BIOSCIENTIST
The Salford Biomedicine Society Magazine

Soaring High: From Salford to Scotland, to the States and Southampton

Dr Ali Roghanian, in conversation with Sara Alnasir Kassam

Abstract

Dr Ali Roghanian, Associate Professor in Cancer Immunology and Immunotherapy at the University of Southampton, is a University of Salford alumni (1998-2002). He sat down with co-editor-in-chief Sara Alnasir Kassam to talk about his career thus far. Sara and Dr Roghanian discuss the ups and downs of a career in academia and scientific research and explore how crucial Salford was in Dr Roghanian's journey.

Sara: Can you tell us about the main origin point of your career?

Ali: I have always been interested in scientific research, particularly translational research, which means my work can contribute to developing therapeutics used in the clinic that will hopefully directly benefit patients. I think what initially inspired me was my dad, who was a scientist and a university lecturer back home in Iran.

Sara: Let's talk about your transition to Salford. What was it like when you first started at Salford? What were your first memories?

Ali: After arriving to the UK at the age of 14, I initially lived in Sheffield, where I went to high school. As you'd expect, it was a bit of a struggle at first. There were cultural differences and the language barrier. In addition to the GCSE core subjects, I was keen in design and technology disciplines, and in fact did my work placement in an architecture office! However, for my A levels I selected science over arts, which somehow surprised my teachers! It was a decision that was made based on my growing interest in biology and chemistry, and my aim to become a scientist.

I wanted to study at a good university, and Salford was a very good choice, as it had a strong Biological Sciences Department that had achieved 24/24 in the national Teaching Quality Assessment. So, I moved to Salford to study for a BSc (Hons) degree in Biochemical Sciences (with industrial placement). I chose this degree because it's a broad subject offering a mixture of modules that cover anything from biology and immunology to pure biochemistry and biomedical sciences. It was a very friendly university, and we had fun and interactive sessions with the academics, many of whom I still remember to this day and am very grateful to; in particular those who inspired me during my studies, including but not limited to Drs Thomas, Moore, Butler, Rogan, Foster and Wakeford. The approachability of these excellent educators gave me inspiration to achieve my goals, as they were very supportive.

Sara: What was the transition like from Salford to Edinburgh? What made you decide on your speciality? What made you choose what you did?

Ali: In the final year of my degree, I started looking for postgraduate courses and managed to get a few PhD interviews. I think having a PhD qualification in our field will help you accelerate your career prospects. Dr Thomas, one of my favourite biochemistry lecturers, at the time said: "*you'd need to go and visit the university, and ideally the labs, as you don't want to end up somewhere you don't enjoy working at*". The University of Edinburgh was amongst my favourite destinations, so I contacted a number of academics there. One of the

DOI: https://doi.org/10.57898/biosci.192

group leaders I met particularly liked my CV, as it aligned with their research interests, and he subsequently supported my application to join his laboratory at the Centre for Inflammation Research.

Because of the nature of my sandwich year project that I did at the Department of Genomic Medicine, University of Sheffield, and the modules we were doing at Salford, I had developed a strong interest in immunology. And again, my dad's background was influential, as he was also a lecturer in immunology and microbiology. That directed me towards this field at Edinburgh. The Medical School at Edinburgh has an excellent reputation in the field and is very research orientated. At the time, Salford wasn't a research university; it was mostly a teaching university, so naturally it was a significant change. Many of my peers had more prior knowledge and experience than me and had been exposed to more research and lab-based projects. However, this did not phase me and despite initially needing to work harder to catch up, I was able to be competitive. Nevertheless, with the help of my supervisors, I managed to successfully navigate through my postgraduate studies, and my PhD thesis contributed to a few peer-reviewed papers, review articles and book chapters, which I'm very proud of.

Sara: When you got to Edinburgh, how did you overcome imposter syndrome, given that your origin was from a small university?

Ali: I had this goal ever since I moved to the UK. I just said "I want to have a PhD by the age of 25-26; I want to do this." I had a journey plan and a goal in mind from the beginning. This goes without saying that there are usually obstacles and occasional failures along the way, but if you stay focused and work hard you can succeed. It helps, of course, if you have tenacity, persistence and patience. I believe having a positive attitude and resilience can immensely help you achieve your goals. Once you start making accomplishments along the way, then you feel less and less like an "imposter" and gain the much-needed confidence and momentum to push you towards and even beyond your set targets.

