Alison Xiaoqiao Xie, BS, MSc, PhD

PERSONAL INFORMATION

Assistant Professor of Surgery, Division of Urology
University of Colorado, Anschutz Medical Campus
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(**Office**) Academic Office Building 1, Room 5501
Mail Stop C319, 12631 E 17th Ave. Aurora, CO, 80045
(**Lab**) 303-724-4654, Research Complex 2, Room 6440A
Mail Stop C317, 12700 E 19th Ave, Aurora, CO 80045
Language: Mandarin (native), English (full professional proficiency)

EDUCATION

B. S. in Biophysics, University of Science and Technology of China **2002**
M. S. in Neurobiology and Biophysics, University of Science and Technology of China **2005**
Ph. D. in Neuroscience, University of California, Riverside **2011**
Postdoctoral Research Associate, Department of Pharmacology, School of Medicine, University of North Carolina at Chapel Hill **2011-2016**

ACADEMIC APPOINTMENTS

Research Assistant Professor, Department of Pharmacology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC **2016-2017**

- Developed and characterized the first pharmacogenetic mouse model for studying the function of GFAP-expressing glia *in vivo*
- Discovered that satellite glial cells in sympathetic ganglia regulate cardiovascular functions *in vivo*. This is the first discovery of the function of satellite glial cells in sympathetic ganglia.
- Discovered that satellite glial cells in sensory ganglia alleviates inflammatory pain. This is the first discovery of the analgesic role of sensory satellite glial cells *in vivo*.
- Discovered that NFκB-COX2 signaling pathway in non-myelinating Schwann cells is necessary for the maintenance of neuropathic pain *in vivo*. This is the only report of the role of non-myelinating Schwann cells in chronic pain. This is also one of the only two reports on the function of sensory non-myelinating Schwann cells *in vivo*.

Instructor, Department of Surgery, School of Medicine, University of Colorado, Anschutz Medical Campus (CU-AMC), Aurora, CO **2017-2019**

- Studied the neuronal mechanisms in sensory ganglia underlying visceral hypersensitivity and bladder overactivity using an animal model of Urologic Chronic Pelvic Pain Syndrome.
- Evaluated the contribution of sensory satellite glial cells in regulating visceral sensitivity and overactive bladder symptoms.

Assistant Professor, Department of Surgery, School of Medicine, CU-AMC, Aurora, CO **October 2019 - present**

- Characterized the role of mechano-gated potassium channel TREK-1 in aging-associated bladder dysfunction using TREK-1 KO mouse models.

- Profiling sensory ganglionic transcriptome during the pathogenesis of bladder nociception and chronic pelvic pain.
- Identifying the sex-specific mechanisms in satellite glial signaling pathways associated with bladder overactivity and chronic pelvic pain symptoms.
- Assessing the role of satellite glial cells in regulating visceral pain behavior and micturition functions *in vivo*.
- Investigating the role of autonomic satellite glia cells in regulating autonomic-driven bladder detrusor muscle contractility.
- Studying the molecular mechanism and potential sex dimorphism associated with glial-driven blood pressure regulation *in vivo*.

OTHER PROFESSIONAL APPOINTMENTS

- Faculty Member, Medical Scientist Training Program, CU-AMC
- Faculty Member, Integrated Physiology Program, CU-AMC
- Faculty Member, Neuroscience Graduate Program, CU-AMC
- Faculty Member, Center for NeuroScience (CNS), CU-AMC
- Faculty Member, Colorado Clinical & Translational Sciences Institute (CCTSI), Aurora, CO

PROFESSIONAL ORGANIZATIONS

- Society of Neuroscience (SfN)
- American Society of Neurochemistry (ASN)
- American Urological Association (AUA)
- South Central Section (SCS) of the American Urological Association (AUA)
- Society for Basic Urologic Research (SBUR)

HONORS, AWARDS, AND CERTIFICATE

2011 University Teaching Certificate
University Teaching Program, the Graduate Division, University of California, Riverside

2014 Excellence in Mentoring Undergraduates
Office for Postdoctoral Affairs, University of North Carolina at Chapel Hill

2016 Young Investigator Travel Award
Federation of American Societies for Experimental Biology (FASEB) Maximizing Access to Research Careers (MARC) Program

