Ainul Huda

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EDUCATION

Virginia Polytechnic Institute and State University, Blacksburg VA.

- Ph.D in Neuroscience — Aug 2022 – Present
  - **Project**: Determining critical protein domains to understand molecular mechanism required for temperature sensing in *Drosophila*.
  - **Coursework**: Principals of Neuroscience, Neuroanatomy and Systems Neuroscience, Cellular Neuroscience, Advanced Genetics in Neuroscience, Statistics in Research
- Future Professoriate Certificate — Aug 2022 – Present
  - **Coursework**: Preparing Future Professoriate, Pedagogical Practices in Contemporary Contexts, Communicating Science

University of Washington, Seattle WA.

- B.S in General Biology — Sep 2009 – Mar 2013
  - **Coursework**: Advanced Chemistry, Organic Chemistry Laboratory, Cellular and Molecular Biology, Microbiology, Animal Behavior and Genetics, Calculus, and French

PUBLICATIONS

- Castaneda, A. N., Huda, A., Whitaker, I. B. M., Reily, J. E., Shelby, G. S., Ni, L., "Functional labeling of individualized postsynaptic neurons using optogenetics and trans-Tango'. Submitting at **Current Biology**, 2023.
- Huda, A., Omelchenko, A. A., Vaden, T. J., Castaneda, A. N., Ni, L., "Responses to Temperature Changes of Different Drosophila Species'. **Journal of Experimental Biology**, 2022.
- Chongtham, A., Yoo, J. H., Chin, T. M., Akingbesot, N. D., Huda, A., Khoshnan, A., Dickinson, M., "Gut bacteria regulate the pathogenesis of Huntington's disease in Drosophila'. **Journal of Neurobiology of Disease**, 2022.
- Dickerson, B. H., de Souza, A. M., Huda, A., Dickinson, M., "Flies Regulate Wing Motion via Active Control of a Dual-Function Gyroscope" **Current Biology**, 29, 20: 3517-3524 2019.
- Van Breugel, F., Huda, A., Dickinson, M. H., "Distinct activity-gated pathways mediate attraction and aversion to CO2 in *Drosophila*" **Nature**, 564: 420-424 2018.
- Suver, M., Huda, A., Iwasaki, N., Safarik, S., Dickinson, M. H., "An Array of Descending Visual Interneurons Encoding Self-Motion in *Drosophila*" **Journal of Neuroscience**, 36:11768 –11780 2016.

TEACHING EXPERIENCE

Neuroscience Teaching Conference, Wake Downtown, Winston-Salem NC.

- Attended sessions including "Development of an undergraduate neurodiversity course" and "Unpacking core neuroscience concepts". Jul 2023

Neuroscience Instructor, VT Summer Science Camp, Virginia Polytechnic Institute and State University, Blacksburg VA.

- "Explore Science" camp for rising 7th-8th graders — Jun 2023 – Jul 2023
- "Exploring Life Science" camp for rising 11th-12th graders
  - "Fresh off the Fruits: Fly anatomy and more!" Created curriculum and conducted activities for the science camp including introduction of fruit flies as model organism, anatomy, and introductory to genetics.

VTGrATE Teach In Day, Virginia Polytechnic Institute and State University, Blacksburg VA.

- Attended a series of workshops and talks to improve teaching skills. Mar 2023

Conference on Higher Education Pedagogy, Virginia Polytechnic Institute and State University, Blacksburg VA.

- Attended sessions addressing disciplinary and interdisciplinary instructional strategies, outcomes, and research. Feb 2023

VTGrATE Teach In Day, Virginia Polytechnic Institute and State University, Blacksburg VA.

- Attended a series of workshops and talks to improve teaching skills. Nov 2022

WORK EXPERIENCE

Graduate Teaching Assistant, Virginia Polytechnic Institute and State University, Blacksburg VA.

- Cellular Molecular Neuroscience — Jan 2023 – May 2023
  - Assisted making lectures and exams, held office hours, and grading.

- Intro to Neuroscience I — Aug 2022 – Dec 2022
  - Assisted with lab preparation, in-person labs (answered questions and checked student progress/completion) and held office hours.

Laboratory Technician, Virginia Polytechnic Institute and State University, Blacksburg VA.

- Ni Lab, School of Neuroscience — Sep 2020 – Aug 2022

Supervisory Experience

- Train all new undergraduates, graduates, postdocs and staff in *Drosophila* care, genetics and experimental protocols.

Projects

- Behavioral experiments to determine *Drosophila* model species for temperature sensing, using CRISPR to create chimeric flies that can be used to understand molecular mechanisms for temperature sensing.

Laboratory Manager, California Institute of Technology, Pasadena CA.

- Dickinson Lab, The Division of Biology and Biological Engineering — Jan 2015 – Jul 2020

Supervisory Experience

- Interview, hire, train, and supervise all new staff in the lab.
- Monitor the progress of lab members and facilitate smooth operations by conducting regular meetings/check-ins.
- Experience working/collaborating with all levels of personnel from grad students to faculty to senior management.

