

# Wendy W.S. Yue, Ph.D.

**Assistant Professor**  
**Hanna Gray Faculty Fellow**  
**Department of Physiology**  
**University of California, San Francisco**

Email : WingSzeWendy.Yue@ucsf.edu  
Lab address: Rock Hall Room 281,  
1550 4<sup>th</sup> Street, San Francisco, CA 94158  
Work phone : +1 415-476-0432  
Cell phone : +1 443-447-0881

## EDUCATION

---

**Ph.D. in Lab of Dr. King-Wai Yau**, Johns Hopkins University, School of Medicine 2008-2016  
Biochemistry, Cellular and Molecular Biology (BCMB) Program  
Dissertation: Visual pigments and light detection in the eye

**Bachelor of Science (B.Sc.)**, University of Hong Kong 2005-2008  
Major: Biochemistry, Minor: Mathematics

## PROFESSIONAL & RESEARCH EXPERIENCE

---

**Assistant Professor and Hanna Gray Faculty Fellow**, University of California, San Francisco 2024-present  
Department of Physiology

- Leading a research program on cellular signaling between the nervous system and bodily fluids, with a focus on neuroendocrine function
- Affiliated with the Cardiovascular Research Institute, leading research on vascular organization at specialized brain-ventricle regions
- Mentor in the Neuroscience Graduate Program, providing student training and leading discussion classes

**Hanna Gray Postdoctoral Fellow**, University of California, San Francisco 2016-2024  
PI: David Julius

- Uncovered an endogenous kappa opioid signaling pathway in the spinal cord that regulates scar formation following injury
- Elucidated the cellular mechanism by which TRPV1 drugs alter core body temperature
- These studies resulted in a first-author publication in *eLife*. Another first-author manuscript is currently in press in *Nature*. During this time, I was supported by a Hanna Gray Fellowship from the Howard Hughes Medical Institute and a Fellowship for Postdoctoral Research from the Croucher Foundation.

**Graduate Student**, Johns Hopkins University, School of Medicine 2008-2016  
PI: King-Wai Yau

- Devised a method to measure the electrical response generated by a single active transducin molecule in intact mouse rods and clarified that rod phototransduction has a much smaller receptor-to-G protein amplification factor than previously estimated
- Examined biophysical factors that contribute to the spontaneous activation of visual pigments as a source of biological noise in the visual system
- Studied the phototransduction pathways downstream of visual pigments and their physiological roles in regulating non-image forming visual behaviors such as circadian rhythm and pupillary light reflex
- These studies resulted in 2 first-author publications in *eLife* and *PNAS*, and 5 other publications in *Science*, *Cell*, *PNAS* and *Curr. Biol.* During this time, I was supported by an International Predoctoral Fellowship from Howard Hughes Medical Institute.

## PUBLICATIONS

---

**Yue W.W.S.\***, Touhara K.T., Toma K., Duan X., and Julius D\*. Endogenous opioid signaling regulates spinal ependymal cell proliferation. PMID: 38883735. (Preprint on *BioRxiv*, scheduled to be published in *Nature* on Oct 18, 2024) (\*co-corresponding authors)  
DOI: <https://doi.org/10.1038/s41586-024-07889-w>

**Yue W.W.S.**, Yuan L., Braz J., Basbaum A.I., and Julius D. (2022) TRPV1 drugs alter core body temperature via central projections of primary afferent sensory neurons. *eLife* 11:e80139. PMID: 35968676.  
DOI: <https://doi.org/10.7554/elife.80139>

Yue W.W.Y., Kiyofumi M, & **Yue W.W.S.** (2021) Side- and similarity-biases during confidence conformity. *PLoS One* 16(7):e0253577. PMID: 34270563.  
DOI: <https://doi.org/10.1371/journal.pone.0253577>

Silverman D., Chai Z., **Yue W.W.S.**, Ramisetty S.K., Bekshe Lokappa S., Sakai K., Frederiksen R., Bina P., Tsang S. H., Yamashita T., Chen J., and Yau K. -W. (2020) Dark noise and retinal degeneration from D190N-rhodopsin. *PNAS* 117(37): 23033–23043. PMID: 32873651.  
DOI: <https://doi.org/10.1073/pnas.2010417117>

