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**Research gate profile:** <https://www.researchgate.net/profile/Soomaayeh-Heysieattalab-2>

#### **Education:**

-B.S. Biology: Tabriz University, Department of Biology, Tabriz, Iran



-M.Sc. Animal physiology: Kharazmi University (Tarbiat Moallem University Tehran) and

Urmia University, Department of Biology, Urmia, Iran



-Ph.D. Neuroscience: Tehran University of Medical Sciences, School of Advanced Medical



Technologies, Department of Neuroscience, Tehran, Iran

Tehran University of Medical Sciences

#### **Current position:**

Associate Professor of Neuroscience, Department of cognitive neuroscience (DCN), University of Tabriz.

**Research interests:**

Learning and memory; Modulation of synaptic plasticity; Closed-loop modulation; Social Neuroscience; Neurodegenerative disease

**Research Support:**

- Iran National Science Foundation (INSF) GRANT for investigating the effect of astroglial connexin 43 inhibition on the morphine dependence and synaptic efficacy of the CA1 hippocampal neurons in rats’ project. Role: Principal Investigator

- National Elites Foundation grant for young assistant professors (Dr. Kazem Ashtiani Award, 2019)

- Tabriz u300 GRANT for Social Ranking and Decisions under Uncertainty: An Event Related Potential Study. Role: Principal Investigator

- Cognitive Science and Technologies Council (CSTC) GRANT for Neural Correlates of Working Memory, Inhibitory Control and Moral Decision Making in Different Social Hierarchies. Role: Principal Investigator

- Iran National Science Foundation (NSF) GRANT for Investigating the effect of social hierarchy formation on mPFC-vHPC circuit during performing spatial working memory cognitive task. Role: Principal Investigator

- Cognitive Science and Technologies Council (CSTC) GRANT for Using Machine Learning to obtain the pattern of multivariate relationships between attention subscales and qEEG parameters. Role: Principal Investigator

**Master and Doctorate Thesis Supervision:**

<b>Title of thesis</b>	<b>Full Name of Student</b>	<b>Role</b>
The effects of social status on effort-based decision-making in male rats: evaluating the behavioral and electrophysiological indexes in ACC -OFC- amygdala circuits	Ghazale Roshani	Supervisor
Effects of social status on value-based decision-making in male rats: A behavioral and electrophysiological study of the amygdala-orbitofrontal cortex and anterior cingulate cortex circuits	Azam Farani	Supervisor

Effect of social status loss on value-based decision-making in male rats: Evaluating the behavioral and electrophysiological indexes in Amygdala-OFC-ACC circuit	Sajed Farajiazar	Second Supervisor
Effect of social hierarchy on value-based decision-making in male rats: Evaluating the behavioral and electrophysiological indexes in LHB-ACC circuit	Zahra Mahmoudi Azari	Supervisor
Investigating the relationship between cognitive control and decision-making preferences in risky and ambiguous conditions	Shaghayegh Kamyabi	Second Supervisor
The difference of preferred and non-preferred conditions cognitive load in risky and ambiguous decisions: A behavioral and electrophysiological study	Hamid Basiryan	Supervisor
The role of induced synchrony on frontotemporal cortex in working memory task using transcranial alternating current stimulation (tACS)	Amirhossein Feizi	Supervisor
The effect of sensory-auditory stimulation under preferred music and binaural beats on behavioral and electrophysiological parameters of patients with disorders of consciousness	Hossein Heidari	Supervisor
Investigating the relationship between quantitative electroencephalogram indices in resting state and decision preferences in "ambiguous" and "risky" conditions.	Hadi Ahmadi	Supervisor
Investigating the coherence of different frequency bands with the indicators of the integrated visual and auditory test (IVA2)	Mahdieh Alizadeh	Supervisor
Comparison of children's eye-closed and eye-opened qEEG in predicting attention deficit and response control by using machine learning	Zohreh Asgharian	Supervisor
Behavioral and neural correlates of visual working memory in men and women with different sleep quality	Fatemeh Bakhtiari	Second Supervisor
Quantitative evaluation of the effect of aroma inhalation on mental flexibility in healthy individuals based on EEG signals	Reyhaan Afghan	Second Supervisor
The effect of transcranial random noise stimulation (tRNS) of bilateral parietal cortex on math performance, executive function, and math anxiety in students with specific learning disorder with impairment in mathematics	Saeed Mohammadi	Advisor
Investigating the spatial-numerical association in adults with right-to-left reading and writing direction	Reyhane Havedanloo	Supervisor
The effect of transcranial direct stimulation on people's social decision-making after learning social hierarchy	Mahdieh Goudarzi	Supervisor
Investigation of the effectiveness of transcranial direct current stimulation (tDCS) and probiotic supplementation on risky	Sara Derafsheh	Supervisor

