# William A Liberti III


CONTACT INFORMATION
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RESEARCH INTERESTS

Tool development, Systems and Computational Neuroscience, Motor Sequencing & Learning, Electrophysiology, Neurophotonics, Calcium Imaging, Nonlinear Optics and Microscopy.

EDUCATION

**Boston University Graduate Medical School**, Boston, MA

Ph.D., Neuroscience, *Expected:* May 2017

- Advisor: Timothy Gardner, Ph.D

**Boston University**, Boston, MA

B.S., Biochemistry & Molecular Biology *With Distinction* , May 2012

RESEARCH EXPERIENCE

**Graduate Research Assistant** May 2013 to present

Graduate Program in Neuroscience

*Research Summary:* Design and implementation of tools for Electrophysiology and Calcium imaging in awake behaving Zebra Finches, to study motor learning and motor sequencing.

REFEREED JOURNAL PUBLICATIONS

1. Moorman S*, **Liberti WA***, Perkins LN, Markowitz JE, Gardner TJ "Noisy and synchronous neural actvity during sleep in a premotor brain region in songbirds" *In Preparation*
2. **Liberti WA**, Perkins LN, Leman DP, Gardner TJ "3D printed miniature microscope and commutator for low-latency Neural recording" *In Submission*
3. **Liberti WA***, Markowitz JE*, Perkins LN, Leman DP, Liberti DC, Guitchounts G, Velho T, Lois C, Kotton DN, Gardner TJ "Stability and drift in songbird cortical sequencing" *Nature Neuroscience (In press)*
4. Markowitz JE*, **Liberti, WA***, Guitchounts G, Velho T, Lois C, Gardner, TJ "Mesoscopic patterns of neural activity support songbird cortical sequences" *PLoS Biology*, 13.6 (2015): e1002158.
5. Guitchounts G,*, Markowitz JE,*, **Liberti WA***, Gardner TJ "A carbon-fiber electrode array for long-term neural recording." *Journal of Neural Engineering*, 10, 046016 (2013).

* indicates co-authorship

PATENTS

Splayable microfiber electrode arrays, U.S. Provisional Patent Application No. 61/843,124. June , 2013

AWARDS

Student Awards — Boston University, Graduate School

- BioWeek 1st place poster prize 2015
- Department of Chemistry Teaching Fellowship 2011–2012
- Boston University Computational Neuroscience Fellowship 2011–2012
- Department of Biology Teaching Fellowship 2011–2015

PRESENTATIONS

First Author Abstracts

- "Rules for motor planning and order in the songbird HVC" San Diego, 2016
- "Sleep promote maintenance of stable motor performance in songbirds" San Diego, 2016
- "Stability and drift in songbird cortical sequencing" Salt Lake City, 2016
- "Stability and drift in songbird cortical sequencing" Chicago, 2015
- "Mesoscopic patterns of neural activity support songbird cortical sequences" Washington DC, 2014
- "A carbon-fiber electrode array for long-term neural recording." New Orleans, 2012

Invited Talks

- Computational and Systems Neuroscience (COSYNE) invited talk February 2016
- Boston College Neuroscience Seminar Guest Speaker January 2016
- Boston University Neuroscience Seminar Series May 2015
- Boston University Biology Seminar Series March 2015
- Boston University Graduate Program in Neuroscience Retreat June 2015

## Teaching Experience

CHEMISTRY Boston University

- CH203 - Organic Chemistry 2011–2012
- CH131- Inorganic Chemistry for Engineers 2011–2012

NEUROSCIENCE/BIOLOGY Boston University

- BI315 - Systems Physiology 2012–2013
- BI644/NE644 - Neuroscience Design Lab 2013–2015

## Service

CELSET Experimental Design Course 2013–2015

*Course Overview:* Through NSF initiative CELEST: (Center of Excellence for Learning in Education, Science and Technology). Taught students from traditionally underrepresented backgrounds in science to program in C, and design simple circuits.

Graduate Resident Assistant 2011–2016

*Overview:* Support diverse student populations in living/learning communities on Boston University's campus.

Ad Hoc Referee: *PLoS ONE* 2016

## Skills

Programming:

- Matlab, Python, R, Processing. *Familiar with:* C, C++, LabView, Swift2, HTML, CSS, Javascript.

Molecular Biology, Biochemistry, & Neurophysiology:

- Gel electrophoresis, PCR, ELISA, Immunohistochemistry, *in-vivo* Electrophysiology( Extracellular multi-electrode, Intracellular), *in-vivo* Microscopy( Multi-Photon, and Single-photon fluorescence. )

Misc:

- Arduino, Processing, LaTeX, Eagle PCB, Fritzing, Git, SolidWorks, SketchUp, TDT DSP, AutoCAD, ZEMAX, Illustrator.

Public

- www.github.com/WALIII