**Yue W.W.S.\***, Silverman D\*, Ren X., Frederiksen R., Sakai K., Yamashita T., Shichida Y., Cornwall M.C., Chen J. and Yau K.-W. (2019) Elementary response triggered by transducin in retinal rods. *PNAS* 116(11):5144-5153. PMID: 30796193. (\*co-first authors)  
DOI: <https://doi.org/10.1073/pnas.1817781116>

Jiang Z., **Yue W.W.S.\***, L. Chen.\*, Sheng Y. and Yau K.-W. (2018) HCN-channel-mediated phototransduction in intrinsically-photosensitive retinal ganglion cells. *Cell* 175(3):652-664.e12. PMID: 30270038. (\*co-second author)  
DOI: <https://doi.org/10.1016/j.cell.2018.08.055>

Wang Q., **Yue W.W.S.**, Jiang Z., Xue T., Kang S.H., Bergles D.E., Mikoshiba K., Offermanns S. and Yau K.-W. (2017) Synergistic signaling by light and acetylcholine in mouse iris sphincter muscle. *Curr Biol.* 27(12):1791-1800.e5. PMID: 28578927.  
DOI: <https://doi.org/10.1016/j.cub.2017.05.022>

**Yue W.W.S.\***, Frederiksen R.\*, Ren X., Luo D.-G., Yamashita T., Shichida Y., Cornwall M.C. and Yau K.-W. (2017) Spontaneous activation of visual pigments in relation to openness/closedness of chromophore-binding pocket. *eLife* pii: e18492. PMID: 28186874. (\*co-first authors)  
DOI: <https://doi.org/10.7554/elife.18492>

Buhr E.D., **Yue W.W.S.**, Ren X., Jiang Z., Liao H.W., Mei X., Vemaraju S., Nguyen M.T., Reed R.R., Lang R.A., Yau K.-W., and Van Gelder R.N. (2015) Neuropsin (OPN5)-mediated photoentrainment of local circadian oscillators in mammalian retina and cornea. *PNAS* 112(42):13093-13098. PMID: 26392540.  
DOI: <https://doi.org/10.1073/pnas.1516259112>

Luo D.-G., **Yue W.W.S.**, Ala-Laurila P. and Yau K.-W. (2011) Activation of visual pigments by light and heat. *Science* 332(6035):1307-1312. PMID: 21659602.  
DOI: <https://doi.org/10.1126/science.1200172>

## FELLOWSHIPS & SCHOLARSHIPS

---

<b>Hanna H. Gray Fellows Program (Postdoctoral and Faculty Phases),</b> Howard Hughes Medical Institute (HHMI)	2017-present
<b>Croucher Fellowship for Postdoctoral Research,</b> Croucher Foundation	2017-2019
<b>International Student Research Fellowship,</b> Howard Hughes Medical Institute (HHMI)	2011-2013

<b>Summer Research Fellowship,</b> University of Hong Kong	2007
<b>Entrance Scholarship,</b> University of Hong Kong Foundation	2006

## **HONORS & AWARDS**

---

<b>Keystone Symposia Scholarship</b>	2019
<b>Summer Research Conference Travel Award,</b> Federation of American Societies for Experimental Biology (FASEB)	2017
<b>Phi Beta Kappa Society Membership</b>	2016
<b>Michael A. Shanoff Young Investigator Award,</b> Johns Hopkins University	2016
<b>Summer Research Conference Travel Award,</b> Federation of American Societies for Experimental Biology (FASEB)	2011
<b>Best Fellowship Proposal,</b> Johns Hopkins University BCMB Program	2009
<b>Dr. Patrick Chow Lum Wong Memorial Prize</b> in Biochemistry, University of Hong Kong	2008
<b>Summer Research Fellowship Best Poster Presenter</b> (Biological Sector), University of Hong Kong	2007
<b>Dean's Honors List,</b> University of Hong Kong	2006-2008

