

Takeshi Morita, Ph.D.

11200 SW 8th St. AHC1 219B
Miami, FL 33199

tmorita@fiu.edu
305-348-2201

EDUCATION

University of California, Berkeley Ph.D., Molecular and Cell Biology Thesis: "Genetic variation as a tool for identifying novel transducers of itch"	August 2016
University of California, San Diego M.S., Biology Thesis: "Function and acuity of the rat vibrissa system during texture discrimination"	September 2008
University of California, San Diego B.S., Animal Physiology and Neuroscience	December 2006

RESEARCH AND PROFESSIONAL EXPERIENCE

Assistant Professor, Florida International University Department of Biological Sciences	2025 – Present
Research Specialist, Howard Hughes Medical Institute Laboratory of Neurogenetics and Behavior <i>Advisor:</i> Leslie B. Vosshall, Ph.D.	2020 – 2025
Scientific Course Consultant (Course Faculty Member), Marine Biological Laboratory Neurobiology: Mechanisms & Advanced Approaches	2017 – 2022
Postdoctoral Fellow, The Rockefeller University Laboratory of Neurogenetics and Behavior <i>Advisor:</i> Leslie B. Vosshall, Ph.D.	2016 – 2020
Graduate Student Researcher, University of California, Berkeley Department of Molecular and Cell Biology <i>Advisors:</i> Diana M. Bautista, Ph.D., and Rachel B. Brem, Ph.D.	2010 – 2016
Staff Research Associate, University of California, Berkeley Department of Molecular and Cell Biology <i>Advisor:</i> Diana M. Bautista, Ph.D.	2009 – 2010
Graduate Student Researcher, University of California, San Diego Division of Biological Sciences <i>Advisor:</i> Daniel E. Feldman, Ph.D.	2007 – 2008
Undergraduate Research Assistant, University of California, San Diego Division of Biological Sciences <i>Advisor:</i> Daniel E. Feldman, Ph.D.	2006 – 2007

FELLOWSHIPS AND AWARDS

Japan Society for the Promotion of Science Overseas Research Fellowship	2017 – 2019
Harvey L. Karp Discovery Award	2016 – 2017
The Alan J. Bearden Award	2016
Berkeley Graduate Division Conference Travel Grant	2015
8th World Congress of Itch Travel Award	2015

PUBLICATIONS

(#Corresponding author, *equal contribution)