2021 Best Poster Award
American Urological Association (AUA)

2023 Outstanding Mentorship Award (nomination)
Women in STEM, CU-AMC

2023 Young Investigator Award
Society of Basic Urologic Research (SBUR)

2024 Faculty Professionalism Award
Department of surgery, School of Medicine, CU-AMC

LEADERSHIP TRAINING AND EXPERIENCE

2022 **Women's Leadership training**, University of Colorado, School of Medicine

- This training program aims to provide professional development opportunity for selected women Assistant Professors with primary appointments in the School of Medicine.

2022 **Leadership, Empower & Engage, Authenticity & Awareness, Diversity (LEAD) training**, University of Colorado, Department of Surgery

- This training program helps DOS members to develop their leadership identity.

2024 **Mentoring Academy, Center for the Improvement of Mentored Experiences in Research (CIMER) facilitator training**, University of Colorado, School of Medicine.

- This training program is designed to train more mentoring facilitators who can implement the training at their institution or organization, and therefore increase the capacity for research mentor training offered at colleges and universities, research institutes, and organizations.

RESEARCH

THESES/DEGREES

Bachelor of Science, Biophysics

"Effects of different stimulation modes on short-term synaptic plasticity of visual cortex in adult rats"

Master of Science, Neurobiology and Biophysics

"The function of visual cortex neurons of different age rats"

Doctor of Philosophy, Neuroscience

"Bidirectional scaling of astrocytic metabotropic glutamate receptor signaling following long-term changes in neuronal synaptic transmission"

PEER-REVIEWED PUBLICATIONS

PI-led and Collaborative Research

2024 Yesupatham SK, Malykhina AP, **Xie AX***. "Transcriptome Analysis in Lumbosacral Dorsal Root Ganglia Reveals Molecular Changes in Animal Models of Urological Chronic Pelvic Pain Syndrome (UCPPS)". *In review.*

2024 **Xie AX**†, Iguchi N†, Malykhina AP*. "Long-term follow-up of TREK-1 KO mice reveals the development of bladder hypertrophy and impaired bladder smooth muscle contractility with age". ***American Journal of Physiology, Renal Physiology***. *doi: 10.1152/ajprenal.00382.2023.*

2022 **Xie AX**, Iguchi N, Clarkson TC, Malykhina AP. "Pharmacogenetic inhibition of lumbosacral sensory neurons alleviates visceral hypersensitivity in a mouse model of chronic pelvic pain". ***PLoS ONE***. doi: 10.1371/journal.pone.0262769

2022 Clarkson TC, Iguchi N, **Xie AX**, Malykhina AP. Differential transcriptomic changes in the central nervous system and urinary bladders of mice infected with a coronavirus. ***PLoS ONE***. doi: 10.1371/journal.pone.0278918

2021 **Xie AX**†*, Taves S†, McCarthy KD. "Nuclear factor Kappa B-COX2 pathway activation in non-myelinating Schwann cells is necessary for the maintenance of neuropathic pain in mice". *Corresponding author. ***Frontiers in Cellular Neuroscience***. doi: 10.3389/fncel.2021.782275

2021 Iguchi N, Carrasco A Jr, **Xie AX**, Pineda RH, Malykhina AP, Wilcox DT. (2021) Functional constipation induces bladder overactivity associated with upregulations of Htr2 and

Trpv2 pathways. ***Scientific Reports***. doi: 10.1038/s41598-020-80794-0.

2020 **Xie AX***, Madayag A, Minton SK, McCarthy KD, Malykhina AP. "Sensory Satellite Glial Gq-GPCR Activation Alleviates Inflammatory Pain via Peripheral Adenosine 1 Receptor Activation". *Corresponding author. ***Scientific Reports.*** Sci Rep. 2020 Aug 25;10(1):14181. doi: 10.1038/s41598-020-71073-z

2019 **Xie AX**†, Pan XQ†, Meacham RB, Malykhina AP. "The Expression of Transcription Factors Mecp2 and CREB Is Modulated in Inflammatory Pelvic Pain", ***Frontiers in Systems Neuroscience***. doi: 10.3389/fnsys.2018.00069.