## **INVITED TALKS & ORAL PRESENTATION**

---

<b>Society of Neuroscience Annual Meeting Nanosymposium on Spinal Cord Injury, Neural Regeneration, and Repair,</b> Society of Neuroscience, Washington D.C. Title: Endogenous opioid signaling regulates proliferation of spinal cord ependymal cells	Nov 11-15, 2023
<b>Hanna Gray Fellowship Program Retreat,</b> Howard Hughes Medical Institute (HHMI), Janelia Farm, Ashburn, VA Title: Endogenous opioid signaling regulates proliferation of spinal cord ependymal cells	Apr 10-13, 2023
<b>Mammalian Sensory Systems,</b> Keystone Symposia, Seattle, WA Title: Toward in vivo optical imaging of trigeminal ganglion neurons and afferents.	Mar 15-19, 2019
<b>Biology and Chemistry of Vision Meeting,</b> Federation of American Societies for Experimental Biology (FASEB), Steamboat Springs, CO Title: Effect of a single active transducin molecule in mouse rods.	Jun 25-30, 2017
<b>Neuroscience Departmental Retreat,</b> Johns Hopkins University School of Medicine, St. Michaels, MD Title: Signal amplification by rhodopsin via G-protein.	Sep 8-9, 2016
<b>Biology and Chemistry of Vision Meeting,</b> Federation of American Societies for Experimental Biology (FASEB), Carefree, AZ Title: Activation of visual pigments by light and heat.	Jun 19-24, 2011

## POSTER PRESENTATION

---

<b>Howard Hughes Medical Institute Scientific meeting</b> , Bethesda, MD Title: Endogenous opioid signaling regulates proliferation of spinal cord ependymal cells	Mar 5-7, 2024
<b>Neuropeptide Signaling</b> , Howard Hughes Medical Institute (HHMI), Janelia Farm, Ashburn, VA Title: Endogenous opioid signaling regulates proliferation of spinal cord ependymal cells	Apr 16-19, 2023
<b>Howard Hughes Medical Institute Scientific meeting</b> , Bethesda, MD Title: Kappa opioid signaling regulates proliferation of ependymal cells in mouse spinal cord	Dec 13-15, 2022
<b>Howard Hughes Medical Institute Scientific meeting</b> , virtual Title: Relative contribution of neuronal versus vascular TRPV1 to agonist/antagonist-induced hypo/hyperthermia	Apr 27-28, 2021
<b>Howard Hughes Medical Institute Scientific meeting</b> , Bethesda, MD Title: Developing tools for studying migraine pain	Sep 17-19, 2019
<b>Mammalian Sensory Systems</b> , Keystone Symposia, Seattle, WA Title: Toward in vivo optical imaging of trigeminal ganglion neurons and afferents	Mar 15-19, 2019
<b>Howard Hughes Medical Institute Scientific meeting</b> , Bethesda, MD Title: Toward in vivo optical imaging of trigeminal ganglion neurons and afferents	Sep 25-27, 2018
<b>Sensory Signaling in Model Organisms</b> , Howard Hughes Medical Institute (HHMI), Janelia Farm, Ashburn, VA Title: Activation of visual pigments by light and heat	Apr 21-24, 2013
<b>Biology and Chemistry of Vision Meeting</b> , Federation of American Societies for Experimental Biology (FASEB), Carefree, AZ Title: Activation of visual pigments by light and heat	Jun 19-24, 2011

## SERVICE & LEADERSHIP

---

<b>Leader</b> , "Mental Health in Academia" Forum, Hanna Gray Fellowship Program Retreat, HHMI	2024
<b>Participant</b> , Evidence-Based Teaching Certificate Course, UCSF	2023
<b>Reviewer</b> , Journal of General Physiology	2018-2023
<b>Reviewer</b> , Proceedings of the National Academy of Sciences (PNAS)	2018-2023
<b>Mentor</b> , San Francisco State University Mentoring Program	2021-2022
<b>Panelist</b> , F99/K00 Fellows' Pathway to Independence BrainTrust Meeting (virtual)	2021
<b>Volunteer</b> , Cultures of Excellence curriculum development, HHMI & University of Illinois	2020
<b>Reviewer</b> , Online Science Day, Lindau Nobel Laureate Meetings	2020
<b>Panelist</b> , Scientists 4 Diversity Forum, UCSF	2018
<b>Volunteer</b> , Exploratorium, San Francisco	2017-2019
<b>Reviewer</b> , Journal of Neuroscience	2015
<b>Volunteer</b> , "Ask a Scientist" Forum, HHMI	2012
<b>Tutor</b> , Biochemical and Biophysical Principles Graduate Course, Johns Hopkins University	2010