

Ishmail Abdus-Saboor
Curriculum Vitae

Office Address (as of July 1, 2018)

University of Pennsylvania
Department of Biology
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Date of birth: May 19, 1984

Nationality: US Citizen, born in Philadelphia, PA

Email: ishmail@pennmedicine.upenn.edu

Education and Training

B.S., Animal Science, <i>summa cum laude</i> , North Carolina A&T University	2006
Ph.D., Cell/Molecular Biology, University of Pennsylvania (with Meera Sundaram)	2012
Postdoc, Weill Cornell Medical College (with Benjamin Shykind)	2012 – 2014
CrawFly invertebrate neurophysiology summer course, Cornell University	2017
Postdoc, K99/R00 Award, University of Pennsylvania (with Wenqin Luo)	2014 – 2018

Appointments

Visiting Scholar, New York University	2018 – 2019
Assistant Professor, Department of Biology, University of Pennsylvania	2018 –

Awards and Honors

Penn Undergraduate SUIP Internship in Developmental Biology	2005
USDA Interdisciplinary Biotechnology and Biodiversity Fellowship	2005
Phi Kappa Phi & Golden Key International Honor Society	2006
Gloria Twine Chisum Fellowship, University of Pennsylvania	2006
Society for Developmental Biology Award (for best grad student talk)	2011
Tom Kadesch Prize in Genetic Research	2012
Burroughs Wellcome Fund PDEP Fellowship	2015
Burroughs Wellcome Fund CTRG Award	2016
BRAINS Fellowship, University of Washington	2017
Rising Stars in Biomedical, MIT	2017
NIH K99/R00 Pathway to Independence Award	2017
Penn Presidential Term Professorship (declined to take position in Penn Biology)	2018

Professional Society Memberships

Society for Neuroscience

Genetics Society of America
American Society for Cell Biology

Invited Talks

2018

Bryn Mawr College, Chemistry Colloquia Series
Penn, Biology Seminar Series
Duke School of Medicine, Department of Pharmacology
NYU School of Dentistry, Department of Oral Surgery
Meharry Medical College, Department of Biochemistry and Cancer Biology
Vanderbilt School of Medicine, Emerging Scholars Lecture

2017

University of Alabama at Birmingham, IRACDA Conference
Syracuse University, Department of Biology
Haverford College, Department of Biology
Rutgers University, Biology Seminar Series
Annual Society for Neuroscience Meeting (Touch, Pain, Itch Nanosymposium)
MIT, Rising Stars in Biomedical
Penn Dental School, Department of Oral Surgery & Pharmacology
Temple University, Center for Substance Abuse Research
Johns Hopkins School of Medicine, Department of Pharmacology

2016

Swarthmore College, Department of Biology
Virginia Tech University, Department of Biochemistry
Rutgers University, Biology Seminar Series
Penn Dental School, Research Seminar Series
Bucknell University, Department of Biology
Mount Holyoke College, Department of Biological Sciences

2013

College de France, Paris, International Symposium on Olfaction

2012

Penn, Department of Genetics Symposium (received Tom Kadesch Award)

2011

UCLA, International *C.elegans* Meeting
Penn, Mid-Atlantic Society of Developmental Biology Meeting
Penn, Annual Cell and Molecular Biology Graduate Group Symposium

Educational Mission

Courses Taught

University of Pennsylvania

BIOL 221: Molecular Biology and Genetics (spring) 2019 –

Rutgers University

BIO 50:120:110 Biology of Disease: History of Biological Discoveries, (spring & fall) 2016

Lincoln University

BIO 313: History of Biology, 2015

University of Pennsylvania

BIOL 221: Molecular Biology and Genetics, 2010 (Teaching Assistant)

Lectures in various courses

BIO 460: Junior seminar in biology, Bates College, 2018

CAMB 550: Genetic Principles, University of Pennsylvania School of Medicine, 2015

B1 204: Genetics and Evolution, Georgian Court University, 2015

Trainees

Undergraduates

Justin Burdge, 2015-present, currently Penn junior

Nayab Khan, 2016-present, currently Penn senior

Mercedes Davis, 2017, currently Drexel junior

Minah Kwon, summer 2017, currently Mount Holyoke College sophomore

Mikayla Joffe, summer 2017, currently Wissahickon High School senior

Rhoshni Bhasin, 2014-2015, currently Penn senior

Career Development

Future Faculty Development Program, Virginia Tech 2016

NextProf Future Faculty Workshop, University of Michigan 2015

Service

Academic Community

Journal Reviewer: PLOS One, Neuroscience Letters

Panelist, Inaugural PennView Postdoc Diversity Initiative 2018

Facilitator, Penn | Post-bac & Summer Intern students, "Writing Your 1st Manuscript" 2017

