# CURRICULUM VITAE

**Hailan Hu**

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## Education

2002 Dec. Ph.D. in Neuroscience, University of California Berkeley, with Corey Goodman
1996 Jul. B.S. in Biochemistry and Molecular Biology, Beijing University

## Postdoctoral training

2004.2-2008.11 Cold Spring Harbor Laboratory/UCSD, with Roberto Malinow
2003.2-2004.2 University of Virginia, with Julius Zhu and Roberto Malinow

## Professional positions

2015.5-present Professor, Senior Investigator, QiuShi Academy for Advanced Studies/Medical School, Zhejiang University
2008.12-2015.4 Principal Investigator, Institute of Neuroscience, Chinese Academy of Sciences
1996.8-1997.7 Postgraduate researcher, University of California San Francisco

## Research interest

The ability to experience emotions makes our life colorful, and greatly affects our thinking and behavior. Research in my lab aims to understand how emotional and social behaviors are encoded in the brain, with a main focus on the neural circuitry underlying depression and dominance hierarchy. The key questions we are addressing are: How are different emotional states represented in the brain? What and where molecular changes occur when emotion regulation goes awry in diseases such as depression and post-traumatic stress disorder? How does dominance hierarchy arise from interplay between activity of specific neural circuits and social experience of animals? Using combinatorial techniques including imaging, electrophysiology, molecular biology and optogenetics, we hope to visualize the neural circuits that are activated during the behavior of interest; elucidate the function of specific neural circuits and cell groups in behavior; and establish the causal relationship between the activity of neural circuits and corresponding behavioral output. We hope these studies will provide new insights into how emotions shape and color our life, and shed new light on treating emotional disorders.

## Awards and honors

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| 2013 | Meiji Life Science Outstanding Award |
| 2012 | Chinese Outstanding Youth Award |
| 2012, 2014 | Excellent Mentorship Award of Chinese Academy of Sciences |
| 2010-2012 | Shanghai Pujiang Talent Award |
| 2009-2012 | Chinese Hundred Talent Plan Award |
| 2003-2006 | Damon Runyon Foundation Postdoctoral Fellowship |
| 2002 | HHMI and IBRO fellowships for MBL Neurobiology Course |
| 1998-2003 | Howard Hughes Medical Institute Predoctoral Fellowship |

**Referee for** Science, Neuron, Current Biology etc. since 2011

**Committee Service:**

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| 2013- present | IBRO Alumni Committee |
| 2009- present | Reviewer for Chinese National Science Foundation Grants |
| 2010 | Reviewer for UK MRC grant |

**Teaching:**

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| 2008-present | Neurobiology (Lecture: The Autonomous Nervous System) |
| 2012-present | ION summer school (Lecture: Neural Mechanism of Emotion) |

**Trainees present:**

Yihui Cui (postdoc fellow, PhD with Laurent Venance at College de France)
Qiye He (postdoc fellow, PhD with Julia Zeitlinger at Stowers Institute)
Yan Yang (postdoc fellow, PhD with Yuqiu Zhang at Fudan University)
Hong Zhu (graduate student)
Tingting Zhou (graduate student)
Qi Zhang (graduate student)

**Ph.D students graduated (current position):**

Fei Wang (postdoc, HHMI Janellia Farm, with Barry Dickson)
Kun Li (postdoc, Rockefeller University, with Nathaniel Heintz)
Jianbo Xiu (postdoc, Peking Union Medical School, with Qi Xu)
Tao Zhou (Assistant investigator, Shanghai Sci & Tech University)

**Undergraduate students trained (current position):**

Zhanmin Lin (graduate school, Erasmus Univ.)
Jia Shen (graduate school, SUNY/CSHL, US)

**Research Subjects**

[1] Neural representation of emotional valence

[2] Molecular and circuit mechanism of depression

[3] Neural circuit mechanism of social hierarchy

**Selected Publications**

1. **Hu H.** (2016) Reward and aversion. **Annual Review in Neuroscience** (invited review)

2. Lv Q, Yang L, Li G, Wang Z, Shen Z, Yu W, Jiang Q, Hou B, Pu J, **Hu H***, Wang Z*. (2015) Large-scale persistent network reconfiguration induced by ketamine in anesthetized monkeys: relevance to mood disorders. **Biological Psychiatry**, in print (*equal senior author contribution).

