

Masters in the Department of Anatomy and Neurobiology

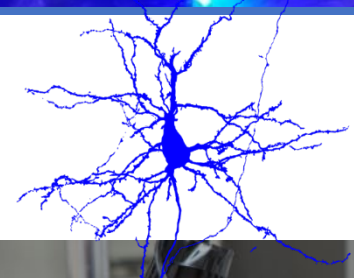
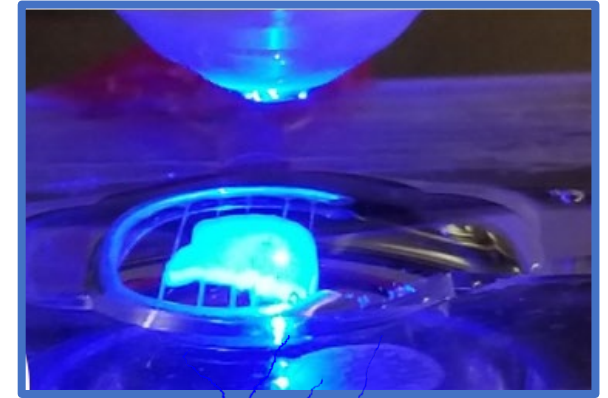
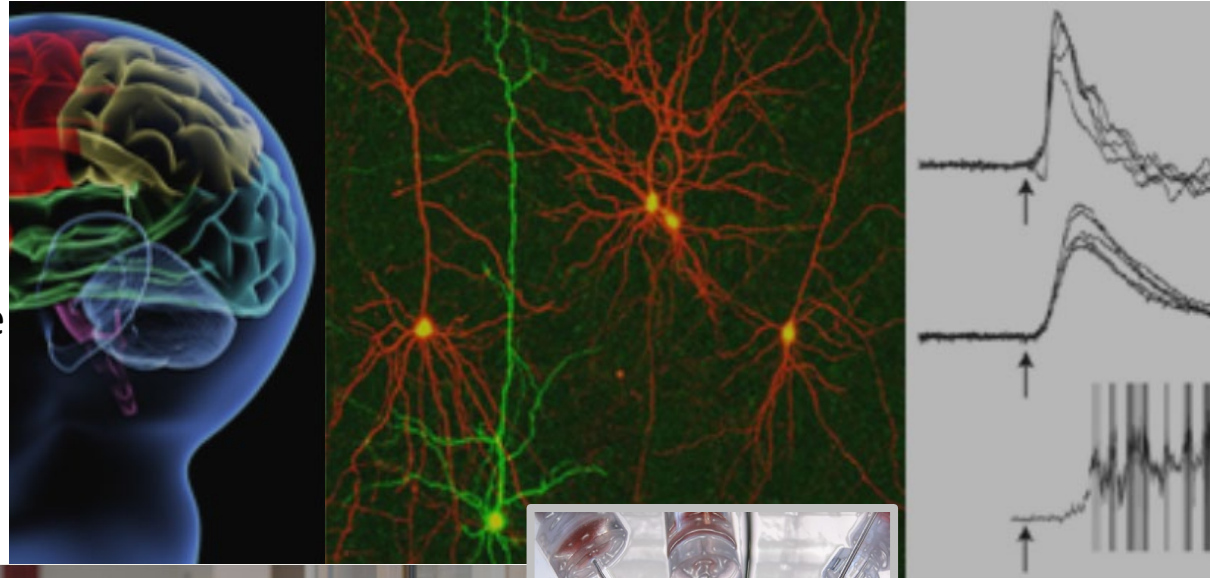
www.kmjacobs.org/ms

Multiple Sclerosis
Alzheimer's Disease
Epilepsy
Traumatic Brain Injury
Stress
HIV-associated dementia
Gene regulation in drug abuse
Molecular mechanisms of
Neuropsychiatric disorders

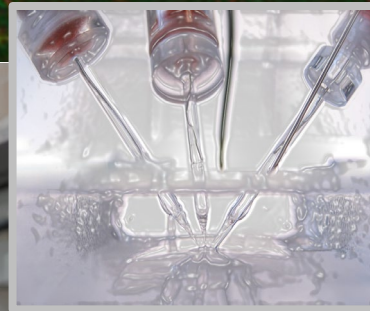
Director: Kimberle M. Jacobs, PhD

Kimberle.Jacobs@vcuhealth.org

Cell phone: 804 387-0140



Department of Anatomy and Neurobiology



EDUCATION

Master of Science

MS-ANB: A total of 37 credits are required: 24 course credits; 13 directed research credits

Year 1 Fall semester:

ANAT608 + ANAT612 → ✓ Biochemistry, Cell and Molecular Biology (BIOC 503) 5 credits
Cellular and Molecular Neuroscience (NEUS 609) 4 credits
ANAT691 → Faculty Research Seminar (ANAT 690) 1 credit

Year 1 Spring semester:

