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Education

Eötvös Loránd University , Budapest, Hungary, MSc in Biology	1998-2003
Semmelweis University , Budapest, Hungary Ph.D. in Neuroendocrinology	2003-2008

Employment

New York State Psychiatric Institute Research Scientist IV. Columbia University, New York Adjunct Associate Research Scientist in the Department of Psychiatry	2016 - present
Columbia University Medical Center , New York Postdoctoral Research Fellow Laboratory of Attila Losonczy	2010 - 2016
Institute of Experimental Medicine , Budapest, Hungary Postdoctoral Research Fellow Laboratory of Balázs Rózsa/Femtonics	2008 - 2010
Institute of Experimental Medicine , Budapest, Hungary Undergraduate/ Graduate student Laboratory of Zsolt Liposits	2003 - 2008
Rutgers University, Newark, USA. Short Term Scholar Laboratory of Laszlo Zaborszky	2004

RESEARCH SUPPORT:

Ongoing Research Support

Investigating the neuronal mechanisms of PTSD and anxiety at the subcellular and network levels BRAIN & BEHAVIOR RESEARCH FOUNDATION YOUNG INVESTIGATOR GRANT Role: Principal Investigator	01/15/2021 – 01/14/2023
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The major goal of this grant is to Investigate the neuronal mechanisms of PTSD and anxiety at the subcellular and network levels

Fear generalization after traumatic experience in the dentate gyrus
NIH/National Institute of Mental Health - R21 MH122965-01A1
Role: Principal Investigator

09/17/2020 – 08/31/2022

The major goal of this project is to identify the neuronal correlate of fear generalization in mossy cells and serotonergic axons in the dentate gyrus

Pending support

Neuromodulation of hippocampal memory consolidation during sleep
National Science Foundation
Role: Co-PI

tentative: 2022- 2026

The major goal of this project is to investigate the role of the Dentate Gyrus in memory consolidation

LIST OF PUBLICATIONS

Pre-prints:

1. Sebnem N Tuncdemir, Andres D Grosmark, Gergely F. Turi, Amei Shank, Jack Bowler, Gokhan Ordek, Attila Losonczy, Rene Hen, Clay O Lacefield. Parallel processing of sensory cue and spatial information in the Dentate Gyrus, BioRxiv; doi: <https://doi.org/10.1101/2020.02.13.947903> (2021)

PEER-REVIEWED

2020

1. Troullinou, Eirini; Tsagkatakis, Grigorios; Chavlis, Spyridon; Turi, Gergely F.; Li, Wenke; Losonczy, Attila; Tsakalides, Panagiotis; Poirazi, Panayiota (2021). "Artificial Neural Networks in Action for an automated Cell-Type Classification of Biological Neural Networks." IEEE Transactions on Emerging Topics in Computational Intelligence 5(5): 755-767.

2019

Mehta P, Kreeger L, Wylie DC, Pattadkal JJ, Lusignan T, Davis MJ, Turi GF, Li WK, Whitmire MP, Chen Y, Kajs BL, Seidemann E, Priebe NJ, Losonczy A, Zemelman BV. Functional Access to Neuron Subclasses in Rodent and Primate Forebrain. Cell Rep. 2019 Mar 5;26(10):2818-2832.e8. doi: 10.1016/j.celrep.2019.02.011. PubMed PMID: 30840900.

2. **Gergely F. Turi***, Wen-Ke Li*, Spyridon Chavlis, Panagiotis Bozelos, Ioanna Pandi, Justin O'Hare, James B. Priestley, Andres D. Grosmark, Zhenrui Liao, Max Ladow, Jeff F. Zhang, Boris V. Zemelman, Panayiota Poirazi and Attila Losonczy. Vasoactive Intestinal Polypeptide-Expressing Interneurons in the Hippocampus Support Goal-Oriented Spatial Learning. Neuron. 2019 Jan 18. pii: S0896-6273(19)30010-8. doi:10.1016/j.neuron.2019.01.009. [Epub ahead of print] PubMed PMID: 30713030.
(* contributed equally)

