

Scientific Advisory Boards

2024–present	Co-Founder and Scientific Consultant, Tactorum Inc.
2022–2025	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

Faculty Mentorship

2026–2028	Faculty mentor to junior faculty through NIH R25 Faculty Access Program

Grant Review Panels

- Standing member, NIH Neurobiology of Pain and Itch Study Section (2025 – present)
- Standing member, Burroughs Wellcome Fund PDEP Postdoctoral Fellowship (2023 – present)
- Ad hoc reviewer, HHMI Hannah Gray Fellowship (2024)
- Ad hoc reviewer, Simons Foundation Autism Research Initiative (SFARI) "Cross-Species Studies of ASD" (2023)
- Ad hoc reviewer, NIH BRAIN Initiative R01 review panel (2022)
- Ad hoc reviewer, Chan Zuckerberg Biohub Investigators San Francisco review panel (2021)

Meeting Organization

Keystone Meeting: Mammalian Somatosensation (with Diana Bautista & Becky Seal) (2024)
Northeast Pain Meeting (with Vanna Zachariou and Victoria Abraira) (2023 – present)

Journal Reviewer

Nature, Cell, Science, Neuron, Nature Neuroscience, Nature Methods, eLife, Cell Reports, PNAS, etc.

Grant Support

2026	NIH Pilot Award in neural mechanisms of soft-tissue manipulation therapies and affective touch
Role: PI	"Force-parameterized affective touch: real-time oxytocin dynamics and neural circuit mechanisms of affective touch." (Co-PI: Victoria Abraira)
2025–2030	NIH Director's Pioneer Award
Role: PI	"Role of social touch and social memory in organizing naked mole-rat colonies"
2025–2026	Incite Institute at Columbia University Hard Questions Grant
Role: PI	"How does the brain control social recognition and social memory?"
2025–2028	Kavli-Grossman Scholar Award
Role: PI	
2024–2027	One Mind Rising Star Award
Role: PI	"Activating neurons in the skin to relieve symptoms of chronic stress"
2023–2033	Freeman Hrabowski Scholar, Howard Hughes Medical Institute
Role: PI	"Neural circuits for somatosensation from mice to naked mole-rats"
2023–2026	McKnight Scholar Award
Role: PI	"Skin-brain axis for rewarding touch behaviors"

2023–2026 Ernest E. Just Faculty Mentor Award
Role: PI Awarded to IAS to fund a postdoc

2022–2027 Chan Zuckerberg Initiative Science Diversity Leadership Award
Role: PI "Uncovering Peripheral and Central Neural Circuits for Inflammatory Pain"

2022–2026 Pew Scholar in the Biomedical Sciences
Role: PI "Elucidating Pain Sensation and Emotion from Circuits to Cells to Genes"

Completed grants

2022–2025 NIH/NINDS DP2 New Innovator Award (DP2NS130454)
Role: PI "Using mouse pain scales to discover unusual pain sensitivity and new pain targets."

2024–2025 Columbia University Cancer Center & Arts and Science (Co-PI: Yvon Woappi)
Role: PI "Do sensory neurons in the skin drive wound memory to promote squamous cell carcinoma?"

2022–2024 Brain Research Foundation Seed Grant
Role: PI "Investigating a skin-brain neuronal pathway for rewarding social touch."

2022–2023 Columbia University Provost Grant for Junior Faculty
Role: PI "Does brain activity in the naked mole-rat govern cooperative social life?"

2021–2023 Alfred P. Sloan Research Fellowship in Neuroscience.
Role: PI

2020–2023 Rita Allen Foundation Scholar in Pain Award
Role: PI "Discovering behavioral signatures of pain at millisecond timescales."

2017–2021 NIH/NIDCR K99/R00 Pathway to Independence Award (DE026807)
Role: PI "Determining the functions of molecularly defined populations of nociceptors in spinal and dental pain."

2015–2018 Burroughs Wellcome Fund Postdoctoral Enrichment Program
Role: PI "Defining the neural mechanisms mediating crosstalk between touch and pain."

2016–2017 Burroughs Wellcome Fund Collaborative Travel Grant
Role: PI "Optogenetic and brain imaging investigation of pain neural circuitry." Co-I: Jin Lee, Stanford

2014–2017 NIH IRACDA Postdoc Fellowship (K12 GM081295)
Role: PI "Dissect neural mechanisms underlying the crosstalk between touch and pain."

