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## Education

**Eötvös Loránd University**, Budapest, Hungary, 1998-2003  
**MSc** in Biology

**Semmelweis University**, Budapest, Hungary 2003-2008  
**Ph.D.** in Neuroendocrinology

## Employment

**New York State Psychiatric Institute** 2016 - present  
Research Scientist IV.  
Columbia University, New York  
Adjunct Associate Research Scientist in the  
Department of Psychiatry

**Columbia University Medical Center**, New York 2010 - 2016  
Postdoctoral Research Fellow  
Laboratory of Attila Losonczy

**Institute of Experimental Medicine**, Budapest, 2008 - 2010  
Hungary  
Postdoctoral Research Fellow  
Laboratory of Balázs Rózsa/Femtonics

**Institute of Experimental Medicine**, Budapest, 2003 - 2008  
Hungary  
Undergraduate/ Graduate student  
Laboratory of Zsolt Liposits

**Rutgers University, Newark, USA.** 09/2004-12/2004  
Short Term Scholar  
Laboratory of Laszlo Zaborszky

## RESEARCH SUPPORT:

### Ongoing Research Support

*Investigating the neuronal mechanisms of PTSD and anxiety at the subcellular and network levels* 01/15/2021 – 01/14/2023  
BRAIN & BEHAVIOR RESEARCH FOUNDATION  
YOUNG INVESTIGATOR GRANT  
Role: Principal Investigator

The major goal of this grant is to investigate the neuronal mechanisms of PTSD and anxiety at the subcellular and network levels

NIH/National Institute of Mental Health - R21 MH122965-01A1

Role: Principal Investigator

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

## LIST OF PUBLICATIONS

### PEER-REVIEWED:

#### 2021

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. Cell Reports, Accepted.

#### 2020

2. Troullinou, Eirini; Tsagakatakis, 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

3. 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.

4. **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

5. 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>

6. 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

7. Nathan B. Danielson\*, **Gergely F. Turi\***, Max Ladow, Spyridon Chavlis, Panagiotis C Petrantonas, 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

8. 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.

9. 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( $\Delta$ G) Strain Enhances Retrograde Synaptic Transfer and Neuronal Viability. *Neuron*. 89(4):711-24.

## 2015

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

## 2014

11. Christine A Denny, Mazen A Kheirbek, Eva L Alba, Kenji F Tanaka, Rebecca A Brachman, Kimberly B Laughman, Nicole K Tomm, **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.

12. 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)

13. 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

14. 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

15. F Bolze, J -F Nicoud, C Bourgoigne, 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.

16. 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.

17. Attila Heinrich, Romeo D. Andó, **Gergely F. Turi**, Balázs Rózsa, Beáta Sperlággh (2012) K<sup>+</sup> 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

18. 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

19. 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

20. **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

21. 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

22. 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.

23. 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

24. 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.

25. 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

26. 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.

27. 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

28. **Gergely F. Turi**, Zsolt 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.

## 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)

## 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/turigergergely.e.pdf](http://semmelweis.hu/wp-content/phd/phd_live/vedes/export/turigergergely.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
XXVI. National Council of Student Research Societies, Neuroscience section, 2nd place, Szeged, Hungary	2003

## 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**

2022/06 – 08 Chinaza Onwukanjo; High School Student intern (BRAINYAC program).  
2022/06 – 08 Aliza Hacking; Summer intern.  
2021 – present Huong Ho, New York Institute of Technology, undergrad researcher  
2021 – present Carla Dias, Princeton Univ., Research Assistant  
2021 – present Isla Weber, Princeton Univ., Research Assistant, thesis advisor  
2020 – 2022 Pallavi Pareek, undergrad researcher, Drexel Univ.  
2020 – 2022 Nicola Sheybani, Barnard College, undergrad researcher, thesis advisor. Currently: First Year Analyst at Morgan Stanley  
2018 – 2020 Rehnuma Khan, undergrad researcher/Research Assistant. Currently: med school at Albert Einstein College of Medicine  
2020 – 2022 Hongtao Cai, Columbia University, Columbia Engineering, undergrad researcher. Currently at Allegro Microsystems  
2021/06 – 2021/08 Robina Afzal, Emory Univ., Summer Intern.  
2020 – 2021 Zvi Goldstein, Columbia University, Columbia Engineering, undergrad researcher. Currently: Biomedical Engineer at PathAI  
2019 – 2021 Colin Payne-Rogers, Columbia University, undergrad researcher. Currently: senior software engineer at Cedar  
2020 – 2021 Siyuan Lu, Columbia University, undergrad researcher  
2019 – 2020 Angelica Prastiti, Barnard College, undergrad researcher, currently in dental school at Universidad Europea (Spain)

### ***Other training activities***

2016 – 2022 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, rotation and graduate student  
2013 – 2016 Alexandra Kaufman, Current position: Postdoctoral Scientist at Regeneron  
2013 – 2016 Sebastian Rolotti, Current position: CTRL-lab/Facebook  
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