

TYLER MOULTON

Science Educator

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Citizenship: United States

Permanent Resident: Canada

EDUCATION

MSc	McGill University, Biology Thesis: "Keeping a Finger on the Pulse of East African Weakly Electric Fishes: Ecology and Hypoxia Tolerance of Mormyrids in Lake Nabugabo, Uganda" Supervisors: Dr. Lauren Chapman and Dr. Ruediger Krahe	2017
BSc	McGill University, Faculty of Science Major: Biology (Honours First Class) Minor: Field Studies	2013

LANGUAGES

English: Native Language

French: Intermediate-Advanced spoken and written

HONOURS AND AWARDS

SUNY Cortland Leadership in Civic Engagement Award	2019
- Awarded for community service through the NY State Mentorship Program	
SUNY Cortland Performance-Based Discretionary Salary Award for Faculty	2018
- Awarded for excellence in teaching and community service (\$791)	
Quebec Centre for Biodiversity Science Excellence Award	2016
- Awarded for travel to CSEE conference (\$555)	
McGill Biology GREAT Award	2016
- Awarded for travel to CSEE conference (\$500)	
McGill International Master's Research Fellowship	2015
- (\$10,000)	
McGill Biology Research Travel Award	2015
- (\$1,960)	
National Geographic Young Explorer's Grant	2014
- Project Title: "Keeping a finger on the pulse of extremophiles: costs of low environmental oxygen for electric signaling of mormyrid fishes" (\$5,000)	
Science Undergraduate Research Award	2011, 2013
- Summer independent research scholarships (\$5,600 ea.)	

TEACHING EXPERIENCE

- Hamilton College**, Clinton, NY, USA 09/2019 – 06/2020
Laboratory Instructor and Technician, Dept. of Biology
- **Biochemistry (BIO 346 – Laboratory)**
 - Subjects: Enzyme kinetics, biomolecule synthesis & metabolism,
 - Develop and implement syllabus, manage labs, grade assignments
 - **Genes and Genomes (BIO 248 – Laboratory)**
 - Subjects: RFLP analysis, FISH, CRISPR
 - **Cellular Neurobiology (BIO 357 – Laboratory)**
 - Subjects: Degenerate PCR, cloning
- SUNY Cortland**, Cortland, NY, USA 2017 – 2019
Adjunct Lecturer, Dept. of Biology
- **Biological Sciences II (BIO 202 – Laboratory)**
 - Subjects: Cell division pathways, anatomy, animal diversity, scientific writing
 - **Principles of Biology I & II (BIO 11 and 113 – Laboratory)**
 - Subjects: Cell division pathways, anatomy, respiration, photosynthesis, nutrition
- McGill University**, Montreal, Canada 2014 - 2016
Teaching Assistant, Dept. of Biology
- **Methods in Biology of Organisms (BIOL 206 – Laboratory)**
 - Subjects: Research methods, experimental design, introductory statistics and R
 - **Evolution (BIOL 304)**
 - Subjects: Natural & artificial selection, metazoan evolution

FIELD AND RESEARCH EXPERIENCE

- Department of Fish and Wildlife**, Roxbury, VT, USA 04/2017 – 08/2017
Creel Survey Technician
- Conducted angler counts, interviews, and fish measurements
 - Created database and user guide to catalogue survey data
 - Assisted in trout stocking and backpack electroshocking surveys
- McGill University, Dept. of Biology**, Montreal, Canada
MSc Student, *Supervisors: Dr. Lauren Chapman, Dr. Ruediger Krahe* 2014 – 2017
- Developed an eco-physiological framework for studying weakly electric fish
 - Designed and conducted extensive field surveys and respirometry experiments
 - Managed field excursions, supply runs, and at times, field station operations over four field seasons (totaling eight months) at Lake Nabugabo, Uganda
- Research Assistant**, *Supervisors: Dr. L. Chapman, Dr. R. Krahe* 2013 – 2014
- Designed and conducted behavioral experiments on weakly electric fish
 - Managed and supervised fish care and maintenance
- Undergraduate Independent Studies Student**, *Supervisor: Dr. Graham Bell* 2011
- Performed experimental evolution study on an alga (*Chlamydomonas*)

Undergraduate Research Assistant, Supervisor: Dr. Graham Bell

2011

- Identified species of wild *Saccharomyces* isolates

PUBLICATIONS

Peer-Reviewed Journal Articles

Moulton T. L., Chapman L.J., Krahe R. (2020). Effects of hypoxia on aerobic metabolism and active electrosensory acquisition in the African weakly electric fish *Marcusenius victoriae*. *Journal of Fish Biology*, 96(2): 496-505.

Moulton T., Bell G. (2013). Selecting for multicellularity in the unicellular alga *Chlamydomonas reinhardtii*. *McGill Science Undergraduate Research Journal*, 8(1): 30-38.

Software

Moulton T. L. (2018). rMR: Importing Data from Loligo Systems Software Calculating Metabolic Rates, and Critical Tensions. R package version 1.1.0. <https://CRAN.R-project.org/package=rMR>.