2018

3. Mary J. Donahue, Attila Kaszás, Gergely F. Turi, Balázs Rózsa, Andrea Slézia, Ivo Vanzetta, Gergely Katona, Christophe Bernard, George G. Malliaras and Adam Williamson. Multimodal Characterization of Neural Networks using Highly Transparent Electrode Arrays. *eNeuro*. 21 December 2018, ENEURO.0187-18.2018; DOI: <https://doi.org/10.1523/ENEURO.0187-18.2018>
4. Dénes Pálfi, Balázs Chiovini, Gergely Szalay, Attila Kaszás, Gergely F. Turi, Gergely Katona, Péter Ábrányi-Balogh, Milán Szőri, Attila Potor, Orsolya Frigyesi, Csilla Lukácsné Haveland, Zoltán Szadai, Miklós Madarász, Anikó Vasánits-Zsigrai, Ibolya Molnár-Perl, Béla Viskolcz, Imre G. Csizmadia, Zoltán Mucsi and Balázs Rózsa. High efficiency two-photon uncaging coupled by the correction of spontaneous hydrolysis. *Org Biomol Chem*. 2018 Mar 14;16(11):1958-1970. doi: 10.1039/c8ob00025e.

2017

5. Nathan B. Danielson*, **Gergely F. Turi***, Max Ladow, Spyridon Chavlis, Panagiotis C Petrantonakis, Panayiota Poirazi, Attila Losonczy. *In Vivo* Imaging of Dentate Gyrus Mossy Cells in Behaving Mice. *Neuron*. 2017 Feb 8;93(3):552-559.e4. doi: 10.1016/j.neuron.2016.12.019. Epub 2017 Jan 26.
(* contributed equally)

2016

6. Tommy L Lewis Jr, Gergely F. Turi, Seok-Kyu Kwon, Attila Losonczy, Franck Polleux. Progressive Decrease of Mitochondrial Motility during Maturation of Cortical Axons *In Vitro* and *In Vivo*. *Curr Biol*. 2016 Oct 10;26(19):2602-2608. doi: 10.1016/j.cub.2016.07.064. Epub 2016 Sep 15.
7. Thomas R. Reardon, Andrew J. Murray, Gergely F. Turi, Christoph Wirblich, Katherine R. Croce, Matthias J. Schnell, Thomas M. Jessell, Attila Losonczy (2016) Rabies Virus CVS-N2c(Δ G) Strain Enhances Retrograde Synaptic Transfer and Neuronal Viability. *Neuron*. 89(4):711-24.

2015

8. **Gergely F. Turi**, Gábor Wittmann, Ronald M. Lechan and Attila Losonczy (2015) Ambient GABA modulates septo-hippocampal inhibitory terminals via presynaptic GABA_B receptors. *Neuropharmacology* 88C: 55-62 Oct.

2014

9. Christine A Denny, Mazen A Kheirbek, Eva L Alba, Kenji F Tanaka, Rebecca A Brachman, Kimberly B Laughman, Nicole K Tamm, Gergely F. Turi, Attila Losonczy, René Hen (2014) Hippocampal memory traces are differentially modulated by experience, time, and adult neurogenesis. *Neuron* 83: 1. 189-2014 Jul.
10. Balázs Chiovini*, **Gergely F. Turi***, Gergely Katona, Attila Kaszás, Dénes Pálfi, Pál Maák, Gergely Szalay, Mátyás Forián Szabó, Gábor Szabó, Zoltán Szadai, Szabolcs Káli, Balázs Rózsa (2014) Dendritic Spikes Induce Ripples in Parvalbumin Interneurons during Hippocampal Sharp Waves. *Neuron* 82: 4. 908-924 May.
(* contributed equally)
11. Matthew Lovett-Barron, Patrick Kaifosh, Mazen A Kheirbek, Nathan Danielson, Jeffrey D Zaremba, Thomas R Reardon, Gergely F. Turi, René Hen, Boris V Zemelman, Attila Losonczy (2014) Dendritic inhibition in the hippocampus supports fear learning. *Science (New York, N.Y.)* 343: 6173. 857-863 Feb.

2013

12. Patrick Kaifosh, Matthew Lovett-Barron, Gergely F. Turi, Thomas R Reardon, Attila Losonczy (2013) Septo-hippocampal GABAergic signaling across multiple modalities in awake mice. *Nature neuroscience* 16: 9. 1182-1184 Sep.