PHYS501 → ✓ Biochemistry, Cell and Molecular Biology (BIOC 504) 5 credits
Systems Neuroscience (ANAT 610) 4 credits
ANAT691 → Faculty Research Seminar (ANAT 690) 1 credit

Year 1 SUMMER semester:

Directed Research (ANAT 697) 1 credit

Year 2 Fall semester:

Scientific Integrity (OVPR 601) 1 credit
Laboratory Safety (IBMS 600) 1 credit
Faculty Research Seminar (ANAT 690) 1 credit
Directed Research (ANAT697) **6 credits**

Year 2 Spring semester:

Faculty Research Seminar (ANAT 690) 1 credit
Directed Research (ANAT 697) **6 credits**

Graduate in May or August

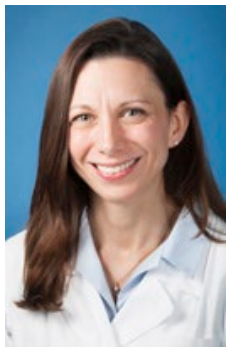
Possible Research Mentors



Jeff Dupree multiple sclerosis, axon structure, axon initial segment, microglia, immunohistochemistry, western blots, microscopy
jeffery.dupree@vcuhealth.org



Rory McQuiston Alzheimer's, memory formation, brain rhythms, neuromodulators, neurophysiology, voltage-sensitive dyes, optogenetics, transgenics, immunohistochemistry
adam.mcquiston@vcuhealth.org



Gretchen Neigh Stress during adolescence, endocrine-immune interactions, behavior, histology, microscopy, cell culture, molecular biology
gretchen.mccandless@vcuhealth.org
<https://www.gretchenneigh.com/>



Andy Ottens toxicological exposures and traumatic insults to the brain, mass spectrometry, bioactive peptides, proteolytic degradation
andrew.ottens@vcuhealth.org
<https://ottenslab.weebly.com/>



Peter Hamilton molecular mechanisms in neuropsychiatric syndromes, engineer epigenetic editing tool, pharmacotherapies, behavior
peter.hamilton@vcuhealth.org



Dong Sun molecular mechanisms neural repair and regeneration, brain injury, Alzheimer's, neural stem cell cultures, immunohistochemistry, western blotting, behavior, microscopy
dong.sun@vcuhealth.org



Audrey Lafrenaye glial and neuronal pathologies traumatic brain injury, in vivo models, behavioral, microscopic and molecular assessments
audrey.lafrenaye@vcuhealth.org



Kimberle Jacobs developmental epilepsy, traumatic brain injury, cellular and network neurophysiology, optogenetics, EEG, microscopy, immunohistochemistry, structure
Kimberle.jacobs@vcuhealth.org
www.kmjacobslab.org



Babette Fuss multiple sclerosis, myelination, neuropsychiatric disorders, autotaxin-lysophospholipid signaling, glutamate transporter signaling, tissue culture, transgenics
babette.fuss@vcuhealth.org



Pam Knapp HIV-associated dementia, neuron-glia interactions, opiate signaling, tissue culture, immunohistochemistry, confocal and electron microscopy, in situ hybridization, PCR, biochemistry
pamela.knapp@vcuhealth.org

Master of Science in Anatomy and Neurobiology

Explore the research: anatomy.vcu.edu/research-groups/

Previous Masters Theses in the Department of Anatomy & Neurobiology

The Effect of Mild Traumatic Brain Injury on Perineuronal Nets Surrounding Neocortical Parvalbumin Interneurons - Olivia Lowman, Jacobs and Greer labs

Quantitative Changes in Hippocampal CCR5+ Microglia and Neurons with the Administration of Maraviroc (MVC): Does Sex Matter? - Ama Boakye-Agyei, Knapp lab

Exosomes as systemic mediators of nanotube induced neurotoxicity - Christopher Canal, Ottens lab

The role of GLT-1 signaling in oligodendrocytes during development and myelin repair - Elizabeth Thomason, Fuss lab

Chronic adolescent stress as a predictive factor for risk of developing PTSD-like symptoms in adulthood - Grace Young, Neigh lab

Connecting the Dots: Investigating the effects of trans-synaptic Tau transmission in the hippocampus- Michael Bamisile, McQuiston lab

Potential treatments for malformation associated epilepsy - Olivia Bowles, Jacobs lab

A study on the mechanism of CLP290 restoration of KCC2 and Neuroprotection after traumatic brain injury - Ekaterina Stepanova, Ottens lab

Effects of gestational ozone exposure on privileged placental and brain barrier integrity - Alexander Hamm, Ottens lab

Effects of Buprenorphine treatment on myelin following traumatic brain injury in a rat model - Jane Ryu, Lafrenaye lab

Modulation in NMDA receptor function alleviates safety learning deficit in females who experienced chronic stress during adolescence - Zuby Okafor, Neigh lab