Patents:

Abdus-Saboor, I, et al. Automated reproducible mechanical stimulation for animal experiments. US Patent Application 8/781,138 (pending).

Selected Invited Seminars (2021–present)

New York University, Pain Research Center Seminar Series (2026)
University of Pennsylvania, Distinguished Seminar Series, Cell & Developmental Biology Department (2026)
Janelia Conference: Functional Mapping of the Peripheral Nervous System (2026)
Weill Cornell Medicine, Burke Neurological Institute Seminar Series (2026)
Summer Conference on the Changing Brain. Beckman Center of the National Academies at UC Irvine (2025)
Samsung Global Research Symposium: Brain-Body Interactions, Sweden (2025)
University of Lausanne, Switzerland. Department of Neuroscience Seminar Series (2025)
Lake Conference on Circuits Neuroscience: Sensation and Action. Lake Thun, Switzerland (2025)
UC Berkeley, Neuroscience Seminar Series (2025)
International Associate for the Study of Pain World Congress on Pain, Netherlands (2024)
88th Cold Spring Harbor Laboratory Symposium on Quantitative Biology: Brain Body Physiology (2024)
UC Davis, Neuroscience Seminar Series (2024)
Johns Hopkins University, Department of Neuroscience Seminar Series (2024)

Brown University, Neuroscience Seminar Series (2023)
Mount Sinai School of Medicine: Brain and Body Lecture Series (2023)
Stanford University, Wu Tsai Neuroscience Institute Seminar Series (2023)
Princeton University, Neuroscience Institute Seminar Series (2023)
Caltech, Chen Institute Neuroscience Symposium (2023)
Yale University, Neuroscience Seminar Series (2022)
American College of Neuropsychopharmacology Annual Meeting (2022)
Rockefeller University, Symposium on the Social Brain (2022)
Washington University in St. Louis, Anesthesiology Research Seminar Series (2022)
Northwestern University, Department of Physiology and Pain Center Seminar Series (2022)
Brandeis University, M. R. Bauer Foundation Colloquium Seminar Series (2022)
Harvard Medical School, Department of Neurobiology Seminar Series (2021)
University of California San Francisco, Neuroscience Seminar Series (2021)
Salk Institute, Thursday Seminar Series (2021)
University College London, Gatsby Computational Neuroscience Series (2021)
University of Chicago, Neuroscience Seminar Series (2021)
Duke University, Department of Neurobiology Seminar Series (2021)
University of California San Diego, Neuroscience Seminar Series (2021)

Selected Media Coverage

- Research featured in major media outlets including Washington Post, Nature, NPR
- 50 Scientists that Inspire, 50th Year Anniversary Issue. *Cell* (2024)
- Podcast interview. "From Lab to Life: The Science of Touch." *Pew Charitable Trusts* (2024)
- Q & A Feature interview. "Pleasure or pain? He maps the neural circuits that decide." *Quanta Magazine* (2024).
- Q & A Feature interview. *Neuron* (2021)
- TV Feature and lab visit, *CBS News* (2018). "Central High School Graduate Hoping to Make Impact with New Lab at Penn Medicine" {https://www.youtube.com/watch?v=_DkApUni3MA}

Mentorship:

Postdoctoral Fellows (current)

- Yuki Haba (Leon Levy Fellow), 2024 – present
- Sasha Fulton (HHMI Hannah Gray Fellow), 2023 – present
- Briana Nixon (HHMI-LSRF Fellow), 2023 – present
- Anastasia-maria Zavitsanou (Simons Junior Fellow), 2022 – present
- Anna Zhukovskaya, 2024 – present
- Aleksander Kaplan, 2023 – present

Postdoctoral Fellows (alumni → last known position)

- Heather Rossi → Senior Research Investigator at UPenn (2018 – 2021)
- Andre Toussaint → Postdoctoral Fellow at Mount Sinai Medicine (2022 – 2024)

Doctoral Students (current)

