

Tom Bamford - Institute for Astronomy, Edinburgh, July/August 2014

During July and August this summer I worked at the Institute for Astronomy at Edinburgh University undertaking one of the summer research projects they offer to undergraduate students. I worked on my own, guided by a postdoctoral supervisor, on a project entitled 'Dust in Galaxies across the Hubble sequence'.

In this project I studied the morphology of galaxies and how this relates to star formation, in close-by galaxies. This was done by looking at radiation from interstellar dust, which acts as a good indicator of star formation due to dust obscuring the radiation produced directly from stars and re-emitting this radiation at a different (known) wavelength. I then compared the results I produced with previous results produced by my supervisor on how galaxy colour relates to star formation.

My final results showed general agreement between classifying galaxies by morphology and classifying galaxies by colour when used as an indicator for star formation rates. Disk galaxies tend to be blue and star forming (late type galaxies) and elliptical galaxies tend to be red and passive (early type galaxies).

My project mainly required analysing data using IDL (a programming language), then producing graphs to compare to the results gained using galaxy colour. I was therefore required to learn the programming language on the job in the first couple of weeks, then analyse the results and produce a scientific report in the later part of the project. I was also required to give a presentation on my project and results to an audience of around 30 PhD students and postdoctoral researchers at the institute.

I greatly enjoyed this project, and would strongly recommend any physics students interested in undertaking some research and gaining experience of the professional academic world taking part in a similar project. I would like to thank the college for awarding me this grant and allowing me to take part in this project.