SULSA
Scottish Universities Life Sciences Alliance

POST-ACADEMIC CAREERS CASE STUDIES

ENTREPRENEUR

FOUNDER NOVOSOUND

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Dave Hughes

Since completing your PhD what jobs have you had?

Post-doc Research Assistant at the University of Dundee Centre for Developmental Biology in a project that developed ultrasound devices for the manipulation of cells. Typically investigating dictyostelium discoideum and chicken gastrulation. After that, I took on a Post-doctoral Research Fellowship at University of the West of Scotland to investigate new methods for high resolution ultrasound imaging. After 3-4 years, I made a step change in the technology and was awarded £500k of Scottish Enterprise funding to commercialise the research and create the University's first spin-out Novosound. Myself and Richard Cooper, the commercial Champion of the SE grant, went out for investment and closed a seed round of £1.5M in April 2018. This created Novosound as a private venture and set-up the business at Biocity in central Scotland with Richard as CEO and myself as Technical Director (CTO).

What does your current job entail?

At Novosound, we push the limits of ultrasonic imaging and measurement by exploiting thin film technologies in untapped and current markets. Plainly, we sell sensors. As the Technical Director and founder, I oversee the technical roadmap and vision for the company, including building a world-class team of engineers, physicists, project managers and other key team members. I am still very hands-on in the technical department, providing guidance on the science and engineering sides of our projects, and I am also acting as the lead commercial contact in the business due to the heavily technical sale aspect of the role. As a SME, we have grown the company from our initial 6 members of staff to a team of 14 highly driven individuals and have been named as one of the Top 10 Start-Ups in Scotland.

What is the best part of your current role?

The best part of the job is the impact that we are making with research that was created in the university laboratory. To date, we have shipped 16 probes comprising of our novel technology, and to know that other researchers and companies are using them in their work and products is a great feeling. I also enjoy the challenge of keeping the business running, the large amounts of global travel, and the excitement of not knowing what each day will bring.

What top 3 qualities are required for your job?

1 Determination and a belief in your technology

2 A people person who can communicate complex ideas plainly

3 Excitement to convince people to take a chance on you and your business

"As a doctoral student, you can be too focused on the career path that remains inside the university systems..."

Dave's Advice

I wish I had paid more attention to the Commercialisation and Intellectual Property courses that were given to me during my EngD/PhD studies. As a doctoral student, you can be too focused on the career path that remains inside the university systems, and with that you lose out on seeing the bigger picture. This includes the large (majority?) amount of research that is carried out in private companies and institutions that is changing the world around you without publishing a single REF'able paper!

PhD Studied
EngD Medical Devices
University of Strathclyde

PhD Completion
2009

Current Job
Founder & Technical Director
Novosound

MANAGING DIRECTOR

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Thomas Aspray

Since completing your PhD what jobs have you had?

After my PhD, I moved to Warwickshire to undertake a post doc in environmental microbiology (2004-2005). Towards the end of this I applied for positions both in academia and industry and finally decided the best fit for me was a knowledge transfer partnership project – working in industry and academia. The project was between Edinburgh Napier University and a soil and groundwater remediation contractor (ERS Ltd) based in Glasgow. After the two year project was complete, I stayed on with ERS as a remediation scientist and was promoted to Technical Manager in 2010. I was then looking for a new challenge and opportunity to do more research and so left ERS to take up position of assistant professor at Heriot Watt University in 2012. After 6 years, I left HWU to setup my own company Solidsense Ltd in 2018 and have returned to work part time for ERS Ltd.

What does your current job entail?

Setting up my own company Solidsense Ltd last year it has been a busy and very exciting time time. Starting out on my own, I have to do everything from delivering projects, finances, marketing, service development etc. I also have a part time job at ERS Ltd where I design remediation solutions (particularly for contaminated soils), lead innovation and research projects and running the laboratory I built in the KTP project.

What is the best part of your current role?

Both in Solidsense and ERS, I like developing new things e.g. new services/solutions, laboratory protocols/methods, training courses. I also like problem solving and interdisciplinary projects – working with scientists and engineers in particular.

What top 3 qualities are required for your job?

1 Attention to detail

2 Problem solving

3 Ability to communicate with scientists, engineers and people with non-technical backgrounds

"As a PhD student it took time to find the right direction to go in. I tried lots of different things & techniques - many of which didn't work"

Thomas' Advice

As a PhD student it took time for me to find the right direction to go in – I tried lots of different things and techniques – many of which didn't work but I learn't a lot through the process. I think my PhD was invaluable in teaching me how to work independently and strat to develop myself as an independent researcher. The postdoc was just over a year so short but I was able to be quite productive in terms of outputs in this period which was. The move to the KTP project was seen as a risk by some people I knew at the time; however, it enabled me to develop business skills and had loads budget for training opportunities which was great. My tips then are; 1) to move if you can – broaden your network and build on skills quickly, 2) take calculated risks (when you can).

