



## PHYSICS AND ASTRONOMY

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Ms Angela Townsend  
Diversity Programme Co-ordinator  
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Project Juno  
76 Portland Place  
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Dear Ms Townsend,

I have the pleasure in enclosing our renewal application for Juno Practitioner status from the Department of Physics and Astronomy, which is part of the College of Engineering, Mathematics and Physical Sciences at the University of Exeter.

The renewal process has provided an additional opportunity to step back and reflect on the changes and progress we have made as a department since our first accreditation. We are pleased to see changes in our staffing and student gender profiles whilst recognising there is still much to do to reach full gender equality.

I have striven to lead change for a better environment, one that encourages scientific excellence for both staff and students, and an environment where good practice and a commitment to equality and diversity are an integral part of what we do. I am delighted to see that gender equality (and equality in general) has moved on in the department's culture, as something that a few would focus on to becoming an integral part of the department's ambitions and day to day work. This in itself shows to me that we have made a dramatic positive change.

A key component of this is to keep the debate around equality live within the department through discussion and seeking feedback. Our students have been consulted through the undergraduate and PhD representatives and our student/staff liaison committee. Staff consultation has taken place in focus group meetings and through our Employee Engagement Survey. Additionally, surveys for staff and students have been carried out by a PhD student carrying out research into "the under-representation of women in science, technology, engineering and mathematics". This inclusive approach ensures that the culture of gender awareness and progression is not limited to those on the committee.

We have also looked closely at each stage of career and study to identify any barriers to women in Physics and put in place actions to remove these. In particular I would like to highlight:

### **1. Outreach work with female students at primary and secondary schools**

We recognise the importance of engaging with female students early on in their studies so they see the benefits of studying Physics at A level and beyond. We have a 'Girls into Physics'

programme which commenced locally and is now nationwide, sending teams of female Physics undergraduates to inspire an interest in science. This project has reached more than 500 girls. We have increased our resources for outreach and shared these with other educationalists e.g. a card game that compares top female scientists for their innovation, impact and obscurity. The goal of the game is to determine who can be considered the ultimate female scientist of all time. We have recently obtained funding from the Ogden Trust to provide these as teaching packs.

## **2. Increasing female undergraduates**

Our female undergraduate student numbers have shown positive signs, increasing from 18% to 22% last year with an increase in female acceptances to 21% in the last two years. We hope to see further improvements coming from our Outreach work in future years. Additionally, we have reviewed the way we promote the Department online (via webpages, role model examples and prospectuses) and in person (via female student ambassadors at Open Days, the look and feel of our building etc.).

## **3. Increasing female PhD students**

Whilst our PhD student numbers have increased, our gender ratios have remained around 22% female. We now invest additional time in speaking to our current undergraduate cohort about further study and hold female-led seminars so that female undergraduates can visualise the next step in their career path and talk to an existing PhD student about the challenges and benefits.

## **4. Supporting early career staff**

We have identified where we need to grow our talent pool of female early career staff within each research group and have a comprehensive development programme to support this group in gaining a full academic role. The resulting engagement figures demonstrated an impressive increase from female ECRs: 80% female PGRs and 79% of female ECRs now accessing resources. This has been effective and we have seen a 17% growth in female staff at this level to 27% in the last two years.

## **5. Supporting female academic staff progression**

Looking back at our promotion within academic staff grades, we realised that only 25% of our female staff had gained promotion within the last five years. Part of this was due to low overall female staffing numbers. We put in place promotion workshops, increased support for participating in appraisals and, as a result, we are seeing positive movement here too. There is an increasing female promotion rate from grade F (Lecturer) to grade G (Senior Lecturer) and career plans are now in place for a number of these staff to reach Associate Professor and beyond.

We are realistic about the challenges ahead but look at these optimistically given the wide level of engagement and understanding of where under-representation of women in our Department currently lies and defined actions which are already showing positive impact.

I remain committed to continually improving our working environment, both for those already here, and for those who will join in the future. I look forward to hearing the outcome of the Juno panel's assessment of our renewal application.

Yours sincerely



Professor Bill Barnes

## **Juno Practitioner Renewal – Summary Report**

### **Principle 1**

As outlined in our covering letter we have expanded our original Juno group, along with web resources with links to other gender equality work in the department and through the University and nationally.

Our students have been consulted through the undergraduate and PhD representatives and our student/staff liaison committee. Staff consultation has taken place in focus group meetings and through our Employee Engagement Survey. Additionally, surveys for staff and students have been carried out by a PhD student researching “the under-representation of women in science, technology, engineering and mathematics”. This inclusive approach ensures that the culture of gender awareness and progression is not limited to those on the committee.

Our female undergraduate student numbers remained in the range of 18-20% between 2008 and 2012, (benchmark 24%). Our intake for 2013/14 has shown positive signs, increasing to 22%. We are pleased that the percentage of female undergraduate applicants accepting a place has risen from 16% in 2008/09 to 21% in the last two years. Since 2012/3, all applicants are interviewed prior to offer, providing an opportunity to meet our female staff and student ambassadors which has had a positive impact with over 90% of applicants visiting Exeter (70% prior to 2012). The proportion of female PhD students has remained roughly static, below the benchmark of 26% and our priority has been to increase the offer-to-accept ratio which is now close to gender balanced.