3. Xiu JB, Zhang Q, Zhou T, Zhou TT, **Hu, H**. (2014) Visualizing an emotional valence map in the limbic forebrain by TAI-FISH. ***Nature Neuroscience***, 17:1552-1559 (Selected by **Faculty 1000**,)

4. Wang F, Kessels H*, **Hu H***. (2014) The mouse that roared - neural mechanisms of social hierarchy. ***Trends in Neuroscience*** 11:674-682 (invited review, cover article, * co-corresponding author)

5. Li, K, Zhou, T, Liao, L, Yang, Z, Wong, C, Henn, F, Malinow, R, Yates, J, **Hu, H.** (2013) βCaMKII in lateral habenula mediates core symptoms of depression. ***Science***, 341:1016-1020. (Highlighted in ***Nat. Rev. Neuro.***, ***JAMA***, selected by **Faculty 1000**)

6. Wang, F, Zhu, J, Zhu, H, Zhang, Q, Lin, Z, **Hu, H** (2011) Bidirectional control of social hierarchy by synaptic efficacy in medial prefrontal cortex. ***Science***, 334: 693-697. (Highlighted in ***Science***,)

7. **Hu, H***, Qin Y*, Bochorishvili G, Zhu Y, Van Aelst, L, and Zhu, JJ. (2008) Ras signaling mechanism for impaired synaptic plasticity and AMPA receptor trafficking in a mouse model of fragile X syndrome (***Journal of Neuroscience***, 28(31): 7847-62.) (* co-first author)

8. **Hu H**, Real E, Takamiya K, Kang MG, Ledoux J, Huganir R, Malinow R. (2007) Emotion Enhances Learning via Norepinephrine Regulation of AMPA-Receptor Trafficking. ***Cell*** 131: 160-73. (Highlighted in ***Nature*** Journal club and ***Nat. Rev. Neurosci.***)

9. **Hu H***, Li M*, Labrador J, McEwen J, Lai EC, Goodman CS, Bashaw GJ. (2005) Cross GTPase-activating protein (CrossGAP)/Vilse links the Roundabout receptor to Rac to regulate midline repulsion. ***Proc Natl Acad Sci*** 102(12): 4613-8. (* co-first author)

10. Godenschwege TA, **Hu H**, Shan X, Goodman CS and Murphey RK. (2002) Bi-directional signaling by Semaphorin 1a during central synapse formation in Drosophila. ***Nature Neuroscience*** 5: 1294-301.

11. Bashaw GJ, **Hu H**, Nobes CD, Goodman CS. (2002) A novel Dbl family RhoGEF promotes Rho-dependent axon attraction to the central nervous system midline in Drosophila and overcomes Robo repulsion***. Journal of Cell Biology*** 155(7): 1117-1122. (Cover article)

12. **Hu H**, Marton T and Goodman CS. (2001) PlexinB Mediates Axon Guidance in Drosophila by Simultaneously Inhibiting Active Rac and Enhancing RhoA Signaling. ***Neuron*** 32(1): 39-51. (Highlighted in the Preview of ***Neuron***)

13. Driessens MH, **Hu H**, Nobes CD, Self A, Jordens I, Goodman CS, Hall A. (2001) Plexin-B semaphorin receptors interact directly with active Rac and regulate the actin cytoskeleton by activating Rho. ***Current Biology***, 11(5): 339-44.

14. Bellocchio EE, **Hu H**, Pohorille A, Chan J, Pickel VM and Edwards RH. (1998) The Localization of the Brain-Specific Inorganic Phosphate Transporter Suggests a Specific Presynaptic Role in Glutamatergic Transmission. ***J. Neurosci.***, 18(21): 8648-59.

**Invited Talks**

2016 "The Neurobiology of Mental Health" NCCR Conference, Geneva, Swizerland
2015 "From Neural Circuitry to Neurotechnology" meeting by AAA Science, RIKEN & IPSEN, Tokyo, Japan
2014 Society of Japanese Neuroscience Conference, symposium on aggression behavior, Japan
2014 RIKEN seminar, Japan
2014 Chinese-American Frontiers of Science Symposium
2014 Institute of Biophysics "Bei Shi Zhang" seminar, Chinese Academy of Sciences, Beijing
2013 FMI seminar, Basel, Switzerland
2013 EMBL seminar, Monterotondo, Italy
2013 Cold Spring Harbor Asia Conference, Francis Crick Symposium of Neuroscience: The Changing Brain. Suzhou, China
2013 CGSB Meeting of NYU, Abu Dhabi, UAE
2012 College de France, Paris, France
2012 University of Muenster/EMBL, Muenster, Germany
2012 The European Science Foundation/FENS conference on The Neurobiology of Emotion, Stressa, Italy.
2012 14th International Congress of Histochemistry and Cytochemistry (ICHC 2012). Kyoto, Japan. （**Session co-chair** on "Neurobiology of social behavior"）
2012 Cold Spring Harbor Asia Conference on Neural Circuit Basis of Behavior and its Disorders. Suzhou, China.
2011 Erasmus Univeristy, Department of Neuroscience seminar, the Netherlands.
2011 VU University of Amsterdam seminar, the Netherlands.
2011 4th Sino-German Frontiers of Science Symposium in Berlin
2010 Japan National Institute for Physiological Science meeting "Synapse"
2009 22nd Biennial Meeting of International Society of Neurochemistry, Young Scientist Lecture, "In search of the Molecular and Circuit Mechanism of Depression"
2008 New York University, Center for Neural Science
2008 Mount Sinai Medical School
2008 Harvard University, Center for Brain Science
2008 MIT, Picower Center for Learning and Memory