decision-making, impulsive traits, self-control and food choice in excess weight adolescents		
Recognition of common patterns between attention subscales and children's qEEG using machine learning	Sevda Abbasi	Supervisor
Learning-based non-contact method for detecting brain signals related to the frontal lobe from facial features	Mohammad Alaei	Advisor
Non-contact method for generating brainwaves of motor cortex with utilizing learning algorithm and facial features	Mohamad Saeed Nazari	Advisor
Investigation of cognitive function of memory and quantitative electroencephalography of children of persons with Alzheimer disease	Sara Rabiee	Supervisor
The effect of social hierarchy on spatial working memory: evaluating the behavioral and electrophysiological indexes in olfactory bulb-ventral hippocampus-medial prefrontal cortex circuit	Elham Bakhshi	Supervisor
Investigating the effect of social hierarchy formation on the mPFC-vHPC circuit during performing spatial working memory task	Faezeh Zarfsaz	Supervisor
Feedback processing in different social hierarchies: An event-related potentials (ERPs) study	Maryam Mohamadikia	Supervisor
Neural correlates of decision-making under uncertainty in different social hierarchies	Saeedeh Khosravi	Supervisor
The effects of social hierarchy on inhibitory control: An ERP study	Sourosh Fazel	Supervisor
Neural correlates of verbal working memory in different social hierarchies	Hadi Mohamadpour	Supervisor
Neural correlates of moral decision-making in different social hierarchies	Negin Safarzadeh	Supervisor
The effects of social hierarchy on consumer purchase decisions	Parvaneh Nabineghad	Supervisor
Event-related potential (ERP) correlates of negative feedback processing in perfectionists	Leyla Karami	Advisor
ADHD subtypes discrimination through distortion in time reproduction task: an ERP study	Fahimeh Parsaie	Advisor
Causal relationship between theta oscillations and working memory through using closed-loop neurofeedback system	Farhad Farkhondeh Tale Navi	Advisor

#### International Journal Articles:

- Mohammadi Molod S, Vahedi S, **Heysiattalab S**, Soltanlou M. Meta-analysis of the Effectiveness of Transcranial Electrical Stimulation Interventions on Executive Function and Mathematical Performance in Children with Specific Learning Disorder. *Quarterly Journal of Child Mental Health* 9(3):78-99
  
- Fazel S, Vahabie AH, Farkhondeh Tale Navi F, **Heysiattalab S**. Unraveling the Social Hierarchy: Exploring Behavioral and Neural Dynamics in Shaping Inhibitory Control. *Behavioural Brain Research* 456, 114686.
  
- Darvishmolla M, Saeedi N, Tavassoli T, **Heysiattalab S**, Janahmadi M, Hosseinmardi N. Maladaptive plasticity induced by morphine is mediated by hippocampal astrocytic Connexin-43. *Life Sciences*, 121969.
  
- Eyvazpour R, Farkhondeh Tale Navi F, Shakeri E, Nikzad B, **Heysiattalab S**. Machine learning-based classifying of risk-takers and risk-averse individuals using resting-state EEG data: A pilot feasibility study. *Brain and Behavior* 2023.
  
