

NAWEI SUN Ph.D.

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EDUCATION

2008-2016

Rutgers University, Piscataway, New Jersey, USA

Ph.D. in Genetics

Doctoral Dissertation: "The *PNKD* gene is associated with Tourette Disorder or Tic Disorder in a multiplex family"

2004-2008

Jilin University, Changchun, Jilin Province, China

B.S. in Biotechnology

Undergraduate Thesis: "Establishing MCF-7 breast cancer cell line stably expressing PKB gene by electroporation"

RESEARCH EXPERIENCE

April 2017- Present

Institute for Neurodegenerative Diseases, University of California, San Francisco (UCSF), USA

Postdoctoral scholar

May 2009-January 2017

Rutgers University, Piscataway, New Jersey, USA

Graduate assistant with Dr. Jay Tischfield

To investigate the genetic etiology of Tourette's Disorder (TD), we

- Performed the whole exome sequencing on members of TD multiplex families to identify candidate TD-associated sequence variants.
- Generated iPSC lines from members of TD multiplex families to obtain patient-specific neuronal cells by *in vitro* differentiation.
- Conducted transcriptome analysis (RNA-Seq) using iPSC-derived neural progenitor cells to discover biological pathways being affected in TD patients during early neural development.
- Evaluated potential TD-associated genetic variants in iPSC-derived neurons to identify molecular and cellular phenotypes for TD.

March-June 2008

Jilin University, Changchun, Jilin Province, China

Undergraduate researcher at Key Laboratory Molecular Enzymology & Engineering of Jilin University

Thesis projects:

"Establishing MCF-7 breast cancer cell line stably expressing PKB gene by electroporation"

August 2007

The institute of Biophysics (IBP), Chinese academy of Sciences, Beijing, China

Research volunteer at Dr. Yue Ma's lab

I worked on human embryonic stem cells (hESCs) culture.

SKILLS AND TECHNIQUES

- Six years research experience in stem cells biology, molecular genetics and neurobiology.
- Expertise in establishing, maintaining human pluripotent stem cell (iPSC) lines and differentiating iPSC lines into neural progenitor cells and neurons.

- Highly experienced in molecular biology techniques including DNA/RNA purification, quantitative real-time PCR, molecular cloning, transfection, western blot, immunoprecipitation, immunocytochemistry, confocal microscopy, flow cytometry.
- Experienced in the whole exome sequencing, RNA sequencing data analyses and CRISPR.
- Strong analytical and communication skills.

PUBLICATIONS

Nawei Sun, Cara Nasello, Li Deng, Nan Wang, Yeting Zhang, Zihui Xu, Zhichao Song, Kelvin Kwan, Robert A. King, Zhiping P. Pang, Jinchuan Xing, Gary A. Heiman, Jay A. Tischfield. (2017). The *PNKD* gene is associated with Tourette Disorder or Tic disorder in a multiplex family. *Molecular Psychiatry* (accepted)

Willsey, Fernandez, Yu, King, Dietrich, Xing, Sanders, Mandell, Huang, Richer, Smith, Dong, Samocha, **Tourette International Collaborative Genetics (including Nawei Sun)**, Tourette Syndrome Association International Consortium for Genetics, Neale, Coppola, Mathews, Tischfield, Scharf, State and Heiman. (2017). De Novo Coding Variants Are Strongly Associated with Tourette Disorder. *Neuron* 94, 486-499 e489.

Nawei Sun, Jay Tischfield, Robert King and Gary Heiman Functional evaluations of genes disrupted in patients with Tourette's Disorder *Front. Psychiatry* doi:10.3389/fpsyt.2016.00011

CONFERENCES AND PRESENTATIONS

October 6-10 2015

Poster presentation at the 2015 Annual Meeting of American Society of Human Genetics (ASHG), Baltimore, MD

"Transcriptome analysis of human induced pluripotent stem cells and neural progenitor cells in Tourette's Disorder"

October 17-22 2014

Poster presentation at the 2014 Annual Meeting of American Society of Human Genetics (ASHG), San Diego, CA