Postdoctoral Research

2017 **Xie AX*,** Lee JJ, McCarthy KD. "Ganglionic $GFAP^+$ Glial Gq-GPCR Signaling Enhances Heart Functions *in vivo*". ***Corresponding author.** ***Journal of Clinical Investigation Insight***. 2017;2(2):e90565. doi: 10.1172/jci.insight.90565.

2017 **Xie AX*,** Chaia A, McCarthy KD. "Targeting sympathetic glia for treating cardiovascular diseases". ***Corresponding author.** ***Receptors and Clinical Investigation***. 2017;4:e1572. doi: 10.14800/rci.1572.

2016 Annis RP, Swahari V, Nakamura A, **Xie AX**, Hammond SM, Deshmukh M. "Mature Neurons Dynamically Restrict Apoptosis via Redundant Pre-Mitochondrial Brakes". ***the FEBS Journal***. dio: 10.1111/febs.13944

2015 **Xie AX**, Petravicz, J, McCarthy KD*. "Molecular approaches for manipulating astrocytic signaling *in vivo*". ***Frontier in Cellular Neuroscience.*** doi: 10.3389/fncel.2015.00144

2013 Agulhon C, Boyt KM, **Xie AX**, Friocourt F, Roth BL, McCarthy KD. "Modulation of the autonomic nervous system and behaviour by acute glial cell Gq protein-coupled receptor activation *in vivo*". ***Journal of Physiology*.** doi: 10.1113/jphysiol.2013.261289

Graduate/Undergraduate Research

2014 **Xie AX**, Lauderdale K, Murphy T, Myers TL, Fiacco TA. "Inducing plasticity of astrocytic receptors by manipulation of neuronal firing rates". ***Journal of Visualized Experiments.*** doi: 10.3791/51458

2013 Sun MY, Devaraju P, **Xie AX**, Holman I, Samones E, Murphy TR, Fiacco TA. "Astrocyte calcium microdomains are inhibited by bafilomycin A1 and cannot be replicated by low-level Schaffer collateral stimulation *in situ*". ***Cell Calcium*.** doi: 10.1016/j.ceca.2013.10.004

2012 **Xie AX**, Sun MY, Murphy T, Lauderdale K, Tiglao E, Fiacco TA. "Bidirectional scaling of astrocytic metabotropic glutamate receptor signaling following long-term changes in neuronal firing rates". ***PLoS One*.** doi: 10.1371/journal.pone.0049637

2009 Carson MJ, Crane J, **Xie AX**. "Modeling CNS microglia: the quest to identify predictive models". ***Drug Discovery Today: Disease Models*.** Doi: 10.1016/j.ddmod.2008.07.006

2006 Wang H, **Xie X**, Li X, Chen B, Zhou Y. "Functional degradation of visual cortical cells in aged rats". ***Brain Research.*** doi: 10.1016/j.brainres.2006.09.010

2006 Jia F, Wei H, Li X, **Xie X**, Zhou Y. "Short-term synaptic plasticity in the rat geniculo-cortical pathway during development *in vivo*". ***Neuroscience Letters.*** doi: 10.1016/j.neulet.2005.12.054

2005 **Xie X**, Wang H, Chen B, Zhou Y. "Neural response characteristic of neuron to flashing stimulus in visual cortex of young rats". ***Progress in Biochemistry and Biophysics.*** 2005,32(11):1088-1092

2004 Jia F, **Xie X**, Zhou Y. "Short-term depression of synaptic transmission from rat lateral geniculate nucleus to primary visual cortex *in vivo*". ***Brain Research.*** doi: 10.1016/j.brainres.2004.01.001

MEETINGS/INVITED SEMINARS

Invited Seminars

2024 Integrated Physiology Program, University of Colorado, Anschutz Medical Campus. Aurora, CO. "Glial-mediated neuromodulation in treating LUTS".

2024 Department of Surgery Grand Rounds, University of Colorado, Anschutz Medical Campus. Aurora, CO. "The neural (and glial) regulation of bladder functions".

