Raunak Basu, Ph.D. | *Curriculum Vitae*

Contact Information

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Date of Birth: 12th July 1986
Citizenship: Indian

Current Position

- **The Edmond and Lily Safra Center for Brain Sciences (ELSC)**
  The Hebrew University of Jerusalem, Israel
  Senior Lecturer (Assistant Professor) from Oct 2022.

Education

- **University of Utah**, Salt Lake City, Utah, USA
  Ph.D., Neurobiology and Anatomy, 2012 – 2017
  Thesis: "Role of cadherins in mediating synapse specific properties in the hippocampus"
  Advisor: Dr. Megan E. Williams

- **Indian Institute of Technology Kharagpur**, Kharagpur, India
  Bachelor of Technology in Biotechnology and Biochemical Engineering, 2004 - 2008
  Thesis: "*In silico* modelling and characterization of *E.histolytica* chitinase"
  Advisor: Dr. Sudip K. Ghosh

Past Positions

- **Max Planck Institute for Brain Research,** Frankfurt am Main, Germany
  Postdoctoral researcher, July 2017 – Present
  Humboldt postdoctoral fellow, March 2019-February 2021
  Project: "Role of prefrontal cortex and hippocampus in representation of goal location"
  Advisor: Dr. Hiroshi Ito

- **University of Utah**, Salt Lake City, Utah, USA
  Graduate Research Assistant, 2009-2012
  Project: "Studying the biochemical interactors of HIV-1 Gag"
  Advisor: Dr. Wesley I. Sundquist

- **Indian Institute of Science**, Bangalore, India
  Research Assistant, August 2008 - November 2008
  Project: "Algorithm to detect internal repeats in protein structures"
  Advisor: Dr. K. Sekar

Honors and Awards

1. Recipient of FENS-IBRO/PERC Travel Grant for FENS Forum 2022
2. Recipient of "2021 Postdoc Science Discovery" award given by the 'Friends of Max Planck Institute for Brain Research'.
3. Recipient of "Humboldt Research Fellowship for Postdoctoral Researchers" given by the Alexander von Humboldt Foundation (from March 2019 - February 2021).

4. Best poster award (2nd place) at "Neural Circuits and Connectomes" symposium 2016, Snowbird, Utah.
5. Graduate student travel assistant award, University of Utah, 2015.
6. Thomas N. Parks Student Travel Award, University of Utah, 2013.
7. Biological Chemistry Program Fellowship, University of Utah, 2009-2010.

Research Interest

- Decision-making, spatial navigation, action planning, communication between brain regions, and analysis of high dimensional neural data.

Journal Publications

1. **Basu, R.***, Gebauer, R., Herfurth, T., Kolb, S., Golipour, Z., Tchumatchenko, T., and Ito, H.T.* (2021). The orbitofrontal cortex maps future navigational goals. **Nature** *599*, 449-452. (* *Corresponding authors*)

2. **Basu, R.**, Duan, X., Taylor, M.R., Martin, E.A., Muralidhar, S., Wang, Y., Gangi-Wellman, L., Das, S.C., Yamagata, M., West, P.J., Sanes, J.R., Williams, M.E. (2017). Heterophilic Type II Cadherins Are Required for High-Magnitude Synaptic Potentiation in the Hippocampus. **Neuron** *96*, 160–176.e8.

3. Martin, E.A., Muralidhar, S., Wang, Z., Cervantes, D.C., **Basu, R.**, Taylor, M.R., Hunter, J., Cutforth, T., Wilke, S.A., Ghosh, A., Williams, M.E. (2015). The intellectual disability gene Kirrel3 regulates target-specific mossy fiber synapse development in the hippocampus. **eLife** *4*, e09395.

4. **Basu, R.**, Taylor, M.R., and Williams, M.E. (2015). The classic cadherins in synaptic specificity. **Cell Adh Migr** *9*, 193–201.

