

Curriculum vitae: Alexei Morozov, PhD

Assistant Professor,

Virginia Tech Carilion Research Institute, School of Biomedical Engineering and Science,
Virginia Tech, Department of Psychiatry Virginia Tech Carilion School of Medicine

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Education/Research experience

<i>Institution</i>	<i>Position</i>	<i>Year</i>	<i>Field of Study</i>
Virginia Tech	Assistant Professor	since 9/1/2012	Neuronal mechanisms of emotions
National Institute of Mental Health	Investigator	2002-2012	Neuronal mechanisms of emotions
Center for Neurobiology and Behavior Columbia University New York, NY	Postdoctoral Fellow	1996-2002	Molecular mechanisms of learning and memory Postdoctoral advisor: Eric Kandel, M.D.
Biochemistry Department University of Illinois at Chicago, Chicago, IL	Graduate Student	1991-1996	Eukaryotic transcription Ph.D. advisor: Pradip Raychaudhuri
Institute of Molecular Biology Russian Academy of Sciences, Moscow	Researcher	1989-1991	Genes regulation
Institute of Medical Enzymology Russian Academy of Medical Health Sciences, Moscow	Researcher	1987-1989	Genes regulation
Bioorganic Chemistry Dept, Lomonosov Moscow State University	MS student	1982-1987	Biochemistry

Research interests

Neuronal circuit-based mechanisms of emotion, social behaviors and empathy.

Experimental approaches

Animal behavior, transgenic mouse technology, rodent brain slice electrophysiology, optogenetics *in vitro* and *in vivo*

Awards:

- 1993-1996 Graduate College Fellowship, University of Illinois at Chicago, Chicago, Illinois
- 1993-1995 Award from Dorothea H. Fleming Student Research Fund, University of Illinois at Chicago, Chicago, Illinois
- 1994 Certificate of Merit for Outstanding Student Research Presentation at the Eleventh 1994 Annual Molecular Biology Retreat of the University of Illinois at Chicago.

Meeting organization and scientific societies:

2011 *SFN Meeting*: Chair of nanosymposium “Optogenetics: Novel Methods and Innovative Uses”

Society for Neuroscience – regular member since January 1999

Reviewing:

Animal Cognition (2019)
Biological Psychiatry
Cell Reports
Current Molecular Pharmacology
eNeuro (2020)
Experimental Biology and Medicine
Genes Brain and Behavior
Hippocampus
J. of Neuroscience
Journal of Neuroscience Methods
Journal of Neuroscience Research (2020)
Journal of Visualized Experiments
Molecular Brain
Molecular Neurobiology
Neurochemistry International (2018/11)
Neuron
Neuropharmacology
Neuropsychopharmacology
Neuroscience
Neuroscience Letters (2018/4)
PLOS Biology
Psychoneuroendocrinology (2017)
Scientific Reports (2017, 2018)
Trends in Neuroscience

Ad-hock reviewer

July 2020	NIH Special Emphasis Panel/Scientific Review Group 2020/10 ZNS1 SRB-M (01) - BRAIN Biology and Biophysics of Neural Stimulations and Recording Technologies SRB M01
October 2019	NIH Special emphasis panel ZRG1MDCN P57, the Cellular and Molecular Biology of Complex Brain Disorders
July 2018	Executive Review Committee for the Inova Translational Research Funding Program
June 2017	MRC Independent Career Fellowship application
January 2017	Evaluator of Elena Brazhnik, Ph.D. as a Senior Research Fellow in the NINDS Intramural Program
November 2016	<i>New University Researchers Start-up Program</i> of the Fonds de recherche du Québec - Nature et technologies
November 2 2016	NIMH Special emphasis panel ZMH1 ERB-S(01) 'The neural mechanisms of multidimensional emotional and social representations'.
November 2015	Swiss National Science Foundation
November 2013	Swiss National Science Foundation
March 2012	Transdisciplinary, Multi-institutional Research Cluster Proposal Program from Nebraska EPSCoR.

Service:

2020-present	Search for Senior Veterinarian VT.
2020-present	Mentor for Bishan Shourie, undergraduate student at VT School of Neuroscience.
2019-present	Ph. D. Thesis Committee for Kaiser Arndt, VT School of Neuroscience student.
2018-present	Ph. D. Thesis Committee for Ivan Zuidhoek, VT TBMH graduate student
2017-present	Ph. D. Thesis Committee for Zhuoya Cui, VT TBMH graduate student.
2017	Extramural Reviewer for the Ph. D. dissertation of Thomas Rogers-Cotrone, Department of Biomedical Sciences and Pathobiology Virginia-Maryland College of Veterinary Medicine.

