# COVERSHEET

## 1. Personal details:

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| ***First / Surnames:*** | Yuichi TAKEUCHI, Ph.D. |
| ***Nationality:*** | Japan |
| ***Place of Birth:*** | Aichi, Japan |
| ***Date of Birth*** | 4th September 1982 |
| ***Gender:*** | Male |
| ***Office Address:*** | MTA-SZTE ‘Lendület’, Oscillatory Neuronal Networks Research Group University of Szeged, Department of Physiology 10 Dóm sqr, Szeged 6720, Hungary |
| ***Phone:*** | +36-62-545-373 |
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| ***Web site:*** | <https://ytake.org/> |

### Current Appointment

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| Sep 1st, 2015 – present | Research Assistant Professor | Department of Physiology, Faculty of Medicine, University of Szeged, Hungary |
| Sep 1st, 2015 – present | Adjunct Lecturer | Hungarian Medical Universities |
| Apr 1st, 2018 – present | Research Fellow | Department of Neuropharmacology, Graduate School of Pharmaceutical Sciences, Nagoya City University |

## 2. Education/Qualifications

### Degrees

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| 2005 | B.S. in Pharmaceutical Science  Faculty of Pharmaceutical Sciences, Nagoya City University, Nagoya, Japan |
| 2007 | M.S. in Pharmaceutical Science  Graduate School of Pharmaceutical Sciences, Nagoya City University, Nagoya, Japan |
| 2010 | Ph.D. in Science  Department of Physiological Sciences, School of Life Science, The Graduate University for Advanced Studies (SOKENDAI), Hayama, Japan |

### Licensures

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| Nov 28th, 2005 | Pharmacist | Japan, No. 399397 |
| Jan 1st, 2016 | Physiology Educator | Physiological Society of Japan, No. 160018 |
| Jan 26th, 2017 | FELASA C certificate | Federation of European Laboratory Animal Science Associations, No. 63/2017, 035/14 |
| Jan 2nd 2018 | Certified Peer Reviewer | Publons Academy |

## 3. Professional Appointments

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| 2007–2008 | Research Assistant | National Institute of Physiological Sciences, Okazaki, Japan |
| 2009–2010 | Research Fellow | Japan Society for the Promotion of Science, Tokyo, Japan |
| 2010–2015 | Assistant Professor | Tokyo Women’s Medical University, Tokyo, Japan |
| 2016 | Research Fellow | The Uehara Memorial Foundation, Japan |

## 4. Other Appointments and Affiliations:

### Professional Societies

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| 2005–present | Japanese Pharmacological Society | Member |
| 2008–present | The Japan Neuroscience Society | Member |
| 2010–present | The Physiological Society of Japan | Member (2010 –2020) Councilor (2020–present) |
| 2010–present | Society for Neuroscience | Member |
| 2012–present | Japanese Neural Network Society | Member |
| 2015–present | Asia Pacific Neural Network Society | Member |

### Professional Bodies

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| Mar 2020–present | The Physiological Society of Japan | Board Member |

## 5. Prizes, Awards and other Honors

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| 2006 | First prize of the entrance exam of the Department of Physiological Sciences, School of Life Sciences, The Graduate University for Advanced Studies |
| 2007 | A total exemption from repayment of two-year scholarship by outstanding results and fulfills, Japan Student Services Organization |
| 2009 | Research Fellowship, Japan Society for the Promotion of Science |
| 2009 | A partial exemption from repayment of two-year scholarship by outstanding results and fulfills, Japan Student Services Organization |
| 2012 | Research award, Narishige Neuroscience Research Foundation |
| 2012 | Medical Research Award, Hiroto Yoshioka Memorial Fund |
| 2013 | First prize of The Science Research Promotion Fund for young researcher, The Promotion and Mutual Aid Corporation for Private School of Japan |
| 2013 | Incentive Award for Young Scientist, Physiological Society of Japan |
| 2016 | Research Fellowship, The Uehara Memorial Foundation |
| 2019 | Special award for excellent presentation, Annual meeting of Young Neurobehavioral Pharmacologists |