- Tate Yawitz (Neurobiology & Behavior), 2025 – present
- Viviana Vinci (Biological Sciences), 2024 – present
- Yu-Young Wesley Tsai (Biological Sciences), 2024 – present
- William Foster (Neurobiology & Behavior), 2023 – present
- Preston Sheng (Biological Sciences), 2023 – present
- Isabella Succi (Biological Sciences), 2023 – present
- Brittany Bistis (Biological Sciences), 2022 – present

Doctoral Students (alumni → last known position)

- Ryan Schwark, PhD → Curation Scientist, Fulgent Technologies (2020 – 2024)
- Justin Burdge, PhD → Co-Founder and CEO of Tactorum Inc., (2020 – 2024)
- Melanie Schaffler, PhD → Regular Writer at Novo Nordisk (2018 – 2022)
- Leah Elias, PhD → Jane Coffin Childs Postdoctoral Fellow at Johns Hopkins University (2018 – 2022)

Technicians (alumni → last known position)

- Alexis Knight → Clinical research associate at Columbia University (2023 – 2024)
- Victoria Saltz → PhD student at Columbia University (2022 – 2023)
- Jared Boyce → MD-PhD student at Wisconsin-Madison (2021 – 2022)
- Isabella Succi → PhD student in the Abdus-Saboor lab at Columbia University (2020 – 2022)
- William Foster → PhD student in the Abdus-Saboor lab at Columbia University (2018 – 2021)
- Jessica Jones → PhD at University of Washington → Scientist at Genentech (2018 – 2020)

Undergraduates

- 7 undergraduates currently work in the lab
- 24 alumni undergraduates of the lab since 2018; many have gone on to medical or grad school

Summer Interns (alumni)

- Mentored 24 summer interns since 2019; many have gone on to medical or grad school

Fellowships Awarded to Trainees

2025–2028	Leon Levy Scholar in Neuroscience to Yuki Haba (postdoctoral fellow)
2025–2033	HHMI Hannah Gray Fellowship to Sasha Fulton (postdoc to faculty fellowship)
2024–2027	HHMI-LSRF Fellowship to Briana Nixon (postdoctoral fellow)
2024–2027	Simons Junior Fellowship to Anastasia Zavitsanou (postdoctoral fellow)
2024–2027	Burroughs Wellcome Fund PDEP to Sasha Fulton (postdoctoral fellow)
2023–2024	NIH NRSA Predoctoral Fellowship to Justin Burdge (graduate student)
2023–2025	NIH D-SPAN Fellowship to Sasha Fulton (postdoctoral fellow)
2022–2024	Simons Junior Fellowship to Andre Toussaint (postdoctoral fellow)
2022–2024	Burroughs Wellcome Fund PDEP to Andre Toussaint (postdoctoral fellow)
2021–2022	NIH NRSA Predoctoral Fellowship to Melanie Schaffler (graduate student)
2020–2022	NIH NRSA Predoctoral Fellowship to Leah Elias (graduate student)

Publications

1. Bohic M, Salamone PC, Zuo W, Negm A, Fulton SL, Du S, Jayakumar S, Keating J, Soubeyre V, Gradwell MA, Upadhyay A, Duvernoy B, Inoue-Ueno Y, Mensch B, Peirs C, Gaetan Poulen G, Lonjon N, Vachiery-Lahaye F, Bauchet L, Bourinet E, Olausson H, **Abdus-Saboor I**, Tao Y, Boehme R, Abraira VE. (2026). Oxytocin modulation of spinal circuits drives therapeutic benefits of massage. *bioRxiv*

2. Lawen A, Succi I, Lichtman D, Peterka D, **Abdus-Saboor I**, Kahn I. (2026) Dopamine release effects on striatal blood oxygenation and whole brain plasticity underlying associative learning. *Science Advances, in revision*

3. Burdge J, Jhumka A, Khan A, Ogundare S, Baer N, Fulton S, Kaplan A, Bistis B, Foster W, Thackray J, Toussaint A, Li M, Morizawa YM, Nazarian J, Yadessa L, George AJ, Delinois A, Mayiseni W, Loran N, Yang G, Margolis DJ, Abraira VE, **Abdus-Saboor I**. (2025). Remote automated delivery of mechanical stimuli coupled to brain recordings in behaving mice. *eLife,* 13:RP99614.