PhD Studied	PhD Completion	Current Job
Microbiology University of Kent	2004	Managing Director, Solidsense Ltd

OUTREACH MANAGER

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Lissa Herron
@Biotech_Lissa

Since completing your PhD what jobs have you had?

I had a one-year research assistant position in my PhD lab after submitting my thesis, then moved on to a post-doc in neuroanatomy, studying synaptic changes in the spinal cord of a mouse model of motor neuron disease. While the results were interesting, I felt frustrated knowing that my findings were unlikely to have an impact any time soon, possibly not even in my lifetime.

I decided to go back to the biochemistry roots of my undergraduate degree and went for a more applied post-doc project making transgenic chickens that expressed recombinant proteins in their egg white at The Roslin Institute. This project was amazing, and at the end of my first contract, we were awarded a BBSRC Super Follow-On Fund to de-risk early commercialisation of the technology. I then completed an RSE Enterprise Fellowship that took me out of the lab to develop business skills and found I didn't really miss the bench as much as I expected. My project was spun into a company that had been formed to commercialise projects from Roslin, so instead of becoming CEO of a spin-out, I became head of a business unit. After about a year getting the business unit going, I decided to move on to new challenges, as I missed the entrepreneurial world I had been part of during my fellowship.

What does your current job entail?

Converge is the leading entrepreneurial development programme for Scotland's universities and research institutes, helping to support company formation by students, recent graduates and staff of all of these institutions. We provide training, support, and, in the competition element of our programme, prize money to two winners in each of our 4 categories. As part of the Enterprise team, I get to travel all over Scotland to tell people about Converge, recruit applicants, help people with their applications, organise training and business surgeries, support participants with their business plans and pitches, and engage with our alumni to further support them after they've been through the programme.

What is the best part of your current role?

Pretty much my entire job description is my favourite part! I get to see all the new and exciting projects coming through Scottish universities, meet interesting people, see the country- what's not to love?

What top 3 qualities are required for your job?

1 Outgoing

2 Proactive

3 Organised

I've got the first two down, but still working onthe third!

"I wish I had known more about commercialisation as an option for delivering impact"

Lissa's Advice

I wish I had known more about commercialisation as an option for delivering impact from an earlier stage in my career. I was a post-doc for nearly a decade, but as I knew from an early stage that I didn't want to stay in academia, I probably would have pursued other directions at the early post-doc stage. There are lots of ways to get involved in research commercialisation and entrepreneurship: most universities will have a student society or similar avenue for people interested in entrepreneurship, and there are events like bootcamps, competitions, and accelerators to help with generating ideas and developing business skills. Apply to work on projects that have clear translational/ commercial potential, and then apply for Converge!

PhD Studied
Neurobiology
University of St Andrews

PhD Completion
2008

Current Job
Enterprise Outreach Manager
Converge

CEO CAUSEWAY THERAPEUTICS

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Derek Gilchrist

Since completing your PhD what jobs have you had?

I had a very simple, if long route to my current role. Prior to becoming the CEO of Causeway Therapeutics I was a post-doc at Edinburgh and Glasgow Universities for more than 15 years.

What does your current job entail?

As CEO of Causeway Therapeutics I oversee the clinical development of novel drugs targeted musculoskeletal diseases in human and animal patients. My role of CEO means that I have overall responsibility for the day-to-day running of the company including roles ranging from strategic direction, scientific/technical, financial and recruitment. I work daily with our key stakeholders to execute our current clinical development program, identification of new therapeutics opportunities, securing funding, both grant and equity investment, necessary for the ongoing development of Causeway's pipeline of therapies. As Causeway outsources much of the pre-clinical studies and manufacturing I work closely with our CRO and CMO in the pre-clinical development of our lead therapy TenoMiR.

What is the best part of your current role?

For me, the best part of my job is making progress towards goals. Each time I can cross something off of the list is taking Causeway closer to achieving our goals.

What top 3 qualities are required for your job?

1 Problem-solving. Rarely a day goes by without one problem or another arising. Having the ability to solve these problems creatively is key. This, more often than not, involves working collectively with the team, external consultants and CRO/CMO to arrive at solutions that keep our ambitious programs on track.

2 Enthusiasm. You need to be able to communicate your enthusiasm to stakeholders, including, investors, team members, funding bodies and external consultants. Keeping everyone engaged and excited about our goals is a crucial element for future success.