Our female undergraduate students consistently achieve higher degree classifications than their male counterparts. However, an Exeter-based 2013 research survey and study showed they did not feel the strength of this achievement. The survey was repeated (March 2015) and the latest results found that while this pattern has not entirely disappeared, it has considerably weakened.

Every postgraduate student now chooses a mentor. Our mentor pool includes 6 female mentors mentoring 7 students each. In 2014 we introduced a buddy-scheme for the new PhD students in our Centre for Doctoral Training (PhDs in Metamaterials). Feedback has been positive and the scheme will be rolled out to all new PhD students entering in September 2015.

We have seen a significant increase in the fraction of female staff, rising from 10% (2011/12) to 23% (2013/14) which compares well to the benchmark of 16%. The percentage of female early career research staff has risen from 10% in 2010/11 to 27% in 2013/4. We have also increased our female Lecturer/Researcher staff from 18% (2011/12) to 41% (2013/14).

### **Principle 2**

Over the last five years, out of 14 academic appointments made, 3 were female. We see fewer female applicants for higher grade posts, which reflects in part the national and international trends and reinforces our strategy to foster and create our own talent pool. We have increased the number of trained selection panel members in the Department from 13% (September 2013) to 22% (February 2015) and E&D training completion rates have increased from 22% (2013) to 88% (April 2015).

In addition to a University and Department induction, the Head of Department meets new starters in their first month, hosts a new starter lunch (every 6 months) and welcomes them into the Department via the monthly e-newsletter and at the first available meeting. This ensures staff are supported on appointment and have the opportunity to network with colleagues from the start.

### **Principle 3**

In the last four years 5 women have been promoted (25% of total promotions) compared to 19 men, which has prompted the Department to investigate this further in relation to overall percentage of women. Of particular concern is the lack of females at the highest levels. There is

an increasing female promotion rate from Lecturer to Senior Lecturer which reflects the increased number of female staff who are on our 'supported promotion route' to Senior Lecturer. By creating a pool of female Senior Lecturers and providing them with career planning, we anticipate seeing promotions to Associate Professor and then Professor in future years.

Our Department Strategy Group reviews all staff annually with a view to putting people forward for promotion and to putting support in place to assist staff developing their career progression. Promotion is now discussed during annual appraisals to identify potential applicants. Promotion workshops ran through August and September 2014 and will be repeated annually. The workshops clarify the promotion process and encourage pro-active promotion planning. Feedback received was very positive.

All staff are encouraged to participate in our appraisal system which covers all academic work, including pastoral care and outreach. In 2013 34% of appraisals were completed (19% female), this increased to 57% in 2014 (25% female). Our "Researcher Development Programme" (RDP) provides postgraduate research students and early career researchers with personal and professional support. We have worked hard to increase engagement with RDP which now stands at 80% female PGRs and 79% of female ECRs. We have also nurtured and supported a Physics and Astronomy Early Career Researcher Network which organises workshops and social events e.g. speakers on career break, planning a family etc.

#### **Principle 4**

Our weekly colloquium series has seen the percentage of women guest speakers rise from 9% (2009) to 25% (2014). The Department uses social media to a great extent and is aware of how this can contribute to a positive culture, with 20% of the web based news stories showcasing female staff/ students.

Our online workload planner helps workload distribution, monitoring research, teaching, supervision, mentoring, pastoral duties, and administration roles and now includes an allocation for our gender work (i.e. Project Juno and Athena SWAN.). Adjustments are commonly made for staff working reduced or part-time hours because of caring responsibilities and all major meetings occur in our core hours of 10.00 am - 4.00 pm.

#### **Principle 5**

We have low maternity rates with two staff taking leave in the last five years and have therefore gained resource for Professor Manuela Barreto (Professor of Social and Organisational Psychology) to carry out an independent study to identify any reasons for this. Maternity leave cover is arranged by the line manager in consultation with the employee and now includes access to funds to cover academic positions. Staff utilise both formal and informal flexible working on their return. A University Parents and Carers network has been formed to provide informal mentoring and support and recognises both male and female staff in parent and carer roles. We are conscious that students can be parents and carers too and this year all student induction materials were revised to include a session specifically for UG and PG students with parental or caring responsibilities.

#### **Other**

A full-time outreach officer has recently been employed, part funded by the Ogden Trust. In 2012 we commenced our 'Girls into Physics' programme which has reached more than 500 girls nationwide.

One of our female PhD students (along with a Mathematics PhD student) has been supported to create a Top Female Scientist card game - free to download. By comparing the scientists for their innovation, impact and obscurity, the goal of the game is to determine who can be considered the ultimate female scientist of all time. This is already being used nationally by teachers and those involved in outreach.