# **Hossein Esteky**

Shahid Beheshti Medical University; School of Medicine

# **Academic Appointments**

## Neuroscience Research Institute, Stanford University, USA

Visiting Scholar, 2014 - 2016

#### Institute for Research in Fundamental Sciences, School of Cognitive Sciences, Iran

Director, 2002 - 2016

Adjunct Scientist, 2000 - 2016

## **Tarbiat Modares University, Iran**

Adjunct Professor, 2018 - present

## Shahid Beheshti Medical University, School of Medicine, Iran

Director, Research Group for Brain and Cognitive Sciences, 1998 - present

Professor of Neural Sciences, Dept. of Physiology, 2007 - present

Associate Professor of Neural Sciences, Dept. of Physiology, 2002 - 2007

Assistant Professor of Neural Sciences, Dept. of Physiology, 1998 - 2002

## **RIKEN Brain Science Institute, Japan**

Affiliated Senior Researcher, Group for Brain and Cognitive Mapping, 1998 - 2010

#### **Education**

#### **Postdoctoral Research Fellow**

Laboratory for Cognitive Brain Mapping

Brain Science Institute, RIKEN, Japan, 1996 - 1998

## Doctor of Philosophy in Neurophysiology (Ph.D.)

Department of Neurobiology

University of North Texas, USA, 1989 - 1993

## **Doctor of Medicine (M.D.)**

School of Medicine, University of Tehran, Iran, 1979 – 1987

#### **Research Interests**

Visual perception and attention, Cognitive impairment; Autism; Alzheimer's Disease; Digital health and Remote medicine;

#### **Journal Publications**

- Lost in music: Neural signature of pleasure and its effect in modulating attentional resources; Nemati S, Akrami H, Salehi S, Esteky H, Moghimi S. Accepted, Brain. 2018
- 2. Learning temporal context enhances the prestimulus alpha oscillations in the parietal cortex and improves the visual discrimination performance. Tossi T, Tousi E, **Esteky H. Journal of Neurophysiology,** May 2017, Aug 1;118(2):771-777
- Rapid face adaptation distributes representation in inferior temporal cortex across time and neuronal dimensions. Vahabi H., Aboulghasemi MR, Nili M, Arabi B, Esteky H. Science Rep. 2017 May 10;7(1):1709
- 4. Low dimensional representation of face space by face-selective inferior temporal neurons. Salehi S, Dehaqani MA, **Esteky** H.

**Eur J Neurosci.** 2017 Mar 5(10):1268-1278

- Stimulus context alters neural representations of faces in inferotemporal cortex. Noudoost, B, Nategh, N, Clark, K, Esteky H.
   Journal of Neurophysiology, 2017, 26; 1;117(1):336-347
- 6. Impairment of perceptual closure in autism for VERTEX, but not EDGE defined object images. Aboulghasemi MR, Alizadeh M, Vahabi H, **Esteky, H**.

**Journal of Vision**; 2016 Aug 1;16(10):10

- 7. Temporal dynamics of visual category representation in the macaque inferior temporal cortex. Aboulghasemi MR, Vahabi H, Nili M, Arabi B, Kiani R, Esteky, H. Journal of Neurophysiology; 2016 Aug 1;116(2):587-601
- 8. High baseline activity in inferior temporal cortex improves neural and behavioral discriminability during visual categorization. Emadi N, Rajimehr R, Esteky H. Frontiers in System Neuroscience, 2014 Nov 3;8:218.
- Behavioral demand modulates object category representation in the inferior temporal cortex. Emadi N, and Esteky H.
   Journal of Neurophysiology, 2014 Jul 30.
- Dimensionality of object representations in monkey inferotemporal cortex, Lehky S, Kiani R, Esteky H and Tanaka K.
   Neural Computation, 2014 Jul 24:1-2.
- 11. Comparison between face and object processing in youths with autism spectrum disorder: An event related potentials study, Khorrami A, Tehrani-Doost M, Esteky H. Iran J Psychiatry, 2013 Oct;8(4):179-87.
- 12. Neural representation of ambiguous visual objects in the inferior temporal cortex. Emadi N, and **Esteky H. PLOS One,** 2013; Oct 3;8 (10).
- 13. Neuronal correlates of view representation revealed by face view aftereffect. Noudoost B, and Esteky H.
  Journal of Neuroscience, 2013; 27; 33 (13): 5761-72.
- 14. Computational model of excitatory/inhibitory ratio imbalance role in attention deficit disorders. Bakhtiari R, Mohammadi Sephavand N, Nili Ahmadabadi M, Nadjar Araabi B, Esteky H.
  Journal of Computational Neuroscience 2012, 33(2):389-404.

