

## Case Study: Alumni

**Andreas Mogensen, MEng Aeronautical Engineering**

**Graduation Year: 1999**

**Job Title: Astronaut**

**Employer: European Space Agency**

**Department: European Astronaut Center**



### Could you give us some information about yourself and your role?

I was selected by the European Space Agency in 2009 as one of six new European astronauts and the first astronaut from Denmark. Since then I have been based at the European Astronaut Center in Cologne, Germany. Currently, I am training for my first spaceflight, launching on 1 September 2015 with the Russian Soyuz spacecraft from Baikonur, Kazakhstan to the International Space Station. The mission will involve a mixture of science experiments and technology developments. In addition, I will serve as co-pilot on board Soyuz, which means I will be trained to fly and land the spacecraft manually.

Life as an astronaut is predominantly about training and learning new skills. This includes everything from classroom-based technical training on all the onboard systems to the much more practical training on how to perform a spacewalk or control the robotic arm. And of course there is also Russian language training on top of it. All of this training takes place among the international partners behind the ISS program, which means that I am constantly travelling between NASA's Johnson Space Center in Houston, Star City in Russia, and the European Astronaut Center.

The training is intended to teach us new skills, but it doesn't teach us much about life in space. For that we use analogue missions that simulate elements of a real spaceflight. Whether it's ESA's CAVES program, which takes us several kilometres below the surface of the Earth, or NASA's NEEMO program, which takes us 20 metres below the surface of sea, these missions allow us to work together as a multinational team of astronauts in an operational scenario, where we are out of our comfort zone and where strict adherence to safety protocols is a necessity for staying alive.

### Could you tell us about your time at Imperial College London?

Imperial College has a tremendous reputation for providing a world-class academic education, but being a student is an opportunity in your life to gain unique experiences and Imperial College offers so much more than just an education. In addition to the hundreds of student societies, where I learned to scuba dive and white-water kayak, the Imperial College Exploration Board is unique in providing students with an

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opportunity to live out their dreams of exploring our world. Within the first few months of my freshman year, I joined a group of students planning a canoeing expedition to the Amazon rainforest in Venezuela. The two-month long expedition during that first summer as a student at Imperial College is one of the highlights of my life and was even a topic of discussion during the astronaut selection interview. Funding from the Imperial College Exploration Board made the expedition possible. It was such a great experience that a few years later I organized a kayaking expedition to Peru, which the Exploration Board also supported.

Imperial College also offers excellent opportunities for studying abroad, and under the assumption that you can never travel too much, I spent the final semester of my fourth year at a university in Lisbon, Portugal. These experiences were what made my student life at Imperial College so extraordinary and why I came away with so much more than just a world-class education.

### **Could you give us one or more career tips for Imperial graduates?**

It was always my dream to be an astronaut, but if I couldn't be an astronaut, at least I wanted to work in some area of space exploration. There were few jobs in the aerospace industry, however, when I graduated in 1999. Instead, I accepted a job with Schlumberger as a drilling services engineer in the oil industry and was promptly sent to West Africa to work on an offshore drilling rig. Luckily, I could point to Bruce Willis in the movie Armageddon whenever anyone asked me what I was doing working on an oil rig. A couple of years later, I returned to the aerospace industry and then went back to graduate school to get my PhD in aerospace engineering. However, if it weren't for the couple of years that I worked on the oil rigs, I never would have been selected as an astronaut, because I wouldn't have had the necessary operational experience. So take the opportunities that arise; you never know where they will lead.

