

# Does Higher Education in Greece prepare the next generation of scientists for alternative careers?

## Thoughts of a Greek ex scientist and UK based Business Development professional



**Eleftheria Ledaki**

Άλληλον Μέλος

MSc, cRTTP President of the World Hellenic Biomedical Association, Business Development Consultant

[Eleftheria Ledaki | LinkedIn](#)

The majority of Greek biomedical scientists and especially PhD students, [pursue careers outside of academic research](#). They choose careers in consultancy, market research, clinical, business development and technology transfer worldwide, using their scientific and research background, knowledge and skills to secure entry level roles. Such roles are fundamental to ensure talent throughout the drug development value chain. As UK and US Higher Education Institutions improve their curricular with economics, market and business courses and [Post Graduate Certifications](#) (PGCert) to prepare biomedical graduates for roles outside of research, it is important to discuss if Greek Higher Education Institutions (HEI) were and are able to provide the skills and resources to scientists to *find* suitable roles, *prepare*, and *excel* in careers outside of academia.

Having obtained my BSc (Biology, Department of Biology, University of Crete, 2010-2014) and MSc (Molecular Basis of Human Diseases, School of Medicine, University of Crete, 2014-2016) I am first-hand aware of the availability for support in choosing an alternative career path to scientific research. Both institutions were manned with acclaimed scientists who lead their research fields. Those scientists are [heavily granted](#) from worldwide recognised organisations e.g European Research Council (ERC), Marie-Curie and others. They have the expertise to educate students of all levels both through educational courses and practical lab experience. The skills they teach encompass developing scientific acumen, curiosity, an analytical mind set and critical thinking. These skills are key in any non-scientific role. Moreover, the University of Crete also provided the opportunity to travel abroad and conduct research in highly

acclaimed laboratories through [Erasmus+ scholarships](#), which I also happily pursued. This scholarship provides the opportunity to conduct cutting edge research and expand scientific and mental horizons. However, at least in my experience the past fifteen years, there wasn't any key module or support from administration, focused on career prospects, the needed skills and experience for a non-academic career path. It is important, however, to investigate whether this was the experience of other students graduating from Greek HEIs.

*'I didn't have any idea of alternative career paths of work, outside academia. The university was only focused on providing me the skills and knowledge to become a researcher, which they did extremely well. But, I had to search by myself and network with people in order to identify alternative careers. I remember, clearly, when the department's secretary asked each graduate their next steps, she was surprised when I told her I was going for a Master's at Copenhagen Business School.'*

**Giorgos Takousiis, Regulatory Analyst (University of Crete Graduate, 2019)**

*'When I was pursuing my undergraduate studies at DUTH, a few modules were available to prepare us for careers outside academia. However, these modules focused only on a research career in biotech or pharma industry. Alternative career paths require a completely different skill set, and academic institutions in Greece should ensure that undergraduate students are well-equipped and on par with students in universities abroad. Opportunities are endless, and this should be reflected in undergraduate curriculums.'*

**Christos Evangelou, PhD, Freelance Medical Writer and Medical Communications Consultant, (Democritus University of Thrace Graduate, 2014)**

*'There was no opportunity to explore alternative careers in my BSc studies. I first discovered this after transitioning to the French environment as a PhD student and then much more after moving to*

*the UK as a post-doctoral researcher. My experience within the Greek university and labs was really useful for a research-oriented role and the university prepared me for critical thinking which was helpful to complete my MSc degree and gain a PhD studentship but the exam style during my MSc curriculum was very different. It was more focused on problem solving and analytical thinking based on case studies rather than theoretical.'*

**Maria Mastrogiannaki, Technology Transfer Manager, University College London (University of Crete Graduate, 2006)**

*'The sole focus of my BSc in Greece was on the science and associated research skills. The scientific skills and knowledge base provided were strong, but there was a big disconnect between academia and industry. The main viable career pathway suggested to students was that of a researcher. Terms such as internships, industry placements, transferable skills and alternative career pathways were largely unknown to me. It was through personal research and studying overseas that I started attending career fairs, familiarising myself with alternative career pathways, talking to people who had already pivoted from academia to industry and learn how to build and tailor my CV in order to explore opportunities outside of the lab. I still remember the mixed feelings that I had after the first few months of my Master's degree in Scotland when comparing myself to other students. While I felt very confident in my scientific knowledge, when it came to career planning, I had zero working experience, didn't know what my options were and didn't really know where to start.'*