Statistics of visual responses in primate inferotemporal cortex to object stimuli. Lehky
 Kiani R, Esteky H, Tanaka K.
 Journal of Neurophysiology, 2011, 106 (3): 1097-1117.

- State Dependent Effects of Stimulus Presentation Duration on Temporal Dynamics of Neural Responses in Inferotemporal Cortex of Macaque Monkeys. Mirpour K, Esteky H. Journal of Neurophysiology 2009, 102(3):1790-800.
- 17. A study of human N250 event-related potential during face and leaf detection tasks.
  Nasr S, Esteky H.
  Journal of Vision, 2009, 8; 9(5):5.1-14.
- 18. Matching categorical object representations in inferior temporal cortex of man and monkey. Kriegeskorte N, Mur M, Ruff DA, Kiani R, Bodurka J, **Esteky H**, Tanaka K, Bandettini PA.

**Neuron,** 2008, 26; 60(6):1126-41.

19. A Mixture of Multilayer Perceptron Experts Network for Modeling Face/Nonface Recognition in Cortical Face Processing Regions, Ebrahimpour, R, Kabir, E, Esteky, H, Yousefi, MR,

**Intelligent Automation and Soft Computing**, 2008, vol:14, pp:151-162.

20. View-independent Face Recognition with Mixture of Experts, Ebrahimpour, R, Kabir, E, **Esteky**, H, Yousefi, MR.

**Neurocomputing**, 2008, vol.: 71, pp:1103-1107.

- Neural correlate of filtering of irrelevant information from visual working memory.
   Nasr S, Moeeny A, Esteky H.
   PLoS ONE, 2008, 26; 3(9) e3282.
- 22. Object category structure in response patterns of neuronal population in monkey inferior temporal cortex. Kiani R, **Esteky H,** Mirpour K, Tanaka K. **Journal of Neurophysiology** 2007, 97(6):4296-309.

23. Visual spatial integrity in the absence of splenium. Noudoost B, Afraz SR, Vaziri-Pashkam M, **Esteky H.** 

**Brain Res**. 2006, 3; 1076(1):177-86.

24. Microstimulation of inferotemporal cortex influences face categorization. Afraz SR, Kiani R, **Esteky H.** 

Nature, 2006, 10; 442(7103):692-5.

25. Differences in onset latency of macaque inferotemporal neural responses to primate and non-primate faces. Kiani R, **Esteky H,** Tanaka K.

**Journal Neurophysiology** 2005, 94(2):1587-96.

26. Configural and analytical processing of familiar and unfamiliar objects. Noudoost B, Adibi M, Moeeny A, Esteky H.

**Brain Res Cognitive Brain Res**. 2005, 24(3):436-41.

27. Effects of neonatal C-fiber depletion on neocortical long-term potentiation and depression. Komaki A, **Esteky H.** 

**Brain Res**. 2005, 30; 1054(2):135-42.

28. Effects of GABAA receptor inhibition on response properties of barrel cortical neurons in C-fiber-depleted rats. Farazifard R, Kiani R, **Esteky H.** 

**Brain Res**. 2005, 19; 1050(1-2):27-32.

29. Effects of neonatal C-fiber depletion on the integration of paired-whisker inputs in rat barrel cortex. Farazifard R, Kiani R, Noorbakhsh M, **Esteky H**.

**Exp. Brain Res**. 2005, 162(1):115-21.

30. Motion-induced overestimation of the number of items in a display. Afraz SR, Kiani R, Vaziri-Pashkam M, **Esteky H**.

**Perception**, 2004, 33(8):915-25.

31. Orientation-selective adaptation during motion-induced blindness. Montaser-Kouhsari L, Moradi F, Zandvakili A, **Esteky H. Perception** 2004, 33(2):249-54.

32. Adaptation to apparent motion in crowding condition. Rajimehr R, Vaziri-Pashkam M, Afraz SR, **Esteky H.** 

Vision Res. 2004, 44(9): 925-31.

33. Effects of neonatal C-fiber depletion on discrimination of principal and adjacent whisker stimulation within rat individual cortical barrels. Kiani R, Farazifard R, Noorbakhsh SM, **Esteky H. Brain Res**. 2004, 23; 1015(1-2):129-35.

