

Curriculum Vitae
QUYNH ANH DAC NGUYEN

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EDUCATION AND TRAINING

- 2017 **Ph.D. Neuroscience**, University of California, San Francisco. Thesis advisor: Roger Nicoll
Thesis committee members: Robert Edwards, Anatol Kreitzer, Kevin Bender, Hillel Adesnik.
- 2010 **M.S. Biology**, Stanford University. Faculty advisor: Susan McConnell.
- 2010 **B.S. Biology**, Honors in Neurobiology, Stanford University. Thesis advisor: Theo Palmer,
Faculty advisor: Susan McConnell.

POSITIONS

- 2024- **Assistant Professor**, Dept. of Pharmacology and Vanderbilt Brain Institute, Vanderbilt University, Nashville, TN
- Investigating mechanisms of hyperexcitability in the brain.
 - The Nguyen lab utilizes approaches such as slice electrophysiology, in vivo silicon probe recording, 2-photon imaging, closed-loop optogenetics, EEG recording, and computational modeling in mice to study neural function and dysfunction at the level of molecules, cells, circuits, and behavior.
- 2022-24 **Instructor**, Ivan Soltesz Lab, Dept. of Neurosurgery, Stanford University School of Medicine, Stanford, CA
- K99 Project: Neural circuit mechanisms controlling seizures.
 - K99 Advisory committee: Alice Ting, Liqun Luo, Gyorgy Buzsaki.
- 2017-22 **Postdoctoral Scholar**, Ivan Soltesz Lab, Dept. of Neurosurgery, Stanford University School of Medicine, Stanford, CA
- Project: Multi-scale and interdisciplinary research on mechanisms of epilepsy. Involved in Ripple U19 team science providing input on how SWRs are altered in epilepsy.
- 2011-17 **Graduate Student**, Roger Nicoll Lab, Dept. of Cellular & Molecular Pharmacology, University of California, San Francisco, San Francisco, CA
- Ph.D. Thesis Title: Mechanisms of inhibitory transmission at hippocampal synapses.
- 2007-10 **Undergraduate Student Researcher**, Theo Palmer Lab, Dept. of Neurosurgery, Stanford University School of Medicine, Stanford, CA
- Honors Thesis Project: Production of midbrain dopaminergic neurons from iPS cells derived from Parkinson's patients.
- 2009 **HHMI ExROP Program Research Fellow**, Li-Huei Tsai Lab, Dept. of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA
- Project: Transient HDAC2 Over-Expression in the Mouse Hippocampus Leads to Decrease in Activation of EGR-1 and Spine Density.
- 2007 **R&D Intern**, Aridis Pharmaceuticals, San Jose, CA
- Project: Optimization of ELISA assay in development of *Pseudomonas aeruginosa* vaccine. Gave results presentation to the company including executive board members.
- 2007 **Research Assistant**, Sharon Long Lab, Dept. of Biological Sciences, Stanford University, Stanford, CA
- Project: New Tools for Hairy Root Transformation of *Medicago truncatula*.

SCHOLARSHIPS, GRANTS, AND FELLOWSHIPS

POSTDOCTORAL

2021- NINDS K99/R00 Pathway to Independence Award
2018-2021 NINDS F32 Ruth L. Kirschstein National Research Service Award
2017-2018 NIH T32 Stanford Epilepsy Research Training Fellowship

DOCTORAL

2013-2014 American Heart Association Predoctoral Fellowship
2012-2015 UCSF PIBS Fellowship
2010-2012 UCSF Eugene Cota-Robles Fellowship

UNDERGRADUATE

2009 HHMI ExROP Research Fellowship
2008 Stanford Summer Research Grant
2008 Stanford Spring Research Grant
2006-2013 Gates Millennium Scholarship

ADDITIONAL HONORS, AWARDS, AND SCIENTIFIC APPOINTMENTS

2024-2026 Committee Member, Merritt-Putnam Symposium, American Epilepsy Society
2021 NINDS Curing the Epilepsies Travel Award
2012 UCSF Graduate Student Association Travel Award
2011-2013 AAAS/Science Excellence in Science

