

Kelvin Chen

CONTACT INFORMATION

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

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RESEARCH INTERESTS

Translational neuroscience, neurobiological marker discovery, computational and experimental disease modeling, neuropathological and cerebrovascular mechanisms of nervous system disorders

EDUCATION

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

New Horizons Governor's School for Science & Technology Hampton, VA
Dual Enrollment with VPCC, Biological Sciences & Mathematics Sept 2020 – Jun 2022
• GPA: 5.00/5.00

Woodside High School Newport News, VA
Advanced Studies Diploma Sept 2018 – Jun 2022
• GPA: 4.61/4.00 (Weighted), 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 2024 – Aug 2024
Advisor: [Richard Dortch, Ph.D.](#)
• Constructed a finite difference-based numerical simulation to optimize and validate nerve-specific computational models through solving a PDE framework (*tentative*).

Research Intern, Department of Translational Neuroscience May 2023 – Aug 2023
Advisor: [Richard Dortch, Ph.D.](#)
• Modeled multi-compartmental diffusion MRI signals in pre-clinical rat models of peripheral nerve trauma based on segmented histological images to derive diffusion tensor imaging- and spherical mean technique-based metrics for monitoring axonal re/degeneration.

Hampton University
Research Intern, Department of Chemistry & Biochemistry
 Advisor: [Peter Njoki, Ph.D.](#)

Hampton, VA
 Sept 2021 – Mar 2022

- Probed the kinetic behavior of gold nanoparticles in COVID-19 diagnosis and its mediating effect with antiviral drugs in the targeting of the SARS-CoV-2 RdRp via biochemical and mathematical modeling.

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.2] **Chen, K.**, Sharifi, K.A., Tvrdik, P. *Cortical Microglial Phagocytic Activation and Transition Dynamics Following Focal Cerebral Ischemia (in preparation)*.
- [P.1] **Chen, K.**, Sadrabadi, M.S., Dortch, R.D. *Geometry-Informed Multi-Compartmental Diffusion MRI Modeling of Injured Peripheral Nerves*. BNI Undergraduate Research Symposium, Phoenix, AZ, Aug 11, 2023 [[PDF](#)]

TEACHING EXPERIENCE

UVA Department of Chemistry

Undergraduate Teaching Assistant

Charlottesville, VA

- CHEM 2311 Organic Chemistry Laboratory I (for Non-Chemistry Majors) Fall 2024
- CHEM 1810 Principles of Chemical Structure (Accelerated) Fall 2024
- CHEM 2321 Organic Chemistry Laboratory II (for Non-Chemistry Majors) Spring 2024
- CHEM 2311 Organic Chemistry Laboratory I (for Non-Chemistry Majors) Fall 2023
- CHEM 1811 Principles of Chemical Structure Laboratory (Accelerated) Fall 2023

UVA Department of Psychology

Undergraduate Teaching Assistant

Charlottesville, VA

- PSYC 3210 Research Methods: Psychobiology Laboratory Spring 2024

HONORS & AWARDS	Echols Scholarship, UVA Aug 2023 <i>Awarded to 5% of undergraduates in the College of Arts & Sciences for academic excellence and intellectual leadership</i>	
	Distinguished Research Mentorship Award, NHGSST Jun 2022 <i>Awarded to three seniors for excellence in research based on their research project</i>	
	University Achievement Award Scholarship, UVA Mar 2022 <i>Awarded to 50 in-state students from disadvantaged backgrounds on the basis of academic merit, leadership, public service, citizenship, diversity, and character; covers full-tuition for four years</i>	
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PROFESSIONAL SERVICES	<ul style="list-style-type: none">• Editor, Grounds: The Virginia Journal of Bioethics	Jun 2023 – Present
	<ul style="list-style-type: none">• Symposium Volunteer, UVA Office of Citizen Scholar Development	Apr 2023 – Present
	<ul style="list-style-type: none">• Senior Translator, The Cavalier Daily	Feb 2023 – Present
	<ul style="list-style-type: none">• Editor, Oculus: The Virginia Journal of Undergraduate Research	Sept 2022 – Present
	<ul style="list-style-type: none">• Investigator, University Judiciary Committee	Sept 2022 – Present
	<ul style="list-style-type: none">• Senior Associate, The Blosson Together Association	Sept 2022 – Present
	<ul style="list-style-type: none">• Workshop Volunteer, W. M. Keck Center for Cellular Imaging	Mar 2024
	<ul style="list-style-type: none">• Surgical Supply Volunteer, UVA Health University Hospital	Sept 2022 – May 2023
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TECHNICAL SKILLS	<ul style="list-style-type: none">• Programming: MATLAB, Python, R, C/C++, SQL, MySQL, HTML, JavaScript	
	<ul style="list-style-type: none">• Softwares: L^AT_EX, Microsoft Offices, ImageJ, ZEN, CellProfiler, Simulink, GraphPad Prism	
	<ul style="list-style-type: none">• Operating Systems: Windows, Linux, MacOS	
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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