Durham University

Role of the Post-Graduate student

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Astro Post Graduate Course Director

Aims:

- overview of the astro post-graduate course
- basic guidance on what you should expect in your PhD
- what is expected of you

Overview

- **The 1st year post-graduate course**
  - Course structure, lectures, and course work
  - Assessment and feedback
  - Dividing your time between research and the course

- **Post-graduate research**
  - Key skills: specific and general
  - Building your research portfolio
  - Becoming independent

PG course: structure, lectures, and course work

- **Lectures:**
  - typically 1 hour
  - 9am in PH132 (James Knott Library) on most days of the week
  - check google calendar

- **First term:** mostly research skills
- **Second term:** more science based

- **Aim:** basic skills needed for PhD and give wider background

More about lecture courses & assessment

- **Research skills: general computing, statistics, programming, high-performance computing, instrumentation, data reduction, scientific paper writing, evaluating scientific papers**
  - Coursework is set in each research-skill lecture component - may sometimes be quite extensive since is related to your research

- **Science lectures cover broad range of astrophysics from stars to cosmology**
  - Coursework is set for every lecture series
  - should typically take ~3 hours of your time
  - Aim is to give you grounding in key principals in astrophysics

Feedback sessions for coursework: ~2 weeks after course

Workshops

- Programming: **Python**
- Programming: choose **Data Reduction** or **High Performance Computing** workshops

Astro-PG Course Assessment: critique, talk, progression report and viva

- **Essay/critique**
  - ~2500 word critique of opposing studies - designed to develop your science evaluation skills and also your scientific writing skills
    - Will have lecture on scientific writing skills before the essay is set
  - ~12 min presentation of the critique with 3 min of questions

- **Friday lunchtime talk** (~20 mins) on your research towards the end of the first year

- **Progression report and viva (towards end of year)**
  - ~5000 word report on your research to date - background material, techniques, and results
  - ~30-45 min oral defence of your report with 2 examiners

- **Progression into second year is dependent on**

  (1) passing the post-graduate course and completing the course work

  (2) successfully completing your progression report and viva

Astro-PG Course Assessment: critique, talk, progression report and viva

Critique and talk:

- 2nd term
- 1st March – deadline for submitting draft to supervisor
- 8th March – deadline for final draft
- 17th March – talks

Progression report:

- 5000 word report
- 15th June – deadline for submitting draft to supervisor
- Supervisor arranges examiners, date for viva and date for final submission – before 31st July
- Process to be completed in advance of university progression deadline 31st August

Weekly events

Expected to attend:

- Wednesday seminars (/CfAI seminars)
  - 3 pm seminar
  - Coffee post seminar
  - Student journal club: Weds 11am: discuss speaker's research
  - Opportunity to go to lunch (dinner) with speaker
- Friday lunchtime talks (internal speakers)
- 1st year astro-ph journal club – Mondays 2nd & 3rd terms
- Theorists: alternate Mondays – Galform lunch/Theory lunch

Other events:

- LSS journal club 11am Tuesday
- Galaxy formation/general astro-ph Thursday 1pm

Other training opportunities

- All students complete a Training Needs Analysis
- Identify training needs beyond those met by PG course
- Centre for Academic, Researcher and Organisation Development (CAROD)
- HPC/Fortran – Hamilton/CIS
- https://www.dur.ac.uk/cis/training/courses

PG research: some of the key skills

- **Problem solving,** which you will develop. Do not feel intimidated about asking others (students/PDRAs/staff) for help!
  - Achieve a balance between being independent and seeking advice when necessary
  - Achieve a good relationship with your supervisor: different supervisor/student combinations will have different approaches - work out what works for you both!
- **Presenting your scientific results**
  - Improve your presentation skills: give presentations to the group then progress to larger national meetings and then international conferences
  - Improve your writing skills by writing research papers and proposals
  - Discuss your results with others (students/PDRAs/staff) - explaining your work helps you better understand what you have done and why!
- **Understanding how your work fits into the bigger picture**. Follow the background scientific literature and recognise the strengths and weaknesses of your research (and the research of others)
  - Follow new research in your area by following, e.g., arXiv.org pre-print archive regularly (e.g., each day or week) and NASA ADS

PG course: dividing your time between research and the post-graduate course

- Post-graduate course runs for two terms
- 25-50% of your time will be spent attending lectures and completing course work
  - Manage your time so you can make progress on your research
- Third term: complete your research report and pass your viva (by end of June) - often this is the first draft of your research paper
- From July onwards the post-graduate course work is finished and so you are completely focused on your research.

Your supervisors know that you attend the PG course and undertake the course work.