34. Effects of ketamine on synaptic transmission and long-term potentiation in layer II/III of rat visual cortex in vitro. Salami M, Fathollahi Y, **Esteky H,** Motamedi F, Atapour N. **Eur. J. Pharmacology** 2000, 3; 390(3):287-93.

35. Primed-bursts induced long-term potentiation in rat visual cortex: effects of dark-rearing. Atapour N, **Esteky H,** Fathollahi Y, Mansouri FA. **Brain Res**. 1999, 18; 851(1-2):148-53.

36. Visual deprivation increases capability of layer II/III for epileptiform activity in the rat visual cortical slices. Atapour N, Esteky H, Fathollahi Y.
Brain Res Dev Brain Res. 1999, 18; 117(2):153-7.

37. Responses of rapidly adapting neurons in cat primary somatosensory cortex to constant-velocity mechanical stimulation. Esteky H, Schwark HD.
Journal of Neurophysiology 1994, 72(5):2269-79.

38. Corticocortical connections of cat primary somatosensory cortex. Schwark HD, **Esteky** H, Jones EG.

Exp. Brain Res. 1992, 91(3):425-34.

# **Manuscripts Under Review and Working Papers**

- Two distinct physiological neural networks for fine and course representation of faces in inferior temporal cortex. Salehi S, Aboulghasemi MR, Noudoost B, Esteky H. Under review at Progress in Neurobiology.
- 2. Cholinergic modulation promotes attentional modulation in the primary visual cortex-A modeling study. Atena Sajedin, Mohammad Bagher Menhaj, Abdol-Hossein Vahabie, Stefano Panzeri, and Hossein Esteky. Under review at Sci. Report
- 3. Task dependent modulation of response patterns of neuronal population in the monkey inferior temporal cortex. Emadi N, Aboulghasemi MR, Vahabi H, **Esteky H.** Under preparation.
- 4. Neural activity of the inferior temporal cortex reflects choice for the categorization of ambiguous visual objects. Emadi N, and **Esteky H.** Under preparation.

#### **Honors and Awards**

Research Grant, Silk Road Agreement, \$75,000, Iran/China, 2016

Research Grant, RIKEN Brain Science Institute, Japan, \$400,000, 2000-2006

Teaching Excellence Award, Shahid Beheshti Medical University, Iran, 2004, 2007, 2009

Best Basic Medical Scientific Paper Award, Academy of Medical Sciences, Iran, 2008

Best Basic Medical Scientific Paper Award, Ministry of Health and Medical Education, Iran, 2007

Best Scientific Paper Award, Ministry of Science and Technology, Iran, 2006

## **Keynote Speaks and Invited Presentations**

## Invited speaker

The organization of consciousness

BINESHANEH, Isfahan University of Medical Sciences

Tehran, Iran, November 2018

## Invited speaker

The evolution of cognition

Shiraz Neuroscience Research Institute

Tehran, Iran, December 2018

## Invited speaker

The evolution of cognition

University of Sistan and Balouchestan

Tehran, Iran, December 2018

# Invited speaker

Brain evolution and emergence of cognition and self-awareness

Shahed University

Tehran, Iran, October 2017

# Invited speaker

Brain evolution and emergence of cognition and self-awareness

**Shahed University** 

Tehran, Iran, October 2017

## Invited speaker

Neural basis of self-awareness

Iranian Science Council

Tehran, Iran, May 2017

## Invited speaker

Biological correlates of cognition

IBRO Advanced School; TMU

Tehran, Iran, May 2017

## Invited speaker

Brain-state dependent perceptual processing

Vision Science Division, University of California - Berkeley

Berkeley, CA, February 2016

## Invited speaker

Functional organization of consciousness: Lecture

5th Tehran International Brain Research Organization (IBRO) School, April 2016

# Invited speaker

State-dependent perceptual processing

Department of Psychology, Stanford University

Stanford, CA, November, 2014

## Invited speaker

Rhythmic enhancement of cortical baseline activity improves sensory processing and

behavioral performance, National Institute of Health (NIH)

Bethesda, MD, August 2011

## Invited speaker

Oscillation, baseline shift, and improved object recognition

McGovern Institute for Brain Research, Massachusetts Institute of Technology

Boston, MA, July 2011

## Keynote talk

Brain internal state predicts perception and behavioral decision

Iranian Conference on Biomedical Engineering (ICBME'90)