2024 Department of Surgery, University of Colorado, Anschutz Medical Campus. Aurora, CO. "Peripheral Glial Signaling Modulates Micturition and Bladder Pain".

2023 Department of Biology, Johns Hopkins University. Baltimore, MD. "Probing the roles of satellite glial signaling *in vivo* and in physiology"

2022 Neuroscience Graduate Program, University of Colorado, Anschutz Medical Campus. Aurora, CO. "Peripheral glia modulation of autonomic control: from heart to bladder"

2021 Department of Anesthesiology, University of Colorado, Anschutz Medical Campus. Aurora, CO. "The analgesic role of peripheral $GFAP^+$ glia *in vivo*"

2017 Integrative Physiology Program, University of Colorado, Boulder. Boulder, CO. "DREADD the Glia: Pharmacogenetic Approaches for Studying the Role of $GFAP^+$ Glia in Physiology and Disease"

2016 Department of Pharmacology, University of North Carolina at Chapel Hill. Chapel Hill, NC. "Targeting sympathetic satellite glial cells for treating cardiovascular diseases"

Conferences Talks

2024 Neuroscience Program Retreat. Serve as a speaker and the co-chair. Estes Park, CO. "Satellite glial regulation of bladder functions"

2024 ASN 2024 Annual Meeting. Serve as a speaker and the chair for scientific symposium titled "the roles of satellite glial cells during development and diseases". Portland, OR. "The analgesic role of satellite glial signaling in bladder sensory ganglia and chronic pelvic pain"

2024 American Physiological Society Summit. Serves as a speaker and the co-chair for the Foundational Science Session titled "Peripheral glia take center stage in autonomic functions", Long Beach, CA. "Satellite glial regulation of bladder function and pain".

2023 AUA 2023 Annual Meeting, Basic Science Symposium. Chicago, IL. "Manipulating peripheral glial signaling to treat pelvic pain"

2022 SCS of the AUA Annual Meeting, "Modulation of Sensory Glia Gq-GPCR Signaling *in vivo* Affects Spontaneous Voiding and Bladder Function in an Animal Model of Chronic Pelvic Pain"

2021 AUA annual meeting, "Sensory glial Gq-GPCR signaling alleviates visceral pain and improves micturition function in an animal model of urological chronic pelvic pain syndrome"

2020 SCS of the AUA Annual Meeting, "Lumbar-sacral neuromodulation alleviates visceral pain and improves lower urinary tract symptoms in animal model of urological chronic pelvic pain syndrome"

2018 AUA Annual Meeting, "VEGF-induced bladder nerve remodeling and visceral

hyperalgesia in bladder pain"

2016 Duke Neuroimmunology and Glia Group Annual Retreat, "Gq-GPCR Signaling in Sympathetic Satellite Glial Cells Regulate Cardiovascular Functions *in vivo*"

Department of Pharmacology Retreat, University of North Carolina at Chapel Hill, "Gq-GPCR Signaling in Sympathetic Satellite Glial Cells Regulate Cardiovascular Functions *in vivo*"

The ASN 47th Annual Meeting, "Gq-GPCR Signaling in Sympathetic Satellite Glial Cells Regulate Cardiovascular Functions *in vivo*"

2014 Cold Spring Harbor Laboratory, Glia in Health & Disease meeting, "Ganglionic $GFAP^+$ glia regulate cardiovascular function via Gq-GPCR activation"

ABSTRACTS

2007

SfN Annual Meeting, "Microglial activation in the cuprizone model of adult demyelination and remyelination"

2008

ASN 39th Annual Meeting, "TLT2 has both constitutive and inducible patterns of expression in the healthy and inflamed CNS"

La Jolla Immunology Conference, "TLT2 has both constitutive and inducible patterns of expression in the healthy and inflamed CNS"

2009

SfN Annual Meeting, "Homeostatic plasticity of astrocytic Gq-GPCRs and glutamate transporters"

Gordon Conference, Glial Biology: Functional Interactions among Glia & Neurons, "Homeostatic scaling of astrocyte glutamate receptors and transporters"

2010

SfN Annual Meeting, "Homeostatic plasticity of astrocytic metabotropic glutamate receptors"