- Heydarpour S, Mehdizadeh Fanid L, Mirza Asgari Z, **Heysiattalab S**. Effects of Repeated Trans Cranial Magnetic Stimulation on Cognitive Functions of Policemen with Post-traumatic stress disorder. *Iranian Journal of Psychiatry and Clinical Psychology* 29(1):32-47.
- L Karami Isheqlou, M Soltanlou, M Zarean, MT Saeedi, **S Heysiattalab**. Feedback-related negativity in perfectionists: An index of performance outcome evaluation. *Behavioral Brain Research*, 2023. 444, 114358
  
- N Saeedi, **S Heysiattalab**, M Janahmadi, N Hosseinmardi. The role of glial glutamate transporter in the baseline synaptic response and short-term synaptic plasticity of CA1 area of the hippocampus in male Wistar rat. *Medical Journal of Tabriz University of Medical Sciences* 2022. 44 (5), 380-389
  
- L Karami Isheqlou, M Zarean, MT Saeedi, M Soltanlou, **S Heysiattalab**. Maladaptive perfectionists are more impulsive than adaptive perfectionists in a monetary gambling task. *Journal of Experimental Psychopathology* 2022.13 (2), 20438087221106925.

- Heysiattalab S**, Khakpay R, Fadaei M, Aboureihani Mohammadi M, Bagheri F , Hashemi S, Effects of social hierarchy on innate fear-induced panic responses. *Acta Neurobiologiae Experimentalis* 2022. 82 (2), 133-146.
- Darvishmolla M, **Heysiattalab S\***, Saeedi N, Hosseinmardi N\*, Jan Ahmadi M, Involvement of Hippocampal Astrocytic Connexin-43 in Morphine dependence. *Physiology & Behavior* 2022. 247, 113710.
- Farkhondeh Tale Navi F, **Heysiattalab S**, Ramanathan DS, Raoufy MR, Nazari MA. Closed-loop Modulation of the Self-Regulating Brain: A review on approaches, emerging paradigms, and experimental designs. *Neuroscience* 2022. 483, 104-126
- **Heysiattalab S**, Sadeghi L. Ecballium elaterium attenuates neuroinflammation in animal model of Alzheimer Disease through nuclear factor  $\kappa$ B pathway. *Avicenna Journal of Phytomedicine* 2022. 12 (1), 89.
- Farhoumandi N, Mollaey S, **Heysiattalab S\***, Zarean M\*. Facial emotional recognition predicts alexithymia using machine learning. *Computational Intelligence and Neuroscience* 2021; 10
- Saeedi N, Darvishmolla M, Tavassoli Z, Davoudi SH, **Heysiattalab S**, Hosseinmardi N, Janahmadi M, Behzadi G. The role of hippocampal glial glutamate transporter (GLT-1) in morphine-induced behavioral responses. *Brain and Behavior* 2021; 11(9); e2323.
- Heysiattalab S**, Sadeghi L. Dynamic structural neuroplasticity during and after epileptogenesis in a pilocarpine rat model of epilepsy. *Acta Epileptologica* 2021; 3 (1): 1-9.
- **Heysiattalab S**, Doostmohammadi J, Darvishmolla M, Saeedi N, Hosseinmardi N, Gholami M, Janahmadi M, Choopani S. Non-selective COX inhibitors impair memory formation and short-term but not long-term synaptic plasticity. *Naunyn-Schmiedeberg's Archives of Pharmacology* 2021; 1-13.
- Abizadeh M, **Heysiattalab S**, Hosseinmardi N, Janahmadi M, Saeedi N, Salari F, Golpayegani SM, Shojaii A. Ameliorating Effects of Dorema Ammoniacum on PTZ-induced Seizures and Epileptiform Brain Activity in Rats. *Planta Medica* 2020; 86 (18): 1353-1362.
- **Heysiattalab S**, Sadeghi L. Effects of Delphinidin on pathophysiological signs of nucleus basalis of Meynert lesioned rats as animal model of Alzheimer disease. *Neurochemical research* 2020; 45(7):1636-1646.