Tehran, Iran, 2011

#### Keynote talk

Neuronal basis of visual object recognition

IBRO Neuroscience Orientation Summer Program,

Tehran, Iran, 2006

#### Keynote talk

Short-latency category specific neural responses to human faces in macaque

inferotemporal cortex

2th Federation of the Asian-Oceanic Neuroscience Societies (FAONS) Congress

Tehran, Iran, 2004

Member of discussion panel

Percept, Decision, Action: Bridging the Gaps Novartis Foundation Symposium, No. 270; 2004 Trieste, Italy, 2004

#### **Published Conference Abstracts**

- 1. Dehaqani MR, Alizadeh Zarei M, Vahabie H, Esteky H. Selective impairment of perceptual closure in autism. Vision Science Society. St. Pete Beach, FL, USA, 2016
- Salehi S, Dehaqani MR, H, Esteky H. Enhansive and suppressive face neurons form two distinct physiological networks for course and fine face representations in inferotemopral cortex. US Society for Neuroscience Annual Meeting, San Diego, CA, USA, 2016.
- Lehkey S., Kiani R., Esteky H., Tanaka K. Statistics of visual responses in primate inferotemporal cortex to object stimuli. US Society for Neuroscience Annual Meeting San Diego, CA, USA, 2010
- 4. Noudoost B., Esteky H. Adaptation reveals: Faithful representation of face views is achieved in object-centered representations prior to viewer-centered. US Society for Neuroscience Annual Meeting. San Diego, CA, USA, 2010
- Emadi N., Esteky H. Brain-state dependent attentional modulation of firing rate, response variability and choice probability of inferior temporal neurons in monkeys performing categorization of ambiguous visual stimuli. US Society for Neuroscience Annual Meeting. San Diego, CA, USA, 2010
- 6. Nasr S., Esteky H. A study of N250 event-related brain potential during face and non-face detection tasks. Vision Science Society, Naples, FL, USA, 2009
- 7. Emadi N., Esteky H. Performance of Macaque Monkeys in a Two-Alternative Forced-Choice Body/Object Visual Categorization Task, European Conference on Visual Perception (ECVP) Regensburg, Germany, 2009.

- 8. Nasr S., Sanayei M., Esteky H. Comparing Neuronal Substrates of Identity and Category Discrimination: An ERP Study, US Society for Neuroscience Annual Meeting Washington, D.C., USA, 2008
- 9. Nasr S., Esteky H. Task-dependent modulation of face specific brain potentials, US Society for Neuroscience Annual Meeting, Washington, D.C., USA, 2008
- Mirpour K., Esteky H. The effect of stimulus presentation duration on response properties of inferior temporal cortex of macaque monkeys, US Society for Neuroscience Annual Meeting, San Diego, CA, USA, 2007
- 11. Afraz S.R., Kiani R., Esteky H. Microstimulation of inferotemporal cortex influences face categorization, US Society for Neuroscience Annual Meeting, Atlanta, GA, USA, 2006
- 12. Ebrahimpour R., Yousefi M.R., Esteky H., Kabir E. Object recognition: Computational Theories and Models, 11th International CSI Computer Conference (CSICC) Tehran, Iran, 2006
- Kiani R., Esteky H., Tanaka K. Hierarchical Representation of Object Categories in Monkey Inferotemporal Cortex, US Society for Neuroscience Annual Meeting, Washington DC, USA, 2005
- 14. Nasr S., Esteky H. Information about the sequence of presentation does not reduce the visual working memory capacity. European Conference on Visual Perception (ECVP), Acoruna, Spain, 2005
- 15. Noudoost B., Afraz S.R., Vaziri Pashkam M., Esteky H. Visual object tracking across hemifields in a split-brain patient, European Conference on Visual Perception (ECVP), Budapest, Hungary, 2004
- 16. Komaki A.R., Esteky H., Motamedi F. Effect of capsaicin on neocortical long-term potentiation in awake and freely moving rat, 27th Annual meeting of the Japan neuroscience society, Tokyo, Japan, 2004