Invited Research Seminar, Penn Grad Student SACNAS Chapter 2017

Facilitator, Penn | HHMI BioInteractive Teaching Workshop for Faculty 2016

Panelist, Diversity in STEM workshop, Penn Center for Teaching and Learning 2016

Program Organizer for interns at Penn, "Graduate School Admissions Process" 2016

Program Organizer for workshop on obtaining NSF grants as new faculty 2016

Career Development Panelist, "Penn Honors Diversity Symposium" 2016

Science Fair poster judge, Lincoln University & Penn 2015 – 2016

Poster Judge, American Society for Cell Biology Annual Meeting 2012

Community at Large

Co-Founder/Board Member/Volunteer, Science Education Academy 2008 – present
Invited Speaker, “March for Science” Philadelphia, PA 2017
Panelist, A.K.A. Ascend high school career fair, University of the Science, Phila., PA 2017
Invited Lecturer, “Neuroscience Symposium,” The Baldwin School, Bryn Mawr, PA 2017
Invited Lecturer, “Optogenetics and Pain,” Friends Central School, Wynnewood, PA 2016
Invited Lecturer, Penn Undergraduate Neuroscience Society, Penn PA | “Pain in the Brain” 2015
Panelist/Lab tour host, Upward Bound program for inner-city high school students 2008 – 2011
Outreach Chair, E.E. Just Biomedical Society 2007 – 2008

Grant Support

Current Research Grants:

Burroughs Wellcome Fund Postdoctoral Enrichment Program (PDEP) 9/2015 – 8/2018
“Defining the neural mechanisms mediating crosstalk between touch and pain.”
Role: PI, \$60,000 total.

NIH K99/R00 Pathway to Independence Award (DE026807) 9/2017 – 8/2022
“Determining the functions of molecularly defined populations of nociceptors in spinal and dental pain.”
Role: PI, \$955,440 total.

Completed Research Grants:

NIH Training Program in Genetics (T32GM008216) 2009 – 2011
Funding for students whose research was directed towards basic genetic mechanisms.
\$65,000 total.

NIH IRACDA Research and Teaching Postdoc Fellowship (K12 GM081295) 9/2014 – 7/2017
“Dissect neural mechanisms underlying the crosstalk between touch and pain.”
\$190,488 total.

Burroughs Wellcome Fund Collaborative Research Travel Grant 6/2016 – 12/2017
“Optogenetic and brain imaging investigation of pain neural circuitry.”
This grant forms a research collaboration with the Lee laboratory at Stanford University to map brain activity during peripheral optogenetic neural activation.
Role: PI, \$8,000 total.

Publications

As a graduate student:

1. **Ishmail Abdus-Saboor**[†], Vincent P. Mancuso[†], John I. Murray, Katherine Palozola, Carolyn Norris, David Hall, Kelly Howell, Kai Huang, Meera V. Sundaram. Notch and Ras promote sequential steps of excretory tube development in *C.elegans*. Development 138,

3545–3555 (2011). (†co-first authors). Research Highlight in Nature Reviews Molecular Cell Biology 12, 549 (2011).

2. **Ishmail Abdus-Saboor**, Craig Stone, John I. Murray, Meera Sundaram. 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).

As a postdoctoral fellow:

3. Alexander Fleischmann, **Ishmail Abdus-Saboor**, Atef Sayed, Benjamin Shykind. Functional interrogation of an odorant receptor locus reveals multiple axes of transcriptional regulation. PLoS Biology 11(5):e1001568 (2013).

4. **Ishmail Abdus-Saboor**, Alexander Fleischmann, Benjamin Shykind. Setting limits: maintaining order in a large gene family. Transcription 5:e28978(2014).

5. **Ishmail Abdus-Saboor**, Muhammad Al-Nufal, Maha Agha, M. Ruinart de Brimont, Alexander Fleischmann, Benjamin Shykind. An expression refinement process ensures singular odorant receptor gene choice. Current Biology 26, 1083–90 (2016).

6. Lian Cui[†], Xuerong Miao[†], Lingli Liang, **Ishmail Abdus-Saboor**, William Olson, Michael Fleming, Minghong Ma, Yuanxiang Tao, Wenqin Luo. Identification of early RET⁺ deep dorsal spinal cord interneurons in gating pain. Neuron 91, 1–17 (2016). (†co-first authors)

7. William Olson, **Ishmail Abdus-Saboor**[†], Lian Cui[†], Justin Burdge, Tobias Raabe, Minghong Ma, and Wenqin Luo. Sparse genetic tracing reveals regionally specific functional organization of mammalian nociceptors. eLife 6:e29507 (2017) (†co-second authors).

8. **Ishmail Abdus-Saboor**[†], Nathan Fried[†], Mark Lay, Justin Burdge, Peter Dong, Ming Lu, Long Ding, Xinzhong Dong, Wenqin Luo. High-Speed Imaging of Paw Withdrawal Reflex to Objectively Assess Pain State in Mice. bioRxiv 263400 (2018) (†co-first authors) (non peer-reviewed preprint)