2012

13. F Bolze, J -F Nicoud, C Bourgogne, S Gug, X H Sun, M Goeldner, A Specht, L Donato, D Warther, Gergely F. Turi, A Losonczy (2012) Two-photon uncaging: The chemist point of view *Optical Materials* 34: 10. 1664-1669 08.
14. M Lovett-Barron, Gergely F. Turi, P Kaifosh, P H Lee, F Bolze, X H Sun, J F Nicoud, B V Zemelman, S M Sternson, A Losonczy (2012) Regulation of neuronal input transformations by tunable dendritic inhibition *Nat Neurosci* 15: 3. 423-30, 03.
15. Attila Heinrich, Romeo D. Andó, Gergely F. Turi, Balázs Rózsa, Beáta Sperlág (2012) K⁺ depolarization evokes ATP, adenosine and glutamate release from glia in rat hippocampus: a microelectrode biosensor study. *British journal of pharmacology* 167: 5. 1003-1020 Nov.

2011

16. Gergely Katona, Attila Kaszás, Gergely F. Turi, Norbert Hajos, Gábor Tamas, Szilveszter E. Vizi, Balázs Rózsa (2011) Roller Coaster Scanning reveals spontaneous triggering of dendritic spikes in CA1 interneurons *Proc Natl Acad Sci U S A* 108: 5. 2148-53 02.

2010

17. Balázs Chiovini, Gergely F. Turi, Gergely Katona, Attila Kaszás, Ferenc Erdelyi, Gábor Szabo, Hannah Monyer, Attila Csákányi, Szilveszter E. Vizi, Balázs Rózsa (2010) Enhanced dendritic action potential backpropagation in parvalbumin-positive basket cells during sharp wave activity *Neurochem Res* 35: 12. 2086-95 12.

2008

18. **Gergely F. Turi**, Zsolt Liposits, Erik Hrabovszky (2008) Cholinergic afferents to gonadotropin-releasing hormone neurons of the rat *Neurochemistry International* 52: 4-5. 723-728 03.

2007

19. Erik Hrabovszky, Levente Deli, Gergely F. Turi, Imre Kallo, Zsolt Liposits (2007) Glutamatergic innervation of the hypothalamic median eminence and posterior pituitary of the rat *Neuroscience* 144: 4. 1383-1392 02.

2006

20. Erik Hrabovszky, Imre Kallo, Gergely F. Turi, Katalin May, Gábor Wittmann, Csaba Fekete, Zsolt Liposits (2006) Expression of vesicular glutamate transporter-2 in gonadotrope and thyrotrope cells of the rat pituitary. Regulation by estrogen and thyroid hormone status *Endocrinology* 147: 8. 3818-3825 08.
21. Erik Hrabovszky, Agnes K. Csapo, Imre Kallo, Tamas Wilhelm, Gergely F. Turi, Zsolt Liposits (2006) Localization and osmotic regulation of vesicular glutamate transporter-2 in magnocellular neurons of the rat hypothalamus *Neurochemistry International* 48: 8. 753-761 06.

2005

22. Erik Hrabovszky, Gábor Wittmann, Gergely F. Turi, Zsolt Liposits, Csaba Fekete (2005) Hypophysiotropic thyrotropin-releasing hormone and corticotropin-releasing hormone neurons of the rat contain vesicular glutamate transporter-2 *Endocrinology* 146: 1. 341-347 01.
23. Erik Hrabovszky, Gergely F. Turi, Zsolt Liposits (2005) Presence of vesicular glutamate transporter-2 in hypophysiotropic somatostatin but not growth hormone-releasing hormone neurons of the male rat *European Journal of Neuroscience* 21: 8. 2120-2126 04.

2004

24. Sarah Threlfell, Stephanie J Cragg, Imre Kallo, Gergely F. Turi, Clive W. Coen, Sarah A. Greenfield (2004) Histamine h3 receptors inhibit serotonin release in substantia nigra pars reticulata *Journal of Neuroscience* 24: 40. 8704-8710 10.
25. Erik Hrabovszky, Gergely F. Turi, Imre Kallo, Z Liposits (2004) Expression of vesicular glutamate transporter-2 in gonadotropin-releasing hormone neurons of the adult male rat *Endocrinology* 145: 9. 4018-4021 09.

