

Mentor-Postdoc Spotlight Series 2018



Prof. Iain L. O. Buxton

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With over 40 years of research experience, Dr. Buxton's career in research started with his PhD training at the North Carolina State University (NCSU) in 1974 under the mentorship of Dr. Russel Main in the department of Biochemistry. His thesis was entitled "On the Purification of Cholinesterase".

After NCSU, Dr. Buxton further earned a PharmD at University of the Pacific in California followed by clinical residency at the Veterans Affairs Medical Center in La Jolla and a Postdoctoral fellowship under the guidance of L. L. Brunton at the University of California at San Diego working on Compartmentation of cAMP signaling on cardiac myocytes.

With over a 100 publications in high-impact journals, current research in Dr. Buxton's [laboratory](#) focuses on protein nitrosation regulation underlying the dysfunctional relaxation or preterm myometrium to nitric oxide.

A couple of key publication of interest are:

Buxton IL, Brunton LL. J Biol Chem. 1983 Sep 10;258(17):10233-9. Compartments of cyclic AMP and protein kinase in mammalian cardiomyocytes. First demonstration of agonist specific compartmentation of cAMP that led to the field of inquiry of mechanisms of non-membrane delimited second messenger signaling.

Barnett SD, Smith CR, Ulrich CC, Baker JE, Buxton ILO. S-Nitrosoglutathione Reductase Underlies the Dysfunctional Relaxation to Nitric Oxide in Preterm Labor. Nature Sci Rep. 2018 Apr 4;8(1):5614. doi: 10.1038/s41598-018-23371-w. Discovery of the mechanism underlying dysfunctional relaxation in spontaneous preterm labor in women.

Dr. Buxton's advice to current and future postdocs: *"Your post-doctoral years can be the very best period of time to conduct science and enjoy the relative freedom to discover. Wherever you land after your post doc, there will be increasing demands on your creative time. For this reason, establishing your path and*

*your passions for research while you are young in your career, is essential. There are things to put forefront in your mind if you are to succeed. Choose your mentor on the basis of their humanity and not only their reputation. Those that went before can help you with this. Use your common sense when interacting with PIs; human beings are complicated so keep it about the science. Never tie your future to effects smaller than 20% change. Anything less is very hard to prove. The network that you establish during your postdoctoral years needs to sustain you as you move into an independent position. There is an inherent conflict in training when you are the one doing the work and others are in a position to profit from your efforts. Remember that these are the folks that will review your papers and your grants, so avoid conflicts where you can; look for constructive ways to find common ground. Your freedom to discuss your science and disagree about what the data mean should be cherished. Finally, let me add a strange bit of advice I was given by my postdoctoral mentor: Larry told me not to read too much. It took me a few years to sort that out. It was, after decoding, a very good bit of advice. It means do not expect that every other published article puts to rest your best ideas. You need to do the experiment! Follow the path set by your passions and do not be deterred. Science is by necessity constantly in flux. **Dogma is not always established as firmly as you think**".*

Featured Postdoc



Dr. Scott Barnett obtained his PhD from the University of Nevada Reno, under the mentorship of Dr. Iain L.O. Buxton. His PhD thesis examined 'Intimations on the Pathophysiology of Human Preterm Labor: The Unique Actions of Nitric Oxide in the Myometrium and the Consequences of its Dysregulation'. Dr. Barnett joined Dr. Buxton's group in as a postdoc in 2018.

Please read "[Regulation of Contractile Protein S-Nitrosation in Preterm Myometrium Underlies the Dysfunctional Relaxation to Nitric Oxide](#)" in the May 2018 issue.



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