2011

SfN Annual Meeting, "Bidirectional scaling of astrocytic metabotropic glutamate receptor signaling following long term changes in neuronal synaptic transmission"

Gordon Conference, Glial Biology: Functional Interactions among Glia & Neurons, "Homeostatic plasticity of astrocytic metabotropic glutamate receptors"

2013

SfN Annual Meeting, "Elimination of neuronal driven Ca^{2+} Activity in astrocytes in IP3R2 knock-out (IP3R2 KO) mice"

Gordon Conference, Glial Biology: Functional Interactions among Glia & Neurons, "Studying the role of glial Gq signaling in the regulation of the cardiovascular system"

2014

IVB/MHI Spring Research Symposium, "Ganglionic glia regulate cardiovascular function via Gq-GPCR activation"

2015

Glial Biology Across Taxonomy – Implications for Function & Dysfunction symposium at Duke, "Ganglionic $GFAP^+$ glia regulate cardiovascular function"

Gordon-Kenan Research Seminar and Gordon Conference, Glial Biology: Functional Interactions among Glia & Neurons, "Ganglionic $GFAP^+$ glia regulate cardiovascular function"

2016

International Conference on Glial Biology in Medicine, "Chemogenetic activation of satellite glial Gq-GPCR signaling enhances cardiovascular function *in vivo*"

Weinstein Cardiovascular Development and Regeneration Conference, "Chemogenetic activation of satellite glial Gq-GPCR signaling enhances cardiovascular function *in vivo*"

Arteriosclerosis, Thrombosis and Vascular Biology and Peripheral Vascular Disease (ATVB/PVD) Annual Meeting, "Gq-GPCR Signaling in Sympathetic Satellite Glial Cells Regulate Cardiovascular Functions *in vivo*"

2018

ASN 49th Annual Meeting, "Targeting Satellite Glial Signaling for the Treatment of Chronic Pain"

Rocky Mountain Regional Neuroscience Group Annual Meeting, "The Analgesic Effect of Satellite Glial Signaling on Models of Chronic Pain"

SCS of the AUA Annual Meeting, "VEGF-induced bladder nerve remodeling and visceral hyperalgesia in bladder pain"

2019

SBUR Annual Meeting, "Pharmacogenetic inhibition of afferent excitability alleviates VEGF-induced visceral allodynia and hyperalgesia in a mouse model of urological chronic pelvic pain syndrome (UCPPS)"

SCS of the AUA Meeting, "Pharmacogenetic inhibition of afferent excitability alleviates VEGF-induced visceral allodynia and hyperalgesia in a mouse model of urological chronic pelvic pain syndrome (UCPPS)"

2020

ASN 50th Annual Meeting, "Pharmacogenetic inhibition of afferent excitability alleviates VEGF-induced visceral hypersensitivity in a mouse model of UCPPS"

AUA Annual Meeting, "Pharmacogenetic inhibition of lumbosacral spinal and sensory neurons alleviates visceral pain and improves lower urinary tract symptoms in animal model of urological chronic pelvic pain syndrome"

2021

ASN annual meeting, "Pharmacogenetic Inhibition of Afferent Excitability Alleviates VEGF-induced Visceral Hypersensitivity in a Mouse Model of Urological Chronic Pelvic Pain Syndrome (UCPPS)"

2022

AUA annual meeting, "Modulation of Sensory Glia Gq-GPCR Signaling *in vivo* Affects Spontaneous Voiding and Bladder Function in an Animal Model of Chronic Pelvic Pain". ***This poster presentation was awarded the "2022 AUA Best Poster"***.

2023

ASN annual meeting, Yesupatham, SK, **Xie, AX***. "Transcriptome Analysis in Lumbosacral Dorsal Root Ganglia Reveals Key Molecular Changes Underlying Nociceptive Sensitization in Animal Models of Urological Chronic Pelvic Pain Syndrome".

AUA annual meeting, "The Lack of Mechanosensitive TREK-1 Channel Mimics the Development of Aging-related Bladder Phenotypes in Mice".

AUA annual meeting, Yesupatham, SK, **Xie, AX***. "Transcriptome Analysis in Lumbosacral Dorsal Root Ganglia Reveals Key Molecular Changes in Animal Models of Urological Chronic Pelvic Pain Syndrome (UCPPS)".