3 Resilience. Being the CEO of a start-up is a trial by fire; nothing can prepare you for challenges ahead. It is a cliché, but starting a business really is a roller coaster.

"The great thing is that Entrepreneurship, unless you're Elon Musk, isn't a rocket science, it is something that can be taught."

Derek's Advice

I wish I had been exposed to Entrepreneurship earlier in my career. Entrepreneurship is about recognising opportunities, evaluating them and creating a plan to develop, fund and grow these opportunities into something that can be world-changing.

I believe that Entrepreneurship should be a core subject in every undergraduate degree. Learning the basics empowers you to recognise the Entrepreneurial opportunities that surround you.

The great thing is that Entrepreneurship, unless your Elon Musk, isn't a rocket science, it is something that can be taught. As scientists, we already have the communication skills and inventiveness that are required for success. Add self-belief and tenacity to the mix and you have everything you need to be a successful entrepreneur.

PhD Studied	PhD Completion	Current Job
Molecular Biology Liverpool University	1998	CEO Causeway Therapeutics

FOUNDER COGNIHEALTH

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Pooja Jain
@pooja_psj @Cogni_Health

Since completing your Masters what jobs have you had?

I started working on the idea of CogniHealth after I completed my Masters. My thesis was assessing the role tau in memory loss during Alzheimer's and I knew I had an interest in this area but wasn't sure what the next step for me was. Just before I graduated, I had spoken to a few carers and for the first time was exposed to the challenge's families were having with post-diagnostic care. I realised how distant I had been from the realities of the condition during my research. Soon after my grandfather was diagnosed with Vascular Dementia. I was determined to use my scientific background to help families that were affected by dementia. I had a vision in mind with a vague idea.

Before the company was formally registered and I started working on CogniHealth full time, I worked as a professional carer for the elderly, where many of my clients were affected by dementia. This helped me better understand the varied relationships families have with dementia. It also helped shape the idea. I then worked as a consultant for the digital team at Alzheimer Scotland, which was also vital to developing our solution, CogniCare.

What does your current job entail?

My role at CogniHealth focuses on product development, external engagement, and business development. During the last three years, I led a team that created CogniCare – a digital companion for carers of people with dementia. I continue to work with affected families, healthcare professionals and researchers to improve CogniCare. I also have an external facing role in establishing partnerships with charities, voluntary groups and service providers as well as giving talks at conferences and relevant events to raise awareness of our work. Additionally, I look at building a sustainable business.

What is the best part of your current role?

Professionally, the best part is seeing our product support families all over the world live better with dementia. Personally, the best part is the steep learning curve – the exposure this role as given me has widened and strengthen my skill set.

What top 3 qualities are required for your job?

1 Passion – You need to fall in love with the problem you are trying to solve.

2 Determination – You need to be comfortable with failure.

3 Proactive – You need to be creative in seizing opportunities.

"You don't need to know everything, you'll always be learning on the job"

Pooja's Advice

1. Network early, having the right connections, mentors, team and support system is very important – so don't be afraid to approach people, the worst they can say is no.

2. You don't need to know everything, you'll always be learning on the job and there are enough people, programs and accelerators to learn from along the way –University is a great starting point, they'll have a department that supports start-ups and spin-outs.

3. Things take longer than you think, so be patient, persistent and realistic with your milestones.

4. There are going to be A LOT of 'no's' and ' lows', learn from failure and take time to enjoy the successes.

5. You're going to be challenged and out of your comfort zone, embrace it!

Studied
MSc Integrative Neuroscience
University of Edinburgh

Masters Completion
2017

Current Job
CEO & Founder
CogniHealth

FOUNDER VIVOMOTION

SULSA
Scottish Universities Life Sciences Alliance

Mhairi Towler
@vivomotion

Since completing your PhD what jobs have you had?

Since completing my PhD, I have carried out 3 post-doctoral positions at The University of California and the University of Dundee. While carrying out these posts I was interested in the visual side of data produced in the lab and spent a lot of time doing microscopy work and considered myself as a photographer of the micro world. Therefore, when an opportunity arose to do a SciArt project I jumped at the chance. This was the "Designs for Life Project" which involved working with a printmaker to make art works based on our lab data, with a view to starting discussions with the public about science and art. This work has now been shown in galleries Internationally. This project fuelled my creative side and sparked an interest in further outreach projects.

At this point in my career I was completing a postgraduate certificate in Teaching and Learning in Higher Education and I had to address how to make my lectures more engaging. I thought animation would be a good idea, as I was teaching dynamic cell biological processes. I collaborated with an animator and we won a prize for innovative teaching. I spotted a gap in the market to help scientists communicate using animation, so decided to retrain with a Masters in Animation & Visualisation. I launched Vivomotion, a science animation company in 2012 and have never looked back!

