William A Liberti III

CONTACT INFORMATION

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RESEARCH INTERESTS

Tool development, Systems and Computational Neuroscience, Chronic Electrophysiology, Calcium Imaging, Neural basis of motor sequencing and motor learning, 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., Cell Biology, Molecular Biology, and Genetics *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. **Liberti WA***, Perkins LN, Leman DP, Gardner TJ "3D printed miniature microscope and commutator for low-latency Neural recording" *In Preparation*
2. **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" *Submitted*
3. 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.
4. 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

- 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

- "Stability and drift in songbird cortical sequencing" *Submitted* 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

- Boston College Neuroethology 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 2013–2016

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.

Skills

Programming:

- MATLAB, Python, R, Processing. *Familiar with:* C, C++, LabView.

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, LaTeX, Eagle PCB, Fritzing, Git, SolidWorks, SketchUp, TDT DSP, AutoCAD, ZEMAX.

Public

- www.github.com/WALIII