- 17. Vaziri Pashkam M., Afraz S.R., Kiani R., Esteky H. Motion-induced overestimation, European Conference on Visual Perception (ECVP), Budapest, Hungary, 2004
- 18. Goshadrou F., Esteky H. The effect of ibotonic acid lesion of the nucleus basalis of meynert (NBM) on the response of cortical neurons in the rat barrel cortex, 2nd Federation of the Asian-Oceanic Neuroscience Societies (FAONS) congress, Tehran, Iran, 2004.
- 19. Afraz S.R., Najafian A., Sanayei M., Adibi M., Esteky H. Spatial invariance of motion aftereffect across eye movements, European Conference on Visual Perception (ECVP), Budapest, Hungary, 2004
- Kiani R., Esteky H., Tanaka K. Short latency category specific neural responses to human faces in macaque inferotemporal cortex, Society for Neuroscience Annual Meeting, Washington DC, USA, 2003
- 21. Sheibani V., Esteky H., Motamedi F. Effect of C-Fiber Depletion and Locus Coeruleus Electrical Stimulation on Response of Barrel Cortical Cells to Controlled Mechanical Displacement in Adult Rats, 6th IBRO World Congress of Neuroscience, Prague, Czech Republic, 2003
- 22. Leila Montaser Kouhsari, Reza Rajimehr, Seyed Reza Afraz, & Hossein Esteky, Visual illusion without awareness, Vision Sciences Society Annual Meeting, Sarasota, Florida; 2002
- 23. Montaser Kouhsari L., Moradi F., Zand-Vakili A., Esteky H. Orientation selective adaptation in the motion induced blindness, European Conference on Visual Perception (ECVP), Scotland, UK, 2002
- Montaser Kouhsari L., Esteky H. Distance dependent compulsory averaging of crowded signals, European Conference on Visual Perception (ECVP), Scotland, UK, 200

- 25. Rajimehr R., Vaziri-Pashkam M., Afraz S.R., Esteky H. Adaptation to apparent motion in the crowding condition, Federation of European Neuroscience Societies (FENS), Prague, Czech Republic, 2002
- 26. Sheybani V., Esteky H. Responses of rat barrel cortical neurons is altered after Locus Coeruleus electrical stimulation, 3rd Federation of the Asian-Oceanic Neuroscience Societies (FAONS) Congress, Seoul, South Korea, 2002
- 27. Esteky H., Montaser Kouhsari L., Afraz S-R, Vaziri-Pashkam M. Visual interhemispheric interactions in a partial split brain patient without splenium, US Society for Neuroscience Annual Meeting, San Diego, USA, 2001
- 28. Esteky H., Tanaka K. Effects of changes in aspect ratio of stimulus shape on responses of cells in the monkey inferotemporal cortex. US Society for Neuroscience Annual Meeting, Los Angeles, USA, 1998
- 29. Esteky H., Schwark H.D. Thalamocortical connections of the forepaw representation in cat cortical areas 3b and 2, 4th IBRO World Congress of Neuroscience, Kyoto, Japan, 1995
- 30. Esteky H., Pettit M.J., Schwark H.D. Responses of cat SI rapidly adapting neurons to controlled mechanical stimulation, US Society for Neuroscience Annual Meeting, Anaheim, USA, 1992
- 31. Esteky H., Schwark H.D. Intrinsic corticocortical connections of cat primary somatosensory cortex, US Society for Neuroscience Annual Meeting, New Orleans, USA, 1990

## **Teaching Experience**

Note: All courses were taught at Shahid Beheshti Medical University and School of Cognitive Sciences, Institute for Studies in Fundamental Sciences, unless noted otherwise. Some undergraduate courses were taught jointly with other faculties. Principal instructor in all lectures unless noted. All courses taught once each year unless noted. Altogether, I have taught over 80 courses over the course of +30 academic semesters.

## **Undergraduate courses**

Cognition and Cognitive Disorders: Multiple lectures; 4<sup>th</sup> Tehran IBRO School

	Hossein Esteky – C.V.
Introduction to Neuroscience	1998 - 2013
Cognitive Neuroscience	2009 - 2013
Techniques in Cognitive Neuroscience: Multiple lectures; 3 <sup>rd</sup>	Tehran IBRO School 2013
Sensation and Perception	2000 - 2012
Primate Electrophysiology: Multiple lectures; 2 <sup>nd</sup> Tehran IBF	RO School 2012
Cell Physiology	1998 - 2005
Spike Trains to Actions: Brain basis of behavior; Multiple led (Fifth Antonio Borsellino College on Neurophysics; Trieste,	
The Neuronal Basis of Visual Object Recognition; Multiple I (Fourth Antonio Borsellino College on Neurophysics; Trieste	
Pain and Nociception	1998 - 2004
Introduction to Neuroscience; Tehran Medical School;	1994 -1995
Biology (teaching assistant); University of North Texas	1990 - 1992
Electrophysiology (teaching assistant); University of North T	Sexas 1992 - 1993
Graduate courses	
Principals of Neural Sciences	1998 - 2014
Neural Basis of Vision and Attention	2004, 2006. 2008, 2010, 2012
Neuroplasticity	2007, 2009
Techniques in Brain Research	2005, 2007
Doctoral Seminars	2002 - 2006
Sensation and Perception	1998 - 2005
Neural Basis of Language and Hemispheric Laterality	2002, 2004
Methods in Electrophysiological Recordings	2001, 2003
Excitable Membrane Physiology	2000 - 2003
Students Advised Students current position	