What does your current job entail?

I now run Vivomotion (www.vivomotion.co.uk). This involves everything from press & marketing, accounting, project management, business development, networking, self-development & delivering training workshops. The skills required to run a business are not dissimilar to running a research lab. There is a lot of juggling involved!

When we get a new animation client, we work with them in a collaborative nature to bring their ideas for an animation to life. This involves script writing, storyboarding, animation production and delivery of the final solution.

I have also developed a suite of workshops to train postgraduate students about the visual presentation of their data. Everything from poster presentation to data visualisation. I enjoy this interaction with students and sharing nuggets of wisdom with them that I wish I had known when I was a PhD student.

What is the best part of your current role?

Seeing the results – when the animations we have carefully produced deliver on their communication promise. It is very exciting to see clients using our animations on stage at international conferences to help them talk about their research.

I also really enjoy working with postgraduate students to help them dig deep to hone their visual communication skills. It often surprises me just how talented and creative they can be!

Finally, I have been lucky to meet so many wonderful people from different walks of life. My job spans the academic, business, tech & creative industries sectors. These interactions give me a unique insight into different worlds, which wouldn't have happened had I stayed in academia.

What top 3 qualities are required for your job?

1. Discipline
2. Resilience
3. Creativity

Mhairi's Advice

If you want to pursue a similar career path to myself I would get some training in the arts and business. This could be done part-time or perhaps even as a night class to test if you really enjoy it. Business Gateway offer many free workshops if you are interested in starting your own business. There are now many companies that specialise in graphics for scientists and having a scientific background would give you the edge over generic artists.

I wish I had known more about visual communication in science. If I had known about it as an option for a career I would likely have gone down that path sooner.

PhD Studied
Cell & Molecular Biology
University of Dundee

PhD Completion
2000

Current Job
Founder & CEO
Vivomotion

FOUNDER COUTO PHOENIX

Jillian Couto-Phoenix
@JCoutoPhoenix

Since completing your PhD what jobs have you had?

Following my PhD, I moved to Glasgow with my partner and took up my first postdoctoral position within the Faculty of Biomedical and Life Sciences (now MVLS), working on a project in human molecular genetics. Following this, I discipline-hopped into environmental engineering in the School of Engineering at the University of Glasgow. This was a very big change in subject areas and I wrote a short blog post for the Engineering and Physical Sciences Research Council about this. If you are interested: https://epsrc.ukri.org/blog/discipline-hopping-a-gateway-to-increased-creativity-or-mainstay-of-the-indecisive/

Compared to the life sciences, engineering was a very different environment You develop a bigger awareness of different commercial companies and research projects will often involve industrial project partners. With respect to my research, I was now working in the area of environmental biotechnology (genomics was my cross-over) and could pursue research with a greater level of independence. Among other things, this gave me the freedom to forge collaborations with other researchers. One such collaboration led me to work with social scientists on the topic of responsible research and innovation. I ended up being one of the few people at the University of Glasgow with this knowledge and got asked to develop some training for a cohort of PhD students. My background as a STEM researcher enabled me to put a unique spin on a topic that is mainly a piece of research governance. There is currently an interest for training in this topic in th UK Higher Education sector, so I decided to finish off my postdoctoral contract and start my company.

What does your current job entail?

Product development, marketing and business development.

What is the best part of your current role?

I really enjoy delivering the training workshops. I also like exploring new tools to engage the students with.

What top 3 qualities are required for your job?

1. Resilience
2. Creativity
3. Willingness to try new things

Jillian's Advice

Although I am not sure discipline hopping is for everyone, it certainly enabled me to develop an awareness of different areas of science and innovation. Moving to engineering also helped me learn about the route from research to innovation. Some tips: (1) Keep an open mind and think about who (e.g.: industry, policy, other sectors) might be interested in your research area. (2) Know the big picture, i.e.: where is your research area/field headed? And do you like, or rather, can you exploit any of these directions? (3) Do an inventory of your skills and think about tangible examples of how you demonstrated these skills from your job experience. If you find there are skills you would like to acquire, attend a staff development course or ask at your P&DR. (4) Don't underestimate your transferrable skills. Instead, learn how to talk about them. The Vitae website is a good resource for this. (5) Sign up for job alerts as soon as you can. Even if you don't apply/aren't on the market yet, read the advertisements to give you an idea of jobs you would and wouldn't do.

"Don't underestimate your transferrable skills. Instead, learn how to talk about them"

PhD Studied
Human Genetics
University of Toronto

PhD Completion
2008

Current Job
Founder
Couto Phoenix Consulting