TEACHING EXPERIENCE

2019-2023 Demo and Section Leader, Stanford NSUR 249: Neuro-tech Experimental Immersion
2021 Guest Lecturer, Stanford NSUR 239: Neuro-tech Training Seminar
2013-2014 Section Leader In-vitro electrophysiology, UCSF NS 200: Intro. to Neuroscience, Essential Concepts and Methods
2012 Teaching Assistant, UCSF BMS 117: Cell Physiology
2011 Volunteer Science Teacher, 5th Grade Biology, New Traditions Elementary School
2010 Course Coordinator and Teaching Assistant, Stanford NENS 25SI: Discoveries and Debates in Neuroscience Research
2008-2010 Teaching Assistant, Stanford BIO 44X: Core Experimental Laboratory

MENTORING EXPERIENCE

2023-23 David Hartmann, Neurology Resident
Grant received: 2023 Stanford Neuroscience Scholarship
2021-23 Ryan Jamiolkowski, Neurosurgery Resident
Grants received: 2021 NINDS R25, 2022 LGS Foundation Research Award, 2022 Stanford MCHRI Endowed Postdoctoral Fellowship
2018-22 Darian Hadjiabadi, Bioengineering Grad. Student
Grants received: 2021 AES Early Career Fellowship, 2018 Stanford Interdisciplinary Graduate Fellow
2020-22 Jesslyn Homidan, Research Technician (currently Research Associate at Regeneron)
Poster presented: Novel Chemogenetic Therapy for Focal Epilepsy, 2022 Stanford Wu Tsai Institute Retreat

2019-22	Anna Ortiz, Research Technician (currently Associate Scientist at Johnson & Johnson)
2019-2020	Kyle Dinkins, Research Technician (currently Research Associate at ImmunityBio)
2012-2017	Samantha Ancona Esselmann, Grad. Student (currently Product Scientist at 23andMe)
2012-2017	Meryl Horn, Grad. Student (currently Producer at Science Vs Podcast)

VOLUNTEER EXPERIENCE

2021	Co-Chair, Epilepsy Young Investigators Meeting
2021	Co-Founder, Epilepsy Young Investigators Network
2021	Panelist, International Network for the Science of Team Science Conference
2013	Volunteer, SEP-Senses Booth, Bay Area Science Festival Discovery Days
2012	Co-organizer, UCSF Grad. Students Assoc., “How to Choose a Thesis Lab” Seminar