- 2016-2017 Faculty search committee **TR0160164** for the VTCRI Center for Developmental and Translational Neuroscience.
- 2015-2016 Advisor for Michael Urban CDA proposal
2016 Mentor for Jamelle Simmons on collaborative project with Yong Lee laboratory
- 2014-2015 Mentor for Darshan Patel and Nikki Carmack undergraduate research projects in the VTCRI laboratory
- 2014-2015 Mentor for Howard Huang under the Insight Program of Roanoke County Public Schools and Roanoke Valley Governor's School for Science, Howard's presentation won the first place in the Regional Science Fair.
- 2007 Judge for FARE award, NIH, May-June 2007
2007 Department of Biological Sciences Lehigh University, Evaluator for the college tenure committee for tenure review of Dr. Bykhovskaya
- 2006 The Institute for Biomedical Sciences of George Washington University, Ph. D. Thesis Committee for Hyun-Soo Je
- March-August 2013 Supervisor for Catherine Farnan's Virginia Tech Capstone Project
- April 23 2014 Presentation for VT Chapter of SASE (Society of Asian Scientists and Engineers) on how to get involved in the research field.

Outreach:

Interviews with several media outlets in winter-spring 2017 :

- 1) Academic minute- National public radio: <https://academicminute.org/2017/03/alexei-morozov-virginia-tech-university-fear-in-others/>
- 2) <http://wsls.com/2017/03/17/local-neurologist-discovers-second-hand-trauma-causes-physical-change-in-brain/>
- 3) Science for the people: <http://www.scienceforthepeople.ca/episodes/ptsd.>
- 4) Wall Street Journal, interview by Susan Pinker <https://www.wsj.com/articles/watching-terror-and-other-traumas-can-deeply-hurt-teenagers-1486567986?mg=id-wsj>

Invited talks:

- June 29, 2018 "Observational fear as an enhancer of inhibitory avoidance", Symposium: Social transmission of information in mammals: Key insights from rodents

and non-human primates. International Behavioral Neuroscience Society annual meeting, Boca Raton, Florida, June 27-July 2.

- August 9, 2017 "Metaplasticity of the prefrontal-amygdala pathway as a two-hit mechanisms of pathological fear", Gordon Research Conference "Amygdala Function in Emotion, Cognition and Disease", Stonehill College Easton, MA.
- March 19, 2015 "Pathological behaviors and neuronal circuits: searching for links using animal models", invited talk at Virginia Tech Carilion Psychiatry Grand Rounds.
- June 19, 2014 "Prefrontal-amygdala circuit and behavior following vicarious pain", invited talk at the session "Development and plasticity of neural circuits controlling stress, anxiety and fear" during Stress Neurobiology Workshop, Cincinnati, OH.
- January 29, 2014 "Hippocampal CA3-restricted BDNF knockout mice as a model of abnormal social behaviors", invited panel presentation at the 47th Annual Winter Conference on Brain Research, Steamboat Springs, CO
- October 17, 2013 "Prefrontal-amygdala circuit and behavior following vicarious pain", talk at Virginia Tech Carilion Research Institute European-U.S. Workshop on the neuroscience of Cognition, Computation, and Decisions.
- July 30, 2013 "Prefrontal-amygdala circuit and behavior following vicarious pain", talk at Gordon Research Conference "Amygdala in Health and Disease", Stonehill College, Easton, MA
- March 8, 2012 "Amygdala circuitry and emotions" Neuroscience Seminar Series of the Uniformed Services University School of Medicine, in Bethesda, MD
- January 9, 2012 "Functional analysis of the neural circuitry of emotions" University of Pittsburgh Department of Neuroscience
- November 21, 2011 "Functional analysis of the neural circuitry of emotions" Virginia Tech Carilion Research Institute
- November 17, 2011 "Distinct properties of sensory and modulatory inputs to amygdala" 1st Joint Neuroscience Symposium Institute of Neuroscience, Chinese Academy of Sciences National Institute of Mental Health, National Institutes of Health
- August 23, 2011 "Functional analysis of emotional circuitry of the brain" University of Iowa
- August 2, 2011 "Inputs from anterior cingulate cortex and sensory area TeA differentially recruit neuronal subpopulations in basolateral amygdala" Hot topics presentation at Gordon Research Conference: "Amygdala in Health & Disease"

