



FRESH PERSPECTIVE

BHF PhD studentships are inspiring a future generation of cardiac researchers. Sarah Kidner discovers how the experience shaped them

Recent BHF PhD graduate Dr Kathryn Garner (pictured) has a unique approach to scientific research, inspired by her love of fine art.

Kathryn's passions for science and art have always run in parallel. "A long time before my BHF journey began, I excelled at biology GCSE. I was also very skilled at drawing and painting. My dad's an artist and all my teachers expected me to do art. I really didn't know what I'd do with science," she says. "For A-level, I took art, geography and physics but, despite feeling the desire to take an academic subject to degree level, I opted to take a BTEC Foundation Diploma in art instead."

Scientific inspiration

On completing her foundation course, Kathryn went on to take a BA Hons in fine art at University College Falmouth. The college had adopted a "post-modern" approach to art that "encouraged students to find out what really interested them", she says.

In Kathryn's case, this was science. "I spent a lot of time in the library. I found my inspiration in pictures of cells and drawings in the textbook *Gray's Anatomy*," she says. "In my first and second years at art school I created many cell paintings."

On graduating, Kathryn took a job working in a farm packaging live insects for the exotic pet industry with a view to funding her own art studio. From there, she moved on to a role in a lab that involved freezing sperm for use in London-based fertility clinics.

"Here I was working with biological cells and I was inspired to carry out a series of science A-levels in my spare time," she explains. "My thirst for knowledge didn't waver and this led me to a BSc in molecular cell biology at University College London."

As an undergraduate at UCL, Kathryn became interested in a specific family of proteins. She focused on one member of this protein family called RdgB-beta, which appeared to be important in terms of regulating blood pressure. Her supervisor, Professor Shamshad Cockcroft, drafted a grant application and the BHF awarded Kathryn a PhD studentship in 2008.

Kathryn has now combined her passions for art and science. "My artwork informs my scientific work," she says. "It makes me think outside the box and motivates me. When I was working with proteins, I'd draw stuff out or think what it would be like if I made a clay model. That's how the questions come."

It's a quality appreciated by her former supervisor Professor Cockcroft. "Every time we would discuss an idea, Kathryn would turn it into a picture," she says. "All PhD students bring something different. They are more open to ideas and more willing to try new things."

BHF-funded PhDs, like the students who secure them, are also special, says BHF Professor David Newby, who began his long relationship with the BHF as a PhD student. "Often, other organisations fund the person and not the project. The BHF pays for the project and the person and makes sure they are more aligned, which is a far more effective way of doing things."

£30m

The amount the BHF is currently investing in PhD students

"Plus there's the kudos that comes from a BHF grant. You have to compete for it. You have to step up to the mark and get a good project together. The BHF studentship application process is rigorous."

Detective stories

Were it not for having his curiosity piqued by his own PhD studentship 12 years ago, Professor Newby says he might never have pursued a career in research. "My BHF PhD was best thing that ever happened to me," he says. "Research is unpredictable, it's like a detective story where you don't know what you'll find until you get to the end of the book. The PhD gave me exposure to that and got me hooked on research."

Professor Newby is now one of the lead researchers working in the Scottish Centre for Regenerative Medicine (part-funded by the BHF's Mending Broken Hearts Appeal). He is currently researching how blood vessels and the heart react in disease, particularly in heart attacks and heart failure.

Kathryn, who has completed her PhD, is now working in the lab of Professor Paolo Madeddu at the University of Bristol in another BHF-funded position, but would like to set up her own lab one day. She says she is "well on the cardiovascular path now" and is also currently working on a new science-inspired exhibition. ■

1,000+

The number of PhD students who have benefited from BHF funding over the past 40 years

43%

The percentage of three-year PhD applications that we accepted in 2012

Research images

To see examples of Kathryn's paintings, including her cell pictures, visit bhf.org.uk/HMkathryn. The BHF's annual Reflections of research competition strives to find the most beautiful images from our scientists' life-saving research into heart disease. Cast your vote in the BHF supporter category at bhf.org.uk/reflections.