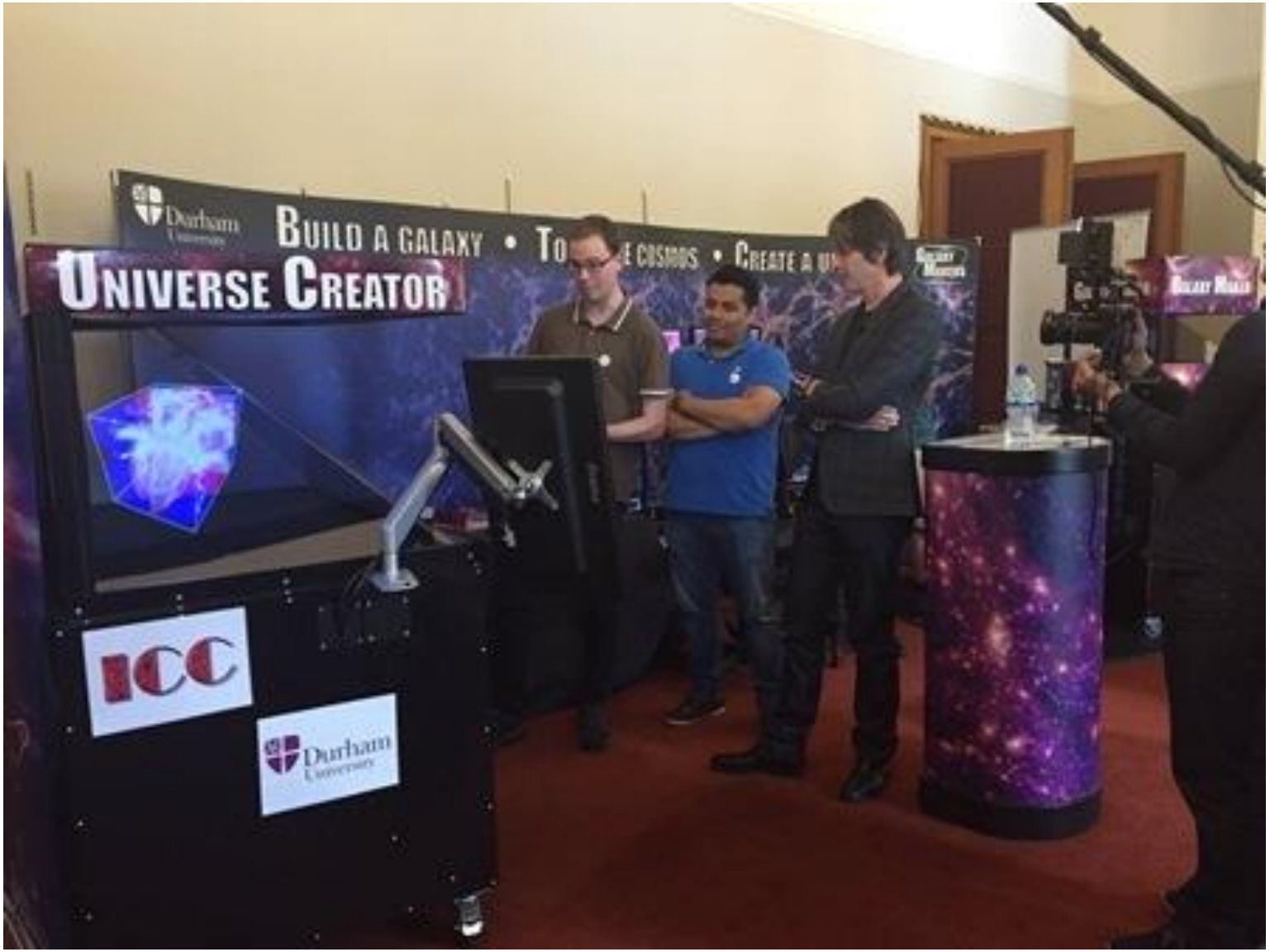
You may need to remind them occasionally: I am also happy to do so!

PG research: building your research portfolio over the following years

- **Your success in research so often depends on your research portfolio**
  - Your scientific papers
  - Your reputation for giving good presentations
  - Your visibility within your research community
  - Talking to researchers from outside Durham (e.g. seminar speakers/visitors)

- **Directing your PhD research**
  - At first your supervisor will guide your research but towards the end of a PhD you should start to take more control and will maybe be designing your own research experiments/projects
  - But ultimately you want to be leading your own research programme

Outreach


Durham University
BUILD A GALAXY
UNIVERSE CREATOR
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celebrate SCIENCE

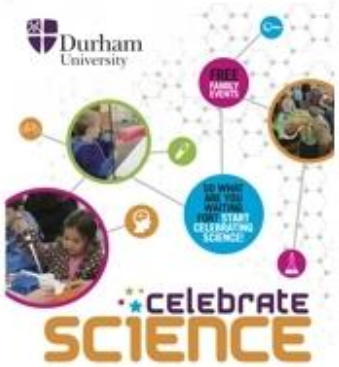
- **Celebrate Science**
- Programme of events
- Activities at other University Attractions
- Map and directions
- Partners

Celebrate Science





Tuesday 25th - Thursday 27th October 2016 10am - 4pm Daily



Celebrate Science is back with another 3 fun-packed and fascinating days of FREE childrens events, activities, workshops and experiments celebrating science!

Come along to the 'Celebrate Science' Marquee on Palace Green, the heart of Durham's World Heritage Site where a wide range of free science themed activities will be taking place,

A host of Free events will be taking place across Durham University visitor attractions as part of the Celebrate Science 2016 Festival. From FREE children's craft activities to science and nature trails. Explore our other venues to see what else you can discover.