- May 31, 2011 "Functional analysis of basolateral amygdala" NIDA Intramural Research Program Seminar Series, NIDA, Baltimore
- October 6, 2010 "Dissection of amygdala circuitry with optogenetics" NIH Research Festival, Session on Brain Microcircuits and Behavior. Natcher Conference Center
- November 13, 2009 "Fear and amygdala plasticity" Center for Neuroscience Research Children's Research Institute, Washington DC
- June 20, 2008 "Animals in biological research" Walter Johnson High School, Bethesda
- March 1, 2007 "Regulation of fear and amygdala synaptic plasticity by small GTPase Rap1": Institute of Neuroscience University of Oregon
- March 30, 2005 "Circuitry of fear and aggression" Center for Neuroscience University of North Carolina
- June 14, 2005 "Circuitry of fear and aggression" McLean Hospital Harvard University
- September 14, 2005 "Control of aggressive behaviors by BDNF" Department of Psychiatry Johns Hopkins University

Teaching Experience and student activities

- 2020/8/28 Research live to medical students
- 2020/6/23 Evaluating M4 manuscript presentation for Godbe, Gosnel, Rahman
- 2020/6/12 Evaluating M2 abstract oral presentations for Chen, King and Reis
- 2020/5/22 Grading prospectus of M1 Lauren Hennis
- 2020/4/29 Methods and logic facilitator to M1 VTCSOM students
- 2020/4/28 Lecture "The Limbic System: Emotion and Memory" to M1 VTCSOM students on Neuroscience class.
- 2020/4/17 Evaluation of M1 student proposals (Carter, Hennis, McLane)
- 2020/1/31 Evaluator for Caleb Hubbard, M4 manuscript and oral presentation
- 2020/1/10 Research Live to medical students
- 2019/12/9 Neuroscience Ph. D. Dissertation Committee for Kaiser Arndt, School of Neuroscience Graduate Program
- 2019/9/16 Thesis committee meeting for Ivan Zudeck, TBMH student
- 2019/8/19 Evaluator for Sol Moon, M4 manuscript and oral presentation
- 2018/6/19 Evaluator for Gail Stanton's, Brian Connor's, M4 oral presentation
- 2018/5/9 Grader of research prospectus of Haily Gosnel, M1 medical student
- 2018/4/25 Evaluator for M2 oral presentations: Anisha Chada, Harsh Patolia, Sol Moon
- 2018/4/18 Facilitator for "Methods and Logic" class for VTCSOM and TBMH students
- 2017/6-7 Mentor for a rotation VT PREP student Van Truong
- 2017/6/12 Evaluator of 3d year med students Courtney Knill and Elizabeth Sugg
- 2017/5/11 External Examiner of Ph. D. thesis for Tom Cotrone Virginia-Maryland College of Veterinary Medicine

2017/4/25 Evaluator of M2 research presentations
 2017/4/3 Evaluator of M1 structured abstracts for medical students Taylor and Liao.
 2017/2/9 Evaluator of students' posters after TBMH rotation
 2016 Introducing the TBMH Neuroscience track during TBMH recruiting, 11/4/2016
 2016 "Research live" lecture to medical students, 11/4/2016
 2016 BMES qualifying exam, summer 6/21/2016
 2016 Evaluator of research presentations by the following VTC medical students:
 Robinson, Schafer, Zafar, Xu and Scharping, 4/22/2016
 2016 Professional development course for TBMH and BEST students, April 27, 2016
 2016 Introduction to Biomedical Engineering – 2 lectures
 2016 Fundamentals of Brain and Cognitive Sciences - 1 lecture
 2015 Professional development course for TBMH and BEST students, April 8, 2015
 2015 Introduction to Biomedical Engineering – 2 lectures
 2014 "Research live" lecture to Medical students, Fall 2014
 2014 Introduction to Biomedical Engineering – 2 lectures
 2013 Evaluator for James Joyner's project entitled "The effects of brain stimulation on
 resistance to smoking" and for Greg Davis
 2013 BMES qualifying exam, summer 2013
 2013 "Research live" lecture to Medical students on November 15
 2013 Introduction to Biomedical Engineering – 1 lecture
 2002-2011 Training post baccalaureate fellows at NIH
 1991-1996 Teaching Assistant, Department of Biochemistry University of Illinois
 1993-1994 Biochemistry Tutor for Dentistry Students, University of Illinois.

