Nicholas M George
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Cell and Developmental Biology
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Education

2016- **Ph.D. Neuroscience**
University of Colorado, Anschutz Medical Campus, Aurora, CO
Thesis: "Excitable axonal domains adapt to olfactory sensory experience in adults"
Advisors: Diego Restrepo and Wendy Macklin

2014-2016 **M.S. Anatomy and Neurobiology**
Virginia Commonwealth University, School of Medicine, Richmond, VA
Thesis: "Resolution of Inflammation Rescues Axon Initial Segment Disruption"
Advisor: Jeffrey Dupree

2009-2012 **B.S. Human Nutrition, Foods, and Exercise**
Virginia Tech, Blacksburg, VA

Funding

2019-2022 1F31 DC018459-01
NIH/NIDCD
"Investigating axonal and glial adaptations to sensory manipulations in the olfactory system"
Role: PI

2017-2018 TL1 TR001082
Colorado Clinical and Translational Sciences Institute
"Neuronavigation with a fiber-coupled microscope"
Role: Pre-doctoral Fellow

Publications

2018 Gould, E. A., Busquet, N., Shepherd, D., Dietz, R. M., Herson, P. S., de Souza, F. M. S., Li, A., **George, N. M.**, Restrepo, D., and Macklin, W. B. (2018). Mild myelin disruption elicits early alteration in behavior and proliferation in the subventricular zone. *eLife*, 7:e34783.

2017 Benusa, S. D., **George, N. M.**, Sword, B. A., DeVries, G. H., and Dupree, J. L. (2017). Acute neuroinflammation induces AIS structural plasticity in a NOX2-dependent manner. *Journal of Neuroinflammation*, 14(1):116.

Invited Talks

2019 **Gordon Research Seminar: Glial Biology**, Ventura, CA
"Investigating glial and axonal adaptations to sensory deprivation in the olfactory system"
CU Anschutz Neuroscience retreat, Keystone, CO
"Glial and axonal adaptations to sensory deprivation in the olfactory system"

2018 **Translational Science**, Washington, DC
"A novel multiphoton microscopy method for neuronavigation in deep brain stimulation surgery"
All Neurosurgery Research Meeting, Aurora, CO
"Characterizing autofluorescence in human STN for deep brain neuronavigation"

Poster Presentations

2020 Association for Chemoreceptive Science, Remote

2019 Gordon Research Conference: Glial Biology, Ventura, CA
Association for Chemoreceptive Science, Bonita Springs, FL
Rocky Mountain Regional Neuroscience Group, Aurora, CO

2018 Translational Science, Washington, DC

2017 CU Anschutz Neuroscience Retreat, Estes Park, CO

2016 William and Mary Graduate Research Symposium, Williamsburg, VA

Honors and Awards

2018 Wellcome Fund Trainee Travel Award for Clinical and Translational Research Conference, Washington, DC

2016 Visiting Scholar Award for Excellence in the Natural and Computational Sciences. Poster and research summary presented at The William and Mary Graduate Research Symposium, Williamsburg, VA

2015 Poster presentation award at the Virginia Symposium on Brain Immunology and Glia, Richmond, VA

Software Development

Lab-utility-plugins — I built several small tools and scripts to help lab members and myself simplify common microscopy image analysis tasks such as blinding images and image conversions/manipulations. The source and documentation for these tools are freely available and they are distributed via the Fiji update site Lab-utility-plugins.

ABF Explorer — ABF Explorer is a simple GUI to allow for fast visualization of Axon Binary Format (ABF) electrophsiology data and metadata. ABF Explorer is written with python using PyQt and pyqtgraph for interactive graphics, while ABF parsing is done with the pyABF library.

Website — I built my personal website using Clojure, a functional lisp which runs on the JVM. I write about programming and science on my website.

Other Skills, Experience, and Outreach

2020- **Software Carpentry Instructor Training**
I attended a Software Carpentry workshop when I first started my Ph.D. and it helped me tremendously with data analysis and organization. I would like to lead Software Carpentry seminars to help other researchers adopt techniques to improve experimental data gathering and analysis.

2017-2018 **CU Neuroscience Outreach**
I was involved with the CU Neuroscience outreach program. We organized a yearly outreach event for pre-kindergarten to high school students at the Denver Science museum, featuring interactive demos illustrating how sensory systems and neurons worked. I wrote a simple RaspberryPi application with a Tkinter GUI interface to control a thermal camera and email photos of the students to demonstrate snake "heat vision". The project was called SnakeSnap.

2016-2018 **CU Anschutz Reproducible Research Network**
Co-founded the CU Anschutz Reproducible Research Network
This was a short-lived organization meant to provide tutorials and resources to help other researchers with data analysis and statistical computing needs. The RRN was set up in a bi-weekly "clinic" setting, where we would give a short presentation on a reproducible research tool (mostly in the R programming language ecosystem) and would then host office hours for researchers. Initially this was a popular event, but became difficult to maintain early in my PhD work.