"Transcriptome analyses of patient-specific induced pluripotent stem cell (iPSC) derived neural stem cells implicate neurodevelopmental pathways involved in Tourette Syndrome"

June 13, 2014

Poster presentation at "Neuroscience Day at Rutgers" research symposium, Piscataway, NJ

"Modeling Tourette Syndrome with induced pluripotent stem cells (iPSCs) and iPSC derived neuronal cells"

October 22-26, 2013

Poster presentation at 2013 Annual Meeting of American Society of Human Genetics (ASHG), Boston, MA

"Investigation of the role of serotonin pathway in the etiology of Tourette Syndrome"

April 26-27, 2013

Poster presentation at the 2013 Annual Meeting of the European Society for the Study of Tourette Syndrome (ESSTS), Athens, Greece

"Generation of Tourette patient-specific induced pluripotent stem cells"

November 6-10, 2012

Poster presentation at 2012 Annual Meeting of American Society of Human Genetics (ASHG), San Francisco, CA

"Investigation of the role of serotonin and histamine pathways in the etiology of Tourette Syndrome"

May 2012

Poster presentation at Departmental Retreat of Department of Genetics, Rutgers University, New Brunswick, NJ

"Tourette Syndrome-a complex neurodevelopmental and genetic disorder"

April 2012

Poster presentation at Human Genetics Institute of New Jersey (HGINJ) Research Day, Piscataway, NJ

“Investigation of the role of serotonin pathway in the etiology of Tourette Syndrome”

September 21, 2011

Poster presentation at The Fifth Annual New Jersey Stem Cell Symposium, Bridgewater, NJ

“Investigating genetic or epigenetic factors responsible for Bipolar Disorder by using neurons differentiated from patient-specific induced pluripotent stem cells”

June 15-18, 2011

Attend 2011 Annual Meeting for International Society for Stem Cell Research (ISSCR), Toronto, Canada

April 1, 2011

Poster presentation at Human Genetics Institute of New Jersey (HGINJ) Research Day, Piscataway, NJ

“Investigating genetic or epigenetic factors responsible for Bipolar Disorder by using neurons differentiated from patient-specific induced pluripotent stem cells”

HONORS AND AWARDS

Rutgers University, USA

July 1 2015 - August 31 2015

Arthur McCallum summer research award

July 1 2014 - August 31 2014

Arthur McCallum summer research award

July 1 2013 - August 31 2013

Arthur McCallum summer research award

July 1 2012 - August 31 2012

Koft-Umbreif summer research award

Jilin University, China

2007-2008

Honored Graduate of Jilin University

Nominated for “Excellent Undergraduate Student Thesis” of Jilin University

2006-2007

Second Class Scholarship

Honor of “Excellent Student”, Department of Life Science

Honor of “Excellent Student Cadre”, Department of Life Science

2005-2006

Second Class Scholarship

Dong Rong Social Scholarship

Honor of “Excellent Student”

2004-2005

First Class Scholarship

Dong Rong Social Scholarship

Honor of “Excellent Student”

TEACHING EXPERIENCE

May 2009 to January 2017

Undergraduate research mentor in Dr. Jay Tischfield’s lab

2013, 2014, 2015, 2016, 2017 spring semesters

Lecturer at undergraduate course: Effective Communication Skills in Genetics

MEMBERSHIPS

American Society of Human Genetics (ASHG)

Human Genetics Institute of New Jersey (HGINJ)

New Jersey Center for Tourette Syndrome (NJCTS)

OTHER ACTIVITIES

November 2014

ad hoc reviewer, PLOS ONE

September 2014

Volunteer at Sino-American Pharmaceutical Professionals Association 22nd Annual Conference

June 2012, 2013, 2014

Volunteer at Camp Bernie of New Jersey Center for Tourette Syndrome

2009-2010

Rutgers Chinese Student & Scholar Association (RCSA) board member

Summer 2008

Attend "Bio-Hope" Summer Camp of Institute of Biophysics, Chinese Academy of Sciences