Books and chapters

1. **Alexei Morozov** and Wataru Ito (2019) Plasticity of amygdala neurons underlying fear learning and extinction. In: Handbook of Amygdala Structure and Function. Urban J and Rosenkranz A, eds. Elsevier, Amsterdam (In Press) [invited chapter]
2. Controlled Genetic Manipulations, editor of the volume. Springer, [Neuromethods](#) Volume 65, 2012, DOI: 10.1007/978-1-61779-533-6 <http://www.springerlink.com/content/k16761/>

Peer-reviewed publications

1. Disinhibition-assisted long-term potentiation in the prefrontal-amygdala pathway via suppression of somatostatin-expressing interneurons. Ito W., Fusco B., Morozov A. Neurophoton. 7(1), 015007 (2020), doi: 10.1117/1.NPh.7.1.015007.
2. Conserved features of anterior cingulate networks support observational learning across species. Burgos-Robles A, Gothard KM, Monfils MH, **Morozov A**, Vicentic A. Neurosci Biobehav Rev. 2019 Sep 8;107:215-228. doi: 10.1016/j.neubiorev.2019.09.009. [Epub ahead of print] Review. PMID: 31509768

3. EGR1 recruits TET1 to shape the brain methylome during development and upon neuronal activity. Sun Z, Xu X, He J, Murray A, Sun MA, Wei X, Wang X, McCoig E, Xie E, Jiang X, Li L, Zhu J, Chen J, **Morozov A**, Pickrell AM, Theus MH, Xie H. *Nat Commun*. 2019 Aug 29;10(1):3892. doi: 10.1038/s41467-019-11905-3. PMID: 31467272
4. Prefrontal-amygdala plasticity enabled by observational fear. Ito W, **Morozov A**. *Neuropsychopharmacology*. 2019 Feb 13. doi: 10.1038/s41386-019-0342-7. [Epub ahead of print] PMID: 30759453
5. Impaired social contacts with familiar anesthetized conspecific in CA3-restricted brain-derived neurotrophic factor knockout mice. Ito W, Huang H, Brayman V, **Morozov A**. *Genes Brain Behav*. 2019 Jan;18(1):e12513. doi: 10.1111/gbb.12513.
6. Social modulation of fear: facilitation versus buffering. **A. Morozov** and W. Ito. *Genes Brain Behav*. 2019 Jan;18(1):e12491. doi: 10.1111/gbb.12491. Published online June 13, 2018.
7. Behavioral modulation by social experiences in rodent models. **A. Morozov**. *Current Protocols in Neuroscience*, 84, e50. doi:10.1002/cpns.50Published online May 16, 2018.
8. Overexpression of channelrhodopsin-2 interferes with the GABA_B receptor-mediated depression of GABA release from the somatostatin-containing interneurons of the prefrontal cortex. Lei Liu, Wataru Ito, and **Alexei Morozov**. *Neurophotonics*, 2018 Apr;5(2):025003. doi: 10.1117/1.NPh.5.2.025003. Epub 2018 Mar 1.
9. GABA_B Receptor Mediates Opposing Adaptations of GABA Release From Two Types of Prefrontal Interneurons After Observational Fear. Liu L, Ito W, **Morozov A**. *Neuropsychopharmacology*. 2017 May;42(6):1272- 2017.
10. Neuronal Rap1 Regulates Energy Balance, Glucose Homeostasis, and Leptin Actions. Kaneko K, Xu P, Cordonier EL, Chen SS, Ng A, Xu Y, **Morozov A**, Fukuda M. *Cell Rep*. 2016 Sep 13;16(11):3003-15. doi: 10.1016/j.celrep.2016.08.039.
11. Maddala R, Nagendran T, Lang RA, **Morozov A**, Rao PV. Rap1 GTPase is required for mouse lens epithelial maintenance and morphogenesis. *Dev Biol*. 2015 Oct 1;406(1):74-91. doi: 10.1016/j.ydbio.2015.06.022. Epub 2015 Jul 23. PubMed PMID: 26212757; PubMed Central PMCID: PMC4587029.
12. W. Ito, A. Erisir, **A. Morozov**. Observation of distressed conspecific as a model of emotional trauma generates silent synapses in the prefrontal-amygdala pathway and enhances fear learning, but ketamine abolishes those effects. *Neuropsychopharmacology* 2015 Oct;40(11):2536-45. doi: 10.1038/npp.2015.100. PMID: 25865929
13. Ying Huang, Kristopher Yoon, Ho Ko, Song Jiao, Wataru Ito, Jian- Young Wu, Wing-Ho Yung, Bai Lu and **Alexei Morozov**. 5-HT_{3a} Receptors Modulate Hippocampal Gamma Oscillations by Regulating Synchrony of Parvalbumin-Positive Interneurons *Cereb Cortex*. 2016 Feb;26(2):576-85. doi: 10.1093/cercor/bhu209. Epub 2014 Sep 21. *PubMed PMID: 25246509*.