PUBLICATIONS

* - Co-first author

¹ – Corresponding author

- Jamiolkowski RM^{*1}, **Nguyen QA**^{*1}, Farrell JS, McGinn RJ, Hartmann DA, Nirschl JJ, Sanchez MI, Buch VP, Soltesz I. The fasciola cinereum of the hippocampal tail as an interventional target in epilepsy. *Accepted, Nature Medicine*.
- **Nguyen QA**^{*1}, Klein PM^{*1}, Xie C, Benthall K, Iafrati I, Homidan J, Bendor JT, Dudok B, Farrell J, Gschwind T, Keravala A, Dodson GS, Soltesz I. Acetylcholine receptor based chemogenetics engineered for neuronal inhibition and seizure control assessed in mice. *Nature Commun.* 15(1): 601 (2024).
- Klein PM, Parihar VK, Szabo GG, Zöldi M, Angulo MC, Allen BD, Amin AN, **Nguyen QA**, Katona I, Baulch JE, Limoli CL, Soltesz I. Detrimental impacts of mixed-ion radiation on nervous system function. *Neurobiol Dis.* 151: 105252 (2021).
- Chen R*, Gore F*, **Nguyen QA**, Ramakrishnan C, Patel S, Kim F, Raffiee M, Kim YS, Hsueh B, Krook-Magnusson E, Soltesz I, Deisseroth K. Deep brain optogenetics without intracranial surgery. *Nature Biotechnol.* 39(2): 161-164 (2021).
- **Nguyen QA**, Moolchand P, Soltesz I. Connecting Pathological Cellular Mechanisms to Large-Scale Seizure Structures. *TINS*, 43(8): 547-549 (2020).
- Sanchez MI, **Nguyen QA**, Wang W, Soltesz I, Ting AY. Transcriptional readout of neuronal activity via an engineered Ca⁺²-activated protease. *Proc. Natl. Acad. Sci.* 117(52): 33186-33196 (2020).
- Dey D, Parihar VK, Szabo GG, Klein PM, Tran J, Moayyad J, Ahmad F, **Nguyen QA**, Murray A, Merriott D, Nguyen B, Goldman J, Angulo MC, Piomelli D, Soltesz I, Bauch JE, Limoli CL. Neurological impairments in mice subjected to irradiation and chemotherapy. *Radiation Research* 193(5): 407-424 (2020).
- Farrell JS, **Nguyen QA**, Soltesz I. Resolving the Micro-Macro Disconnect to Address Core Features of Seizure Networks. *Neuron* 101(6): 1016-1028 (2019).
- **Nguyen QA**, Nicoll RA. The GABA_A receptor β subunit is required for inhibitory transmission. *Neuron* 98(4): 718–725.e3 (2018).
- **Nguyen QA**, Horn ME, Nicoll RA. Distinct roles for extracellular and intracellular domains in neuroligin function at inhibitory synapses. *eLife* 5: e19236 (2016).

- Bembem MA, **Nguyen QA**, Wang T, Li Y, Nicoll RA, Roche KW. Autism-associated mutation inhibits protein kinase C-mediated neurologin-4X enhancement of excitatory synapses. *Proc. Natl. Acad. Sci.* 112(8): 2551-2556 (2015).
- **Nguyen QA**¹, Farrell J, Dudok B, Szabo GG, Gschwind T, Hadjiabadi D, Homidan J, Soltesz I. Microcircuit alterations underlie the emergence of pathological high frequency oscillations. *In prep.*

PRESENTATIONS

ORAL PRESENTATIONS

*- invited speaker

- **Nguyen QA**. Identification of a Novel Interventional Target in Epilepsy Treatment. Stanford Quad Lab Meeting. Stanford, CA (2023).
- **Nguyen QA**. Microcircuit Alterations Underlie the Emergence of Pathological High Frequency Oscillations. Epilepsy Journal Club. Stanford, CA (2023).
- ***Nguyen QA**. Microcircuit Alterations Underlie the Emergence of Pathological High Frequency Oscillations. Gordon Research Conference: Mechanisms of Epilepsy and Neuronal Synchronization. Barcelona, Spain (2022).
- ***Nguyen QA**. Neural Circuit Mechanisms of Pathological High Frequency Oscillations. University of Chicago Rising Stars Symposium. Virtual (2022).
- **Nguyen QA**. Neural Circuit Mechanisms of Pathological High Frequency Oscillations. Stanford Neurofeedback Seminar Series. Stanford, CA (2022).
- ***Nguyen QA**. Multi-scale investigation of interictal spikes. UC Irvine EpiCenter Symposium. Virtual (2022).
- **Nguyen QA**. Ripples in Epilepsy. NIH BRAIN Initiative U19 Site Visit. Stanford, CA (2021).
- **Nguyen QA**. Training and Diversity in NIH BRAIN Initiative Team Science. International Science of Team Science Conference. Virtual (2021).
- **Nguyen QA**. Adventures in Neurotechnology. Stanford NSUR 239: Neurotech Training Seminar. Stanford, CA (2021).
- ***Nguyen QA**. It's Gonna β 3: Loss of a GABA_AR Subunit Keeps It in Sync. Gordon Research Conference: Inhibition in the CNS. Newry ME (2019).
- **Nguyen QA**. Dysfunction of β 3 subunit containing GABA_A receptors in epilepsy. CMN Science Meeting. Stanford, CA (2018).
- **Nguyen QA**. Interictal Epileptiform Discharges: a basic science perspective. Epilepsy Quarterly Conference. Stanford, CA (2018).

