Postgraduate degrees produce employable people – it’s official

Academics in the field have long thought that postgraduate degrees in astronomy, astrophysics and planetary science and particle physics are a good bet for careers. But now a survey has confirmed that by being excellently prepared, employment prospects and above-average salaries, within sciences and elsewhere, boosting the case for funding studentships in order to support science and industry. The survey was funded by the Science and Technology Facilities Council and examined careers of research students funded by STFC and predecessors. Almost all of them (97%) were employed, full and part-time, and two-thirds of them remained in scientific research. Those who moved out of specialist science favoured business and financial services, working for companies such as Barclays, IBM, BP and Goldman Sachs.

These results support the case that the training offered by PhD research is valuable both for science and for the country’s economic success as a whole. Keith Mason, Chief Executive at STFC, says: “One of our key roles is to support the development of skilled people for academic, business, and other employment through postgraduate training. The results of this study confirm that STFC’s productive investment is highly valuable to the current and future competitiveness of the UK economy.” Mason stresses that it is the transferable skills in postgraduate research training that makes for valuable professionals in the wider fields of employment. “These are high-value, knowledge-intensive sectors that have a strong demand for people with the type of high-level computing, modelling, analytical and transferable skills that are developed through an STFC PhD.”

The survey also revealed that about 62% of respondents are earning a comparable or greater salary than the average professional worker in the UK, despite being at relatively early stages in their careers – implying that former PhD students tend to be high-achievers whatever career they pursue. Furthermore, STFC’s PhD students enjoy almost full employment, with only 1% unemployed and 2% on a career break, in the survey. Although many use the technical competences from their PhD work, it is important not to forget those other skills that students learn, that are especially valuable in other fields.

Bruce Fairley, whose PhD was on astronomy and cosmology, is now a Senior Software Engineer at Tesella plc, a company that designs bespoke scientific software, and he is drawing directly on transferable skills he learnt as a research student. “The technical side of my PhD training, such as analysing images from telescopes, is of limited relevance to my current job,” he says. “However, I still use many of the other more general skills I developed. As an astronomy PhD student you spend a lot of time writing proposals for telescope time. This type of experience is highly relevant in the private sector, where a lot of time is also spent writing tenders and proposals.”

The survey was carried out on behalf of the STFC by DTZ; their report and summary, including statistics and career profiles of several of the respondents, can be found via the STFC website.

http://www.stfc.ac.uk/Funding%20and %20Grants/18313.aspx

Bang: and there goes a quasar

What makes a quasar glow? Colliding galaxies, according to an international team of astronomers scanning a quasar sideways-on. They have found that a collision between galaxies seems to fire up a quasar, driving intense activity from the central engine. The team, led by Montserrat Villar Martin of the Instituto de Astrofísica de Andalucía-CSIC in Spain, used the Very Large Telescope in Chile and the Gran Telescopio Canarias (GTC) on La Palma in the Canary Islands, to study activity from the quasar SDSS J0123+00. This is a Type 2 quasar, oriented so that we see the toroidal accretion disc, formed as material falls towards the central black hole, edge-on. They provide useful tools for understanding quasars in general, because the dust in the torus dims the bright jet of material emerging from the central region, which otherwise overwhelms any detail to be found in the disc.

“Type 2 quasars are a family of still rather mysterious objects,” explains Montserrat Villar Martin, who led the research team, “which so far have been investigated mostly from a statistical point of view. We have observed a giant nebula of ionized gas associated with SDSS J0123+00, and signs of an interaction with a nearby galaxy.” The nebula is about six times larger than 5000 narrow-band filters. The nebula is about six times larger than the Milky Way and the authors infer that it is probable made of the debris of the interaction between SDSS J0123+00 and its neighbour. The nebula includes a bridge of material that connects the two galaxies, which strengthens the hypothesis that the quasar activity is triggered by the interaction between them. The image reveals the existence of a giant nebula of ionized gas which extends for 180 kparsecs (590 000 light-years) and includes a bridge of material that connects the quasar with the neighbouring galaxy it is interacting with. (Montserrat Villar Martin, IAA-CSIC)