14. Potla U, Ni J, Vadaparampil J, Yang G, Leventhal JS, Campbell KN, Chuang PY, **Morozov A**, He JC, D'Agati VD, Klotman PE, Kaufman L. Podocyte-specific RAP1GAP expression contributes to focal segmental glomerulosclerosis-associated glomerular injury *J Clin Invest*. 2014 Apr 1;124(4):1757-69.
15. Subramanian J, Dye L, **Morozov A**. Rap1 signaling prevents L-type calcium channel-dependent neurotransmitter release. *J Neurosci*. 2013 Apr 24;33(17):7245-52.
16. Zou W, Izawa T, Zhu T, Chappel J, Otero K, Monkley SJ, Critchley DR, Petrich BG, **Morozov A**, Ginsberg MH, Teitelbaum SL. Talin1 and Rap1 are critical for osteoclast function *Mol Cell Biol*. 2013 Feb;33(4):830-44
17. Chu HY, Ito W, Li J and **Morozov A**. Target-Specific Suppression of GABA Release from Parvalbumin Interneurons in the Basolateral Amygdala by Dopamine. *J Neurosci*. 2012 Oct 17;32(42):14815-20.
18. VM Luna and **A Morozov**. Input-specific excitation of olfactory cortex microcircuits. *Frontiers in Neural Circuits* 2012, Volume 6, Article 69 http://www.frontiersin.org/neural_circuits/10.3389/fncir.2012.00069/abstract
19. Huang Y, Ko H, Cheung ZH, Yung KK, Yao T, Wang JJ, **Morozov A**, Ke Y, Ip NY, Yung WH. Dual actions of brain-derived neurotrophic factor on GABAergic transmission in cerebellar Purkinje neurons. *Exp Neurol*. 2012 Feb;233(2):791-8.
20. Ito W, Chehab M, Thakur S, Li J, **Morozov A**. BDNF-restricted knockout mice as an animal model for aggression. *Genes Brain Behav*. 2011 Apr;10(3):365-74
21. Huang Y, **Morozov A**. Hippocampal deletion of BDNF gene attenuates gamma oscillations in area CA1 by up-regulating 5-HT3 receptor. *PLoS One*. 2011 Jan 26;6(1):e16480
22. J Subramanian and **A Morozov**. Erk1/2 Inhibit Synaptic Vesicle Exocytosis through L-Type Calcium Channels. *J Neurosci*. 2011 Mar 23;31(12):4755-64.
23. **Morozov A**, Sukato D, Ito W. Selective suppression of plasticity in amygdala inputs from temporal association cortex by the external capsule. *J Neurosci*. 2011 Jan 5;31(1):339-45.
24. Warner-Schmidt JL, Chen EY, Zhang X, Marshall JJ, **Morozov A**, Svenningsson P, Greengard P. A Role for p11 in the Antidepressant Action of Brain-Derived Neurotrophic Factor. *Biol Psychiatry*. 2010 Sep 15;68(6):528-35.
25. Takahashi S, Ohshima T, Hirasawa M, Pareek TK, Bugge TH, **Morozov A**, Fujieda K, Brady RO, Kulkarni AB. Conditional deletion of neuronal cyclin-dependent kinase 5 in

