

Kelvin Chen

CONTACT INFORMATION

University of Virginia
College of Arts & Sciences
Charlottesville, VA 22904

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RESEARCH INTERESTS

Translational neuroscience, mechanisms of neurovascular pathology, computational and experimental disease modeling, neurological surgery, marker discovery, integrative omics, quantitative imaging

EDUCATION

University of Virginia Charlottesville, VA
B.A., Neuroscience & B.A., Chemistry; Minor, Bioethics Aug 2022 – May 2026 (*Expected*)
• GPA: –

Virginia Peninsula Community College Hampton, VA
Dual Enrollment, Biological Sciences & Mathematics Sept 2020 – Jun 2022
• GPA: 4.00

Woodside High School Newport News, VA
Advanced Studies Diploma Sept 2018 – Jun 2022
• GPA: 4.61/3.98 (W/UW), Rank: 1/381

RESEARCH EXPERIENCE

UVA School of Medicine, Center for Brain Immunology and Glia Charlottesville, VA
Undergraduate Researcher, Department of Neurosurgery & Neuroscience Jan 2024 – Present
Advisor: [Petr Tvrdek, Ph.D.](#)
• Mapped cortical myeloid cell dynamics in situ in focal cerebral ischemia models of stroke in Iba1-Dre and/or LysM-Cre transgenic mouse models with the intersectional *RC::RLTG* dual-recombinase reporter system.

Undergraduate Researcher, Department of Neuroscience Aug 2023 – Jan 2024
Advisor: [Lulu Jiang, M.D., Ph.D.](#)
• Investigated the cellular mechanism underlying nuclear membrane disruption and nucleocytoplasmic translocation of RNA-binding proteins and transcripts triggered by tau pathology in Alzheimer's disease using mouse and iPSC-derived human organoid models.

Undergraduate Researcher, Department of Pharmacology Sep 2022 – May 2023
Advisor: [Julius Zhu, Ph.D.](#)
• Optimized a genetically encoded sensor-based image visualization and analysis algorithm to probe neuromodulatory synaptic activities and characterize neurotransmitter properties at the nanoscopic scale.

Barrow Neurological Institute, Neuroimaging Innovation Center Phoenix, AZ
Research Intern, Department of Translational Neuroscience May 2023 – Present
Advisor: [Richard Dortch, Ph.D.](#)
• Developed a multi-compartmental diffusion MRI-based computational framework with enhanced pathological specificity to axonal re/degeneration in pre-clinical rat models of peripheral nerve trauma using the spherical mean technique to perform signal simulations in silico.

Hampton University School of Science Hampton, VA
Research Intern, Department of Chemistry & Biochemistry Sept 2021 – May 2022
Advisor: [Peter Njoki, Ph.D.](#)
• Analyzed the role of gold nanoparticles in the inhibition of SARS-CoV-2 via biochemical and mathematical modeling in a kinetic ODE system and their synergistic effect with antiviral drugs in the targeting of viral spike and nucleocapsid antigens.

PUBLICATIONS

Editorials

- [E.6] **Chen, K.**, *A Neuroethical Discourse on the Application of Optogenetics for Memory Modification*. Grounds: The Virginia Journal of Bioethics, 2023 [[URL](#)]
- [E.5] **Chen, K.**, *Therapeutic Nihilism in Disorders of Consciousness Care and the Right to Live*. Grounds: The Virginia Journal of Bioethics, 2023 [[URL](#)]
- [E.4] **Chen, K.**, *On the Psychological Disembodiment of Autonomy and Agency in Patients with Brain-Computer Interface Implants*. Grounds: The Virginia Journal of Bioethics, 2023 [[URL](#)]
- [E.3] **Chen, K.**, *Moral Status in Cerebral Organoids, Gastruloids, and Chimeras*. Grounds: The Virginia Journal of Bioethics, 2023 [[URL](#)]
- [E.2] **Chen, K.**, *The Inadvertent Consequences of Scanning the Human Brain*. Grounds: The Virginia Journal of Bioethics, 2023 [[URL](#)]
- [E.1] **Chen, K.**, *Towards a Brave New World: The Huxleyan Reality of Using Pharmacological Neuroenhancement*. Grounds: The Virginia Journal of Bioethics, 2023 [[URL](#)]

