

# Stanford

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## Jack Tzu-Chieh Wang

Instructor, Neurology & Neurological Sciences

### CLINICAL OFFICES

- **Center for Academic Medicine Stanford Stroke Center**

453 Quarry Road MC 5235

Stanford, CA 94304-5235

**Tel** (650) 723-2606      **Fax** (650) 723-4451

- **Stanford Neurocritical Care Program**

780 Welch Rd Ste 350

Stanford, CA 94304

**Tel** (650) 723-2606      **Fax** (650) 723-4451

### ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

Valerie Berland - Administrative Associate

**Email** vberland@stanford.edu

**Tel** (650) 723-2606

### Bio

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#### BIO

Dr. Jack Wang is a physician-scientist and a neurointensivist at Stanford University Medical Center, where he currently cares for critically ill patients with neurological illnesses in the ICU. He has particular clinical and research interests in stroke and traumatic brain injury, and currently leads an active translational effort to identify novel therapeutic targets to promote functional recovery after brain and spinal cord injuries.

#### CLINICAL FOCUS

- Neurocritical Care
- Neurology

#### ACADEMIC APPOINTMENTS

- Instructor, Neurology & Neurological Sciences

#### HONORS AND AWARDS

- NCS Career Development Research Grant, Neurocritical Care Society (2021)
- StrokeNet Research Fellowship, NIH (2020-2021)
- Excellence in Research Award, Los Angeles Neurological Society (2018)
- Semel Institute Neuroscience Research Award, UCLA-Semel Neuroscience Institute (2018)
- R25 Translational Neuroscience Research Grant, NINDS (2016-2020)
- Bio-X Bowes Fellow, Stanford University School of Medicine (2011-2014)
- Best Poster Award, Stanford Institute of Neuroscience Symposium (2010)
- Research Fellowship, American Heart & Stroke Association (2009-2011)

- Translational Neuroscience Research Scholar, Adelson Neural Repair & Rehabilitation Foundation (2008-2011)
- Delegate, International Achievement Summit (2007)
- Medical Research Fellowship, Howard Hughes Medical Institute (2006-2007)
- Stanford Medical Scholars, Stanford University School of Medicine (2005-2007)
- Excellence in Undergraduate Teaching, Stanford University, Department of Biological Sciences (2003)

## PROFESSIONAL EDUCATION

- Board Certification: Neurocritical Care, American Board of Psychiatry and Neurology (2021)
- Board Certification, American Board of Psychiatry and Neurology , Vascular Neurology (2020)
- Board Certification: Neurology, American Board of Psychiatry and Neurology (2018)
- Fellowship: Stanford University Neurocritical Care and Stroke Fellowship (2020) CA
- Residency: UCLA Dept of Neurology (2018) CA
- Internship: Kaiser Permanente Santa Clara Internal Medicine Residency (2015) CA
- Medical Education: Stanford University School of Medicine (2014) CA
- PhD, Stanford University School of Medicine , Neuroscience (2014)
- MD, Stanford University School of Medicine , Medicine (2014)

## LINKS

- Stanford Neurocritical Care: <https://med.stanford.edu/neurology/divisions/neurocriticalcare/team.html>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our primary research focus is understanding the molecular mechanisms of axonal degeneration and subsequent failure of axonal regeneration in the CNS. We have identified critical cellular pathways mediating axonal degeneration following acute neurological injuries including ischemic stroke and traumatic brain injury. Modulating these pathways presents a novel therapeutic strategy to protect vulnerable nerve fibers and enhance functional recovery in a multitude of acute CNS injuries and diseases.

## Teaching

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### COURSES

2022-23

- Stroke Seminar: NENS 204 (Win)

## Publications

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### PUBLICATIONS

- **What are the Molecular Mechanisms of Axonal Degeneration in Stroke?**  
Wang, J.  
LIPPINCOTT WILLIAMS & WILKINS.2021
- **Absence of Sarm1 Promotes Axonal and Neuronal Survival after Stroke**  
Wang, J., Toh, B., Komuro, Y., Hinman, J. D.  
WILEY.2019: S240
- **Developmental mechanisms for establishing functional non-image-forming visual circuits**  
Dhande, O. S., Phan, A. H., Seabrook, T. A., Nguyen, P. L., Wang, J. T., Huberman, A.

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ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2017

- **Local axonal protection by WldS as revealed by conditional regulation of protein stability** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Wang, J. T., Medress, Z. A., Vargas, M. E., Barres, B. A.  
2015; 112 (33): 10093-10100
- **Gap junctions are essential for generating the correlated spike activity of neighboring retinal ganglion cells.** *PloS one*  
Völgyi, B., Pan, F., Paul, D. L., Wang, J. T., Huberman, A. D., Bloomfield, S. A.  
2013; 8 (7): e69426
- **Gap Junctions Are Essential for Generating the Correlated Spike Activity of Neighboring Retinal Ganglion Cells** *PLOS ONE*  
Voelgyi, B., Pan, F., Paul, D. L., Wang, J. T., Huberman, A. D., Bloomfield, S. A.  
2013; 8 (7)
- **Culturing hybridoma cell lines for monoclonal antibody production.** *Cold Spring Harbor protocols*  
Winzeler, A., Wang, J. T.  
2013; 2013 (7): 640-642
- **Purification and culture of retinal ganglion cells.** *Cold Spring Harbor protocols*  
Winzeler, A., Wang, J. T.  
2013; 2013 (7): 614-617
- **Purification and culture of retinal ganglion cells from rodents.** *Cold Spring Harbor protocols*  
Winzeler, A., Wang, J. T.  
2013; 2013 (7): 643-652
- **Axon Degeneration: Where the Wld(s) Things Are** *CURRENT BIOLOGY*  
Wang, J. T., Barres, B. A.  
2012; 22 (7): R221-R223
- **Axon degeneration: Molecular mechanisms of a self-destruction pathway** *JOURNAL OF CELL BIOLOGY*  
Wang, J. T., Medress, Z. A., Barres, B. A.  
2012; 196 (1): 7-18
- **Disease gene candidates revealed by expression profiling of retinal ganglion cell development** *JOURNAL OF NEUROSCIENCE*  
Wang, J. T., Kunzevitzky, N. J., Dugas, J. C., Cameron, M., Barres, B. A., Goldberg, J. L.  
2007; 27 (32): 8593-8603
- **An oligodendrocyte lineage-specific semaphorin, sema5A, inhibits axon growth by retinal ganglion cells** *JOURNAL OF NEUROSCIENCE*  
Goldberg, J. L., Vargas, M. E., Wang, J. T., Mandemakers, W., Oster, S. F., Sretavan, D. W., Barres, B. A.  
2004; 24 (21): 4989-4999

## PRESENTATIONS

- Molecular Mechanisms of Wlds and SARM1 Mediated Protection in Stroke - American Academy of Neurology Annual Conference (4/2018)
- What is the Molecular Mechanism of Axon Degeneration in Stroke? - American Society of Neurochemistry Annual Conference (3/2018)