2003

26. **Gergely F. Turi**, Zolt Liposits, Suzanne M. Moenter, Csaba Fekete, Erik Hrabovszky (2003) Origin of neuropeptide Y-containing afferents to gonadotropin-releasing hormone neurons in male mice *Endocrinology* 144: 11. 4967-4974 11.

INTERNATIONAL PATENTS

1. Method and measuring system for scanning multiple regions of interest E. Szilveszter Vizi, Gergely Katona, J. Balázs Rózsa, Attila Kaszás, **Gergely F. Turi** US 20110279667; EP2187252; WO/2010/055361; PCT/HU2009/000094

SELECTED PRESENTATIONS

1. *In vivo* imaging dentate gyrus principal neuron subpopulations during navigation and learning – Society for Neuroscience, Annual Meeting, 2017
2. Role of hippocampal VIP interneurons in reward-oriented spatial learning – Society for Neuroscience, Annual Meeting, 2017

THESIS:

Gergely, F. T. (2007). *Implication of novel neurotransmitter systems in the regulation of gonadotropin -releasing hormone neurons* http://semmelweis.hu/wp-content/phd/phd_live/vedes/export/turigergely.e.pdf

FELLOWSHIPS AND AWARDS:

<i>Deciphering neuronal encoding in the dentate gyrus during anxiety</i> Columbia University, Dept. of Psychiatry – Chairman's Collaborative Pilot Awards Role: PI	2018
<i>New combined femto-chemical, nonlinear microscopy technology for drug and neurotransmitter effect screening with unprecedented spatial and temporal resolution</i> Pfizer R&D Award, Hungary Role: Co-PI	2010
Travel grant of the German Neuroscience Society	2010
IBRO Travel Grant	2010
FENS-CEERC Travel Grant	2008

TEACHING EXPERIENCE:

09/1997 – 06/1998: Teaching Assistant at Mihály Babits High School (Budapest, Hungary)

PROFESSIONAL MEMBERSHIPS AND POSTIONS:

Society for Neuroscience

2016 – present Head of the Preclinical Imaging Core at New York State Psychiatric Institute

2020 – *ad hoc* reviewer, NIH – Neurobiology of Motivated Behavior study section

ADVISING AND MENTORSHIP

Turi lab

2021 – present Carla Dias, Princeton Univ. , Research Assistant

2021 – present Isla Weber, Princeton Univ. , Research Assistant

2021/06 – 2021/08 Robina Afzal, Emory Univ., Summer Intern

2020 – present Pallavi Pareek, undergrad researcher, Drexel Univ.

2020 – present Nicola Sheybani, Barnard College, undergrad researcher

2018 – present Rehnuma Khan, undergrad/Graduate researcher

2020 – present Hongtao Cai, Columbia University, Columbia Engineering, undergrad researcher

2020 – 2021 Zvi Goldstein, Columbia University, Columbia Engineering, undergrad researcher

2019 – 2021 Colin Payne-Rogers, Columbia University, undergrad researcher

2020 – 2021 Siyuan Lu, Columbia University, undergrad researcher

2019 – 2020 Angelica Prastiti, Barnard College, undergrad researcher

Other

2016 – present Sebnem Tuncdemir, Current position: Postdoc in René Hen's lab

2016 – 2021 Jack Berry, Current position: MD-PhD student in Dr. René Hen's lab

2016 – 2019 Jeff Zhang, Current position: Medical student, Jacobs School of Medicine at University of Buffalo

2010 – 2016 Nathan Danielson, Current position: CTRL-lab/Facebook

2010 – 2016 Jeff Zaremba, Current position: Senior Data Engineer at Perceptive Automata

2010 – 2016 Joseph Tsai, graduate student

2013 – 2016 Alexandra Kaufman, Current position: Regeneron

2013 – 2016 Sebastian Rolotti, Current position: Postdoc in Attila Losonczy's lab

2015 – 2017 Max Ladow, Current position: PhD student in Kheirbek lab at UCSF

2015 – 2018 Zhenrui Liao, Current position: MD-PhD student in Losonczy lab, Columbia University

2014 – 2016 Alyson Lowell, Current position: PhD student, CUNY Stony Brook

2012 – 2013 Anna Sarfaty

2008 – 2010 Balázs Chiovini, Current position: researcher in Dr. Balazs Rózsa's lab

2008 – 2010 Gergely Szalay, Current position: Head of Biological Research Department at Femtonics