- developing forebrain results in microglial activation and neurodegeneration. *Am J Pathol.* 2010 Jan;176(1):320-9.
26. B-X Pan, W Ito and **A Morozov**. Divergence Between Thalamic and Cortical Inputs to Lateral Amygdala During Juvenile-Adult Transition in Mice. *Biol Psychiatry.* 2009 Nov 15;66(10):964-71.
 27. B-X Pan, Y Dong, W Ito, Y Yanagawa, R Shigemoto and **A Morozov**. Selective gating of glutamatergic inputs to excitatory neurons of amygdala by presynaptic GABA_B receptor *Neuron*: 2009 Mar 26;61(6):917-29.
 28. W Ito, B-X Pan, C Yang, S Thakur and **A Morozov**. Enhanced generalization of auditory conditioned fear in juvenile mice *Learn Mem*: 2009 Feb 17;16(3):187-92
 29. **A. Morozov**. Conditional gene expression and targeting in neuroscience research. *Curr. Prot. Neurosci.* 44: 4.31.1-4.31.10 © 2008 by John Wiley and Sons, Inc.
 30. Pan B., Vautier, F., Ito W., Bolshakov VY and **Morozov A**. Enhanced cortico-amygdala efficacy and suppressed fear in absence of Rap1 *J Neurosci.* 2008 Feb 27;28(9):2089-98.
 31. A Barco, S Patterson, J M Alarcon, P Gromova, M Mata-Roig, **A Morozov**, and ER Kandel. Gene Expression Profiling of Facilitated L-LTP in VP16-CREB Mice Reveals that BDNF Is Critical for the Maintenance of LTP and Its Synaptic Capture. *Neuron* 2005, October 6; 48 (1): 123-137.
 32. Nolan MF, Malleret G, Dudman JT, Buhl D, Santoro B, Gibbs E, Vronskaya S, Buzsaki G, Siegelbaum SA, Kandel ER and **A Morozov**. A behavioral role for dendritic integration: HCN1 channels constrain spatial memory and plasticity at inputs to distal dendrites of CA1 pyramidal neurons *Cell* 2004 Nov 24;119(5):719-32.
 33. **Morozov A**, Kellendonk C, Simpson E, Tronche F. Using conditional mutagenesis to study the brain. *Biol. Psychiatry* 2003 Dec 1; 54(11): 1125-33.
 34. Nolan MF, Malleret G, Lee KH, Gibbs E., Dudman JT, Santoro, B, Yin D, Thompson RF, Siegelbaum SA, Kandel ER and **A Morozov**. The hyperpolarization-activated HCN1 channel is important for motor learning and neuronal integration by cerebellar Purkinje cells. *Cell* 2003, Nov 26; 115(5): 551-64
 35. **A Morozov**, I Muzzio, R Bourtchouladze, N Van-Strien, K Lapidus, DQ Yin, D Winder, P Adams, D Sweatt and Eric Kandel Rap1 couples camp signaling to a distinct pool of p42/44MAPK regulating excitability, synaptic plasticity, learning and memory. *Neuron.* 2003, July; 39(2): 309-325.
 36. SS Zakharenko, S. Patterson, I. Dragatsis, S. Zeitlin, SA Siegelbaum, ER Kandel and **A Morozov** Selective involvement of presynaptic BDNF in presynaptic but not postsynaptic forms of hippocampal CA3-CA1 LTP. *Neuron.* 2003, Sep; 39(6): 975-990.
 37. Buzsaki G, Buhl DL, Harris KD, Csisvari J, Czsh B, **Morozov A**. Hippocampal network patterns of activity in the mouse. *Neuroscience.* 2003;116(1):201-11.

38. Patterson SL, Pittenger C, **Morozov A**, Martin KC, Scanlin H, Drake C, Kandel ER. Some Forms of cAMP-Mediated Long-Lasting Potentiation Are Associated with Release of BDNF and Nuclear Translocation of Phospho-MAP Kinase. *Neuron*. 2001 Oct;32(1):123-40.
39. Berezutskaya E, Yu B, **Morozov A**, Raychaudhuri P, Bagchi S. Differential regulation of the pocket domains of the retinoblastoma family proteins by the HPV16 E7 oncoprotein. *Cell Growth Differ* 1997 Dec;8(12):1277-86
40. **Morozov A**, Shiyarov P, Barr E, Leiden JM, Raychaudhuri P. Accumulation of human papillomavirus type 16 E7 protein bypasses G1 arrest induced by serum deprivation and by the cell cycle inhibitor p21. *J Virol* 1997 May;71(5):3451-7.
41. Shiyarov P, Bagchi S, Adami G, Kokontis J, Hay N, Arroyo M, **Morozov A**, Raychaudhuri P. p21 Disrupts the interaction between cdk2 and the E2F-p130 complex. *Mol Cell Biol* 1996 Mar;16(3):737-44.
42. **Morozov A**, Subject J, Raychaudhuri P. HPV16 E7 oncoprotein induces expression of a 110 kDa heat shock protein. *FEBS Lett* 1995 Sep 11;371(3):214-8.
43. **Morozov A**, Phelps WC, Raychaudhuri P. Activation of the c-fos gene by the HPV16 oncoproteins depends upon the cAMP-response element at -60. *J Biol Chem* 1994 Jul 15;269(28):18434-40
44. Deev SM, Urakov DN, Shiyarov PA, **Morozov A**, Polianovskii OL. [Functioning and silent regrouped immunoglobulin genes in the hybridoma genome]. [Article in Russian] *Mol Biol (Mosk)* 1993 Jul-Aug;27(4):924-33
45. **Morozov A**, Aleksandrova SS, Khodarev NN, Votrin II. [DNA recombination in vitro Initiated by Ca/Mg-dependent endonuclease from cell nuclei of human splenocytes]. [Article in Russian] *Mol Gen Mikrobiol Virusol* 1989 Apr;(4):42-5
46. **Morozov A**, Urakov DN, Khodarev NN, Deev SM, Polianovskii OL [Characteristics of the effect of Ca/Mg-dependent endonuclease from cell nuclei of human lymphocytes on J kappa-cluster of immunoglobulin genes]. [Article in Russian] *Mol Gen Mikrobiol Virusol* 1988 Nov;(11):26-9
47. Khodarev NN, **Morozov A**, Sokolova IA, Aleksandrova SS, Votrin II [Specificity of fragmentation of DNA from pBR322 plasmid by Ca,Mg-dependent endonuclease from cell nuclei of human lymphocytes]. [Article in Russian] *Mol Gen Mikrobiol Virusol* 1988 Sep;(9):26-32

