

## ***Personal Information***

Name: Marta Zlatic, Ph.D.  
 Date of Birth: February 24th, 1977  
 Nationality: Croatian and British  
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## ***Positions***

- **Reader in Systems and Circuits Neuroscience, University of Cambridge** (appointed Oct. 2017 for **planned start date Sept. 2019**).
- **Group Leader 2, HHMI Janelia Research Campus** (appointed Sept. 2016; **planned end date Sept. 2019**).
- **Group Leader 1, HHMI Janelia Research Campus** (Oct. 2009 - Sept. 2016).
- **Research and Teaching Fellow, Trinity College, Cambridge** (elected June 2016).
- **Junior Research Fellow, Trinity College, Cambridge** (Oct. 2005 - Oct. 2009).
- **Wellcome Trust Prize Fellow, Department of Zoology, Cambridge** (Oct. 2003 - Oct. 2005).

## ***Education and Training***

- **Ph.D., Neurobiology 2004**, Department of Zoology, University of Cambridge; Supervisor: Prof. Michael C. Bate.
- **M. SCI., Chemistry 2000**, Hons. Cantab. Trinity College, University of Cambridge.
- **B. A., Natural Sciences 1999**, Hons. Cantab. Trinity College, University of Cambridge.
- Fluent in Croatian, English, German (Diploma, Cambridge University, 2002), French (Certificate, Universite des Sciences Humaines de Strasbourg, 1998), Spanish, Russian (Diploma, Cambridge University, 2003) and Italian; literate in Ancient Greek and Latin;
- Read four years of a B.A. degree in General Linguistics and Russian, at University of Zagreb

## ***Selected Awards and Scholarships (Honors)***

- **Eric Kandel Young Neuroscientists Prize 2017**
- **Thomas Henry Huxley Award 2005** for the outstanding Ph.D. thesis of the year.
- **Trinity College (Cambridge) Junior Research Fellowship awarded Oct. 2003.**
- **Wellcome Trust Prize Fellowship Oct. 2003–Oct. 2005.**
- **Wellcome Trust Prize Studentship Oct. 2000–Oct. 2003.**
- **Trinity College Eastern European Bursary Oct. 1996–Oct. 2000.**

## ***Organisation of scientific consortia and meetings***

- Secured funding for and lead the Larval Behavior Project (Sep. 2011 - Sep. 2015) - a large international consortium of 9 different research groups from 6 different countries worldwide (funded by HHMI).
- Behavioral neurogenetics of *Drosophila* larva, HHMI Janelia, Oct. 2016, organizer.
- Action selection across the animal kingdom, HHMI Janelia, Sept. 2016, organizer.
- Program committee for Cosyne 2016, Salt Lake City, Feb. 2016.
- Combining information from multiple modalities, HHMI Janelia, May 2015, organizer.
- Behavioral neurogenetics of *Drosophila* larva, HHMI Janelia, Oct. 2012, organizer.
- Behavioral neurogenetics of *Drosophila* larva, HHMI Janelia, Oct. 2008, organizer.

## ***Selected invited seminars and talks 2015-2019***

- 2019 European *Drosophila* Research Conference, EPFL Lausanne, Sept. 2019. Plenary talk.
- Max Planck Institute for Brain Research Seminar Series, Frankfurt, May 2019.