5. Sabarinathan, R.*, **Basu, R.***, and Sekar, K. (2010). ProSTRIP: A method to find similar structural repeats in three-dimensional protein structures. **Comput Biol Chem** *34*, 126–130. (**co-first authors*)

6. Dey, T., **Basu, R**., and Ghosh, S.K. (2009). Entamoeba invadens: cloning and molecular characterization of chitinases. **Exp. Parasitol**. *123*, 244–249.

Invited Talks

1. Invited speaker at the University Medical Center Hamburg-Eppendorf (UKE)
2. Invited speaker at INMED, Marseille, France, February 2022.
3. Invited speaker at the 'Emerging Talent' Seminar series, Max Planck Institute for Neuroscience, Florida, USA, December 2021.
4. Invited speaker at Bernstein Center for Computational Neuroscience, Munich, July 2021.
5. Symposium speaker at Computational and Systems Neuroscience meeting (Cosyne) February 2021.
6. Invited speaker at University of Utah, USA, February 2020.
7. Symposium speaker at Mechanistic Cognitive Neuroscience workshop, Janelia Farm Research Campus, USA, October 2019.
8. Symposium speaker at Experimental Biology conference, Chicago, USA, April 2017.

Poster Presentations at Conferences

1. Society for Neuroscience Meeting, USA, 2022
2. Gordon Research Conference on 'Frontal Cortex', USA, 2022
3. Federation of European Neuroscience Societies (FENS) Forum, France, 2022
4. Computational and Systems Neuroscience Meeting (Cosyne), USA, 2020
5. "Mechanistic Cognitive Neuroscience" workshop at Janelia Farm Research Campus, USA, 2019
6. Society for Neuroscience Meeting, USA, 2019
7. Network Meeting of the Alexander von Humboldt Foundation, Germany, 2019
8. Society for Neuroscience Meeting, USA, 2016
9. "Neural Circuits and Connectomics" symposium at Snowbird (Utah), USA, 2016
10. "Neuronal Circuits" meeting at Cold Spring Harbor Laboratory, USA, 2016
11. "Wiring the brain" meeting at Cold Spring Harbor Laboratory, USA, 2015
12. Society for Neuroscience Meeting, USA, 2013

Mentoring Experience

1. Ms. Jisoo Kim – Ms. Kim was a Masters student carrying out her thesis project in the lab of my postdoc supervisor Dr. Ito. Ms. Kim and I regularly discussed how her experimental results can be interpreted in light of the overall aim of her project. In addition, I assisted Ms. Kim with data analysis and experimental techniques.

2. Ms. Ipek Bölükbaşi – Ms. Bölükbaşi is a Masters student in the lab of my postdoc supervisor Dr. Ito. Her Master's thesis comprises a part of my previous research project, and I was her thesis mentor. My mentorship role included guiding Ms. Bölükbaşi in structuring her project, and also teaching her the necessary experimental and data analysis techniques.

Teaching Experience

1. Instructor of a seminar course on neural dynamics at the Hebrew University of Jerusalem (2022-2023).

2. Co-instructor of a course (along with my current supervisor Dr. Ito) on "Space and time representation in the brain" offered by the Max Planck Institute for Brain Research (2022).

3. Co-instructor of a course (along with my current supervisor Dr. Ito) on "Space and time representation in the brain" offered by the Max Planck Institute for Brain Research (2021).

4. Teaching Assistant in Molecular Biology Bootcamp organized by the Department of Neurobiology and Anatomy at the University of Utah (2015).

5. Teaching Assistant in a course of Advanced Biochemistry taught at the University of Utah (2011).

6. Taught mathematics to high school students as a part of National Service Scheme of India (2004-2005).

Outreach Activity

1. I presented at the “Bar of Science” event organized by the Max Planck Institute where scientists talk about their research to a non-academic audience to create awareness about the basic science research conducted at the institute (2018).

2. I gave introductory lectures to high school students in Germany as a part of the Max Planck Institute’s outreach program ‘Meet the Science’ (in 2018 and 2020). These lectures included a high-level explanation of the kind of research performed in our lab including a tour of the various behavior setups and instruments used in our research.