**Kyriakos Tzafestas, Director (University of Ioannina Graduate, 2009)**

The above comments showcase that Greek universities should have improved their career counselling for alternative career paths. Students need support to discover their key attributes and how these would fit in a career in entrepreneurship and innovation. Students have a range of skillsets, interests and visions for their



lives outside of academic research and this encompasses their personality traits as well. Professional counsellors have been using the popular [Myers-Briggs Type Indicator](#) (or MBTI), to [match a person's personality type to a suitable career](#) and is considered one of the most important factors to create a job match 'made in heaven'. Moreover, working in a job that actually makes you happy has also been heavily linked with [being more productive and having a better performance](#). This means that appropriate career planning can benefit both students as well as the organisations focusing on R&D, business and commercial activities in healthcare. Finding a profession that actually 'makes sense' for a scientist is key to excel in a career outside of academia. Each aspect of product commercialisation requires a different set of skillsets, from analytical skills in understanding the value of an invention, negotiation skills when building collaborations between academia and industry, problem solving when technical

challenges arise in an alliance management etc. It also requires a personal drive and fulfilment from employees working at any of these stages. Every stage needs to work seamlessly for a drug to treat a patient, for a diagnostic to diagnose a patient etc.

Speaking from personal experience, having an outgoing, curious and results driven mindset, I was disappointed by experimental failure. I had a business mindset, investigating how I can take advantage of my research to help patients. My mindset was stuck in between the bench and bedside. After a few weeks of research in the summer of 2016, I discovered working in technology transfer and business development, an area which was still under development in Greece. It took moving to London, undertaking a PG Cert in Intellectual Property Law while working as a researcher at University College London, to kick off my new career, but every step was worth it.

However, HEI have improved from the past decade in understanding, creating and fostering innovation which has in turn provided tools and resources to students to learn and consider alternative careers. This encompasses the creation of the largest technology transfer network in Greece, [PRAXI Network](#), which support academics apply for international funding, protect and commercialise their inventions. The [Athens Centre of Entrepreneurship and Innovation](#) (ACEIn) has an incubator which supports students with innovative ideas receive mentoring, start-up formation support and funding. It also supports students with career and educational workshops and networking. ACEIn opens up the possibility to a scientist to move to a CEO, operational, project or business development role in a start-up company. Moreover, there are a number of summer schools which not only educate students on the latest advancements in medical biosciences and environmental sciences, but have been upgraded to include intellectual property, clinical development, commercialisation and solving environmental problems, namely the annual [WHBA Summer School in Medical Biosciences Research and Management](#), and the [The Interdisciplinary School for Environmental Crisis \(ISEC\)](#) from ARISTEiA. However, these summer schools rely on volunteering efforts and philanthropic fundraising every year. There needs to be governmental support for such initiatives, especially as they support in creating the next generation of business professionals.

It is clear that there is still room for improving the available resources and tools for alternative career development. Firstly, there needs to be a dedicated career development department in each HEI. Students should be asked to respond to personality questionnaires, people and organization assessments tools (such as [GC Index](#)), for them to realise what professions and which type of teams would suit them. Such offices would include CV and cover letter preparations and mock interviewing while providing all available resources and workshop on which alternative careers are existent and how one can move towards them e.g further certifications, entry

level positions, training workshops etc. There also need to be specific courses on drug development, intellectual property exploitation and commercialization and the job roles associated with each to provide an overview of career possibilities.

The skills a scientist gains throughout their career shouldn't be underestimated. However, there need to be career workshops with real case studies and discussions with scientists working outside of academia to provide the confidence and knowledge to early career researchers on how to follow such a path. Greek universities need to provide further PGCerts and also promote the ones that exist and explain how they support employability. Lastly, they also need to take advantage of existent networks such as [EIT](#), [BioSpace](#), and promote new career development initiatives e.g [conducting industry focused PhDs](#) to increase the visibility for alternative career paths.

It is concerning that Greek university graduates felt they didn't get supported in finding their appropriate career path and gaining the skills needed for a successful career outside of academia. Careers outside of scientific research are equally important to support drug development and commercialization, foster and build a groundbreaking, innovative ecosystem in Greece and beyond. Matching science graduates with their most suitable careers would improve their performance at work and they would have a higher possibility of living a happier and fulfilling life. Even though HEIs have moved forward in the recent years to build an innovative ecosystem where graduates can explore their career development, a more organized, targeted and all encompassing plan needs to be put in place and for resources, tools and specific career visions to be available in all HEIs. This plan is crucial for graduates and the whole country, as postgraduate students provide the pipeline for market, business and commercial professionals and is needed for Greece to succeed in R&D and commercialization of drugs to cure diseases, and ultimately improve peoples' lives.