- Gordon Research Conference on Modulation of neuronal circuits and behavior, May 2019.
- Grossman Center Workshop on Quantifying Structure in Large Neural Datasets, Aspen, Sept. 2018.
- NIH Neuroscience Seminar, Oct. 2018.
- Behavioral Neurogenetics of Drosophila Larva, Edinburgh, Oct. 2018. Plenary lecture.
- 11th FENS Forum of Neuroscience 2018, Berlin, July 2018. Eric Kandel Prize Lecture.
- Stanford's Center for Mind, Brain, and Computation (MBC) Seminar Series, Stanford University, June 2018.
- Analysis and interpretation of connectomes, HHMI Janelia Research Campus, May 2018.
- Neuro-evo: a comparative approach to cracking circuit function, HHMI Janelia Research Campus, May 2018.
- Neural Circuits of the Insect Nerve Cord, HHMI Janelia Research Campus, April 2018.
- Harvard Medical School Neurobiology Seminar Series, Boston, Oct. 2017.
- University of Michigan Life Sciences Institute Seminar Series, Ann Arbor, Oct. 2017.
- EMBO/EMBL symposium: Neural circuits in the past present and future, May 2017.
- Drosophila research conference, San Diego, March 2017. Plenary talk.
- MIT Neurotechnology symposium, November 2016.
- Motor Control Circuits: Structure, Function and Behavior Conference, HHMI Janelia Research Campus, April 2016.
- High-Resolution Circuit Reconstruction Conference, HHMI Janelia Research Campus, April 2016.
- Columbia Workshop on Brain Circuits, Memory and Computation, Columbia University, New York, March 2016.
- Yale University MCDB Departmental Seminar Series, New Haven. Dec. 2015.
- Harvard University Seminar Series at Center for Brain Science, Boston. Nov. 2015.
- UCSF Neuroscience Formal Seminar Series, San Francisco. Oct. 2015.
- Workshop on Neural Circuits and Behavior of Drosophila, Crete, June 2015.

### *Grants*

- Wellcome Trust Investigator Award. Feb. 2017. 2,737,376 GBP.
- HHMI Transition Grant transferrable to any institution. Sept. 2016. 1,720,000 \$.
- HHMI Janelia Group Leader 2 Grant. Sept. 2016 - Sept. 2020. 3,440,000 \$ over 4 years.
- HHMI Group Leader 1 Grant. Sept. 2009 - Sept. 2016. 4,550,000 \$ over 7 years.
- HHMI Larval Behavior Project Grant. Sept. 2011 - Sept. 2016. 1,000,000 \$ over 5 years.
- Brain EAGER National Science Foundation Grant with Prof. Carey Priebe from John's Hopkins University. August 2014- August 2016 (total 300,000 \$ for two years).

### *Graduate and Postdoctoral Mentoring*

- Tomoko Ohyama, postdoctoral researcher, Oct. 2009-Sept. 2016. Assistant Professor, McGill University, Montreal, since Sept. 2016.
- Jean-Baptiste Masson, research associate, Sept. 2014-Oct. 2016. Group Leader at Pasteur Institute in Paris since Oct. 2016.
- Tihana Jovanic, postdoctoral researcher, Oct. 2009-Sept. 2018. Moving to take up a Group Leader position in Paris.
- Bruno Afonso, postdoctoral researcher, Sept. 2011 to present.
- Claire Eschbach, postdoctoral researcher, April 2012 to present.
- Nadine Randell, postdoctoral researcher, April 2015 to present.
- Michael Winding, postdoctoral researcher, Oct. 2016 to present.
- Katharine Eichler, visiting student from University of Konstanz, spent her entire PhD in my lab from Oct. 2013 - Dec. 2017.
- Javier Valdes-Aleman, PhD student, Oct. 2015 to date.
- Ben Cocanougher, PhD student. Oct. 2016. to date.
- Kristina Klein, Ph. D. student. Oct. 2016 to date.

- Elise Croteau-Chonka, Ph. D. student. Oct. 2017 to date.

### ***Undergraduate teaching***

- Part IB (2nd year) Animal Biology Course, Brains and Behavior Module, University of Cambridge, U.K.; wrote and gave 6 lectures and associated practical classes in November 2016.
- Part II Zoology Course (3rd year), Neuroethology Module, University of Cambridge, U.K.; wrote and gave 3 lectures in November 2016.

### ***Editorial and reviewing duties***

- Editorial board member for *Current Biology*
- Faculty Member in the Sensory Systems Section F1000Prime
- Reviewer for *Nature*, *Nature Neuroscience*, *Neuron*, *Journal of Neuroscience*, *eLife*, *Current Biology*, *Plos One*, *Cell Reports*, *Nature Communications*.
- Review Panel Member for National Institute of Health BRAIN Initiative Grant Calls.
- Reviewer for Wellcome Trust (2015).
- Rapporteur at the National Science Foundation's Physical and Mathematical Principles of Brain Structure and Function Workshop, Arlington, May 2013.