PRESENTATIONS

Posters

- [P.4] **Chen, K.**, Sharifi, K. A., Tvrdik, P. *Focal Cerebral Ischemia-Induced Phenotypic Plasticity in Recombinase-Mediated Myeloid Cell Subtypes (in preparation)*.
- [P.3] **Chen, K.**, Ketsiri, T., Dortch, R. D. *Spherical Mean Diffusion Weighted Magnetic Resonance Signals Reveal Axonal Integrity Following Wallerian Degeneration*. Barrow Neurological Institute Undergraduate Research Symposium, Phoenix, AZ, Aug 2024.
- [P.2] Ketsiri, T., **Chen, K.**, Xu, J., Dortch, R. D. *Validation of Multi-Compartmental Diffusion MRI Models for Peripheral Nerve Trauma*. Gordon Research Conference on In Vivo Magnetic Resonance, Andover, NH, Jul 2024.
- [P.1] **Chen, K.**, Sadrabadi, M. S., Dortch, R. D. *Geometry-Informed Multi-Compartmental Diffusion MRI Modeling of Injured Peripheral Nerves*. Barrow Neurological Institute Undergraduate Research Symposium, Phoenix, AZ, Aug 2023 [[PDF](#)]

TEACHING
EXPERIENCE

UVA Department of Chemistry

Charlottesville, VA

Undergraduate Teaching Assistant

Instructor: [Jason Chruma, Ph.D.](#)

- CHEM 2311 Organic Chemistry Laboratory I (for Non-Chemistry Majors) Fa 2024
- CHEM 2321 Organic Chemistry Laboratory II (for Non-Chemistry Majors) Sp 2024
- CHEM 2311 Organic Chemistry Laboratory I (for Non-Chemistry Majors) Fa 2023

Instructor: [Walter Harman, Ph.D.](#)

- CHEM 1810 Principles of Chemical Structure (Accelerated) Fa 2024

Instructor: [Sen Zhang, Ph.D.](#)

- CHEM 1811 Principles of Chemical Structure Laboratory (Accelerated) Fa 2023

UVA Department of Psychology

Charlottesville, VA

Undergraduate Teaching Assistant

Instructor: [Thaddeus Wiegel, Ph.D.](#)

- PSYC 3210 Research Methods: Psychobiology Laboratory Sp 2024

PROFESSIONAL SERVICES	UVA Office of Citizen Scholar Development	Charlottesville, VA
	<i>Symposium Volunteer</i>	Apr 2023 – Present
	• Undergraduate Research Symposium	
	<i>Editorial Board Staff</i>	Sept 2022 – Present
	• The Oculus: The Virginia Journal of Undergraduate Research	
	W. M. Keck Center for Cellular Imaging	Charlottesville, VA
	<i>Microscopy Workshop Volunteer</i>	Mar 2024
	• 21st Annual FRET, FLIM, & FLIRR Microscopy Workshop	
ADDITIONAL ACTIVITIES	• Editor , Grounds: The Virginia Journal of Bioethics	Jun 2023 – Present
	• Senior Mandarin Translator , The Cavalier Daily	Feb 2023 – Present
	• Investigator , University Judiciary Committee	Sept 2022 – Present
	• Senior Associate , The Blosson Together Association	Sept 2022 – Present
	• Surgical Supply Volunteer , UVA Health University Hospital	Sept 2022 – May 2023
HONORS & AWARDS	• Echols Scholarship , UVA	2023
	• University Achievement Award Scholarship (\$80,000) , UVA	2022
	• Distinguished Research Mentorship Award , NHREC GSST	2022
TECHNICAL SKILLS	• Programming : MATLAB, Python, R, Julia, C/C++, SQL, HTML/CSS, JavaScript	
	• Softwares : \LaTeX , Microsoft Offices, ImageJ, ZEN, GraphPad Prism	
	• Operating Systems : Windows, Linux, MacOS	
AFFILIATIONS	• American Neurological Association , Member	Jun 2024 – Present
REFERENCES	Petr Tvrdik, Ph.D. Assistant Professor Department of Neurosurgery & Neuroscience UVA School of Medicine pt8bm@virginia.edu	Richard Dortch, Ph.D. Associate Professor Department of Translational Neuroscience Barrow Neurological Institute richard.dortch@barrowneuro.org
	Ammasi Periasamy, Ph.D. Professor Department of Biology & Biomedical Engineering University of Virginia ap3t@virginia.edu	Jason Chruma, Ph.D. Assistant Professor Department of Chemistry University of Virginia jjc5p@virginia.edu