- 15) Yoshino J[#], Chiu A, **Morita T**, Yin C, Tenedini FM, Sokabe T, Emoto K, Parrish JZ[#]
Heat-off responses of epidermal cells sensitize *Drosophila* larvae to noxious inputs
Preprint: *bioRxiv* (2025), doi: <https://doi.org/10.1101/2025.05.30.656957>
- 14) Goldman OV[#], DeFoe AE, Qi Y, Jiao Y, Weng SC, Hourri-Zeevi L, Lakhiani P, **Morita T**, Razzauti J, Rosas-Villegas A, Tsitohay YN, Walker MM, Hopkins BR, Mosquito Cell Atlas Consortium, Akbari OS, Duvall LB, White-Cooper H, Sorrells TR, Sharma R, Li H[#], Vosshall LB[#], Shai N[#]
Mosquito Cell Atlas: A single-nucleus transcriptomic atlas of the adult *Aedes aegypti* mosquito
Preprint: *bioRxiv* (2025), doi: <https://doi.org/10.1101/2025.02.25.639765>
Cell. 2025 Oct 30; S0092-8674(25)01137-7. doi: 10.1016/j.cell.2025.10.008
- 13) Yoshino J*, Mali SS*, Williams CR*, **Morita T**, Emerson C, Arp C, Miller S, Yin C, The L, Hemmi C, Motoyoshi M, Ishii K, Emoto K[#], Bautista DM[#], Parrish JZ[#]
Drosophila epidermal cells are intrinsically mechanosensitive and drive nociceptive behavioral outputs
Preprint: *bioRxiv* (2022), doi: <https://doi.org/10.1101/2022.10.07.511265>
eLife (2024) May 13, doi: <https://doi.org/10.7554/eLife.95379.1>
- 12) **Morita T**[#], Lyn NG, von Heynitz RK, Goldman OV, Sorrells TR, DeGennaro M, Matthews BJ, Hourri-Zeevi L, Vosshall LB
Cross-modal sensory compensation increases mosquito attraction to humans
Preprint: *bioRxiv* (2023), doi: <https://doi.org/10.1101/2023.10.10.561721>
Science Advances (2025) Jan 3;11(1):eadn5758. doi: 10.1126/sciadv.adn5758
- 11) Yin C, **Morita T**, Parrish JZ
A cell atlas of the larval *Aedes aegypti* ventral nerve cord
Preprint: *bioRxiv* (2023), doi: <https://doi.org/10.1101/2023.09.08.556941>
Neural Development (2024) Jan 31;19(1):2. doi: 10.1186/s13064-023-00178-8, (PMID: 38297398)
- 10) De Obaldia ME[#], **Morita T**, Dedmon LC, Boehmle DJ, Jiang CS, Zeledon EV, Cross JR, Vosshall LB[#]
Differential mosquito attraction to humans is associated with skin-derived carboxylic acid levels
Preprint: *bioRxiv* (2022), doi: <https://doi.org/10.1101/2022.01.05.475088>
Cell (2022) Oct 27; 185(22): 4099-4116, (PMID: 36261039)
- 9) Herre M*, Goldman OV*, Lu TC, Caballero-Vidal G, Qi Y, Gilbert ZN, Gong Z, **Morita T**, Rahiel S, Ghaninia M, Ignell R, Matthews BJ, Li H, Vosshall LB, Younger MA^{**}
Non-canonical odor coding in the mosquito
Preprint: *bioRxiv* (2022), doi: <https://doi.org/10.1101/2020.11.07.368720>
Cell (2022) Aug 18; 185(17):3104-3123, (PMID: 35985288)
- 8) Basrur NS[#], De Obaldia ME, **Morita T**, Herre M, von Heynitz RK, Tsitohay YN, Vosshall LB[#]
fruitless mutant male mosquitoes gain attraction to human odor
Preprint: *bioRxiv* (2020), doi: <https://doi.org/10.1101/2020.09.04.282434>
eLife (2020) Dec 7;9:e63982. doi: 10.7554/eLife.63982, (PMID: 33284111)
- 7) Hill RZ, **Morita T**, Brem RB, Bautista DM
S1PR3 mediates inflammatory pain and itch via distinct TRP channel-dependent pathways
Preprint: *bioRxiv* (2017), doi: <https://doi.org/10.1101/235614>
The Journal of Neuroscience (2018), 38(36):7833-7843, (PMID: 30082422)
- 6) Hill RZ, Hoffman B, **Morita T**, Campos SM, Lumpkin EA, Brem RB, Bautista DM
The signaling lipid sphingosine 1-phosphate regulates mechanical pain
Preprint: *bioRxiv* (2017), doi: <http://dx.doi.org/10.1101/236778>
eLife (2018), 7:e33285, (PMID: 29561262)
- 5) **Morita T**^{*}, McClain SP*, Batia LM, Pellegrino M, Wilson SR, Kienzler KA, Lyman K, Olsen ASB, Wong JF, Stucky CL, Brem RB[#], Bautista DM[#]

HTR7 mediates serotonergic acute and chronic itch
Neuron (2015), 87(1): 124–138, (PMID: 26074006)

- 4) Schwarzer C, Fu Z, **Morita T**, Whitt AG, Neely AM, Li C, Machen TE
 Paraoxonase 2 serves a proapoptotic function in mouse and human cells in response to the
Pseudomonas aeruginosa quorum-sensing molecule N-(3-Oxododecanoyl)-homoserine lactone
Journal of Biological Chemistry (2015), 290(11): 7247-58, (PMID: 25627690)
- 3) Wilson SR, Nelson AM, Batia L, **Morita T**, Estandian D, Owens DM, Lumpkin EA, Bautista DM
 The ion channel TRPA1 is required for chronic itch
The Journal of Neuroscience (2013), 33(22): 9283-94, (PMID: 23719797)
- 2) Gerhold KA*, Pellegrino M*, Tsunozaki M, **Morita T**, Leitch DB, Tsuruda PR, Brem RB, Catania KC,
 Bautista DM
 The star-nosed mole reveals clues to the molecular basis of mammalian touch
PLoS One (2013), 8(1):e55001, (PMID: 23383028)
- 1) **Morita T***, Kang H*, Wolfe JH, Jadhav SP, Feldman DE
 Psychometric curve and behavioral strategies for whisker-based texture discrimination in rats
PLoS One (2011), 6(6): e20437, (PMID: 21673811)