Managerial Experience:

- Responsible for setting up, organizing and maintaining operational support for the lab.
- Training all new lab members regarding *Drosophila* maintenance and experimental protocols.
- Advising all lab members with their projects, responsible for lab purchases, budgeting and fiscal support
- Coordinating all lab-related events and schedules, including symposiums.
- As a Lead administrator in a multi-million dollar NIH grant spanning seven institutes, I facilitated correspondence between all Principal Investigators and their lab and organizing biennial multi-day symposiums.

Projects

- Researching the role of shakB gene in *Drosophila* flight muscles.
- Leading research about the differences in the functional anatomy of tonic versus phasic flight muscles in *Drosophila* using electron microscopy.

Building Coordinator/Emergency Responder, California Institute of Technology, Pasadena CA.

- Beckman Behavior Biology Building — May 2016 – Jul 2016
  - Liaison between the building occupants and emergency first responders during evacuations and emergency situations
  - Assist safety drills and ensure that labs follow required safety protocols

Research Technologist I, University of Washington, Seattle WA.

- Dickinson Lab, Department of Biology — Mar 2013 – Dec 2014
  - Conducted research on synaptic connection between vertical system cells in lobula plate of the optic lobe with octopaminergic neurons in the *Drosophila* brain
  - Maintained responsibilities of lab assistant

Student Lab Assistant, University of Washington, Seattle WA.

- Dickinson Lab, Department of Biology — Nov 2011 – Mar 2013
  - Assist in performing genetic crosses with *Drosophila*, dissecting, and preparing fly brains and thoracic ganglia for analysis. Also performed immunofluorescence staining protocols, preparing chemical solutions, and performing confocal microscopy

AWARDS & HONORS

- Virginia Tech Graduate Academy for Teaching Excellence (GrATE), Virginia Tech — Oct 2022
  - Member status, VT teaching resource via teaching workshops and offers mentorship programs.
- Howard Hughes Medical Institute Integrative Research Award, University of Washington — Aug 2012
  - Full-time paid internship. Presented research in various venues, including UW-HHMI symposia and outreach events, participated in a weekly research seminar.
- Invited talk, 15th Annual University of Washington Undergraduate Research Symposium — May 2012
  - Anatomical Characterization of Genetically-Identified Neuron Populations in *Drosophila*
- Howard Hughes Medical Institute Biology Fellow, University of Washington — Sep 2010

CERTIFICATION

Future Professoriate Graduate Certificate, Virginia Polytechnic Institute and State University — Ongoing

- Courses include
  - Preparing Future Professoriate, Pedagogical Practices in Contemporary Contexts, and Communicating Science

Zumba® Basics I Instructor Certification, Zumba Fitness LLC. — Aug 2017 – Present

AFAA Certified Group Fitness Instructor, AFAA-CGFI License #1170067855 — Mar 2017 – Present

American Red Cross Adult CPR/AED, Pediatric CPR and First Aid. #GXDAUB — Mar 2019 – Present

OTHER EXPERIENCE

Group Fitness Instructor–Zumba, YMCA, South Pasadena CA

- San Marino, South Pasadena YMCA branch — Jun 2018 – Jul 2020
  - Instructs Zumba classes of 20-30+ students

Zumba Instructor, California Institute of Technology, Pasadena CA

- Caltech Braun Athletic Center — Aug 2017 – Jul 2020
  - Instructs a weekly Zumba class of 20+ students

Volunteer, University of Washington Medical Center, Seattle WA

- ICU Assistant, 160+ Hours — Jun 2010 – Nov 2011
  - Duties included observing medical procedures, assisting nurses with new admits, turns and dressing changes, restocking and maintaining bedside and isolation carts, room set up and stripping, ordering materials, answering phones and managing the front desk
- Patient Escort, 65+ Hours — Mar 2010 – Jun 2010
  - Assisted medical staff, discharged patients, and specimen deliveries

CORE COMPETENCIES

- Maintaining roll as lead researcher for scientific project
- Executing genetic crosses and stabilizing *Drosophila* genetic lines
- Dissecting *Drosophila* central nervous system and muscles
- Confocal microscopy (Leica, Zeiss and Nikon)
- Cellular and Molecular Biology techniques: PCR, SDS-PAGE, cloning, gel electrophoresis, and bacterial transformation
- Hiring, training, and managing all lab members
- Planning outreach and general public events
- Skilled in multi-day symposium organization
- Proficient in academic organization structure, policies, and procedures
- Managing finances (such as purchasing and travel), budget, reimbursement, and allocating expenditure
- Expense management software (SAP Concur)
- eProcurement software (Jaggaer)
- Inventory management tools (Quartzy)
- Microsoft Word, Excel, PowerPoint, and Outlook
- Experience working with WordPress
- Adobe Illustrator and Photoshop
- Strong interpersonal and communication skills
- Ability to work independently and in groups

LANGUAGES

English and Urdu: Native language

French: Intermediate (speaking, reading, writing)