RESEARCH PRESENTATIONS

Conference Oral Presentations (Presenting authors in **bold**)

Krahe, R., Ackerly, K. L., Moulton, T. P., Chapman, L. J. (2019, February). *Effects of acute and chronic hypoxia exposure on active electric sensing in weakly electric fishes*. 14th Annual Meeting of the Ethologische Gesellschaft; Hannover, Germany.

Moulton T., Chapman L.J., Krahe R. (2016, July). *Getting a sense for hypoxia's impacts on weakly electric fish*. Canadian Society of Ecology & Evolution Annual Meeting, St. John's, NL, Canada.

Moulton T., Chapman L.J., Krahe R. (2015, October). *Keeping a finger on the pulse of East Africa's extremophiles: Weakly electric fishes under hypoxia*. Quebec Centre for Biodiversity Science Symposium; Montreal, QC, Canada.

Moulton T., Chapman L.J., Krahe R. (2015, April). *Using the electric organ discharge to study the ecology of wild mormyrid populations*. Mont-Saint-Hilaire Weakly Electric Fish Meeting; Mont-Saint-Hilaire, QC, Canada.

Moulton T., Chapman L.J., Krahe R. (2014, May). *Heated discussions: Temperature dependence of communication signals in wild populations of African weakly electric fish*. Genomes to Biomes Joint Conference with the Canadian Society of Ecology & Evolution, the Canadian Society of Zoologists, and the Society of Canadian Limnologists; Montreal, QC, Canada.

Moulton T., Chapman L.J., Krahe R. (2014, April). *Temperature dependence of electric signals in wild populations of mormyrid weakly electric fish*. Mont-Saint-Hilaire Weakly Electric Fish Meeting; Mont-Saint-Hilaire, QC, Canada.

Moulton T., Chapman L.J., Krahe R. (2013, December). *The distribution of mormyrid fishes in Lake Nabugabo, Uganda, 50 years after the introduction of the Nile perch into the Lake Victoria Region*. Quebec Centre for Biodiversity Science Symposium; Montreal, QC, Canada.

Moulton T., Chapman L.J., Krahe R. (2013, May) *Distribution of mormyrid fishes in Lake Nabugabo, Uganda: 50 years after the introduction of the Nile perch into the Lake Victoria system*. Mont-Saint-Hilaire Weakly Electric Fish Meeting; Mont-Saint-Hilaire, QC, Canada.

Moulton T., Chapman L.J., Krahe R. (2013, April). *Distribution of mormyrid fishes in Lake Nabugabo, Uganda: 50 years after the introduction of the Nile perch into the Lake Victoria system*. McGill University Biology Honours Symposium; Montreal, QC, Canada.

Poster Presentations

Ackerly K.L., **Chrétien E.**, Fugère V., McDonnell L., Moulton T., **Nyboer B.**, Valverde M., Chapman L.J. (2014, May). *Environmental stressors on inland aquatic ecosystems*. McGill University Biology Department Day Symposium; Montreal, QC, Canada.

Ackerly K.L., Moulton T., Krahe R., Chapman L.J. (2014, May). Just keep swimming: The relationship between critical swim speed and electric organ discharge in weakly electric fishes. Genomes to Biomes Joint Conference with the Canadian Society of Ecology & Evolution, the Canadian Society of Zoologists, and the Society of Canadian Limnologists; Montreal, QC, Canada.

Seminar

Moulton T., Chapman L.J., Krahe R. (2016, April). *Keeping a finger on the pulse of African weakly electric fish: A (continuing) eco-physiology story*. McGill University Ecology and Evolutionary Lunch Series; Montreal, QC, Canada.

PROFESSIONAL TRAINING

Quebec Centre for Biodiversity Science, Montreal, Canada

- Software Carpentry Workshop (Shell, Git, SQL) 2016
- Programming in R, Multivariate Analyses in R 2015

COMPUTER SKILLS

R: Intermediate-advanced programming

- Packages: nlme, lme4, vegan, devtools, roxygen2, magrittr, tidyverse, shiny

MATLAB: Beginner

SQL: Beginner

LEADERSHIP AND COMMUNITY SERVICE

New York State Mentoring Program, Cortland, NY, USA 2017 – 2019

- Mentored elementary school students during weekly sessions

New York Public Interest Research Group, Ithaca, NY, USA (paid position)

- Field Manager - summer canvas to effect responsible climate policies 05/2018 – 08/2018

Biology Graduate Student Association (McGill), Montreal, Canada

- Co-founder and organizer of BGSA Department day 2016
- Event designed to academically and socially integrate the department
- Featured a workshop addressing implicit bias and discrimination in STEM
- Representative to Association of Graduate Students Employed at McGill 2015 – 2016

Daraja McGill, Montreal, Canada

- Co-chair 2012 – 2013
- Organized financial aid for partner grassroots development projects in E. Africa

Women in Crisis Centre, Nairobi, Kenya

- Logistical Support and Outreach Volunteer 05/2012 – 06/2012
- Coordinated with a women's support group and development agencies

Anacostia Watershed Society, Bladensburg, MD, USA

- Intern – Invasive Species Project 05/2009 – 07/2009