# REASEARCH/SCHOLARSHIP

## Peer Reviewed Publications

### Original Article

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| 1. **Takeuchi Y.**, Takasu K., Honda M., Ono H., and Tanabe M. Neurochemical evidence that supraspinally administered gabapentin activates the descending noradrenergic system after peripheral nerve injury. ***Eur J Pharmacol*** 556 (1-3): 69-74. Nov 3rd, 2007. DOI: 10.1016/j.ejphar.2006.10.059. |
| 1. Tanabe M., **Takeuchi Y.**, and Ono H. The supraspinally mediated analgesic effects of zonisamide in mice after peripheral nerve injury are independent of the descending monoaminergic system. ***J Pharmacol Sci*** 104 (4): 335-340. Aug 1st, 2007. DOI: 10.1254/jphs.FP0070827. |
| 1. **Takeuchi Y.**, Takasu K., Ono H., and Tanabe M. (2007) Pregabalin, *S*-(+)-3-isobutylgaba, activates the descending noradrenergic system to alleviate neuropathic pain in the mouse partial sciatic nerve ligation model. ***Neuropharmacology*** 53 (7): 842-853. Aug 19th, 2007. DOI: 10.1016/j.neuropharm.2007.08.013. |
| 1. Nagumo Y., **Takeuchi Y.**, Imoto K., and Miyata M. Synapse- and subtype-specific modulation of synaptic transmission by nicotinic acetylcholine receptors in the ventrobasal thalamus. ***Neurosci Res*** 69 (3): 203-213. Dec 15th, 2010. DOI: 10.1016/j.neures.2010.12.002. |
| 1. **Takeuchi Y.**, Yamasaki M.\*, Nagumo Y.\*, Imoto K., Watanabe M., and Miyata M. Rewiring of afferent fibers in the somatosensory thalamus of mice caused by peripheral sensory nerve transection. ***J Neurosci*** 32 (20): 6917-6930. May 16th, 2012. DOI: 10.1523/JNEUROSCI.5008-11.2012. \*equal contribution. |
| 1. Matsumine H., Sasaki R., **Takeuchi Y.**, Miyata M., Yamato M., Okano T., and Sakurai H. (2014) Vascularized versus non-vascularized island-median nerve grafts in the facial nerve regeneration and functional recovery of rats for facial nerve reconstruction study. ***J Reconstr Microsurg*** 30 (2): 127-136. Oct 25th, 2013. DOI: 10.1055/s-0033-1357500. |
| 1. **Takeuchi Y.**, Asano H., Katayama Y., Muragaki Y., Imoto K., and Miyata M. Large-scale somatotopic refinement via functional synapse elimination in the thalamus of developing mice. ***J Neurosci*** 34 (4): 1258-1270. Jan 22nd, 2014. DOI: 10.1523/JNEUROSCI.3865-13.2014. |
| 1. Matsumine H., **Takeuchi Y.**, Sasaki R., Kazama T., Kano K., Matsumoto T., Sakurai H., Miyata M., and Yamato M. Adipocyte-derived and dedifferentiated fat cells promoting facial nerve regeneration in a rat model. ***Plast Reconstr Surg*** 134 (4): 686-697. Oct, 2014. DOI: 10.1097/PRS.0000000000000537. |
| 1. Sasaki R., Matsumine H., Watanabe Y., **Takeuchi Y.**, Yamato M., Okano T., Miyata M., and Ando T. Electrophysiologic and functional evaluations of regenerated facial-nerve defect with a tube containing dental pulp cells in rats. ***Plast Reconstr Surg*** 134: 970-978. Nov, 2014. DOI: 10.1097/PRS.0000000000000602. |
| 1. Matsumine H., Sasaki R., **Takeuchi Y.**, Watanabe Y., Niimi Y., Sakurai H., Miyata M., and Yamato M. Unilateral multiple facial-nerve branch reconstruction using "end-to-side loop graft "supercharged by hypoglossal nerve. ***Plast Reconstr Surg Glob Open*** 2 (10): e240. Nov 7th, 2014. DOI: 10.1097/GOX.0000000000000206. |
| 1. Niimi Y., Matsumine H., **Takeuchi Y.**, Sasaki R., Watanabe Y., Yamato M., Miyata M., and Sakurai H. Effectively axonal-supercharged interpositional-jump graft with an artificial nerve-conduit for rat facial nerve paralysis model. ***Plast Reconstr Surg Glob Open*** 3 (6): e416. July 8th, 2015. DOI: 10.1097/GOX.0000000000000397. |
| 1. **Takeuchi Y.**, Osaki H., Yagasaki Y., Katayama Y., and Miyata M. Afferent fiber remodeling in the somatosensory thalamus of mice as a neural basis of somatotopic reorganization in the brain and ectopic mechanical hypersensitivity after peripheral sensory nerve injury. ***eNeuro*** 4 (2): e0345-16.2017. May 23rd, 2017. DOI: 10.1523/ENEURO.0345-16.2017. |
| 1. Vöröslakos M., **Takeuchi Y.**, Brinyiczki K., Zombori T., Oliva A., Fernández-Ruiz A., Kozák G, Kincses Z. T., Iványi B., Buzsáki G. and Berényi A. Direct effects of transcranial electric stimulation on brain circuits in rats and humans. ***Nat Commun*** 9 (1): 483, DOI: 10.1038/s41467-018-02928-3. 2018 Feb 2. |
| 1. **Takeuchi Y. (CA)**, Osaki H., Matsumine H., Niimi Y., Sasaki R. and Miyata M. A method package for electrophysiological evaluation of reconstructed or regenerated facial nerves in rodents. ***MethodsX*** 5: 283-298. Mar 30th, 2018. DOI: 10.1016/j.mex.2018.03.007. |
| 1. Nagy A., **Takeuchi Y.**. and Berényi A. Coding of self-motion induced and self-independent visual motion in the rat dorsomedial striatum. ***PLoS Biol*** 16 (6): e2004712. June 25th, 2018. DOI: 10.1371/journal.pbio.2004712. |
| 1. Niimi Y., Matsumine H., **Takeuchi Y.**, Osaki H., Tsunoda S., Miyata M., Yamato M., and Sakurai H. (2019) A collagen-coated PGA conduit for interpositional-jump graft with end-to-side neurorrhaphy for treating facial nerve paralysis in rat. ***Microsurgery*** 39 (1): 70-80. Epub Jan 8th, 2018. |
| 1. Narushima M., Yagasaki Y., **Takeuchi Y.**, Aiba A., and Miyata M. The metabotropic glutamate receptor subtype 1 regulates development and maintenance of lemniscal synaptic connectivity in the somatosensory thalamus. ***PLoS ONE*** 14 (12): e0226820. December 27th, 2019. |
| 1. Nagumo Y, Ueta Y, Nakayama H, Osaki H, **Takeuchi Y**, Uesaka N, Kano M, Miyata M. Tonic GABAergic inhibition is essential for nerve injury-induced afferent remodeling in the somatosensory thalamus and associated ectopic sensations. ***Cell Rep***: in press |
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### Review

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| 1. Tanabe M., Takasu K., **Takeuchi Y.**, and Ono H. (2008) Pain relief by gabapentin and pregabalin via supraspinal mechanisms after peripheral nerve injury. ***J Neurosci Res*** 86 (15): 3258-3264. Nov 15th, 2008. DOI: 10.1002/jnr.21786. |
| 1. **Takeuchi Y.**\* and Berényi A.\* Oscillotherapeutics – Time-targeted interventions in epilepsy and beyond. ***Neurosci Res*** 152: 87-107. Jan 16th, 2020. DOI: 10.1016/j.neures.2020.01.002. |

### Thesis for Doctoral Degree

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| **Takeuchi Y.** Developmental and peripheral nerve injury-induced changes of afferent synapses in the somatosensory thalamus. The Graduate University for Advanced Studies, Kanagawa, Japan. Mar 24th, 2010. |

