

Career Paths in Marine Science

**Jack Gilbert**

Molecular Ecologist

I was always interested in the environment as a child, in fact growing up I wanted to be just like David Attenborough and when I asked my parents what kind of job it was that he did, their reply was an environmentalist. Obviously I have not necessarily made it in to the shoes of my childhood hero, but it definitely shaped my career.

I revelled in science at secondary school, mostly in biology as I found my dislike of maths hampered my physics and chemistry. This followed through to A-level, where I again excelled in biology and honestly found physics and chemistry quite dull. So much so that I almost dropped out of these courses and nearly failed! I went to Kings College London and studied biology as my bachelors and enjoyed it greatly. Finding a niche is very important and I worked at marine ecology, finishing with a 1st class honours.

After my degree I became restless and although I was sure I wanted to do a PhD, nothing interested me. So I went to work for the Natural History Museum, London working in entomology. One day after applying to several PhD programs around the country I was offered a position working in molecular biology at Nottingham University, which involved a 15 month stint in Antarctica...how could I refuse. I had to learn a lot as I had never intended on working in a lab (actually I found the idea quite disinteresting), but I buckled down and became a Lab-Monkey!

After my PhD I was asked to do a Post-Doc in Canada, working in biochemistry and protein characterisation; again I had no experience in this field but revelled in the learning process. At 28 I moved to Plymouth Marine Laboratory to help enhance their molecular research program.

Basically you never know what life will throw at you, but if you are prepared to be flexible then you can succeed in whatever you want to do.

**Mike Allen**

Molecular Biologist and Virologist

I grew up in South Wales and attended the great rugby playing school Brynteg Comprehensive. After quickly realising that my passion for rugby was not matched by my ability on the pitch, I decided to focus on my academic studies. After doing A-levels in maths, further maths, biology and chemistry, it came to choosing what to study at university. I enjoyed maths immensely, but it was my love of science (in particular evolutionary biology) that made the decision easy for me. I went to Cardiff University and studied medical molecular biology (basically a biochemistry degree with a focus on human disease) for the next 3 years (1997-2000).

Whilst studying at Cardiff my eyes were opened to the beauty of the world of genetics and I have been hooked ever since. In my final year at Cardiff I was offered a PhD studentship by my first year tutors. The chance of staying on at Cardiff and working on my own research project was too good an opportunity to miss so I found myself working on (among other things) heavy metal and surfactant stress resistance in *Escherichia coli*. I managed to get the lab work done and written up within 3 years (2000-2003) and graduated in 2004.

One of the beauties of genetics is that the skills you learn can be applied to every biological organism on the planet, hence scientists use the term "the universal code of life". A good molecular scientist is not restricted by the nature of the organism being studied: it is the DNA, RNA and protein that we are interested in and more often than not we study these components independently of their cells of origin.

Thus, whilst remaining in the broad field of environmental genomics, I found myself taking a post-doctoral scientist position at Plymouth Marine Laboratory studying the genetics of a family of newly discovered algal viruses. This is an exciting, rapidly expanding area that has really taken off in the last few years. On the back of this work, I was promoted in 2006 to the grade of senior scientist and I am now in the process of setting up my own research group.

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Pennie Lindeque
Molecular Ecologist

I was brought up and educated in Devon and as such, have always had an interest in the local coast, beaches and the marine environment in general. As a child I was fortunate to live within walking distance of the river and spent many happy hours during school holidays and weekends learning to sail. I also enjoyed spending free time on the river banks and beaches; scouring rock pools as well as playing hockey, cycling (and those more embarrassing hobbies like roller-skating).

Despite my keen interest in Marine Biology from an early age, I did not foresee that I would continue this interest as a job. My A-level subjects, Maths, Chemistry, Biology and Art with Art History were chosen more for the interest I had in those subjects than any consideration I had for a career path. In fact I was

quite certain at that age that I wanted to go into teaching. To keep my options open I decided to study for a BSc Hons in Applied Biology at the University of Bath and undertake a concurrent Certificate in Education at the same institute. The course in Bath allowed for the 3rd year (out of a 4 year course) to be spent working in research or industry and I was fortunate to secure a place at Plymouth Marine Laboratory, analysing copepod egg production experiments from a research cruise. I found PML a fantastic place to work and was inspired by the research. Consequently I returned after my degree to help run the 2nd International Zooplankton Production Symposium.

Still unsure of whether to pursue a career in Science or teaching I did what every graduate considers and spent a year travelling around the world. Before I left I had helped to write a PhD proposal with two supervisors from PML in the area of copepod systematics and development. A phone call received while in Indonesia confirmed that the project had been funded and so I returned to Plymouth to spend the next 4 years studying for a PhD. I then spent approximately 2 years on contract work at PML and became a permanent employee about 5 years ago. During this time I worked on 3 different International Science projects and was fortunate to spend some time at sea, from 2 weeks in the Celtic Sea to 6 weeks in the Irminger basin between Iceland and Greenland.

After the birth of my daughter 3 years ago I changed to working part-time and am currently working as a Principle Investigator, having been promoted to Band 5 (Senior Scientist) last year, in the area of molecular biology and zooplankton ecology.



Nicole Bale
PhD Student

I think it is rather clichéd to say that I have always loved the sea and that is why I am now studying marine science but it is the case for me. I enjoy sailing and water sports as well as always having a keen interest in environmental issues.

I took A-levels in Chemistry, Maths and French as well as AS-Levels in General Studies and further Maths. My year 10 work experience was based at Plymouth Marine Laboratory doing general lab work and I did 2 weeks of work experience after my A-levels, also at PML. I got an A in Chemistry, B in Maths and C in French which was enough to study Chemistry at the University of Bristol. The full title of the

course I took at university was 'Chemistry with Study in Continental Europe' and my third year was spent studying in Montpellier in the south of France.

During my fourth and final year back at Bristol, I carried out a final year project with the Organic Geochemistry Unit within the Chemistry department. This project gave me a chance to learn analytical techniques and helped with my selection of a PhD project. After finishing university with a 2.1 degree, I started a PhD at PML, which I am now in my second year of. My PhD is in analytical marine chemistry and I am looking at how molecules of chlorophyll breakdown in the oceans.

My interests out of work include yoga, badminton, jogging, swimming, hiking on Dartmoor, going to the beach, music (especially electronic and drum & bass), travelling off the beaten track, eating, drinking and dancing with friends.