- Sepehr A, Motaghinejad M, **Heysieattalab S**, Safari S. Minocycline May be Useful to Prevent or Treat Methamphetamine-Induced Neural Cell Death: Hypothetic Role of Autophagia and Apoptosis Signaling Pathway. *Advanced Biomedical Research* 2020; 9:7.
- **Heysieattalab S**, Ka-Hung Lee, Liu Y, Foy MR, Bi X and Baudry M. Impaired cerebellar plasticity and eye-blink conditioning in calpain-1 knock-out mice. *Neurobiology of learning and memory* 2020; 170:106995.
- Ghotbeddin Z, **Heysieattalab S**, Borjkhani M , Mirnajafi-Zadeh J, Semnianian S, Hosseinmardi N, Janahmadi M. Ca<sup>2+</sup> channels involvement in low-frequency stimulation-mediated suppression of intrinsic excitability of hippocampal CA1 pyramidal cells in a rat amygdala kindling model. *Neuroscience* 2019; 406:234-248.
- Modaberi S, **Heysieattalab S**, Shahbazi M, Naghdi N. Combination Effects of Forced Mild Exercise and Effective GABA B Receptor Agonist on Spatial Learning and Memory, and Motor Activity in Striatum Lesion Rats. *Motor behavior journal* 2019; 51(4):438-450.
- Shaerzadeh F, Streit WJ, **Heysieattalab S**, Khoshbouei H. Methamphetamine neurotoxicity, microglia, and neuroinflammation. *Journal of Neuroinflammation* 2018; 15(1).
- Azimi M, Gharakhanloua R, Naghdi N, Khodadadi D, **Heysieattalab S**. Moderate Treadmill Exercise via Increasing AMPK Activity and Up-regulation of the PGC-1 $\alpha$ /FNDC5/BDNF Pathway Ameliorates Amyloid- $\beta$ -Induced Learning and Memory Impairment. *Peptides* 2018; 102:78-88.
- Elahi Mahani A\*, **Heysieattalab S\***, Hosseinmardi N, Janahmadi M, Sadat Seyedaghamiri F, Khoshbouei H. Glial Cells Modulate Hippocampal Synaptic Plasticity in Morphine-Treated Rats. *Brain Research Bulletin* 2018; 140:97–106 (\*equal co-first author).
- Sadat Seyedaghamiri F\*, **Heysieattalab S\***, Hosseinmardi N, Janahmadi M, Elahi-Mahani A, Salari F, Golpayegani M, Khoshbouei H. Involvement of hippocampal glial cells in morphine addiction-related behaviors. *Physiology & Behavior* 2018; 191: 37–46 (\*equal co-first author).
- Khodadadi D, Gharakhanlou R, Naghdi N, Salimi M, Azimi M, Shahed A, **Heysieattalab S**. Treadmill exercise improves spatial cognition through increased A $\beta$  clearance in the hippocampus of a rat model of Alzheimer's disease. *Neurochemical research* 2018; 43(8):1561-1574.
- Roohi-Azizi M, Azimi L, **Heysieattalab S**, Aamidfar M, Changes of the Brain's Bioelectrical Activity in Cognition, Consciousness, and Some Mental Disorders. *Medical Journal of the Islamic Republic of Iran* 2017; 31 (1):307-312.

- **Heysieattalab S**, Naghdi N, Zarrindast MR, Haghparast A, Ejtemaei Mehr S, Khoshbouei H. The role of GABA<sub>A</sub> and NMDA receptors in the shell–accumbens in the spatial memory of Methamphetamine-treated Rats. *Pharmacology Biochemistry and Behavior* 2016; 142: 23-25.
- **Heysieattalab S**, Naghdi N, Hosseinmardi N, Zarrindast MR, Haghparast A, Khoshbouei H. Methamphetamine-Induced Enhancement of Hippocampal LTP Is Modulated by NMDA and GABA Receptors in the Shell–Accumbens. *Synapse* 2016; 70: 325-335.
- Azimi L, Kachooeian M, Khodagholi F, Yans A, **Heysieattalab S**, Asadi F, Vakiladeh G, Mottaghi-Dastjerdi N, Vousooghi N, Sharifzadeh M. Attenuation of autophagy and apoptosis marker expression mediated protective effects of salicylate on H-89 induced memory deficit in rats. *Pharmacology, Biochemistry and Behavior* 2016; 150–151: 158-169.
- **Heysieat-talab S**, Zare S, Ghaderi Pakdel F, Mokhtari hashtjin M. Effects of Administration of Perinatal Bupropion on the Population Spike Amplitude in Neonatal Rat Hippocampal Slices. *Iranian Journal of Basic Medical Sciences* 2010; 13: 200-206.