2024

ASN annual meeting, Yesupatham, SK, **Xie, AX***. "Targeted Purification of Polysomal mRNA Sequencing reveals satellite glial cells-specific translatome changes during in animal models of urological chronic pelvic pain syndrome".

AUA annual meeting, Yesupatham, SK, **Xie, AX***. "Targeted Purification of Polysomal mRNA Sequencing reveals satellite glial cells-specific translatome changes during in animal models of urological chronic pelvic pain syndrome".

SCS-AUA annual meeting, Yesupatham, SK, **Xie, AX***. "Targeted Purification of Polysomal mRNA Sequencing reveals satellite glial cells-specific translatome changes during in animal models of urological chronic pelvic pain syndrome".

SCS-AUA annual meeting, **Xie, AX***. "A new approach to neuromodulation: how to use pharmacogenetic activation in non-neuronal cells to promote micturition and alleviate visceral pain".

MEDIA

2024 ***AJP-Renal Physiology.*** "First Author Highlights".

2024 ***The John Hopkins News-Letter.*** "Alison Xie describes analgesic effects of glial-neuron interactions".

2023 ***CU Anschutz, Department of Surgery, News.*** "Alison Xie, PhD, Named SBUR Young Investigator for 2023".

2023 ***CU Anschutz, Department of Surgery, News.*** "Studying the Role of Glial Cells in Regulating Blood Pressure".

2023 ***AUA Daily News***. "New approaches to understanding and treating pelvic pain".

2022 ***AUA News***, November issue. "Sensory Glia Gq-GPCR Activation *In Vivo* Modulates Micturition Functions in an Animal Model of Chronic Pelvic Pain".

2017 ***UNC School of Medicine, News***. "Ganglionic GFAP+ glial Gq-GPCR signaling enhances heart functions in vivo".

FUNDING

ONGOING RESEARCH SUPPORT

Translational Methods (TM) Pilot Award, Colorado Clinical and Translational Sciences Institute
Development of a murine pelvic ganglia-bladder preparation for the study of glial control of micturition

Role: Principal Investigator

08/01/2024-07/31/2025

Direct cost: $30,000/year

This proposal is to establish an MPG-bladder model that can be easily applied to existing LUTS mouse models for mechanistic studies and future hypothesis testing.

Ludman Center Early Career Faculty Research Development Awards

Sex differences in sympathetic glial regulation of blood pressure

Role: Principal Investigator

09/01/2023-08/30/2024

Direct cost: $25,000/year

This proposal studies the sexual dimorphism in sympathetic glial regulation of blood pressure.

NIH/NIDDK R01 DK129260

Activating Peripheral Glia to Relieve Visceral Pain in Animal Models of Urological Chronic Pelvic Pain Syndrome (UCPPS)

Role: Principal Investigator

08/05/2021-05/31/2026

Direct cost: $220,000/year

This proposal is the first proposal on the roles of peripheral $GFAP^+$ glia in bladder function and disease.

RECENTLY COMPLETED RESEARCH SUPPORT

Department of Surgery, School of Medicine, AEF Seed grant

The role of mechanosensitive TREK-1 channels in detrusor overactivity and voiding dysfunction in patients with overactive bladder (OAB)

Role: Principal Investigator

09/01/2020-08/30/2021

Direct cost: $40,000

This project aims to investigate the cellular and molecular mechanisms of aberrant mechano-sensitivity in idiopathic detrusor overactivity and identify molecular targets and signaling pathways associated with increased sensory activity in overactive LUTS.

Colorado Pilot Program Mentored Award, Colorado Clinical and Translational Sciences Institute

Beyond the neurons: the role of peripheral glia in neurogenic bladder dysfunction

Role: Principal Investigator

03/01/2019-02/29/2020

Direct cost: $30,000

This project supported our investigation on whether satellite glial Gq-GPCR activation modulates visceral afferent sensitivity *in vivo*.