## Non-peer Reviewed Publications

### Book etc.

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| 1. Miyata M. and **Takeuchi Y.** (2011) Neurophysiology of Body image: Remodeling of the body map. *Clin Neurosci* 29 (8): 895-899. Aug, 2011. Chugai-igakusha. (*Invited, Japanese*) |
| 1. **Takeuchi Y.** (2020) Epilepsy progress: Development of on-demand interventions of epileptic seizures and a quantitative method of seizure susceptibility. *Medical Science Digest* 46 (2): 118-121, 2020.2. Hokuryukan. (*Invited, Japanese*) 2. **Takeuchi Y.** (2020) Imaging of neuropsychiatric disorders: Revealing neuronal network dynamics underlying behavioral phenotypes of psychiatric disorders. *Medical Science Digest* 46 (6): 906-909, 2020.6. Hokuryukan. (*Invited, Japanese*) |

### Preprints

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| 1. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Closed-loop stimulation of the medial septum terminates epileptic seizures. *bioRxiv* 2020.03.09.982827; doi: https://doi.org/10.1101/2020.03.09.982827 |

### Proceeding and Report

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| 1. **Takeuchi Y.**, Uchida M., and Miyata M. Neuroanatomical and physiological analyses of afferent fiber rewiring in the ventrobasal thalamus of mice after peripheral nerve injury. *Proceedings of Tokyo Women’s Medical University Medical Institute* 32: 20-21. 2012. (*Japanese*) |
| 1. **Takeuchi Y.** and Miyata M. Neuroanatomical analyses of thalamic circuitry rewiring (I). *Proceedings of Tokyo Women’s Medical University Medical Institute* 33: 21. Nov 30th, 2013. (*Japanese*) |
| 1. **Takeuchi Y.** and Miyata M. Neuroanatomical analyses of thalamic circuitry rewiring (II). *Proceedings of Tokyo Women’s Medical University Medical Institute* 34: 16. Nov 30th, 2014. (*Japanese*) |
| 1. Miyata M., Matsumine H., Sasaki R., Watanabe Y., **Takeuchi Y.**, Yamato M., and Sakurai H. Functional evaluations of regenerated peripheral nerve. *J Tokyo Wom Med Univ* 84: 130. Aug 25th, 2014. (*Japanese*) |
| 1. **Takeuchi Y.** and Miyata M. Neuroanatomical analyses of thalamic circuitry rewiring (III). *Proceedings of Tokyo Women’s Medical University Medical Institute* 36: 22-23. Feb 27th, 2017. (*Japanese*) |

### Abstract (International)

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| 1. Tanabe M., **Takeuchi Y.**, Takasu K., and Ono H. Pregabalin supraspinally activates the descending noradrenergic pain inhibitory system after peripheral nerve injury. The 2nd International Congress on Neuropathic Pain. Berlin, Germany. June 7-10, 2007. (Abstract #: 166) *Poster* |
| 1. Nagumo Y., **Takeuchi Y.**, Kawakami Y., Imoto K., and Miyata M. Role of nicotinic acetylcholine receptors on synaptic transmission in the ventrobasal thalamic complex. The 36th Congress of the International Union of Physiological Sciences. Kyoto, Japan. July 27 - Aug 1, 2009. (Abstract #: P1AM-9-1) *Poster* |
| 1. **Takeuchi Y.**, Nagumo Y., Katayama Y., Imoto K., Kawakami Y., and Miyata M. Transection of the infraorbital nerve induces rewiring of afferent fibers in the somatosensory thalamus of mice. The 40th SfN Annual Meeting. San Diego, CA, USA. Nov 13-17, 2010. (Abstract #377.9) *Poster* |
| 1. Nagumo Y., **Takeuchi Y.**, Imoto K., and Miyata M. Synapse- and subtype-specific modulation of synaptic transmission by nicotinic acetylcholine receptors in the ventrobasal thalamus of juvenile mice. The 40th SfN Annual Meeting. San Diego, CA, USA. Nov 13-17, 2010. (Abstract #442.7) *Poster* |
| 1. **Takeuchi Y.**, Nagumo Y., and Miyata M. Peripheral sensory nerve transection-induced remodeling of afferent synapses in the somatosensory thalamus of mice. The 8thIBRO World Congress of Neuroscience. Florence, Italy. July 14-18, 2011. (Abstract #D063) *Poster* |
| 1. Miyata M. and **Takeuchi Y.** Large-scale somatotopic refinement by synapse elimination in the whisker sensory thalamus of developing mice. The 9th FENS Forum of Neuroscience. Milan, Italy. July 5-9, 2014. (Abstract # FENS-1305) *Poster* |
| 1. **Takeuchi Y.**, Katayama Y., and Miyata M. Functional synapse elimination plays a role in large-scale somatotopic refinement in the sensory thalamus of developing mice. The 44th SfN Annual Meeting. Washington, DC, USA. Nov 15-19, 2014. (Abstract #398.04) *Poster* |
| 1. Vöröslakos M., Brinyiczki K., Zombori T., **Takeuchi Y.**, Oliva A., Fernández-Ruiz A., Iványi B., Buzsáki G., and Berényi A. Spatially focused, non-invasive, fast pulse electrical stimulation of the brain. The 46thSfN Annual Meeting. San Diego, USA. Nov 12-16, 2016. (Abstract #591.16) *Poster* |
| 1. Nagy A., **Takeuchi Y.**, and Berényi A. Processing of passive and motion-induced visual percepts in the rat dorsomedial striatum. The 47thSfN Annual Meeting. Washington DC, USA. Nov 11-15, 2017. (Abstract #313.14) *Poster* |
| 1. **Takeuchi Y.** Electrophysiological Evaluations of Reorganized Nervous Systems. The PCS 3rd Global Cell Science and Stem Cell Conference. Budapest, Hungary. July 14-15, 2018. (Abstract #2 in Stem Cell and Stem Cell Therapy) *Oral, Invited* |
| 1. **Takeuchi Y,** Harangozó M, Pedraza L, Földi T, Kozák G, and Berényi A. Closed-loop stimulation of the medial septum alleviates temporal lobe epilepsy in rats. The 49th NIPS International Symposium. Okazaki, Japan. Dec 5-8, 2018. (Abstract #: P24) *Poster* |
| 1. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Automated, closed-loop stimulation of the medial septum alleviates temporal lobe epilepsy in rats. The 9th FAOPS Congress. Kobe, Japan. Mar 28-31, 2019 (Abstract #: 1P-281) *Poster* |
| 1. Nagy A., **Takeuchi Y.**, and Berényi A. Coding of self-motion-induced and self-independent visual motion in the rat dorsomedial striatum. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020 (#84) *Poster* |
| 1. Pedraza L, Sierra R, **Takeuchi Y**, Kozák G, Peijin A, Barcsai L, Berényi A. CLOSED-LOOP MANIPULATION OF HIPPOCAMPAL RIPPLES REDUCE PERSISTENT FEAR EXPRESSION IN ANIMAL MODEL OF POSTTRAUMATIC-STRESS DISORDER. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020 (#86) *Poster* |
| 1. Li Q, **Takeuchi Y**, Kozák G, Ohsawa M, Harangozó M, Berényi A. The functional role of altered olfactory network synchrony in the development of depression. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020 (#87) *Poster* |
| 1. **Takeuchi Y,** Harangozó M, Pedraza L, Földi T, Kozák G, and Berényi A.A closed-loop proxy-intervention of epileptic seizures. IBRO Workshop 2020. Szeged, Hungary. Jan 29, 30, 2020 (#89) *Poster* |
| 1. Narushima M., Yagasaki Y., **Takeuchi Y.**, Aiba A., and Miyata M. The metabotropic glutamate receptor subtype 1 regulates development and maintenance of lemniscal synaptic connectivity through cortical activity in the somatosensory thalamus. FENS Meeting 2020. Glasgow, U. K. July 11th – 15th, 2020. |