#### **National Journal Articles (in Persian)**

- Heydarpour S, L Mehdizadeh, Z Mirzaasgari, **Heysieattalab S**. Effects of Repeated Transcranial Magnetic Stimulation on Cognitive Functions of Police Personnel with Post-Traumatic Stress. *Iranian Journal of Psychiatry and Clinical Psychology* 29 (1), 3-3
- Darvishmolla M, Saeedi N, **Heysieattalab S**, Hosseinmardi N, Janahmadi M. The Role of Astrocytic Cx43 in Baseline Synaptic Response and Short-Term Synaptic Plasticity in CA1 Area of the Hippocampus. *Journal of Mazandaran University of Medical Sciences* 2021; 31 (198): 169-179.
- Aboureihani Mohammadi M, Fadaei Moghadam Heydarabadi M, Zardary S, **Heysieattalab S**. Identification Psychological Disorders Based on Data in Virtual Environments Using Machine Learning. *Psychological research* 2020; 7(4): 7-27.
- **Heysieattalab S**, Samad Z, Ghaderi Pakdel F. Effects of long-term perinatal administration of Bupropion on population spike amplitude in neonatal rat hippocampal slices. *Koomesh* 2010 11(4): 287-293.
- Mokhtari hashtjin M, Zare S, Ghaderi Pakdel F, **Heysieattalab S**. The effect of intra-VTA injection of Bupropion on submissive defensive aggressive behavior induced by electrical foot shock of rat. *Pharmaceutical Sciences* 2010: 16 (3); 125-130.



- Ghaderi Pakdel F, Zare S, **Heysiattalab S**, Mokhtari hashtjin M. Effects of Long-Term Perinatal Treatment of Bupropion on LTP in Neonatal Rat Hippocampus Slices. *Pharmaceutical Sciences* 2010; 16 (2); 107 -115.

-Ghaderi Pakdel F, Zare S, **Heysiattalab S**, Saboori E. The effect of Bupropion on evoked population spikes of rat hippocampal slices. *Urmia of medical journal* 2009; 20 (3); 192-200.

### **International Conference Presentations or Posters**

- Ghaderi Pakdel F, Zare S, **Hesiattalab S**. Bupropion can decrease LTP parameters in rat hippocampal slices. 3rd FAONS symposium, December 4-6, 2008 Bangkok, Thailand (poster)

- **Heysiattalab S**, Zare S, Ghaderi Pakdel F, Saboori E. Effects of Long-term Perinatal Administration of Bupropion on Amplitude of Population Spike of Neonatal Rat Hippocampal Slices. 19th Iranian Congress of Physiology and Pharmacology, Tehran. 3-6 Nov 2009 (poster)

-**Heysiattalab S**, Naghdi N, Zarrindast MR, Haghparast A, Ejtemaei Mehr S, Khoshbouei H. The role of GABA<sub>A</sub> receptor in the shell-accumbens in the spatial memory of methamphetamine-treated Rats. 4th Iranian Congress of basic and clinical neuroscience, Tehran

-Saeedi N, Seyedaghamiri F, Hosseinmardi N, Janahmadi M, **Heysiattalab S**. Inhibition of Hippocampal Glial Cells Reduces the Naloxone-Induced Withdrawal Signs in Morphine Dependent Rats. 2<sup>nd</sup> international & 23<sup>rd</sup> Iranian congress of physiology and pharmacology. Chabahar 15-18 Feb 2018 (poster)

