



# Ella Richards

## AUV Operations Mechanical Engineer

Ella is an expert in the mechanical design and operation of the NOC's Autonomous Underwater Vehicles (AUVs). "I provide the mechanical design effort in order to integrate new technology on the AUVs, build new AUVs and also maintain and operate the AUVs whilst at sea alongside other colleagues."



**Qualifications :** 4 A-Levels, MA Cantab in Mechanical Engineering, MEng in Mechanical Engineering, Chartered Engineer Status with the Institute of Mechanical Engineers.

**Career Pathway :** Ella read Mechanical Engineering at Girton College, Cambridge, graduating in June 2013 with a Bachelors and Masters Degree. She joined the NOC in November 2013. She has just gained her Chartered Engineer Status with the Institute of Mechanical Engineers.

**Number of days at sea :** 140 days

**Favourite thing about working on a research ship :** Using the AUV's to push the boundaries of science by discovering new animals and phenomena that scientists haven't found before. It is exciting to play a small role in understanding how our oceans work.

**Best technology you've developed/used :** I worked on the mechanical concept design for some very small, low cost AUVs (ecosub-u and ecosub-m), that should hopefully make underwater robotics more accessible to students and smaller companies and increase the ease of oceanographic data collection. This project was exciting as the idea was novel and the AUV very different to the larger AUV's I had worked on in the past.

**Support for equality and diversity :** Gender equality within the workplace, and particularly within STEMM fields, is a subject that I am very passionate about. Having spent a large proportion of my educational and work life as a gender minority, I feel responsible for encouraging other women to consider a career in the Engineering field. In order to do this I have been involved in an Engineering outreach program with local schools in order to show students that engineering is a career that is for women as well as men. I have also created links with the Naval Architecture department at University College London; running tours of the NOC facilities and I have plans to give a lecture to students at UCL in attempt to promote the ideas of professional women in STEM, as well as give them information of AUV Mechanical Design. I have also been involved with the Athena SWAN process to assess and improve gender diversity at the NOC.