### Abstract (Domestic)

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| 1. **Takeuchi Y.**, Tanabe M., Honda M., and Ono H. Gabapentin supraspinally accelerates spinal noradrenalin turnover in a murine neuropathic pain model. The 79th Annual Meeting of The Japanese Pharmacological Society. Yokohama, Japan. Mar 8-10, 2006. (Abstract #: P3K-64) *Poster* |
| 1. **Takeuchi Y.**, Ono H., and Tanabe M. Pregabalin supraspinally activates the descending noradrenergic pain inhibitory system after peripheral nerve injury. The 80th Annual Meeting of The Japanese Pharmacological Society. Nagoya, Japan. Mar 14-16, 2007. (Abstract #: P1-039) *Poster* |
| 1. Nagumo Y., **Takeuchi Y.**, Imoto K., Kawakami Y., and Miyata M. Role of acetylcholine on sensory synaptic transmission in the mouse ventrobasal thalamus. The 81th Annual Meeting of The Japanese Pharmacological Society. Yokohama, Japan. Mar 17-19, 2008. (Abstract #: P2I-72) *Poster* |
| 1. Miyata M., Nagumo Y., **Takeuchi Y.**, Imoto K., and Kawakami Y. Acetylcholine distinctly regulates on synaptic transmission in the ventrobasal thalamus. The 85th Annual Meeting of the Physiological Society of Japan. Tokyo, Japan. Mar 25-27, 2008. (Abstract #: 2P-F-047) *Poster* |
| 1. **Takeuchi Y**., Imoto K., and Miyata M. Development of lemniscus synapses on the mice ventrobasal thalamus. The 31st Annual Meeting of the Japan Neuroscience Society. Tokyo, Japan. July 9-11, 2008. (Abstract #: P3-e20) *Poster* |
| 1. Nagumo Y., **Takeuchi Y.**, Kawakami Y., Imoto K., and Miyata M. Neuromodulatory effect of acetylcholine on synaptic transmissions in the ventrobasal thalamic nucleus. The 31st Annual Meeting of the Japan Neuroscience Society. Tokyo, Japan. July 9-11, 2008. (Abstract #: P3-c15) *Poster* |
| 1. **Takeuchi Y.**, Imoto K., and Miyata M. Transection of infraorbital nerve induces multiple innervations of lemniscal fibers onto the relay neuron in the adult mice somatosensory thalamus. The 32nd Annual Meeting of the Japan Neuroscience Society. Nagoya, Japan. Sep 16-18, 2009. (Abstract #: P2-b30) *Poster* |
| 1. **Takeuchi Y.**, Nagumo Y., Katayama Y., Imoto K., Kawakami Y., and Miyata M. Peripheral nerve transection-induced remodeling of afferent synapses in the somatosensory thalamus of mice. The 33rd Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. Sep 2-4, 2010. (Abstract #: P3-b05) *Poster* |
| 1. Miyata M. and **Takeuchi Y.** Synaptic rewiring and compositional changes in glutamate receptors at thalamic lemniscal synapses in the developmental process. The 88th Annual Meeting of the Physiological Society of Japan. Yokohama, Japan. Mar 28-30, 2011. (Abstract #: P1-C-2-3) *Symposium* |
| 1. **Takeuchi Y.**, Narushima M., and Miyata M. The developmental switch in AMPA receptor subunit composition at lemniscal synapses in the somatosensory thalamus of mice. The 88th Annual Meeting of the Physiological Society of Japan. Yokohama, Japan. Mar 28-30, 2011. (Abstract #: P1-352) *Poster* |
| 1. **Takeuchi Y.**, Narushima M., and Miyata M. Postnatal development of the lemniscal fiber-relay neuron system in the somatosensory thalamus of mice. The 34th Annual Meeting of the Japan Neuroscience Society. Yokohama, Japan. Sep 14-17, 2011. (Abstract #: P3-k15) *Poster* |
| 1. **Takeuchi Y.**, Uchida M., and Miyata M. Structural changes of lemniscal axon terminals after the peripheral sensory nerve transection of mice. The 35th Annual Meeting of the Japan Neuroscience Society. Nagoya, Japan. Sep 18-21, 2012. (Abstract #: P3-c08) *Poster* |
| 1. **Takeuchi Y.** and Miyata M. Information tuning via synapse elimination in the whisker sensory thalamus of developing mice. The 90th Annual Meeting of the Physiological Society of Japan. Tokyo, Japan. Mar 27-29, 2013. (Abstract #: 2PK-047) *Poster* |
| 1. **Takeuchi Y.** and Miyata M. Somatotopic tuning along with synapse elimination in the whisker sensory thalamus of developing mice. The 36th Annual Meeting of the Japan Neuroscience Society. Kyoto, Japan. June 20-23, 2013. (Abstract #: P3-1-143) *Poster* |
| 1. **Takeuchi Y.**, Katayama Y., and Miyata M. Transection of the whisker sensory nerve reorganizes topographical wiring of afferent fibers in the whisker sensory thalamus of mice. The 91st Annual Meeting of the Physiological Society of Japan. Kagoshima, Japan. Mar 16-18, 2014. (Abstract #: 1P-104) *Poster* |
| 1. **Takeuchi Y.** and Miyata M. Large-scale somatotopic reorganization via remodeling of thalamic afferent synapses after peripheral sensory nerve injury. The 37th Annual Meeting of the Japan Neuroscience Society. Yokohama, Japan. Sep 11-13, 2014. (Abstract #: S1-C-2-3) *Symposium* |
| 1. **Takeuchi Y.**, Katayama Y., and Miyata M. A neural circuit mechanism of large-scale somatotopic reorganization in the thalamus after transection of the whisker sensory nerve of mice. The 37th Annual Meeting of the Japan Neuroscience Society. Yokohama, Japan. Sep 11-13, 2014. (Abstract #: P2-173) *Poster* |
| 1. **Takeuchi Y.**, Nagumo Y., Osaki H., and Miyata M. Peripheral nerve injury changes neuronal firing patterns in the somatosensory thalamus of unanesthetized mice. The 92nd Annual Meeting of the Physiological Society of Japan. Kobe, Japan. Mar 21-23, 2015. (Abstract #: P3-182) *Poster* |
| 1. Nagumo Y., **Takeuchi Y.**, Osaki H., and Miyata M. Enhanced tonic GABA currents after peripheral nerve injury contribute to inhibition of neuronal activity and subsequent remodeling of medial lemniscal fibers in the somatosensory thalamus. The 92nd Annual Meeting of the Physiological Society of Japan. Kobe, Japan. Mar 21-23, 2015. (Abstract #: P3-205) *Poster* |
| 1. **Takeuchi Y.**, Nagumo Y., Osaki H., Katayama Y., and Miyata M. Large-scale somatotopic reorganization associated with afferent fiber rewiring in the whisker sensory thalamus. The 38th Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. July 28-31, 2015. (Abstract #: 3P217) *Poster* |
| 1. Nagumo Y., **Takeuchi Y.**, and Miyata M. Remodeling of somatosensory thalamic neural circuit and allodynia‒like mechanical hypersensitivity after the peripheral nerve. The 38th Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. July 28-31, 2015. (Abstract #: 3P224) *Poster* |
| 1. Miyata M., **Takeuchi Y.**, and Katayama Y. Large‒scale somatotopic refinement via experience‒dependent synapse elimination in the whisker sensory thalamus. The 38th Annual Meeting of the Japan Neuroscience Society. Kobe, Japan. July 28-31, 2015. (Abstract #: 2S09p-1) *Symposium* |
| 1. Miyata M., **Takeuchi Y.**, and Osaki H. Large-scale somatotopic reorganization with afferent fiber remodeling in the mice whisker sensory thalamus after peripheral sensory nerve injury. The 93rd Annual Meeting of the Physiological Society of Japan. Sapporo, Japan. Mar 22-24, 2016. (Abstract #: 2P-078) *Poster* |
| 1. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Real-time control of epileptic seizures via on-demand deep brain stimulation. The 28th Meeting of Young Researchers’ Society of Neurobehavioral Pharmacology. Hyogo, Japan. Mar 13, 2019. (Abstract #3) *Symposium* |
| 1. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. A closed-loop proxy-intervention of epileptic seizures. Jisedai-Nou Symposium. Tokyo, Japan. Dec 18-20, 2019. (Byotai #: 7) *Poster* |
| 1. **Takeuchi Y.**, Harangozó M., Pedraza L., Földi T., Kozák G., and Berényi A. Closed-loop stimulation of the medial septum terminates epilepsy seizures in rats. The 93th Annual Meeting of the Japan Pharmacological Society. Yokohama, Japan. Mar 16-18, 2020. (Abstract #: 3-O-103) *Oral* |

