

## Employment and Education

Boston University: Department of Psychological and Brain Sciences, 2017—  
Assistant Professor

Harvard University: Center for Brain Science, 2015—  
Principal Investigator, Junior Fellow of the Society of Fellows

MIT: Brain and Cognitive Sciences, 2010 — 2015  
Ph.D. student in the laboratory of Susumu Tonegawa, Ph.D.

Tufts University: Visiting Lecturer of Neuroscience, 2014

Boston University: Neuroscience, B.A., *magna cum laude*, 2006 — 2010  
Researcher in the laboratory of Howard Eichenbaum, Ph.D.

## Publications

1. Denny C, LeBois E, **Ramirez S**.  
From engrams to pathologies of the brain  
*Frontiers in Neural Circuits* 11, 1-20.
2. **Ramirez S**.  
Supporting the next generation of neuroscientists  
*Neuron* 92, 559-560.
3. **Ramirez S**, Liu X, MacDonald CJ, Moffa A, Zhou J, Redondo R, Tonegawa S.  
Positive memory engrams suppress depression-related behavior  
*Nature* 522, 335-339 (2015). SfN Hot Topic.
4. Tonegawa S, Liu X, **Ramirez S**, Redondo RL.  
Memory engram cells have come of age  
*Neuron* 87, 918-931.
5. Liu X, **Ramirez S**, Redondo RL, Tonegawa S.  
Identification and manipulation of memory engram cells  
*Cold Spring Harb Symp Quant Biol*, 1-8 (2015)
6. Redondo RL\*, Kim J\*, Arons AL, **Ramirez S**, Liu X, Tonegawa S.  
Bidirectional switch of the valence associated with a hippocampal contextual memory engram  
*Nature* 513, 426-430 (2014)
7. **Ramirez S**, Tonegawa S, Liu X.  
Identification and optogenetic manipulation of memory engrams in the hippocampus  
*Frontiers in Behavioral Neuroscience*, 7:226 (2014)
8. Liu X\*, **Ramirez S\***, Tonegawa S.  
Inception of a false memory by optogenetic manipulation of a hippocampal memory engram  
*Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences* 369, (2013). Cover article.
9. **Ramirez S\***, Liu X\*, Lin PA, Suh J, Pignatelli M, Redondo RL, Ryan TJ, Tonegawa S.  
Creating a false memory in the hippocampus  
*Science* 341, 387-391 (2013). Cover article. SfN Hot Topic.
10. Liu X\*, **Ramirez S\***, Pang PT, Puryear CB, Govindarajan A, Deisseroth K, Tonegawa S.  
Optogenetic stimulation of a hippocampal engram activates fear memory recall  
*Nature* 484, 381-385 (2012)

11. Ghosh JG, Fabian, D, Mallat A, Ramirez S, Burton M, Casey N, Mocofanesu A, Goldstein LE.  
The molecular chaperone human A $\beta$  crystallin modulates amyloid- $\beta$  neurotoxicity  
*Alzheimer's and Dementia* 5(4), 304 (2009)

\*Authors contributed equally

## Awards

### 2017

1. Selected as 1 of 14 Emerging Scholars by Diverse Issues in Higher Education.
2. McKnight Memory and Cognitive Disorders Award

### 2016

1. NIH Early Independence Award (DP5)
2. NARSAD Young Investigator Award
3. Gordon Research Conference Travel Award
4. American College of Neuropsychopharmacology Travel Award

### 2015

1. Forbes *30 innovators under the age of 30* award, in the area of Science and Technology
2. National Geographic *Breakthrough Explorer*
3. Office of the Dean for Graduate Education Diversity Fellowship
4. Science News' *Top 10 Bright Young Minds*
5. Science magazine's *Breakthrough of the Year*, runners up for memory manipulation

### 2014

1. Smithsonian magazine's *2014 American Ingenuity Award*, in the area of the Natural Sciences
2. *Top 30 thinkers under the age of 30*, Pacific Standard Magazine

### 2013

1. Technology Review TR35: *World's Top 35 Innovators under the Age of 35* award
2. Walle Nauta Award for Continuing Dedication to Teaching at MIT
3. Science paper voted "Top 10 discoveries of 2013" by *La Recherche*, France
4. Science article proclaimed as Top 10 Most Viewed by F1000

### 2012

1. Angus MacDonald Award for Excellence in Undergraduate Teaching at MIT
2. Nature article classified as Best of the Best and Most Viewed by F1000
3. Best Abstract Award granted by the Molecular and Cellular Program at MIT

## Invited Talks

### 2018

- 1) Chair: Winter Conference on the Neurobiology of Learning and Memory. January
- 2) Columbia University, NY. January
- 3) University of Michigan, MI. February
- 4) Max Plank Institute, Germany. March
- 5) Chair: International Conference on Learning and Memory, Irvine, California. April

### 2017

- 1) Winter Neural Plasticity, Grenada, January
- 2) Georgetown University, Washington DC
- 3) University of California, Irvine, Kavli Symposium. February
- 4) Society of Biological Psychiatry, CA. May
- 5) Brandeis University, MA. May
- 6) Harvard University, MA. May
- 7) Spring Hippocampal Conference, Italy. June
- 8) National Geographic, Washington DC. June
- 9) Boston Area Neuroscience Group, MA. June
- 10) National Geographic Symposium, Washington DC. June
- 11) University of Bordeaux, France. June
- 12) University of Toronto, CA. June
- 13) Boston University, MA. July
- 14) University of Calgary, CA. October
- 15) University of Alabama, Birmingham. AL. October

