

# Nicholas M George

University of Colorado Anschutz Medical Campus

Cell and Developmental Biology

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## Education

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- 2016- **Ph.D. Candidate, 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

## Publications

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- 2021 **George NM**, Macklin WB, Restrepo D. 2021. Excitable axonal domains adapt to sensory deprivation in the olfactory system (preprint). Neuroscience. doi:10.1101/2021.01.25.428132
- 2020 Losacco J, **George NM**, Hiratani N, Restrepo D. 2020. The Olfactory Bulb Facilitates Use of Category Bounds for Classification of Odorants in Different Intensity Groups. Front Cell Neurosci 14:613635. doi:10.3389/fncel.2020.613635
- Benusa SD, **George NM**, Dupree JL. 2020. Microglial heterogeneity: distinct cell types or differential functional adaptation? Neuroimmunology and Neuroinflammation 2020. doi:10.20517/2347-8659.2020.03
- 2018 Gould EA, Busquet N, Shepherd D, Dietz RM, Herson PS, de Souza FMS, Li A, **George NM**, Restrepo D, Macklin WB, Simoes de Souza FM, Li A, George NM, Restrepo D, Macklin WB. 2018. Mild myelin disruption elicits early alteration in behavior and proliferation in the subventricular zone. eLife 7:e34783. doi:10.7554/elife.34783
- 2017 Benusa SD, **George NM**, Sword BA, DeVries GH, Dupree JL. 2017. Acute neuroinflammation induces AIS structural plasticity in a NOX2-dependent manner. J Neuroinflammation 14:116. doi:10.1186/s12974-017-0889-3

## Funding

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- 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

## Invited Talks

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- 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

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- 2020     International Symposium on Olfaction and Taste, Virtual Conference
- 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

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- 2018 Wellcome Trust 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

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- Lab-utility-plugins A collection of 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 GUI to allow for fast visualization of Axon Binary Format (ABF) electrophysiology data and metadata. ABF Explorer is written with Python using PyQt and pyqtgraph for interactive graphics.
- Website My personal [website](#) is written with Clojure, a functional lisp hosted on the JVM. I write about programming and science on my website.

## Skills, Experience, and Outreach

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- 2020- **Software Carpentry Instructor**  
Certified [Software Carpentry](#) instructor. I became an instructor because their workshops were very helpful when I first started my PhD and I want 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 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 an 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.