David White

PhD Student

4609 Cedar Ave C2
Philadelphia, PA 19143
(801) 960 0552
davwhite@mail.med.upenn.edu

Objective: I am seeking a position in a research lab in which I may conduct computational research and in which I may carry out my PhD thesis.

Research Interests: Neuroscience. Systems modelling. Network analysis. Cortical function. Cortical patterning/development. Decision making and Neuroeconomics. Consciousness, awareness, and attention. Monoamine systems. Machine learning. Mathematics.

Education

08 2015 – present **PhD**, *University of Pennsylvania*, Pennsylvania, USA.
Neuroscience Graduate Group

06 2008 – 12 2013 **BAS**, *Brigham Young University*, Utah, USA.
Majors in Neuroscience and Biophysics, Minor in Chemistry

Research Experience

05.2016–09.2016 **RA**, *Danielle Basset*, Univeristy of Pennsylvania.
Analysing the affect of brain network modularity on optimal energy requirements in neural systems.

01 2016 – 05 2016 **RA**, *Minghong Ma*, *Vijay Balsubramanian*, Univeristy of Pennsylvania.
Olfactory epithelium tissue recording by MEA and analysis.

08 2015 – 12 2015 **Trainee**, *Richard Betzel*, *Danielle Basset*, Univeristy of Pennsylvania.
Neural network dynamics during development, using fMRI data and graph theory in model construction.

10 2014 – 12 2015 **Consultant**, *Scott Steffensen*, Brigham Young University.
Ex vivo measurement of peroxide formation by dopaminergic cells in the VTA by methamphetamine exposure and induced currents.

07 2012 – 09 2014 **Lead RA**, *David Busath*, *Sterling Sudweeks*, Brigham Young University.
Measuring the effects of various drugs on gap-junction network currents by in vitro dual-whole-cell patch recording of cultured neuroblastoma cells

11 2012 – 09 2013 **RA**, *Scott Steffensen*, Brigham Young University.
Ex vivo analysis of cell-membrane and receptor modulation in the mesolimbic system of rodents by drug modulation and/or current induction using single-cell patching. Focus on GABAergic and dopaminergic cells.

10 2011 – 06 2012 **RA**, *David Busath*, *Scott Steffensen*, Brigham Young University.
High speed photometry of gap junction mediated wave activation in the ex-vivo perforant pathway of the hippocampus using calcium sensitive dyes.

09 2008 – 06 2009 **RA**, *Scott Steffensen*, Brigham Young University.
In Vivo FSCV of dopamine oxidation in rodent brains, analyzing the various effects of addictive drugs and similar agonists/antagonists in the mesolimbic system. Particular interest in alcohol and cocaine.

Additional Employment

09 2014 – 09 2015 **Quality Assurance Engineer**, *Content Watch Inc.*, Utah, USA.

07 2009 – 08 2011 **Religious volunteer**, *LDS church*, Samara, Russia.

Skills and Techniques

Programming	Matlab and Octave. Bash. Python. C. LaTeX. git.
Computing	Cluster computing. Server construction and administration. Linux.
In-Vivo Animal Experimentation	Mice and rats. Anesthesia. Dissection. Surgery.
Patch Clamping	Loose-cell. Whole-cell. Dual-patch. Voltage-clamp. Current-clamp. Ex-vivo. In-vitro. Multiclamp and Clampex. Pipette design. Brain slicing.
Cell Culturing	Maintenance. Plating. Cryogenics. Flow-cytometry.
Microscopy	Fluorescent. Infrared. Confocal. High-speed motion capture. Calcium sensitive dyes. DNA and peroxide assays. Brain staining. Tissue identification.
Spectroscopy	NMR. IR. Mass spectroscopy.
Imaging	MRI preprocessing, EEG use and analysis, EMG use and analysis.
Languages	English (native). Russian (fluent). Spanish (moderate). German (novice).
Other	Circuit design. Soldering.

Conference Presentations

SI Shin, JK Mabey, DN White, SS Sandoval, CA Nielson, ND Schilaty, DN Taylor, SN Sudweeks, JG Edwards, JM McIntosh, J Wu, SC Steffensen. Ethanol inhibits GABA neurons in the ventral tegmental area and dopamine release in the nucleus accumbens via presynaptic $\alpha 6$ nicotinic receptors on GABA terminalsṠociety for Neuroscience Abstracts (2013). 38 60.08.

JK Mabey, SI Shin, DN White, CA Nielson, ND Schilaty, R Ting-a-Kee, H Vargas-Perez, D Van der Kooy, SC Steffensen. Functional switch in $GABA_A$ receptors on VTA GABA neurons by chronic ethanol.ÂăSociety for Neuroscience Abstracts (2013). 38 349.12.

JK Mabey, SI Shin, DN White, C Nielson, H Vargas-Perez, R Ting-A-Kee, A Bahi, D Van der Kooy, SC Steffensen. Ventral tegmental area GABAergic activity underlies opiate motivation. INS Snowbird Symposium (2012).

J Dallin, H Hansen, JD Wilcox, RS McClellan, S Shin, DN White, SC Steffensen. Connexin-36 KO Mice Have a Higher Threshold for Kindled Seziures; A Pilot Study. Brigham Young University Research Fair (2012).

Publications

DN White, RF Betzel, S Gu, JD Medaglia, F Pasqualetti, DS Basset. The role of modularity on tuning brain network controllability. Manuscript in preparation.

SI Shin, JK Mabey, DN White, CA Nielson, ND Schilaty, R Ting-A-Kee, H Vargas-Perez, D van der Kooy, SC Steffensen. Functional switch in $GABA_A$ receptors on VTA GABA neurons by chronic ethanol. Alcoholism: Clinical and Experimental Research (2013). 37($S2$) 238A (908).

SI Shin, JK Mabey, DN White, CA Nielson, ND Schilaty, DH Taylor, J Wu, M McIntosh, SC Steffensen. Ethanol inhibits GABA neurons in the VTA and dopamine release in the nucleus accumbens via $\alpha 6$ nicotinic receptors on GABA terminals. Alcoholism: Clinical and Experimental Research (2013). 37($S2$) 233A(909).

References available upon request.