Sara: You go from England to Scotland, and then back to England and now to the United States at the Massachusetts Institute of Technology (MIT), which is amazing. How did you end up at MIT?

Ali: I finished my PhD at Edinburgh around 2006 and planned to go to the US. But then, for personal reasons, I decided to stay in the UK and got an offer to do my postdoctoral research at the Department of Pathology in Cambridge University (2006-2008). I then worked as a Senior Study Manager at a contract research organisation in life sciences outside Cambridge for a year. I learned a lot during this period but my heart was still in academia. So, I decided to switch back with the longer goal of becoming an academic and a principal investigator (PI). I wanted to lead my projects and design the next generation of therapeutics based on the knowledge that I'd gained so far. I was specifically interested in monoclonal antibodies and cancer immunotherapy research, in which Southampton has a long history. Hence, I applied for a job vacancy at Southampton and was successfully accepted as a research fellow in cancer immunotherapy. As part of my project, we collaborated closely with a biotech company and characterised a panel of monoclonal antibodies using bespoke preclinical models available at Southampton, helping them select the lead candidates for clinical trials. Parallel to this, I started my own projects by looking at other targets for cancer therapy. Cutting edge research heavily relies on the latest technology and preclinical models and is also very costly (hundreds of thousands). Hence, through a very competitive Blood Cancer UK (BCUK) Visiting Fellowship, I went across the Atlantic and worked at the Koch Institute for Integrative Cancer Research in MIT.

Sara: What was the move from England to the States like?

Ali: Although I was very excited with the prospects of experiencing life as a scientist in the US, when I arrived, I realised there were a lot of differences, and again, the way of life was quite different to that of back home in the UK! Nonetheless, I thoroughly enjoyed working with an excellent group of fellow scientists and got exposure to a lot of fantastic science, and was trained in cutting-edge techniques.

Sara: What made you then transition back to England and to Southampton? What made you come back home?

DOI: https://doi.org/10.57898/biosci.192

Ali: Well, it was part of the agreement that I had with BCUK and Southampton, that I would return to establish my independent group as a lecturer. While I was away, a new centre was being built at our medical campus that provided the ideal place to do cancer immunology and immunotherapy research. The Centre for Cancer Immunology opened its doors in 2018. It brings together interdisciplinary teams, including fundamental immunology researchers, clinical oncologists, pathologists and clinical trial managers, to train the next generation of scientists and develop new cancer treatments. Therefore, despite enjoying my time in the US, it was very exciting to return home.

Sara: Your journey was not linear at all. It was very much up and down; how did you deal with that?

Ali: In science, they say that mobility is very important. If you stay in one place, you will learn, but your knowledge is likely to be limited. By being at Salford, I learned the basics of biochemical and biomedical sciences. Then, during my placement year at Sheffield, I learnt the techniques and the basics of doing research in a laboratory setting, and, of course, Edinburgh broadened my horizons. But again, when I went to Cambridge, Southampton, and US, each had their unique features and environments. Had I stayed in one place, I wouldn't have been exposed to such different cultures and environments.

Sara: As you have moved around, it has been quite chaotic. Still, I'm pretty sure it's shaped you into who you are as a scientist; let's transition to your academic life. What was the journey to that stage?

Ali: Doing research as a young scientist can be quite intense. You're expected to put in a lot more hours, have fewer holidays, and be very competitive. I learned several very useful techniques in my previous jobs and then at MIT, before returning to Southampton after the end of my secondment in the US. Setting up my independent laboratory here at Southampton was initially difficult and time-consuming but very rewarding.

The main part of becoming a PI is mapping your research activities, developing new ideas and importantly applying for and managing your funding. You must stay updated with the literature and write and submit many grant proposals, most of which are typically rejected! Overtime, I was awarded more and more research funding, and I currently co-supervise 8 PhD students, and a postdoctoral research fellow.

Sara: What is it like when you're teaching? Do you enjoy that?