Abstracts presented

1. Nov 15, 2010: J. SUBRAMANIAN, A. MOROZOV. "Regulation of synaptic vesicle exocytosis and calcium influx by Erk1/2", 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.

2. Nov 15, 2010: V. M. LUNA, A. MOROZOV. "Modulatory actions of basolateral amygdaloid fibers on local piriform cortex circuits", 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
3. J. L. WARNER-SCHMIDT, E. Y. CHEN, X. ZHANG, J. J. MARSHALL, A. MOROZOV, P. SVENNINGSSON, P. GREENGARD. "A role for p11 in the antidepressant action of brain-derived neurotrophic factor", 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
4. Nov 17, 2010: A. Morozov, D. Sukato, W. Ito. "External capsule interneurons gate synaptic plasticity in the amygdala inputs from perirhinal cortex", 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
5. Nov 17, 2010: W. Ito, D.C.Sukato, A. Morozov. "Specific activation of the ACC-BLA pathway enhances auditory fear learning", 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
6. Nov 13, 2011: J. Li, H.-Y. Chu, A. Morozov. "Paradoxical GABA release following photo-activation of Arch in parvalbumin-positive interneurons of basolateral amygdala", 2011 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011. Online.
7. Nov 15, 2011: V. Luna, A. Morozov. "The piriform cortex utilizes distinct neuronal ensembles to process cortical versus amygdaloid synaptic inputs", 2011 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011. Online.
8. Oct 17, 2012: A. Y. Morozov, J. Li, W. Ito. "Circuit- and behavior-specific facilitation of NMDA-receptor mediated transmission in amygdala input from dmPFC, as a biomarker of emotional trauma in mouse model", 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
9. Oct 14, 2012: *W. Ito, A. Morozov. "Ca3-restricted BDNF knockout as a model of abnormal traits in social behaviors", 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
10. July 30, 2013: Alexei Morozov and Wataru Ito. "Prefrontal-amygdala circuit and behavior following vicarious pain", talk at **Gordon Research Conference "Amygdala in Health and Disease", Stonehill College, Easton, MA**
11. November 7, 2013: Alexei Morozov and Wataru Ito. "One-time brief vicarious pain is sufficient to enhance fear learning, trigger depression-like behaviors and alter prefrontal-amygdala connectivity in mice", poster at **Cell Symposia: The Networked Brain Sfn Satellite Meeting**, San Diego, CA
12. November 12, 2013: Alexei Morozov and Wataru Ito. "PFC-amygdala circuit in a mouse model of vicarious pain", poster at **2013 Sfn Meeting, San Diego, CA**
13. January 29, 2014: Alexei Morozov and Wataru Ito. "Hippocampal CA3-restricted BDNF knockout mice as a model of abnormal social behaviors", invited panel presentation at the **47th Annual Winter Conference on Brain Research, Steamboat Springs, CO**