### ***Maternity leave***

- in 2011/2012 and 2017/2018

### ***10 Most Significant Publications***

- Eichler K.<sup>f</sup>, Li F.<sup>f</sup>, Kumar A. L., Andrade I., Schneider-Mizell C., Saumweber T., Huser A., Gerber B., Fetter R. D., Truman J. W., Abbott L. F., Thum A., Zlatic M.<sup>c</sup> and Cardona A.<sup>c</sup>. (2017) The complete connectome of a learning and memory centre in an insect brain. *Nature*. 548(7666):175-182. doi: 10.1038/nature23455.
- Jovanic T.<sup>f</sup>, Schneider-Mizell, C.<sup>f</sup>, Shao M., Masson J.-B., Denisov G., Fetter R. D., Truman J. W., Cardona, A.<sup>c</sup> and Zlatic M.<sup>c</sup>. (2016) Competitive disinhibition in early sensory processing mediates behavioral choice and sequences in *Drosophila*. *Cell*, 167: 1-13.
- Ohyama T.<sup>f</sup>, Schneider-Mizell, C.<sup>f</sup>, Fetter, R. D., Valdez-Aleman J., Francoville R., Rivera Alba M., Mensh, B., Simpson, J. H., Branson, K., Truman, J. W., Cardona, A.<sup>c</sup> and Zlatic M.<sup>c</sup> (2015): Multilevel multimodal integration enhances action selection. *Nature* 520: 633-639.
- Vogelstein J. T.<sup>f</sup>, Park Y.<sup>f</sup>, Ohyama T.<sup>f</sup>, Kerr R. A., Truman J. W., Priebe C. E.<sup>c</sup> and Zlatic M.<sup>c</sup> (2014): Discovery of brain-wide neural-behavior maps via multiscale unsupervised structure learning. *Science* 344(6182): 386-92.
- Saumweber T., Rohwedder A., Schleyer M., Eichler K., Chen Y.C., Aso Y., Cardona A., Eschbach C., Kobler O., Voigt A., Durairaja A., Mancini N., Zlatic M., Truman J.W., Thum A.S., Gerber B. (2018) Functional architecture of reward learning in mushroom body extrinsic neurons of larval *Drosophila*. *Nat Commun*. 2018 Mar 16;9(1):1104. doi: 10.1038/s41467-018-03130-1.
- Takagi S., Cocanougher B. T., Niki S., Miyamoto D., Kohsaka H., Kazama H., Fetter R. D., Truman J. W., Zlatic M., Cardona A., Nose A. (2017) Divergent Connectivity of Homologous Command-like Neurons Mediates Segment-Specific Touch Responses in *Drosophila*. *Neuron* 96 (6), 1373-1387. e6 doi: 10.1016/j.neuron.2017.10.030
- Fosque B. F., Sun Y., Dana H., Yang C., Ohyama T., Tadross M. R., Zlatic M., Svoboda K., Kim D. S., Ahrens M. B., Jayaraman V., Looger L. and Schreiter E. (2015). Labeling of active neural circuits in vivo with designed calcium integrators. *Science* 347(6223): 755-60.
- Ohyama T., Jovanic T., Denisov G., Dang T. C., Hoffmann D., Kerr R. A., Zlatic M. (2013): High-throughput analysis of stimulus-evoked behaviors in *Drosophila* larva reveals multiple modality-specific escape strategies. *PLoS One* 8(8):e71706

- Zlatic M., Li F., Strigini M. and Bate C.M. (2009): Coordinate positional cues in the *Drosophila* nervous system: Semaphorins guide axon growth and termination in the dorso-ventral axis. *PLoS Biol.* 2009 7(6):e1000135.
- Zlatic M., Landgraf M. and Bate C.M. (2003): Genetic specification of axonal arbors: atonal regulates robo3 to position terminal branches in the *Drosophila* nervous system. *Neuron* 37(1): 41-51.

