

Hiroki Asari, Ph.D.

Curriculum vitae updated March, 2012

Contact Information

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Education

The University of Tokyo, Tokyo, Japan
B.S. in Biophysics and Biochemistry
March 31, 2003.

Watson School of Biological Sciences / Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
Ph.D. in Biological Sciences
Defense: July 2, 2007; Completion: July 31, 2007
Dissertation: Auditory System Characterization.

Positions

Research Experience:

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| 2001-2002 | Research Volunteer
University of Tokyo, Tokyo, Japan. |
| 2002 | Undergraduate Research Program
Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. |
| 2002-2003 | Undergraduate Thesis Research
University of Tokyo, Tokyo, Japan. |
| 2003 | Research Assistant
Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. |
| 2004-2007 | Ph.D. Thesis Research
Watson School of Biological Sciences / Cold Spring Harbor Laboratory,
Cold Spring Harbor, NY. |
| 2007-2008 | Post-graduate Research Assistant
Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. |
| 2008-present | Postdoctoral Fellow
Harvard University, Cambridge, MA. |

Awards and Honors:

Farish-Gerry Fellowship, Watson School of Biological Sciences, 2003-2007.
Postdoctoral Fellowships for Research Abroad, Japan Society for the Promotion of Science, 2009-2011.
Gatsby Cosyne Fellowship, 2010 (travel award).

Other activities:

Student representative:

Executive committee for the Watson School of Biological Sciences, 2005-2006.

Teaching experience:

Dolan DNA Learning Center, Cold Spring Harbor, NY, 2004.

Reviewer experience:

IEEE Transactions on Neural Networks
IEEE Transactions on Audio, Speech and Language Processing
Journal of Zhejiang University, Science
Neural Networks
Neural Information Processing Systems

Publications

Peer-reviewed articles:

- [1] Asari H, Pearlmutter BA & Zador AM. (2006). Sparse Representations for the Cocktail Party Problem. ***Journal of Neuroscience***, 26(28): 7477–7490.
- [2] Asari H & Zador AM. (2009). Long-lasting context dependence constrains neural encoding models in rodent auditory cortex. ***Journal of Neurophysiology***, 102(5): 2638–2656.

Conference Proceedings, Book Chapters, and Unpublished Manuscripts:

- [1] Asari H. (2004). Non-negative Matrix Factorization: A possible way to learn sound dictionaries.
- [2] Pearlmutter BA, Asari H & Zador AM. (2005). Neuronal Predictions of Sparse Linear Representations. Forum Acusticum 2005, Budapest, Hungary.
- [3] Asari H, Olsson RK, Pearlmutter BA & Zador AM. (2007). Sparsification for Monaural Source Separation. In Makino S, Lee T-W & Sawada H. (eds.) Blind Speech Separation, Chap.14, pp.387–410, Springer-Verlag. ISBN: 978-1-4020-6478-4.
- [4] Asari H & Meister M. (submitted). The Axon Terminals of Retinal Bipolar Cells Work as Independent Visual Channels.
- [5] Asari H, Biot C & Zador AM. (in preparation). Sparse Coding Predicts Noiseless Sensory Representations and Noisy Neurons.
- [6] Asari H & Meister M. (in preparation). The Projective Field of Single Bipolar Cells in the Retina.
- [7] Real EA, Asari H, Gollisch T & Meister M. (in preparation). Probing the Inner Details of the Retina from the Outside.

Abstracts:

- [1] Pearlmutter BA, Asari H & Zador AM. (Sep. 2004; Poster). Sparse Representations for the Cocktail Party Problem. ***Gordon Conference: Sensory coding and the natural environment***, Oxford, U.K.
- [2] Asari H, Wehr MS & Zador AM. (Mar. 2005; Poster No.45). Linear Decodability for High-Level Auditory Representation. ***COSYNE***, Salt Lake City, UT.
- [3] Asari H, Oviedo H & Zador AM. (Mar. 2006; Poster No.46). Context Dependence of Neural Responses in Rat Primary Auditory Cortex. ***COSYNE***, Salt Lake City, UT.

- [4] Asari H, Oviedo H, & Zador AM. (Aug. 2006; Poster). Context-Dependent Responses in the Rat Auditory Cortex. **Gordon Conference: Sensory coding and the natural environment**, Big Sky, MT.
- [5] Asari H, Oviedo H, & Zador AM. (Feb. 2007; Poster No.II-103). Context-Dependence and Response Predictability in Rat Auditory Cortex. **COSYNE**, Salt Lake City, UT.
- [6] Asari H, Biot C & Zador AM. (Feb. 2008; Poster No.II-77). Sparse Coding Predicts Noiseless Sensory Representations and Noisy Neurons. **COSYNE**, Salt Lake City, UT.
- [7] Asari H & Meister M. (Feb. 2009; Poster No.III-55). Central Roles of Bipolar Cells in Retinal Neuronal Circuits. **COSYNE**, Salt Lake City, UT.
- [8] Asari H & Meister M. (Jul. 2009; Poster No.3). Central Roles of Bipolar Cells in Retinal Neuronal Circuits. **Sloan-Swartz Annual Meeting: Computational Neuroscience 2009**, Cambridge, MA
- [9] Asari H & Meister M. (Feb. 2010; Poster No.I-86). The Projective Field of Single Bipolar Cells in the Retina. **COSYNE**, Salt Lake City, UT
- [10] Asari H. (Mar. 2010; Invited talk). Which is the right way to go, receptive field or projective field? **COSYNE workshop; Linearity and its discontents—Is there life in a post-STRF world?** Snow Bird, UT.
- [11] Asari H & Meister M. (Jun 2010; Invited). Projective Field of Single Bipolar Cells in the Retina. **Gionanni Armenise-Harvard Foundation annual symposium**, Frascati, Italy.
- [12] Asari H & Meister M. (Feb. 2012; Poster No.I-79). Feedback from Retinal Ganglion Cells to the Inner Retina. **COSYNE**, Salt Lake City, UT

Presentations

- RIKEN Brain Science Institute, Wako, Japan (2007).
- University of Tokyo, Tokyo, Japan (2007).
- Yokohama City University, School of Medicine, Yokohama, Japan (2007).
- Redwood Center for Theoretical Neuroscience, University of California, Berkeley, CA (2007).
- Harvard University, Cambridge, MA (2007).
- Princeton University, Princeton, NJ (2007).
- Gatsby Computational Neuroscience Unit, University College London, London, UK (2007).
- RIKEN Brain Science Institute, Wako, Japan (2011).
- Eberhard Karls Universität Tübingen, Tübingen, Germany (2011).