POSTER PRESENTATIONS

- **Nguyen QA**, Jamiolkowski R, Farrell J, McGinn R, Nirschl J, Buch V, Soltesz I. The Fasciola Cinereum of the Hippocampal Tail as an Interventional Target in Epilepsy. American Epilepsy Society Annual Meeting. Orlando, FL (2023).
- **Nguyen QA**, Sanchez MI, Chon U, Ting AY, Soltesz I. Identification and Manipulation of Neuronal Ensembles Active During Seizures. American Epilepsy Society Annual Meeting. Nashville, TN (2022).
- **Nguyen QA**, Farrell J, Dudok B, Szabo GG, Gschwind T, Hadjiabadi D, Homidan J, Soltesz I. Microcircuit Alterations Underlie the Emergence of Pathological High Frequency Oscillations. Symposium of the Wu Tsai Neurosciences Institute. Stanford, CA (2022).

- **Nguyen QA**, Farrell J, Dudok B, Szabo GG, Gschwind T, Hadjiabadi D, Homidan J, Soltesz I. Microcircuit Alterations Underlie the Emergence of Pathological High Frequency Oscillations. Gordon Research Conference and Seminar: Mechanisms of Epilepsy and Neuronal Synchronization. Barcelona, Spain (2022).
- **Nguyen QA**, Farrell J, Dudok B, Szabo GG, Gschwind T, Hadjiabadi D, Homidan J, Soltesz I. Multi-scale investigation of the pathological nature of interictal spikes. American Epilepsy Society Annual Meeting. Chicago IL (2021).
- **Nguyen QA**, Dudok B, Szabo GG, Sitzer B, Soltesz I. Pathological mechanisms of epilepsy revealed through a novel focal knockout of the GABA_AR β 3 subunit. Gordon Research Conference and Seminar: Inhibition in the CNS. Newry ME (2019).
- **Nguyen QA**, Dudok B, Szabo GG, Soltesz I. Dysfunction of β 3 subunit containing GABA_ARs in epilepsy. Gordon Research Conference and Seminar: Mechanisms of Epilepsy and Neuronal Synchronization. Mount Snow, VT (2018).
- **Nguyen QA**, Nicoll RA. The GABA_A receptor β subunit is critical for inhibitory synaptic transmission. Gordon Research Conference and Seminar: Inhibition in the CNS. Les Diablerets, Switzerland (2017).
- **Nguyen QA**, Horn ME, Nicoll RA. Functional difference between Neuroligin 2 and 3 at inhibitory synapses. Gordon Research Conference and Seminar: Inhibition in the CNS. Bates College, Lewiston, ME (2015).
- **Nguyen QA**, Shipman SL, Nicoll RA. Gephyrin-independent function of Neuroligin 2. Gordon Research Conference: Molecular and Cellular Neurobiology. HKUST, Hong Kong, China (2014).
- **Nguyen QA**, Cord B, Palmer TD. Production of midbrain dopaminergic neurons from iPS cells derived from Parkinson's patients. Biology Achauer Undergraduate Honors Symposium. Stanford, CA (2010).
- **Nguyen QA**, Guan JS, Wang WW, Tsai LH. Transient HDAC2 Over-Expression in the Mouse Hippocampus Leads to Decrease in Activation of EGR-1 and Spine Density. MIT Summer Research Program Poster Session. Boston, MA (2009).
- **Nguyen QA**, Haney CH, Long SL. New Tools for Hairy Root Transformation of *Medicago truncatula*. Carnegie Institution Summer Internship Poster Session. Stanford, CA (2007).

REFERENCES

- 1) Ivan Soltesz, Ph.D.
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- 2) Roger Nicoll, M.D.
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- 3) Alice Ting, Ph.D.
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