### Scientific Essay

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| 1. **Takeuchi Y.** (2013) Report of the 36th Annual Meeting of Japanese Neuroscience Society. Neuroscience News of the Japan Neuroscience Society 195: 10. (*Japanese*) |
| 1. **Takeuchi Y.** (2015) Exciting scientific experience. *J Physiol Soc Japan* 77: 6-7. (*Invited, Japanese*) |

### Dataset Repository

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| 1. **Takeuchi Y.** (2017) Three-dimensional dendritic morphology of somatosensory thalamic neurons in developing mice: Takeuchi Archive. NeuroMorpho.org. URL: http://www.neuromorpho.org/bylab.jsp (*Invited*) |
| 1. **Takeuchi Y.** (2017) Three-dimensional axonal morphology of principle neurons in the principle trigeminal nucleus of mice: Takeuchi Archive. NeuroMorpho.org. http://www.neuromorpho.org/bylab.jsp (*Invited*) |
| 1. **Takeuchi Y.** (2017) LaserDiodeStabilizerCircuit. figshare. https://doi.org/10.6084/m9.figshare.5419195 |
| 1. **Takeuchi Y.** (2017) FootshockCircuit. figshare. https://doi.org/10.6084/m9.figshare.5421613 |
| 1. **Takeuchi Y.** (2017) ActiveBandPassFilter. figshare. https://doi.org/10.6084/m9.figshare.5455702 |
| 1. **Takeuchi Y.** (2018) CMAPMethods. Mendeley Data, v1. http://dx.doi.org/10.17632/9g5n35fd3f.1 |
| 1. **Takeuchi Y.** (2018) RetrogradeMotorNeuronLabeling. figshare. https://doi.org/10.6084/m9.figshare.5445199 |
| 1. **Takeuchi Y.** (2018) TaskController. figshare. https://doi.org/10.6084/m9.figshare.6154751 |
| 1. **Takeuchi Y.** (2018) RatHeadFixRestraintSystem. figshare. https://doi.org/10.6084/m9.figshare.5466355 |
| 1. **Takeuchi Y.** (2018) MouseHeadFixRestraintSystem. figshare. https://doi.org/10.6084/m9.figshare.6154877 |
| 1. **Takeuchi Y.** (2018) OnHeadFaradayCage. figshare.  https://doi.org/10.6084/m9.figshare.6160181 |
| 1. **Takeuchi Y.** (2018) InfraredMotionDetector. figshare. <https://doi.org/10.6084/m9.figshare.6160226> |
| 1. **Takeuchi Y.** and Berényi A. (2020) Closed-loop stimulation of the medial septum terminates epileptic seizures. Mendeley Data, <https://data.mendeley.com/datasets/k9hwm7p33x/1> |