- **Heysiattalab S**, Naghdi N, Zarrindast MR, Haghparast A, Hosseinmardi N, Khoshbouei H. Examination of Behavioral and Electrophysiological Role of NMDA and GABA Receptors in the shell of the Nucleus Accumbens on Learning in Methamphetamine-treated rats. 2<sup>nd</sup> international & 23<sup>rd</sup> Iranian congress of physiology and pharmacology. Chabahar 15-18 Feb 2018 (poster)

-Foy M, **Heysiattalab S**, Lee KH, Liu Y, Bi X and Baudry M. Impaired cerebellar plasticity and eye-blink conditioning in calpain-1 knock-out mice. SfN 11-15 November Washington, DC 2017 (poster)

-**Heysiattalab S**, Ghotbedin Z, Mirnajafi-Zadeh SJ, Semnanian S, Mahyar Janahmadi M. Modulation of intrinsic neuronal properties in hippocampal CA1 pyramidal cells by alterations in the functional properties of intrinsic Ca<sup>2+</sup>- ion channels. 6th Iranian Congress of basic and clinical neuroscience, Tehran (poster)

-Haghravan F, Saebnia S, Khalilzadeh E, Sadeghi L, Dolatyari M, Nazari MA, **Heysiattalab S**. The Effect of Social dominance on oral morphine self-administration in Male Rats. 7th Iranian Congress of basic and clinical neuroscience, Tehran (poster)

-Bagheri F, Hassanzadeh P, Khalilzadeh E, Sadeghi L, Dolatyari M, Nazari MA, **Heysiattalab S**. Effects of Dominant/Subordinate Social Status on Thermal-induced Nociception and Correlation with Concentrations of Glutamate in Prefrontal Cortex and Hippocampus. 7th Iranian Congress of basic and clinical neuroscience, Tehran (poster)

-**Heysiattalab S**, Cross-frequency coupling and synaptic efficiency. 7th Iranian Congress of basic and clinical neuroscience, Tehran (Oral)

-**Heysiattalab S**, neuroplasticity and cellular level interactions in neurofeedback learning. 7th Iranian Congress of basic and clinical neuroscience, Tehran (Oral)

- Parsaei F, MA Nazari MA, **Heysiattalab S**. Decreased delta activity and cross-Frequency interaction of resting-state electroencephalographic oscillations in transcranial light emitting diode (LED) IBRO Reports 6, S78.

**Heysiattalab S**, Bagheri F, Khalilzadeh E, Dolatyari M. Effects of dominant/subordinate social status on acute pain perception IBRO Reports 6, S187.

### **Computing experience:**

I have several years' experience using windows-compatible PCs and am familiar with the following graphical, statistical and analysis packages: Axograph, pClamp, Origin, mini-Analysis, Graphpad (InStat & Prism), SPSS.

### **Technical Experience:**

- Hippocampal and cerebellar slices preparation
- Measuring electrical activity using extracellular and intracellular recording
  - *in vitro* Patch clamp recording technique
  - *In vivo and in vitro* Field Potential
- Cell culture
- Stereotaxic Surgery & Microinjection Techniques
- Behavioral Tests: Memory Tests (Morris Water Maze, Shuttle Box), Conditioned Place Preference (CPP), Open field.

- EEG/ERP

- LFP

**Education grants received:**

- Ahvazi Award in 6th Iranian Congress of basic and clinical neuroscience, Tehran
- Visiting scholar in Western University of Health Sciences, 2016 USA, CA, Pomona
- 1st IBRO-APRC Associate School of Neuroscience, May 22-28, 2013, Tehran, Iran
- IUPS Travel Award to attend the IUPS Congress 2017
- IBRO-APRC AIIMS Delhi 2018 21st October to 4th November 2018
- IBRO Travel Award to attend the neuro 2019 congress 25-28 July, Japan
- ERASMUS mobility program in Cumhuriyet University, Turkey
- IBRO International Travel Grants award to attend FENS Forum 2020, Glasgow, UK
- Tehran IBRO School of Neuroscience; 26 October-6 November, 2015, Tehran, Iran (As a Teaching Assistant in patch clamp lab)

**Reviewer of Journals:**

Basic and clinical neuroscience journal