TEACHING EXPERIENCE

- | | |
|---|---|
| <ul style="list-style-type: none"> • Scientific Course Consultant (Faculty), Marine Biological Laboratory
 <i>Neurobiology: Mechanisms & Advanced Approaches</i> • Instructor, University of California, Berkeley
 <i>Neuro Bootcamp - Helen Wills Neuroscience Institute</i> • Graduate Student Instructor, University of California, Berkeley
 <i>Cell Biology and Physiology Laboratory</i> • Graduate Student Instructor, University of California, Berkeley
 <i>Introduction to Human Physiology</i> • Teaching Assistant, University of California, San Diego
 <i>Mammalian Physiology</i> • Teaching Assistant, University of California, San Diego
 <i>Laboratory in Microbiology</i> | <p>Summers 2017 – 2022</p> <p>Summer 2013</p> <p>Spring 2013</p> <p>Fall 2011</p> <p>Summer 2007</p> <p>Spring 2007</p> |
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PRESENTATIONS

Talks

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| <ol style="list-style-type: none"> 10) Mosquito Bites: Flexible Human-Seeking Behavior and the Itch They Leave Behind 9) The neuronal and behavioral basis of the unbreakable attraction of mosquitoes to humans 8) Neuronal and behavioral basis of mosquito sensory compensation 7) Neuronal and behavioral basis of mosquito sensory compensation 6) Sensory compensation and plasticity of <i>Aedes aegypti</i> mosquito host-seeking behavior 5) HTR7 mediates serotonergic acute and chronic itch 4) HTR7 mediates serotonergic acute and chronic itch 3) The serotonin receptor HTR7 mediates chronic itch 2) Genetic mapping of novel molecular players in itch | <p>2025</p> <p>2024</p> <p>2023</p> <p>2022</p> <p>2021</p> <p>2015</p> <p>2015</p> <p>2015</p> <p>2012</p> |
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- UC Berkeley Neuroscience Departmental Retreat, Lake Tahoe, CA
- 1) Molecular cellular and genetic mechanisms underlying itch 2011
UC Berkeley Molecular and Cell Biology Departmental Retreat, Lake Tahoe, CA

Posters

- 4) Sensory compensation and plasticity of *Aedes aegypti* mosquito host-seeking behavior 2023
Howard Hughes Medical Institute Investigator Meeting, Chevy Chase, MD
- 3) Using natural variation to identify novel molecular players in itch 2014
The Neurobiology of Pain and Itch, San Francisco, CA
- 2) Genetic mapping of novel molecular players in itch 2013
UC Berkeley Neuroscience Departmental Retreat, Lake Tahoe, CA
- 1) Macrobristles are sufficient to perform fine texture discrimination in rats 2008
Society for Neuroscience Annual Meeting, Washington, DC

OUTREACH

- **FIU STEAM Festival** 2025
Miami, FL
 - Introduced K-8 students to mosquito biology and public health
- **Guest Lecturer** 2025
Regis High School, New York, NY
 - Introduced high school students to mosquito biology and modern laboratory techniques
- **Summer Neuroscience Program** 2023
The Rockefeller University – 20 students, led a pair of students for research project
 - Provided mentorship to a team of local high school students for developing research projects
- **Brain Tumor Survivor Care Program 360°** 2021 – 2022
Toho University Ohashi Medical Center/UCSF Brain Tumor Center – more than 50 active participants
 - Helped launch the collaboration between Toho University Ohashi Medical Center and UCSF Brain Tumor Center to establish the first brain tumor survivor's program in Japan
 - Translated UCSF's patient and caregiver manuals into Japanese
- **Monthly community clean-up, Science and Communication and Media group** 2019 – 2020
The Rockefeller University – 10-15 children/parent groups per event
 - Organized events to clean up the neighborhood and raise pollution awareness aimed at children
- **Zero-waste Halloween event, Science and Communication and Media Group** 2019
The Rockefeller University – 50 children/parent groups
 - Volunteered to raise awareness of plastic pollution for local children
- **Research Experience for Undergraduates Summer Mentorship Program** Summers 2013, 2014
National Science Foundation – 15 students, directly mentored one student for a project each year
 - Mentored undergraduate students from under-resourced universities to conduct research projects

PROFESSIONAL DEVELOPMENT

- **Managing Science & Scientists Workshop** Summer 2023
The Rockefeller University
- **The Hurford Science Diplomacy Initiative: Faces of Science Diplomacy** Winter 2020
The Rockefeller University
- **Launching Your Undergraduate Science Teaching Career Course** Fall 2019
Tri-I: Memorial Sloan Kettering/The Rockefeller University/Weill Cornell Medicine
- **Management Training Series: Coaching for Potential** 2019
The Rockefeller University