### Other Publications

- Humberg T.H., Bruegger P., Afonso B., Zlatic M., Truman J.W., Gershow M., Samuel A., Sprecher S.G. (2018) Dedicated photoreceptor pathways in *Drosophila* larvae mediate navigation by processing either spatial or temporal cues. *Nat Commun.* 2018 Mar 28;9(1):1260. doi: 10.1038/s41467-018-03520-5.
- Burgos A., Honjo K., Ohyama T., Qian C. S., Shin G. J., Gohl D. M., Silies M., Tracey W. D. Zlatic M., Cardona A., Grueber W. (2018) Nociceptive interneurons control modular motor pathways to promote escape behavior in *Drosophila*. *eLife* 7, e26016 doi: 10.7554/eLife.26016
- Larderet I., Fritsch P., Gendre N., Maier L., Fetter R. D., Schneider-Mizell C., Truman J. W., Zlatic M., Cardona A., Sprecher S. (2017) Organization of the *Drosophila* larval visual circuit. *eLife*: e28387. doi: 10.7554/eLife.28387
- Dolan M. J., Luan H. Shropshire W. C., Sutcliffe B., Cocanougher B., Scott R. L., Frechter S., Zlatic M., Jefferis G. S. and White B. H. (2017) Facilitating Neuron-Specific Genetic Manipulations in *Drosophila*. *Genetics*. doi: 10.1534/genetics.116.199687.
- Almeida-Carvalho M. J., Berh D., Braun A., Chen Y. C., Eichler K., Eschbach C., Fritsch P. M. J., Gerber B., Hoyer N., Jiang X., Kleber J., Klämbt C., König C., Louis M., Michels B., Miroshnikov A., Mirth C., Miura D., Niewalda T., Otto N., Paisios E., Pankratz M. J., Petersen M., Ramsperger N., Randel N., Risse B., Saumweber T., Schlegel P., Schleyer M., Soba P., Sprecher S. G., Tanimura T., Thum A. S., Toshima N., Truman J. W., Yarali A., Zlatic M. (2017) The OI1mpiad: concordance of behavioural faculties of stage 1 and stage 3 *Drosophila* larvae. *Journal of Experimental Biology* 220: 2452-2475; doi: 10.1242/jeb.156646
- Rohwedder A., Wenz N. L., Stehle B., Huser A., Yamagata N., Zlatic M., Truman J. W., Tanimoto H., Saumweber T., Gerber B. and Thum S. A. (2016). Four Individually Identified Paired Dopaminergic Neurons Signal Reward in Larval *Drosophila*. *Current Biology* 26(5): 661-669.
- Itakura Y., Kohsaka H., Ohyama T., Zlatic M., Pulver S. R. and Nose A. (2015). Identification of Inhibitory Premotor Interneurons Activated at a Late Phase in a Motor Cycle during *Drosophila* Larval Locomotion. *PLoS One* 10(9): e0136660.
- Klein M., Afonso B., Vonner A., Hernandez Nunez, L., Berck M., Tabone C. J., Kane E. A., Pieribone V., Nitabach M. N., Cardona A., Zlatic M., Sprecher S. G., Gershow M., Garrity P. and Samuel A. D. T. (2015). Sensory determinants of behavioral dynamics in *Drosophila* thermotaxis. *PNAS* 112(2): E220-E229.
- Denisov G., Ohyama T., Jovanic T. and Zlatic M.. (2013): Model-based detection and analysis of animal behavior using signals extracted by automated tracking. *BIOSIGNALS* 175-181.
- Fiaschi L., Gregor K., Afonso B., Zlatic M. and Hamprecht F. A. (2013): Keeping Count: Leveraging Temporal Context to Count Heavily Overlapping Objects. *ISBI 2013. Proceedings* 656-659.
- Bharadwaj R., Roy M., Ohyama T., Sivan-Loukianova E., Delannoy M., Lloyd T. E., Zlatic M., Eberl D. F., Kolodkin A. L. (2013): Cbl-associated protein regulates assembly and function of two tension-sensing structures in *Drosophila*. *Development* 140(3):627-38.
- Wu Z., Sweeney L. B., Ayoob J. C., Chak K., Andreone B. J., Ohyama T., Kerr R., Luo L., Zlatic M., Kolodkin A. L. (2011): A combinatorial semaphorin code instructs the initial steps of sensory circuit assembly in the *Drosophila* CNS. *Neuron* 70(2):281-98.