14. June 19, 2014: Alexei Morozov and Wataru Ito. "Prefrontal-amygdala circuit and behavior following vicarious pain", invited talk at the session "Development and plasticity of neural circuits controlling stress, anxiety and fear" during **Stress Neurobiology Workshop, Cincinnati, OH.**
15. November 15, 2014: ***A. Y. MOROZOV**, C. FARNAN, B. PAUDEL, W. ITO. "Building prefrontal functional connectivity map at cellular resolution: Application to socially isolated mice", Program#/Poster#:81.04/LL6, 2014 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2014. Online
16. October 20, 2015: L. LIU, W. ITO, ***A. Y. MOROZOV**; "Differential effects on somatic and dendritic inhibition in PFC layer V pyramidal cells by emotional trauma", Program#/Poster#:575.04/B91, 2015 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2015. Online
17. May 13, 2016: L. LIU, W. ITO, ***A. Y. MOROZOV**; GABA_B receptor mediates somato-dendritic shift in inhibition of prefrontal layer V neurons upon observational fear. Late breaking poster session. Society of Biological Psychiatry 71st Annual Meeting, Atlanta, Georgia.
18. November 14, 2016: W. ITO, A. MOROZOV; "Role of the prefrontal-amygdala synapses in the enhancement of Pavlovian conditioning after observational fear", Program#/Poster#:358.09/JJJ51, 2016 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2016. Online
19. August 6-11, 2017: W. Ito and A. Morozov. Plastic changes in the dmPFC-BLA synapses induced by observing fear and through artificial manipulations. Gordon Research Conference "Amygdala Function in Emotion, Cognition and Disease", Stonehill College Easton, MA.
20. November 12, 2017: A. Y. MOROZOV, W. ITO. Dynamic changes of silent synapses and plasticity in the prefrontal-amygdala synapses: Witnessing others' fear augments plasticity whereas subsequent inhibitory avoidance training abolishes it. Program#/Poster#:254.10/TT20, 2017 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2017. Online
21. November 12, 2017: B. FUSCO, A. Y. MOROZOV, W. ITO. Suppression of the somatostatin, but not parvalbumin-expressing interneuron allows generating LTP in the prefrontal-amygdala synapses In vitro and In vivo. Program#/Poster#:254.11 / TT21, 2017 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2017. Online
22. November 12, 2017: W. ITO, A. Y. MOROZOV. Disposable miniature LED light source for In vivo optogenetic stimulation reveals dynamic changes of synaptic transmission In vivo in dmPFC-BLA synapses during observational fear and subsequent inhibitory avoidance. Program#/Poster#: 254.12 / TT22, 2017 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2017. Online

Funding

Ongoing

R01MH120290

Morozov (PI)

07/05/2019-04/30/2024

Observational fear enhanced plasticity in dmPFC-BLA circuit as a modulator of affective behaviors

Project goals: To investigate role of neuronal adaptations in the prefrontal-amygdala pathway in the enhanced avoidance caused by the experience of observing fear in conspecific.

Role: PI

R21MH118604

Morozov (PI)

12/01/2018 – 11/30/2021 (NCE)

Disinhibition-assisted LTP as a method for testing role of neuronal circuits in behavior

Project goals: To develop a method for LTP induction in the prefrontal-amygdala pathway in vivo and test its effect on emotional behaviors and oscillatory synchronization between the two structures.

Role: PI

R01NS094574

Xie (PI)

06/01/2016-5/31/2021

The epigenetic role of EGR1 during postnatal brain development and in neuronal activity

Project goals: To test a hypothesis that Egr1 mediates the activity dependent establishment of cell-type specific DNA methylation patterns during postnatal brain development.

Role: co-investigator, 4% effort; PI – David Xie.

Specific role in the grant: Morozov lab participates in the experiments on Egr1 knockdown in the postnatal brain. The lab is responsible for transduction of lentiviruses expressing Egr1-GFP shRNA vectors in the mouse brain using stereotaxic surgeries and then tissue harvesting for the subsequent methylome analyses in the Xie laboratory.

R21MH112093

Morozov (PI)

09/23/16-8/31/19

Reorganization of PFC inhibitory network by observational fear

Project goals: To investigate changes in GABA_A receptor control of GABA release in the prefrontal cortex upon observational fear

Role: PI

Completed

Whitehall Foundation

Morozov (PI)

09/01/2015 – 08/31/2018

Reorganization of the prefrontal-amygdala circuit upon observational fear

Project goals: To test a hypothesis that social signals of distress enhance plasticity in the prefrontal-amygdala pathway by incorporating new silent synapses and by changing dynamics of feedforward inhibition

Role: PI

R21MH107970

Morozov (PI)

05/18/2015 – 02/28/2017

Silent synapses and plasticity of prefrontal-amygdala pathway after emotional distress

Project goals: To test an idea that silent synapses resulting from emotional trauma underlie stronger plasticity in the prefrontal-amygdala pathway during Pavlovian conditioning.

Role: PI

K22MH097826

Morozov (PI)

09/01/2012 – 7/31/2016

CA3-restricted BDNF knockout as a model of abnormal traits in social behaviors

Role: PI