### Code Repository

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| 1. **Takeuchi Y.** (2017) CMAPAnalysis v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.800747 |
| 1. **Takeuchi Y.** (2017) tUtility v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.803404 |
| 1. **Takeuchi Y.** (2017) miniAna v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.804083 |
| 1. **Takeuchi Y.** (2017) tSort v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.805588 |
| 1. **Takeuchi Y.** (2017) tNeuroshare v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.805705 |
| 1. **Takeuchi Y.** (2017) tClamp16 v0.0.0-alpha. Zenodo. https://doi.org/10.5281/zenodo.805901 |
| 1. **Takeuchi Y.** (2017) tClamp18 v0.1.0-alpha. Zenodo. https://doi.org/10.5281/zenodo.805897 |
| 1. **Takeuchi Y.** (2017) NiDaqControlPanel v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.810332 |
| 1. **Takeuchi Y.** (2017) APDetector v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.815577 |
| 1. **Takeuchi Y.** (2017) RStatisticalTests v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.817654 |
| 1. **Takeuchi Y.** (2017) LaserDiodeStabilizer v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.897718 |
| 1. **Takeuchi Y.** (2017) CueFearConditioning v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.897730 |
| 1. **Takeuchi Y.** (2018) PMVmemAnalysis v1.0.0. Zenodo. <https://doi.org/10.5281/zenodo.1220169> |
| 1. **Takeuchi Y.** (2018) SM2CInjection v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.1220362 |
| 1. **Takeuchi Y.** (2018) TaskController v1.0.0. Zenodo. https://doi.org/10.5281/zenodo.xxxxx |

## GRANT RECEIVED

|  |
| --- |
| 1. Afferent-input-dependent thalamic circuit plasticity. JSPS, KAKENHI: Grant-in-Aid for JSPS Fellows (Grant# 09J00032), Role: PI, Period: 2009–2010, Total cost: US $7,000 |
| 1. Electrophysiological and neuroanatomical analyses of peripheral nerve transection-induced multiple-innervation of lemniscal fibers in the somatosensory thalamus of mice. JSPS KAKENHI: Grant-in-Aid for Research Activity Start-up (Grant# 22800063), Role: PI, Duration: 2010–2012, Total cost: US $25,350 |
| 1. Remodeling of afferent axon terminals in the thalamus after peripheral nerve injury. Tokyo Women’s Medical University-Medical Research Grant, Role: PI, Period: 2010–2011, Total cost: US $6,800 |
| 1. Functional and neuroanatomical analyses of afferent fiber remodeling in the thalamus after peripheral nerve injury. Narishige Neuroscience Research Foundation, Research Award, Role: PI, Period: 2012–2013, Total cost: US $3,000 |
| 1. Membrane properties underlying abnormal thalamic firing after deafferentation. Casio Science Promotion Foundation: Research Grant, Role: PI, Period: 2012–2013, Total cost: US $10,000 |
| 1. GluA2 glutamate receptor subunit as a target of phantom pain gene therapy. Terumo Life Science Foundation: Medical and Health Enhancement Program Subsidy, Role: PI, Period: 2012–2013, Total cost: US $10,000. |
| 1. Functional evaluation of reconstructed/regenerated facial nerves. Hiroto Yoshioka Memorial Fund for Medical Research Award, Role: Co-PI, Period: 2012–2013, Total cost: US $10,000 |
| 1. Generation of Cre mouse which codes facial somatosensory map in the trigeminal nucleus. National Institute of Genetics: NIG Collaborative Research Program (2012-A-71), Role: Co-PI, Period: 2012–2013, Total cost: US $1,880 |
| 1. Genetic visualization of central circuitry rewiring after peripheral nerve injury. The Promotion and Mutual Aid Corporation for Private School of Japan: The Science Research Promotion Fund, Role: PI, Period: 2013–2014, Total cost: US $5,000 |
| 1. Large-scale somatotopic reorganization in the thalamus after peripheral nerve injury. Tokyo Women’s Medical University: Medical Research Grant, Role: PI, Period: 2014–2015, Total cost: US $7,000 |
| 1. Generation of Cre mouse which codes facial somatosensory map in the trigeminal nucleus. National Institute of Genetics: NIG Collaborative Research Program (2014-A-82), Role: Co-PI, Period: 2014–2015, Total cost: US $1,830 |
| 1. Molecular mechanisms underlying development and maintenance of thalamic remodeling after peripheral nerve injury. JSPS, KAKENHI: Grant-in-Aid for Young Scientists (B) (Grant# 25870757), Role: PI, Period: 2013–2016, Total cost: US $42,900 |
| 1. Development of a new therapeutic approach for epileptic seizures by transcranial electrical stimulation. The Uehara Memorial Foundation, Research Fellowship, Role: PI, Period: 2016, Total cost: US $36,000 |
| 1. Real-time closed-loop interventions of epileptic seizures by non-invasive deep brain stimulation. JSPS, KAKENHI: Fostering Joint International Research (B) (Grant# 18KK0236), Role: PI, Period: 2018–2022, Total cost: US $179,400 2. Real-time closed-loop interventions of epileptic seizures by non-invasive deep brain stimulation. The Kanae Foundation for the Promotion of Medical Science, Foreign Study Grants, Role: PI, Period: 2019–2020, Total cost: US $ 10k 3. On-demand transcranial interventions of epileptic seizures. Life Science Foundation, Research Grant, Role: PI, Period: 2019–2020, Total cost: US $ 10k |
| 1. Development of a quantification method of seizure susceptibility using brain-wide electrical spatiotemporal dynamics. JSPS, KAKENHI: Grant-in-Aid for Scientific Research (B) (Grant# 19H03550), Role: PI, Period: 2019–2024, Total cost: US $171,600 |
| 1. Revealing neuronal network dynamics underlying behavioral phenotypes of psychiatric disorders by solving inverse problems. JSPS, KAKENHI: Grant-in-Aid for Scientific Research on Innovative Areas (Grant# 19H05224), Role: PI, Period: 2019–2021, Total cost: US $57,200 |

