APPLICANT BIOGRAPHICAL SKETCH

NAME OF APPLICANT: **Wang, Minghui**

eRA COMMONS USER NAME (credential, e.g., agency login): **WANGMINGHUI**

POSITION TITLE: **Postdoctoral Fellow**

EDUCATION/TRAINING:

INSTITUTION AND LOCATION	DEGREE	START DATE	END DATE	FIELD OF STUDY
Lanzhou University, Lanzhou, China	**B.S.**	**09/1999**	**07/2003**	**Biology**
Lanzhou University, Lanzhou, China	**M.S.**	**09/2003**	**07/2006**	**Immunology**
Institute of Biophysics, Chinese Academy of Sciences, Beijing, China	**Ph.D.**	**09/2006**	**07/2010**	**Neuroscience**
Cold Spring Harbor Laboratory, NY, USA	**Postdoc**	**10/2010**	**Present**	**Neuroscience**

A. Personal Statement

During my Ph.D. study at the Institute of Biophysics Chinese Academy of Sciences (Beijing), I was trained in cellular neuroscience. My thesis work conducted in Dr. Jinhui Wang's laboratory revealed the role of vasoactive intestinal peptide (VIP) in maintaining and regulating electrical synapses-mediated neuronal synchronization in the suprachiasmatic nucleus (SCN). To achieve this, I performed both calcium imaging using two-photon microscopy and electrophysiology.

Following my Ph.D studies, I joined Dr. Bo Li`s laboratory at Cold Spring Harbor Laboratory (CSHL), where I received training in animal behavior, stereotactic neurosurgery, and neural circuits. During my stay in the Li lab, I investigated the role of the medial prefrontal cortex (mPFC), a brain region highly implicated in clinical and animal models of depression, in adaptive and maladaptive behavioral responses to stress. Using the learned helplessness model of depression, I found that synaptic potentiation in the mPFC was linked to learned helplessness, whereas synaptic weakening was associated with resilience to stress. My studies provided direct evidence that mPFC dysfunction is linked to maladaptive behavioral responses to stress.

As I became very interested in studying the genetic/molecular factors that contribute to stress-related mental disorders, I next wanted to expand my expertise in molecular biology/genetics. Hence, after completing my studies in the Li laboratory, I decided to join Dr. Linda Van Aelst laboratory at CSHL, where I have been investigating the function of the X-linked intellectual disability protein Oligophrenin-1 (Ophn1). Excitingly, I uncovered a critical role for Ophn1 in the establishment of behavioral resilience to stress. As resilience to stress has a central role in modulating the development of depressive disorders, my next immediate goals are to investigate the cellular/synaptic and molecular underpinnings by which Ophn1 deficiency leads to maladaptive behavioral responses to stress.

B. Positions and Honors

Positions and Employment

02/2013 – Present Postdoctoral Research Fellow, Cold Spring Harbor Laboratory, New York, USA
(Laboratory of Dr. Van Aelst)

10/2010 – 01/2013 Postdoctoral Research Fellow, Cold Spring Harbor Laboratory, New York, USA
(Laboratory of Dr. Bo Li)

09/2006 – 07/2010 Ph.D. Training Program, Institute of Biophysics of Chinese Academy of Sciences, Beijing, China (Laboratory of Dr. Jinhui Wang)

09/2003 – 07/2006 Postgraduate Student Research, Lanzhou University, Lanzhou, China (Laboratory of Prof. Qin Wang)

Professional Activities and Memberships

2006 Training course: "Laboratory Animal Sciences" Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

2007 Training course in "Image processing of cryo-electron microscopy" Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

2009 Selected Talk: "Coupled inhibitory neurons in suprachiasmatic nucleus", the 8th Biennial Conference of the Chinese Society for Neuroscience, Guangzhou, China

2009 Member, Chinese Society for Neuroscience

2011 Meeting: "Recent Advances in Neuroscience Research", Stony Brook University

2012 Poster: "Modulation of mPFC-LHB circuitry in an animal model of depression," CSHL In-House Symposium

2013 Meeting, "Synapses", Cold Spring Harbor Laboratory

2014 Meeting, "Neuronal Circuits", Cold Spring Harbor Laboratory

2015 Meeting, "Wiring the brain", Cold Spring Harbor Laboratory

2016 Meeting, "Neuronal Circuits", Cold Spring Harbor Laboratory

Honors

1999-2003 Third-class award to outstanding students in Lanzhou University

2003 Admitted to be postgraduate student without testing in Lanzhou University

2009 Third-class award to annual work report in Institute of Biophysics of Chinese Academy of Sciences

2017 BRAIN & BEHAVIOR Foundation _NARSAD young investigator grant

C. Publications

Wang, Ming-Hui, Na Chen, and Jin-Hui Wang. "The coupling features of electrical synapses modulate neuronal synchrony in hypothalamic superachiasmatic nucleus." *Brain research* 1550 (2014): 9-17.

Wang, Minghui, Zinaida Perova, Benjamin R. Arenkiel, and Bo Li. "Synaptic modifications in the medial prefrontal cortex in susceptibility and resilience to stress." *The Journal of Neuroscience* 34, no. 22 (2014): 7485-7492.

Penzo, Mario A., Vincent Robert, Jason Tucciarone, Dimitri De Bundel, **Minghui Wang,** Linda Van Aelst, Martin Darvas et al. "The paraventricular thalamus controls a central amygdala fear circuit." *Nature* (2015).

Wang M, Yang YT, Tai Y, Li B, Van Aelst L. "Oligophrenin-1 regulation of parvalbumin interneurons in the medial prefrontal cortex for behavioral responses to stress." *In submission* (2016).