NIH/NIDDK R01 DK116648-01A1

Mechanisms of neurogenic voiding dysfunction in a viral murine model of multiple sclerosis (Malykhina)

Role: Key Personnel

09/08/2020-8/30/2023

Direct cost: $200,000/year

The project will investigate the neural mechanisms of lower urinary tract symptoms in multiple sclerosis.

NIH/NIDDK R01 (DK121506-01)

Regulation of pelvic pain and micturition reflex by VEGF in urological chronic pelvic pain syndrome (Malykhina)

Role: Key Personnel

08/01/2019-07/30/2022
Direct cost: $200,000/year
This application evaluates the role of VEGF pathways in neurogenesis and neural plasticity of the neural pathways innervating the lower urinary tract.

TEACHING AND MENTORING

CLASSROOM TEACHING

Zoology Experiments	**2004**
Introduction to Cell and Molecular Biology Lab	**2008-2009**
Genetics	**2010**
Introduction to Neuroscience	**2010**
Neuroscience Laboratory	**2009-2011**
Cellular Neuroscience: Membrane and Synaptic Phenomena	**2010-2011**
Human Reproduction and Sexual Behavior	**2009, 2011**

MENTORSHIP

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Shailja Admin, Biology	**2013**
Jakovin J. Lee, Biology, Carolina Summer Fellowship Program	**2013**
Jakovin J. Lee, Biology	**2014**
Brook Teffera, Biochemistry	**2014**
Miles Herr, Biology, Music, Computer science	**2014**
David Reich, Biochemistry and Molecular Biology, Brown University, Carolina Summer Fellowship Program	**2015**
Stephanie K. Yu, Computer science, Biology, Physics	**2015**
Esther Y. Lee, Biology	**2016**
Dante N. Duncan, Chemistry	**2016**
Tanya Qureshi, Biology	**2016**
Angelo Chaia, Chemistry	**2016**

UNIVERSITY OF COLORADO, ANSCHUTZ MEDICAL CAMPUS - LABORATORY

Kelly P. Smith, Bioengineering	**2018-2019**
Sathish Kumar Yesupatham, Postdoctoral Research Associate, Full-time	**2022-present**
Jin Cha, Professional Research Assistant, Full-time	**2022-present**

UNIVERSITY OF COLORADO, ANSCHUTZ MEDICAL CAMPUS - WOMEN IN STEM (WISTEM) MENTORSHIP PROGRAM **2022-present**

Kayla Janevski, PA-II.	**2022-2023**
Ester Oh, Postdoctoral Fellow, Division of Renal Diseases and Hypertension	**2022-2023**
Aubrianna Gholar, Graduate Student, MS Modern Human Anatomy. CU Anschutz.	**2023-2024**
Aurélie Ledreux, Associate Professor, Department of Neurosurgery.	**2023-2024**

UNIVERSITY OF COLORADO, ANSCHUTZ MEDICAL CAMPUS - COLORADO RESEARCH EXPERIENCES PROGRAM **2024**

Alyssa Granley, Undergraduate Student, Department of Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder **2024**

SERVICE

SCIENTIFIC REVIEWER – FUNDING AGENCIES

CCTSI Pilot Grant Program, reviewer **2019-present**
NIH/CSR Renal/Urological Sciences Small Business Activities Special Emphasis Panel, ad hoc reviewer **2022**
NIH/NIDDK Kidney and Urological Systems Function and Dysfunction study section, ad hoc reviewer **2023**
NIH/CSR Neurobiology of Pain and Itch study section, , ad hoc reviewer **2024**

PEER REVIEWER - PUBLICATIONS

Journal of Visualized Experiments (JoVE), Reviewer **2020-Present**
Frontiers in Systems Neuroscience, Review Editor **2022-Present**
Frontiers in Molecular Neuroscience, Reviewer **2022-Present**
Frontiers in Pain Research, Review Editor **2022-Present**
Journal of Pain research, Reviewer **2022-Present**
Cell Reports, Reviewer **2024**

DEPARTMENT SERVICE

Urology resident research Program, Advisor **2022-present**
The Uro Social Media Workgroup, Department of Surgery, Member **2022-present**

COMMUNITY SERVICE

Denver Metro Regional Science and Engineering Fair (DMRSEF), Judge **2018-present**
TED translator (English, Mandarin) **2010-present**