# **Doctorate**

Noudoost B, Montana State University, Assistant Professor

Bakhtiari R, University of Alberta, Post Doc Fellow Emadi N, Yale University, Psychiatry Resident

Mirpour K, UCLA, Research Associate

Nasr S, Harvard Medical School, Research Associate

Aboulghasemi MR, IPM school of Cognitive Sciences, Assistant Professor

Atapour N. Monash University, Research Fellow

Alizadeh M, Iran Medical University, Assistant Professor

Vahabi H, IPM school of Cognitive Sciences, Assistant Professor Komaki A, Hamedan School of Medicine, Associate Professor Salami M, Kashan School of Medicine, Associate Professor

Sheybani, M, Kerman University, Professor

#### Undergraduates that were involved in my research

Kiani R, NYU, Assistant Professor Afraz SR, NIH, Principal Investigator Vaziri-Pashkam M, NIH, Associate Researcher

Adibi M, Australian National University, Post Doc Fellow

Farazifard R, University of Ottawa, Post Doc Fellow

Montaser-Kouhsari L, Mount Sinai Health System, Neurology Resident

Zandvakili A, Brown University, Psychiatry Resident

Rajimehr R, MIT, Research Associate

#### **Services**

## Journal Editorial Board Membership

Progress in Neurobiology, 2006 - present

Intelligent and Cognitive Computing, 2013 - present

# **Review Board for Faculty Promotion**

International School for Advanced Studies (SISSA), Italy

Institute for Research in Fundamental Sciences, Iran Shahid Beheshti Medical University, Iran

#### Ad Hoc and Grant Reviewer

Nature

Science

Journal of Neuroscience

Journal of Neurophysiology

US Proceedings of the National Academy of Sciences (PNAS)

Neuroscience

Brain Research

US National Science Foundation (NSF)

# **University and Department Committees**

- Director, Faculty Search Committee, School of Cognitive Sciences, Institute for Studies in Fundamental Sciences (2002-2014)
- Member, Scientific steering committee, Institute for Studies in Fundamental Sciences (2002-2014)
- Member, Executive steering committee, Institute for Studies in Fundamental Sciences (2002-2014)
- Director, Graduate Program in Cognitive Neuroscience, School of Cognitive Sciences, Institute for Studies in Fundamental Sciences (2002-2014)
- Chair, PhD program selection committee, School of Cognitive Sciences, Institute for Studies in Fundamental Sciences (2001-2014)
- Member, Curriculum committee, Department of physiology, SBMU School of Medicine (2003-2014)
- Member, Performance review committee, Department of physiology, SBMU School of Medicine (2005-2014)
- Chair, Research ethics committee, School of Cognitive Sciences, Institute for Studies in Fundamental Sciences (2006-2014)

#### **Professional Affiliations**

US Society for Neuroscience (SfN)

International Brain Research Organization (IBRO)

## Major Laboratory Techniques Acquired and Research Labs Set Up

Human psychophysics and eye tracking

Extracellular single unit recording

**EEG** 

Event Related Brain Potential (ERP)

Functional MRI

Human deep brain recording during functional neurosurgery

Transcranial Electrical Current Stimulation (tECS)

In-vivo intracellular recording

In-vitro slice electrophysiology

Neuroanatomical track tracing, histological and cytological techniques

# **International Media Coverage**

- The brains trust of Tehran (**Nature** Vol. 435, N. 19, 2005) http://www.nature.com/nature/journal/v435/n7040/full/435264a.html
- Iran's long march (**Nature** Vol. 435, N. 7040, 2005) http://www.nature.com/nature/journal/v435/n7040/#Editorial
- First class science all over the world (**Nature Neuroscience** Vol. 9, N. 3, 2006) http://www.nature.com/neuro/journal/v9/n3/full/nn0306-293.html
- Making faces in the brain (**Nature** Vol. 442, 2006) http://www.nature.com/nature/journal/v442/n7103/edsumm/e060810-14.html
- Abstraction: Interview with Dr. Hossein Esteky (Nature Vol. 442, 2006)
- Perceiving an object that does not exist (La Recherche N. 403 December 2006) http://www.larecherche.fr