



# Samuel Buxton

Wednesday July 31, 2019, by [admin-STEM](#)

## **2010 Chateaubriand STEM Fellow**

**Iowa State University - INRA, Nouzilly & François Rabelais Université de Tours**

### **Toxicology**

Samuel Buxton earned his PhD from Iowa State University, and he was a Chateaubriand fellow in 2010 at INRA, Nouzilly and François Rabelais Université de Tours for 6 months.

### **In which field did you carry out your research for your PhD and what was your specific area of study?**

Field: Toxicology

Area of study: Ion channels as antihelminth drug targets

### **What is your current occupation?**

Human Health Toxicologist

### **Please give a brief description of the work you completed in France:**

I cloned the subunits for nicotinic acetylcholine receptors of a swine parasite, reconstituted and characterized its pharmacology in frog oocytes.

### **How was your experience as a researcher in France?**

I immediately got immersed in the research and cultural (language, food, sites) experience. It was an easy transition for me, although my grasp of the French language was very basic. I exceeded the target for my research plans in France.

### **Comments on your experience as a researcher in France and conditions in your host lab:**

I commuted between INRA, where I performed all the molecular work and François Rabelais Université de Tours, where I performed all the electrophysiological work. This afforded me the opportunity to learn a lot from the University system and a National Research Institute. Both host laboratories went above-and-beyond to make my research successful and provided what I needed to that end.

### **Did or will your research in France lead to any co-publications?**

Two (2) research and one (1) review publications

If yes, please describe (name of journal, date of publication):

Buxton, S.K., Charvet, C.L., Neveu, C., Cabaret, J., Cortet, J., Peineau, M. Abongwa, E. Courtot, N., Robertson, A.P., Martin, R.J. (2014). Investigation of acetylcholine receptor diversity in a nematode parasite leads to characterization of a tribendimidine- and derquantel-sensitive nAChRs. *PLoS Pathog*, 10(1): e1003870. DOI: 10.1371/journal.ppat.1003870. PMID: PMC3907359

S K Buxton, C Neveu, C L Charvet, A P Robertson, R J Martin (2011). On the mode of action of emodepside: Effects on membrane potential and voltage-activated currents in *Ascaris suum*. *British Journal of Pharmacology*, 164: 453-470. DOI:1111/j.1476-5381.2011.01428.x. PMID: PMC3188918

R. J. Martin, S. K. Buxton, C. Neveu, C. L. Charvet, A. P. Robertson (2011). Emodepside and SLO-1 potassium channels: A review. *Experimental Parasitology*, 132(1):40-6.

**Did you or one of your supervisors present your work at a seminar? Do you plan on doing so?**

Yes, I presented the work at several conferences

If yes, please describe (name of seminar, date, type of presentation):

2013 Nicotinic Acetylcholine Receptors: expression in oocytes demonstrates functional diversity in parasitic nematodes. Buxton, SK, Robertson, AP, Martin, RJ. Central States Society of Toxicology (CSSOT) Annual Conference, Ames, IA USA. Oral Presentation.

2012 Diversity of acetylcholine receptors: expression of levamisole receptors in *Xenopus* oocytes reveal pharmacological subtypes. Buxton, SK, Charvet, CL, Neveu, C, Robertson, AP, Martin, RJ. University of Iowa Health Sciences Research Week, Iowa City, IA, USA. Poster Presentation.

2011 *Ascaris suum* SLO-1: Is it a target for the anthelmintic emodepside. Samuel Buxton, C. L. Charvet, C. Neveu, Robertson, A.P. & Martin, R.J. 23 rd World Association for the Advancement of Veterinary Medicine (WAAVP), Buenos Aires, Argentina. Oral Presentation. Paper # 368.

2011 *O. dentatum*: Functional and Molecular Biology of Levamisole Resistance. Buxton S. K., Peineau N., Cabaret J., Cortet J., Neveu C., Robertson AP., Martin RJ., Charvet C. Consortium on Anthelmintic Resistance (CARS) and SNPs, 23 rd WAAVP, Buenos Aires, Argentina. Oral Presentation.

2011 *Ascaris suum* SLO-1 channel, a target for the anthelmintic emodepside. Buxton, S.K., Neveu, C., Charvet, C.L, Robertson, A.P & Martin, R.J. Journées d'Animation Scientifique du Département de Santé Animale, Fréjus Cedex, France. Oral Presentation S2-1.

**In your opinion, did the Chateaubriand Program contribute to closer ties between your US and French labs (why or why not)?**

Yes, it did. Prior to the program, we had not collaborated on a research project with the INRA team. But during and subsequent to the Chateaubriand fellowship, we have worked on various projects together and it resulted in new research directions and capabilities for both the US and French labs.

**Did you improve your French while in France?**

Yes, but unfortunately, being back in the US does not help much to practice what I learned. I find I'm losing the ability to speak French well with time.

**Do you plan on returning to France in the future?**

Yes, and sooner than later. My daughters want to go to the Loire valley region and walk through my experiences with Chateau's, food, shopping, and general friendliness of the people. We are planning a family trip for late 2019 or early 2020.

**Did you participate in any extracurricular activities or travel while in France?**

Yes, I visited a lot of Chateaux (Amboise, Villandry, Chenonceau, etc), restaurants, wine and cheese tasting events, toured Paris, took French classes, watched live soccer games.