## Invited Talks

|  |  |
| --- | --- |
| 2012 | Invited speaker, Japan Health Sciences Foundation, Tokyo, Japan |
| 2014 | Invited symposiast, The 37th Annual Meeting of the Japan Neuroscience Society, Yokohama, Japan |
| 2015 | Invited speaker, University of Szeged, Szeged, Hungary F1000Research 2017, 6:350 (slides) (doi: 10.7490/f1000research.1113811.1) |
| 2017 | Invited speaker, MathWorks Asia Research Summit 2017, Tokyo, Japan |
| 2018 | Invited speaker, PCS 3rd Global Cell Science and Stem Cell Conference, Budapest, Hungary |
| 2018 | Invited speaker, Osaka City University, Osaka, Japan |
| 2018 | Invited speaker, The Pharmaceutical Society of Japan, Tokai Branch @ Nagoya City University, Nagoya, Japan |
| 2018 | Invited speaker, Seminar @ National Institute of Physiological Sciences |
| 2019 | Invited speaker, Seminar @ University of Szeged, Szeged, Hungary |
| 2019 | Invited speaker, Seminar @ Osaka City University, Osaka, Japan |
| 2019 | Invited speaker, Seminar @ Tokyo Women’s Medical University, Tokyo, Japan |

## Contributed Talks

|  |  |
| --- | --- |
| 2006 | The 27th Annual Meeting of Japanese Narcotics Research Conference, Wakayama, Japan |
| 2012 | Young Researchers’ Forum of Physiology, Tokyo, Japan |
| 2012 | National Institute for Physiological Sciences, Okazaki, Japan |
| 2013 | Young Researchers’ Forum of Physiology, Tokyo, Japan |
| 2019 | The 28th Meeting of Young Researchers’ Society of Neurobehavioral Pharmacology, Hyogo, Japan |

## Relevant Experience

|  |  |
| --- | --- |
| 2005 | Patch-Clamp Training Course; National Institute for Physiological Sciences, Okazaki, Japan; Daily practice for 1 wk |
| 2006 | Slice Patch-Clamp Training Course; National Institute for Physiological Sciences, Okazaki, Japan; Daily practice for 1 wk |
| 2013 | Advanced Brain Research by Optical Measurements and Manipulations; The 13th Summer School of Physiological Society of Japan, Tokyo, Japan; 1 day session |
| 2014 | Matlab Fundamentals; Mathworks Japan, Tokyo, Japan; 3 day practice |
| 2014 | Diffusion Tensor Imaging Analysis (Linux introduction/DTI TBSS/DTI tractgraphy); Comprehensive Brain Science Network, Tokyo, Japan; 1 day practice |
| 2017 | FELASA Accredited Education and Training Course, “Animal experiments theory and practice – level C (Ref No.:035/2014)”, Szeged, Hungary, 80 h lectures and practices |
| 2018 | Publons Academy |

# TEACHING and TRAINING

## Teaching Contributions on Undergraduate Courses

|  |  |
| --- | --- |
| 2010–2013 | Practical of Hematology (Osmotic fragility and Coagulation cascade); Tokyo Women’s Medical University; 4th year undergraduate students; 2 ×4-hr sessions per wk for 2 wks |
| 2010–2013 | Practical of Physiology (Spirometry); Tokyo Women’s Medical University; 2nd year undergraduate students; 2 ×4-hr sessions per wk for 3 wks |
| 2012 | Tutor of Problem Based Learning; Tokyo Women’s Medical University; 1st year undergraduate students; 2 × 2-hr sessions per wk for 6 wks |
| 2012–2013 | Practical of Physiology (Spirometry); Tokyo Women’s Medical University; graduate students for biomedical course; 2 ×2-hr sessions in a day |
| 2013–2014 | Tutor of Team-Based Learning; Tokyo Women’s Medical University; 1st year undergraduate students; 2 × 2-hr sessions per wk for 6 wks |
| 2013 | Supervision of Basic Medical Research; Tokyo Women’s Medical University; 3rd year undergraduate student (Sawako Kamo); Daily mentorship for 3 wks |
| 2014 | Practical of Physiology (In silico Simulation of Cardiac Ion Channels); Tokyo Women’s Medical University; 2nd year undergraduate students; 2 ×4-hr sessions per wk for 3 wks |
| 2015 | Problem-Based Learning; Tokyo Women’s Medical University; 1st year undergraduate students; 4 × 2-hr sessions |
| 2016–2018 | Medical Physiology Seminar I; University of Szeged; 2nd year undergraduate students; 14 × 2-h sessions during the 1st semester |
| 2016–2018 | Medical Physiology Seminar II; University of Szeged; 2nd year undergraduate students; 15 × 2-h sessions during the 2nd semester |
| 2019 | Internship training, University of Szeged; 4th year undergraduate students; 8 weeks full-type |

## Teaching Contributions on Postgraduate Courses

|  |  |
| --- | --- |
| 2013 | Practical of Pain Research (Formalin test and Immunohistochemistry of spinal sections); Tokyo Women’s Medical University; Tokyo Women’s Medical University; graduate students; Daily practice for a week |
| 2012–2014 | Practical of Respiratory Medicine for Bio-Medical Curriculum; 4 × 2-h sessions |

