**Jabbar Campbell**

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# SENIOR SCIENTIST

Molecular Biologist with experience developing and optimizing assays for early discovery efforts in neurodegenerative disease. Fluency in R studio and Python with experience designing pipelines to automate data analysis and visualization. These skills include:

* Design of RNA sequence analysis pipelines using R and Nextflow
* Experience with Cloud based solutions such as AWS and Github repositories
* Molecular Biology experience in DNA cloning
* Multivariate analysis and visualization using Seaborn
* Automated Liquid Handling Experience (BRAVO)
* Assay development on High Throughput instrumentation
* Quantitative Analysis using Bioqant, Image-j, R and Python

# PROFESSIONAL RESEARCH EXPERIENCE

**CARAWAY THERAPEUTICS,** Cambridge, MA 2020 – 2023

***Senior Associate Scientist***

Supported Biomarker efforts to Advanced projects in Lysosomal storage as they pertain to Neurodegeneration through assay development across multiple modalities, high content imaging, and cell-based assays. Contributed to a small molecule campaign to triage potent and selective Ion channel activators.

* Analyzed MS data using R Bioconductor for Proteomic analysis and Gene ontology .
* Built an RNA-SEQ pipeline in R for quality assessment, read mapping, annotation and analysis using AWS
* Established a High Content Image based assay for detecting the effects of activators in 96 and 384 well formats
* Initiated a Machine learning algorithm using Python on High Throughput data to gain Biological Insight.
* Designed a script in R for the purpose of analyzing 3d organoids using raw High Content image files.
* Used PCA to visualize complex data and cluster compounds according to performance across assays.
* Built a R SHINY web application for interactive visualization and statistical analysis of ELISA experiments.
* Increased turnaround time for High Content Imaging Data with automation and scripts in R by 6-fold
* Treated Niemann pick cell models with in house chemical matter followed by downstream Lipidomic analysis to detect phenotypic rescue.
* Quantitated Biomarker/Protein levels following treatment to observe rescue of lysosomal function.

**AMGEN,** Cambridge, MA 2015 – 2019

***Associate Scientist – Neuroscience***

Advanced projects in Analgesia and Neurodegeneration through assay development across multiple modalities, including electrophysiology, high content imaging, biochemical and cell-based assays. Spearheaded a small molecule campaign using both biochemical and cell-based systems and identified potent and specific enzyme inhibitors.

* Optimization of a Fluorogen Activated Peptide assay to improve signal to background in High content imaging.
* Characterized a protopathic aggregation model for ALS in SH-SY5Y cells using High Content Imaging.
* Screened compound libraries to drive Structure Activity relationships (SAR) for ligand and Ion gated Channels.
* Confirmed and prioritized hits across technology platforms to validate next generation instrumentation.
* Performed MEA from spinal cord slices to elucidate mechanism of action for a novel pain target.
* Measured enzymatic kinetics (TR-FRET) to advance project to “Early Optimization Phase” in under 6 months.
* Established the Nanobret Luciferase assay and Invivo Cell based reporter system to provide target engagement data.
* Drove technology transfer to an external CRO’s and increase throughput to reduce cost using R.
* Quantitated protein from lysate in a 384 plate-based sandwich ELISA system via MSD.
* Characterized RNA-Protein interaction associated with the RISC complex to establish PKPD relationships.
* Built a SHINY web application for the Visualization of Pharmacological relationships.
* Achieved departmental and companywide visibility through hosting guest speakers and poster Presentation.
* Strengthened community relationships through Community Outreach.
* Mentored Junior Associates in the lab and through weekly “Neuroinformatics” meetings.

**NATHAN KLINE RESEARCH FOUNDATION,** Orangeburg, NY2001 – 2015

***Department of Dementia Research***

Constructed and characterized models for studying the dynamics of axonal transport in neurons leading to publication of multiple peer reviewed articles in High Impact journals.

* Created transgenic models using PCR and nucleic acid extraction to subclone Genes of interest.
* Used Western blot analysis and histology for studying Neurofilament colocalization.
* Examined protein-protein interaction between Myosin Va and Neurofilament light chain.
* Conducted behavioral experiments to highlight variation in locomotion for KO mice.
* Implemented and maintained a tissue sample database.

# EDUCATION

**Master of Science in Biology**, New York University · New York, NY

**Bachelor of Science in Biology**, Tufts University, Medford, MA

# PUBLICATIONS

Sara. C. Humphreys,1\* Mai B. Thayer,1 **Jabbar Campbell**, 3 Kelly Chen, 2 Dan Adams, 2 Julie M. Lade,1 and Brooke M. Rock1 siRNA biotransformation: Fragmented knowledge and ADME implications. J Med Chem Jun 25;63(12): 6407-6522

[Rao MV, **Campbell J**, Palaniappan A, Kumar A, Nixon RA., calpastatin inhibits motor neuron death and increases survival of hSOD1(G93A) mice. J Neurochem. 2016 Apr;137(2):253-65](https://www.ncbi.nlm.nih.gov/pubmed/26756888)

Rao MV, McBrayer MK, **Campbell J,** Kumar A, Hashim A, Sershen H, Stavrides PH, Ohno M, Hutton M, Nixon [RA. Specific calpain inhibition by Calpastatin prevents tauopathy and neurodegeneration and restores](https://www.ncbi.nlm.nih.gov/pubmed/25009256) [normal lifespan in tau P301L mice. J Neurosci. 2014 Jul 9;34(28):9222-34.](https://www.ncbi.nlm.nih.gov/pubmed/25009256)

[Rao MV, Yuan A, **Campbell J**, Kumar A, Nixon RA., The myosin Va head domain binds to the Neurofilament L rod and modulates endoplasmic reticulum (ER) content and distribution within axons.PLoS One. 2011](https://www.ncbi.nlm.nih.gov/pubmed/21359212)

Feb 16;6(2)

Rao MV, Mohan PS, Kumar A, Yuan A, Montagna L, **Campbell J**, Veeranna, Espreafico EM, Julien JP, Nixon

[RA. The myosin Va head domain binds to the neurofilament-L rod and modulates endoplasmic reticulum (ER) content and distribution within axons. PLoS One. 2011 Feb 16;6(2)](https://www.ncbi.nlm.nih.gov/pubmed/21359212)

Rao MV, Mohan PS, Peterhoff CM, Yang DS, Schmidt SD, Stavrides PH, **Campbell J**, Chen Y, Jiang Y, Paske[vich PA, Cataldo AM, Haroutunian V, Nixon RA., Marked calpastatin (CAST) depletion in Alzheimer's disease](https://www.ncbi.nlm.nih.gov/pubmed/19020018) [accelerates cytoskeleton disruption and neurodegeneration: neuroprotection by CAST overexpression. J](https://www.ncbi.nlm.nih.gov/pubmed/19020018) Neurosci. 2008 Nov 19;28(47):12241-54.

[Rao MV, **Campbell J,** Yuan A, Kumar A, Gotow T, Uchiyama Y, Nixon RA., The neurofilament middle molecular mass subunit carboxyl-terminal tail domains is essential for the radial growth and cytoskeletal architecture of axons but not for regulating neurofilament transport rate. J Cell Biol. 2003 Dec](https://www.ncbi.nlm.nih.gov/pubmed/14662746) 8;163(5):1021-31.