4. Sur D, Zeng Y, Kobayashi H, Zhi X, Goetz MR, Müller CM, Zavitsanou AM, Picoli CC, Martel Matos AA, Pareja J, Savita BK, Lee T, Cunha-Junior JP, Amorim JH, Nikpoor AR, Dory A, Thanabalasuriar A, Galante PAF, Ma VT, James AW, Shepherd AJ, Oudin MJ, Bunimovich YL, Scheff NN, D'Silva NJ, Dixon KO, **Abdus-Saboor I**, Wang TC, Talbot S, Birbrair A. (2025). Entangled cellular and molecular relationships at the sensory neuron–cancer interface. *Neuron,* 113, 2760-2790.

5. Fulton S, Bendl J, DiSalvo G, Fullard J, Al-Kachak A, Lepack A, Stewart A, Singh S, Poller W, Bastle R, Hauberg M, Fakira A, Patel V, Chen M, Durand-de Cuttoli R, Gameiro-Ros I, Cathomas F, Ramakrishnan A, Gleason K, Shen L, Tamminga C, Milosevic A, Russo S, Swirski F, Slesinger P, **Abdus-Saboor I**, Blitzer R, Roussos P, Maze I. (2025). Major-depressive-disorder-associated dysregulation of ZBTB7A in orbitofrontal cortex promotes astrocyte-mediated stress susceptibility. *Neuron,* 113, 2656-2672.

6. Upadhyay A, Gradwell M, Vajtay T, Conner J, Sayal AA, Azadegan C, Patel KR, Thackray JK, Bohic M, Imai F, Ogundare S, Yoshida Y, **Abdus-Saboor I**, Azim E, Abraira V. (2025). The dorsal column nuclei scale mechanical sensitivity in naive and neuropathic pain states. *Cell Reports*, 44:115556

7. Liu D, Rahman M, Johnson A, Amo R, Tsutsui-Kimura I, Sullivan Z, Pena N, Talay M, Logeman BL, Finkbeiner S, Qian L, Choi S, Capo-Battaglia A, **Abdus-Saboor I**, Ginty DD, Uchida N, Watabe-Uchida M, Dulac C. (2025). A hypothalamic circuit underlying the dynamic control of social homeostasis. *Nature*, 640, 1000-1010.

8. Inclan-Rico JM, Napuri C, Lin C, Hung LY, Ferguson A, Wu Q, Pastore CF, Stephenson A, Femoe U, Rossi HL, Reed D, **Abdus-Saboor I**, Luo W, Herbert DR. (2024). MrgprA3 neurons drive cutaneous immunity against helminths through selective control of myeloid-derived IL-33. *Nature Immunology*, 25, 2068-2084.

9. Sgourdou P, Schaffler M, Choi K, McCall N, Burdge J, Williams J, Corder G, Fuccillo M, **Abdus-Saboor I**, Epstein D. (2025). Impaired pain in mice lacking first order posterior medial thalamic neurons. *Pain*, 166, 130-143.

10. Schwark R, Ogundare O, Sheng P, Foster W, Chang P, Tsai YY, Arnold A, **Abdus-Saboor I**. (2024). Social touch shapes communication and animal recognition in naked mole-rats. *bioRxiv*

11. Zavitsanou A, **Abdus-Saboor I**. (2024). Sex organs sense vibrations through specialized touch neurons. *Nature*, 630, 822-823.

12. Bashkirova E, Klimpert N, Monahan K, Campbell CE, Osinski J, Tan L, Schieren I, Pourmorady A, Stecky B, Barnea G, Xie XS, **Abdus-Saboor I**, Shykind B, Marlin BJ, Gronostajski R, Fleischmann A, Lomvardas S. (2023). Opposing, spatially-determined epigenetic forces impose restrictions on stochastic olfactory receptor choice. *eLife*, 12:RP87445.

13. 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-Saboor I***, Abraira V*. (2023). Mapping the neuroethological signatures of pain, analgesia, and recovery in mice. *Neuron*, 111, 2811-2830. (*joint senior authors)

14. 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, Abraira V, **Abdus-Saboor, I**. (2023). Touch neurons underlying dopaminergic pleasurable touch and sexual receptivity. *Cell*, 186, 577–590.

