Investigator Spotlight: The JDRF-nPOD Scientists Who Seek the Cure for T1D

Each month, we highlight one of the nPOD investigators. Thanks to the fundraising of all the JDRF chapters, these scientists are able to have access to nPOD samples for their work. We'll let them introduce themselves, tell you about their research, and their lives.

Sarah Richardson, Ph.D.

(University of Exeter, Exeter, U.K.)

NOTE: Sarah was the first recipient of the "nPOD Collaboration Award" in 2012, recognition for an investigator who is willing to share data and assist other researchers. The award is presented at the Annual nPOD Scientific Meeting. In April 2014, she earned the JDRF Career Development Award, to support her studies on the viral etiology of T1D.

1. Tell us about your education and background. Where are you from and where did you go to school?
I was born in Bedford (just above London) in the U.K. and moved to Cornwall in the Southwest of England in my early teens. I went to school in a small town called Tavistock. There I was inspired by two of my science teachers to pursue a degree in Molecular Biology—which at the time was a relatively new, exciting, and rapidly developing field. During my Bachelor of Science (BSc) degree, I took a year out to work for Pfizer in their research laboratories. This provided me with an incredible insight into research, and allowed me to gain valuable "hands-on" experience in the laboratories—I was hooked!

After completion of my degree, I successfully applied to the British Heart Foundation for the funding to do a Doctorate (Ph.D.) degree. I focused my attention on understanding how endothelial cells (the cells that line your blood vessels) die inappropriately under some circumstances, such as atherosclerosis, or reproduce inappropriately, as when new vessels grow into tumours. Post-Ph.D., I have worked in several laboratories in the U.K. and Australia. My research has always focused on understanding, one way or another, how cells, inappropriately dying or not, can impact a disease. In early 2007, I began working with Professor Noel Morgan on type 1 diabetes.

2. **Where do you currently work and what is your position? What does a "day in the life" look like for you?**
I am a recently appointed Lecturer/Research Fellow at the newly-formed University of Exeter Medical School, in Exeter (Southwest England). A day in my work life involves an early start! I drive 1-1.5 hours, plus cycle a short way – to get to work…great thinking time!

I'm at the point in my career where my time is split between both the laboratory (my real passion) and my office. In the laboratory, I spend a great deal of time analyzing pancreas samples from individuals with type 1 diabetes, to try to better understand the disease. My time in the office is spent applying for funding to continue my research, writing up work I have completed, and mentoring Ph.D. students. I also spend a lot of my time communicating with other researchers in my field. I find this to be one of the most rewarding and exciting parts of my job. The JDRF-funded nPOD initiative has really encouraged and supported this type of communications between groups.

3. Why diabetes? How did you get involved, and what made you want to work in diabetes research?
When I started my job with Professor Morgan, one of my first tasks was to catalogue the tissue samples within the laboratory. I vividly remember writing down the details of children who had sadly passed away after diagnosis of type 1 diabetes. I had just had my first little girl a few months beforehand, and I recall a huge sense of sadness at this loss of young lives. It was at that point I said to myself that I would do all I could to use these samples to learn as much as possible about this devastating disease. I feel that developing a better understanding of the disease will, in the end, pave the way to improved treatment and possibly prevention in the future.

4. Tell us about your research.
Using bio-banked pancreatic tissue from individuals with T1D, at-risk of getting diabetes, and from non-diabetic controls, our group is developing an understanding of the underlying disease process in the pancreas. Essentially, we are focused on two main areas:

1. *Characterize the different immune cells that are invading the pancreas, and destroying the insulin-producing beta cells.*
2. *Determine whether viruses (especially enteroviruses) have a role to play in the destruction of the beta cells.*

5. What are your thoughts on the progress being made in T1D as a whole?
Personally, I feel that the community as a whole has taken great strides forward in developing our understanding of the disease. I believe that the access to pancreas samples, through nPOD and other cohorts, has been instrumental in our understanding. This, coupled with collaborative working groups, such as nPOD-Virus, that bring together scientists with expertise from very different areas to tackle common questions, has really helped the field to progress in ways that would not have been possible with individual groups working alone.

6. Why is diabetes research so important?
Without research, we cannot hope to understand this disease better. Without understanding this disease better, we cannot hope to prevent or improve treatment of T1D—simple really.

7. Do you have anything else you would like to share? Is there anyone to thank or acknowledge? Can you comment on the need for funds from sources such as JDRF?
I am lucky enough to have a wonderful, dedicated, and fun team around me. Professor Noel Morgan, my mentor, is a true inspiration; his calm and gentle nature hides a quiet determination to better understand this disease. I would also like to acknowledge the team at nPOD—they are efficient, warm, extremely helpful…and fun!

8. When you're not working, what do you like to do for fun?
I have a young family—a husband and two girls—and love nothing more than to venture outdoors with them. We like to picnic, ride bikes, or go out in our Canadian Canoe. I also enjoy road cycling, and hope to complete my first Sportive: 65 miles over Dartmoor this summer!

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For more information about nPOD, please visit our website: www.jdrfnpod.org

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