- 16) University of Washington, November
- 17) University of Colorado, Boulder. November

#### 2016

- 1) University of Massachusetts, Boston. April
- 2) MIT Museum, Cambridge Science Festival. April
- 3) UC Berkeley, The Berkeley Forum, CA. Fall
- 4) National Geographic, Explorers Symposium, Washington DC, June.
- 5) Boston University, July.
- 6) Chair: European Biological Psychiatry Society, Netherlands. September
- 7) NIH, MD. October
- 8) Dartmouth College, NH. October
- 9) Northeastern University, MA. October
- 10) Society for Neuroscience, Mini-symposium, CA. November
- 11) American College of Neuropsychopharmacology, FL. December

#### 2015

- 1) Society for Biological Psychiatry, Toronto. May
- 2) NIH, Behavioral and Social Sciences Research 20th Anniversary, MD. June
- 3) University of Rhode Island, Neuroscience Seminar Series, RI. June
- 4) National Geographic Society, Breakthrough Explorers, MD. June
- 5) McLean Hospital Neuroscience Seminar Series, August
- 6) NIMH, *New Discoveries in Mental Health Research* seminar series, MD. September
- 7) Harvard University, Center for Brain Science, MA. October
- 8) National Geographic, London, England. October
- 9) Kahn Annual Lecture in Neuroscience, Smith College, MA. November

#### 2014

- 1) University College London, Affective Brain Lab Seminar Series, January
- 2) National Institute of Technology, Tiruchirapalli, India. *Pragyan: Techno-management Festival*, February
- 3) Janssen, Spain (Johnson & Johnson Co): Medical Affairs Department, March
- 4) Keynote Speaker: Atlanta's Neuroscience Education and Training Program, Center for Behavioral Neuroscience, March
- 5) Cambridge Science Festival, MA. April
- 6) Harvard University, Department of Neurobiology, MA. September
- 7) FENS 2014, Connectomics workshop, University Bordeaux, France. September
- 8) NIH Blueprint-ENDURE, Washington D.C., November

#### 2013

1. University of Pennsylvania, Department of Biological Chemistry, PA. December
2. Columbia University, Department of Neuroscience, NY. December
3. Molecular Cellular and Cognition Society, CA. November
4. *EmTech*, Neuroengineering: The Future is Now, MA. October
5. MIT's Picower Institute Summer Retreat, MA. May

#### 2012

1. Boston University, College of Arts and Sciences, Program in Neuroscience, MA. March
2. Boston University, Center for Memory and Brain, MA. April
3. MIT, Integrated Neuronal Systems Conference, MA. June
4. MIT, Picower Institute Seminar Series, MA. May
5. MIT, Picower Institute Summer Retreat, MA. June

#### 2010

1. Commencement Speaker: Boston University's Program in Neuroscience
2. Boston University, Annual SURF symposium, MA. May
3. Boston University, Annual UROP symposium, MA. May

## Outreach and Media

#### 2017

- 1) Bunker Hill Community College, Careers in Science panel
- 2) Podcast: Science(ish) for Radio Wolfgang

#### 2016

- 1) Science Media and Awards Summit 2016
- 2) National Geographic Explorer's Symposium
- 3) NPR Science Fridays

## 2015

- 1) Featured on National Geographic's *Breakthrough*
- 2) Featured on PBS's Nova Science *Memory Hackers*

## 2014

- 1) TEDxBoston, October
- 2) Loomis Chaffee High School keynote speaker on memory, November

## 2013

- 1) TED, invited speaker
- 2) NPR *Science Fridays* guest discussing memory manipulation
- 3) Featured on the Science channel's *Through the Wormhole* with Morgan Freeman
- 4) Featured on the television series *The Dose with Dr. Billy*
- 5) Invited AMA on reddit to discuss false memories
- 6) Co-host at MIT Museum's *Living in the Future* lecture series
- 7) Science article covered in New York Times, BBC, Forbes, Guardian, CNN, Time, The Economist, Washington Post, The Boston Globe, Nova Science
- 8) WBUR 90.9 science segment guest speaker on memory manipulation
- 9) Digital Village radio show: Los Angeles, guest speaker on false memories

## 2012

- 1) Nature article covered in New York Times, BBC, CNN, Time, Scientific American, New Scientist, and Nova Science
- 2) Featured on the Discovery Channel for memory research

## Teaching Experience

### 2010-2014

- 1) Tufts University, *Neuroscience and Hollywood* (1 year)
- 2) Teaching Assistant, MIT, *Neurophysiology of Memory* (3 years)
- 3) Teaching Assistant, MIT, *Cell and Systems Neurophysiology* (1 year)

### 2007-2010

- 1) Teaching Assistant, Boston University, *Systems Physiology* (1 year)
- 2) Teaching Assistant, Boston University, *Introduction to Biology* (2 years)

## References

References available upon request.