15. Z. Anissa Jhumka, **Abdus-Saboor I**. (2022). Next generation behavioral sequencing for advancing pain quantification. *Current Opinion in Neurobiology*, 76:102598.

16. Elias LJ, **Abdus-Saboor I**. (2022). Bridging skin, brain, and behavior to understand pleasurable social touch. *Current Opinion in Neurobiology*, 73:102527.

17. Burdge J, Jhumka ZA, Bravo I, **Abdus-Saboor I**. (2022). Taking a deep breath: How a brainstem pathway integrates pain and breathing. *Neuron*, 110, 739-741.

18. 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**. (2022). Chronic paternal morphine exposure increases sensitivity to morphine-derived pain relief in male progeny. *Science Advances*, eabk2425.

19. Inclan-Rico JM, Kim BS, **Abdus-Saboor I**. (2021). Beyond somatosensation: Mrgprs in mucosal tissues. *Neuroscience Letters*, 11;135689.

20. Schaffler M, Johnson M, Hing B, Kahler P, Hultman I, Srivastava S, Arnold J, Blendy J, Hultman R, **Abdus-Saboor, I**. (2022). A critical role for touch neurons in a skin-brain pathway for stress resilience. *bioRxiv*

21. Jones JM, Foster W, Twomey CR, Burdge J, Ahmed O, Pereira T, Wojick J, Corder G, Plotkin JB, **Abdus-Saboor I**. (2020). A machine-vision approach for automated pain measurement at millisecond timescales. *eLife*, 9:e57258.

22. Fried NT, Chamessian A, Zylka MJ, **Abdus-Saboor I**. (2020). Improving pain assessment in mice and rats with advanced videography and computational approaches. *Pain*, 161,1420-1424.

23. Rossi HL, See LP, Foster W, Pitake S, Gibbs J, Schmidt B, Mitchell CH, **Abdus-Saboor I**. (2020). Evoked and spontaneous pain assessment in a dental pulp injury model. *Scientific Reports*, 17:2759.

24. Schaffler M, Elias L, **Abdus-Saboor I**. (2019). Mechanisms of tactile sensory phenotypes in autism: current understanding, and future directions for research. *Current Psychiatry Reports*, 5;21(12):134.

25. Pitake S, Middleton LJ, **Abdus-Saboor I**, Mishra SK. (2019). Inflammation induced sensory nerve growth and pain hypersensitivity requires the N-type calcium channel Cav2.2. *Front Neurosci*, 19;13:1009.

26. **Abdus-Saboor 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. (2019). Development of a mouse pain scale using sub-second behavioral mapping and statistical modeling. *Cell Reports,* 28, 1623-1634.

27. Olson W, **Abdus-Saboor I**, Cui L, Burdge J, Raabe T, Ma M, Luo W. (2017). Sparse genetic tracing reveals regionally specific functional organization of mammalian nociceptors. *eLife*, 12;6:e29507.

28. Cui L, Miao X, Liang L, **Abdus-Saboor I**, Olson W, Fleming MS, Ma M, Tao YX, Luo W. (2016). Identification of early RET+ deep dorsal spinal cord interneurons in gating pain. *Neuron*, 91, 1-17.

29. **Abdus-Saboor I**, Al Nufal MJ, Agha MV, Ruinart de Brimont M, Fleischmann A, Shykind B. (2016). An expression refinement process ensures singular odorant receptor gene choice. *Current Biology*, 26, 1083–90.

30. **Abdus-Saboor I**, Fleischmann A., Shykind B. (2014). Setting limits: maintaining order in a large gene family. *Transcription*, 5:e28978.

31. Fleischmann A, **Abdus-Saboor I**, Sayed A, Shykind B. (2013). Functional interrogation of an odorant receptor locus reveals multiple axes of transcriptional regulation. *PloS Biology*, 11:e1001568.

32. **Abdus-Saboor I**, Stone CE, Murray JI, Sundaram MV. (2012). 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.

33. **Abdus-Saboor I**, Mancuso VP, Murray JI, Palozola K, Norris C, Hall DH, Howell K, Huang K, Sundaram MV. (2011). Notch and Ras promote sequential steps of excretory tube development in *C.elegans*. *Development*, 138, 3545–3555.