## Educational Publications

|  |
| --- |
| 1. **Takeuchi Y.** (2017) Physiological Education and Japanese Medical Students in University of Szeged.*J Physiol Soc Japan*79: 8-15. (Peer Reviewed, Japanese). |

## Relevant Experience

|  |  |
| --- | --- |
| 2019 | FAOPS2019 & ADInstruments, Teaching Workshop, Kobe, Japan; Daily pradcctice for two days. Kobe, Japan, March 27-28. |

## Code Repository

|  |
| --- |
| 1. **Takeuchi Y.** (2017) physiology-examiner v1.0.0 [Data set]. Zenodo. http://doi.org/10.5281/zenodo.583685 |

## MD/PhD course Advisor

|  |
| --- |
| Harangozó M. and Földi T. (2017) MTA-SZTE „Lendület“ Oszcillatorikus Neuronhálózatok Kutatócsoport - SZTE ÁOK Élettani Intézet; A temporális lebeny epilepszia rohamainak közvetett csillapítása a neuromodulátoros rendszerek optogenetikai modulációjával. Co-Advisor |
| Harangozó M. (2018) MTA-SZTE „Lendület“ Oszcillatorikus Neuronhálózatok Kutatócsoport - SZTE ÁOK Élettani Intézet; A temporális lebeny epilepszia kezelése sejtvonalspecifikus ”proxy” ingerléssel. Nov 14th Co-Advisor |

# GENERAL CONTRIBUTION

## Reviews of Research Articles

### Pre-publication Peer Review

|  |  |
| --- | --- |
| Dec 10th 2017 | Neuroscience Research |
| Sep 28th, 2019 | Neuropsychopharmacology Reports |
| Nov 13th, 2019 | Neuropsychopharmacology Reports |

### Post-publication Peer Review

|  |  |  |
| --- | --- | --- |
| 2017 | Publons | https://publons.com/publon/462513/ |
| Jan 2nd 2018 | Publons | https://publons.com/publon/1605916/ |
| Jan 2nd 2018 | Publons | https://publons.com/publon/1605917/ |
| Jan 2nd 2018 | Publons | https://publons.com/publon/1605918/ |

## Symposium organization etc.

|  |  |
| --- | --- |
| July 29th 2020 | Symposium: Cutting-edge closed-loop and non-invasive brain stimulation technologies for neurological and psychiatric disorders (1S06a). The Japan Neuroscience Society. The 43rd Annual Meeting of the Japan Neuroscience Society (Kobe) 29 Jul 2020 Travel Grant: Brain Science Foundation, 250,000 JPY for Eran Stark Travel Grant: The Nagai Foundation Tokyo, 250,000 JPY for Mihály Vöröslakos |

## Panelist etc.

|  |  |
| --- | --- |
| March 29th 2019 | 9th FAOPS Congress, Meet the Lectures, Facilitator |

## Research Training Course

|  |  |
| --- | --- |
| 2008.11.01 | Instructor of Slice Patch-Clamp Training Course; National Institute for Physiological Sciences, Okazaki, Japan; Graduate students and Young researchers; Daily practice for 1 week |

## Laboratory Supervisory

### Technicians

|  |  |
| --- | --- |
| 2010–2015 | Supervision of technicians; Tokyo Women’s Medical University; 1st year undergraduate students; Daily mentorship for 12 months |
| 2015–present | Supervision of technicians; University of Szeged; Daily mentorship for 12 months |

### Undergraduate Students

|  |  |
| --- | --- |
| 2011–2012 | Mei Uchida; Waseda University (@ Tokyo Women’s Medical University) |
| 2013 | Sawako Kamo; Tokyo Women’s Medical University, School of Medicine |
| 2016–2017 | Yasuko Takai; Faculty of Medicine, University of Szeged |
| 2016–2017 | Jun Takai; Faculty of Medicine, University of Szeged |
| 2016–2019 | Tamás Földi; Faculty of Medicine, University of Szeged |
| 2016–2019 | Márk Harangozó; Faculty of Medicine, University of Szeged |
| 2019 | Yusei Nakayama; Faculty of Engineering, Toyohashi University of Technology |

### Graduate Students

|  |  |
| --- | --- |
| 2012-2014 | Mei Uchida; Waseda University (@ Tokyo Women’s Medical University) |
| 2015-2018 | Mihály Vöröslakos; Faculty of Medicine, University of Szeged |
| 2015-2018 | Anett Nagy; Faculty of Medicine, University of Szeged |
| 2017-2019 | Lizeth Pedraza; University of Szeged, Department of Physiology |
| 2019 | Takashi Kikukawa; Graduate School of Pharmaceutical Sciences, Nagoya City University |
| 2019-2020 | Lívia Barcsai, Faculty of Medicine, University of Szeged |

## Teaching Contributions

|  |  |
| --- | --- |
| 2015–2019 | Tutorial of Medical Physiology I; Hungary Medical Office; 2nd year undergraduate students; 14 × 2-h sessions during the 1st semester |
| 2015–2019 | Tutorial of Medical Physiology II; Hungary Medical Office; 2nd year undergraduate students; 14 × 2-h sessions during the 2nd semester |
| 2015–2019 | Tutorial of Medical Pharmacology I; Hungary Medical Office; 4th year undergraduate students; 14 × 2-h sessions during the 1st semester |
| 2015–2019 | Tutorial of Medical Pharmacology II; Hungary Medical Office; 4th year undergraduate students; 14 × 2-h sessions during the 2nd semester |

## Teaching Committee and Organization

|  |  |  |
| --- | --- | --- |
| 2015 | Segment 2 Tutorial Committee Member | School of Medicine, Tokyo Women’s Medical University |
| 2015 | Tutorial Committee Organizing Member | School of Medicine, Tokyo Women’s Medical University |

## Outreach activities

|  |  |  |
| --- | --- | --- |
| 2008 Nov 1st | Open-lab | National Institute of Physiological Sciences |
| 2014 Sep 20th | Open-lab | School of Medicine, Tokyo Women’s Medical University |
| 2016 Nov 26th | Open-lab | Department of Physiology, University of Szeged, Hungary |