Ali: Teaching is also a fundamental part of academic work, and it's quite rewarding to teach undergraduate and postgraduate students. Drug development and discovery, preclinical models, and immunology and

DOI: https://doi.org/10.57898/biosci.192

cancer immunotherapy are some of the topics that I normally lecture on. It's always very rewarding when the students start asking questions during my lectures or when they tell me how much they enjoyed the topics.

Sara: What is your life like outside of the university, outside of your lab? How do you manage to maintain a work-life balance?

Ali: I have a number of hobbies, including travelling and sports, which I keep up with as much as I can. But truth to be told, I didn't always maintain a healthy work-life balance in my early days as a scientist, as I often had to work long hours or at weekends. Specially, in the US, sometimes people were working throughout the day and night, and did not take a single day off for months! So, as you can imagine it isn't always easy to start a family. While working in the US, in my spare times and holidays, I got involved with a lot of sports activities, such as football, volleyball and hiking. I also visited different corners of the US, many of which were truly spectacular and breathtaking. These days, in addition to my travels, I spend more time with my family and friends as well as going to the gym and visiting the local nature reserves, such as the New Forest and Jurassic Coast. Overtime I have learned to become more efficient with my time and to balance work and family commitments.

Sara: In the harder times, there are always ups and downs, especially in the scientific life when things don't go as expected. What keeps you going? What is your main motivation?

Ali: There are a lot of times when you get disappointed when doing discovery and translational research. Scientific research involves more failure than success; it's like you go one step forward and two steps back! It's a very, very slow process but you should keep your goals in mind and persevere. Despite all this, there are many reasons that motivate me to continue with more impetus, including making new discoveries and helping treat patients, as well as training young scientists and students and being part of their journeys, while studying at the University and beyond.

Sara: Let's discuss your future. You're in Southampton now. Are there any further plans?

Ali: It's almost 15 years since I first moved to Southampton, a place that I've since called 'home'! I'm very happy here, and the Centre for Cancer Immunology is an amazing place to be working in, alongside some of the most amazing people. In general, our University provides a nurturing and supportive environment to its students and staff, and I thoroughly enjoy doing my research and lecturing here. As part of my duties, I also work and collaborate with other institutions, biotech and pharmaceutical companies. Additionally, I occasionally work with national and international organisations, such as reviewing grant applications for cancer societies/charities, or peer-reviewing manuscripts for publication in scientific journals.

Some of the work I've done has resulted in new investigational medicines, which have now been through a number of successful early clinical trials. You can see my work by following the links below:

- Impact of Work Done At Southampton On Clinical Trials
- Immunotherapy and My Work With FcγRIIB
- Celebrating Receiving Approval From The US FDA Organisation To Carry Out Research

My future plan is to continue to contribute towards developing treatments for cancer patients and improve people's quality of life.

Sara: Lastly, if you could journey back in time to the Ali who attended Salford, sit down and chat with him based on your journey; what advice would you give him?

Ali: I'd advise him to relax and enjoy the moments more! But also, to seek help and support by engaging more with his lecturers and peers, both at personal and academic level. Building strong relationships is an integral part of a successful career. Next, I'd advise him to have clear short-term and long-term 'SMART (specific, measurable, attainable, realistic and time-bound) goals'; and to determine them by talking to as many people as possible and exploring different options and avenues. Lastly, I'd tell him to "*keep going and have the tenacity needed to get you through the challenges that life throws at you.*"!

DOI: https://doi.org/10.57898/biosci.192

That consistency is important. Undoubtedly, there will be ups and downs, but you need to be quite adamant about what you want to achieve, seek help when in need, keep up your faith and never give up easily, even if you have to start all over again!

Thank you very much for this interactive interview, Sara - you're all doing a great job with your Bioscientist Magazine. Here's one of my favourite quotes from Jay McLean to end this conversation with:

"*Be strong when you are weak, brave when you are scared, and humble when you are victorious*."

Sara: Thank you so much, Dr Roghanian, for providing insight into your career journey. Thank you for teaching us not to give up, to keep going, and to aim high.

DOI: https://doi.org/10.57898/biosci.192