Good afternoon. My name is Cheryl and I would like to give you a brief overview of the two undergraduate e-journals that we run at Leicester. I have had experience of both sides of this activity: as an undergraduate I submitted papers and acted on the reviewing side of the journal; now I am the academic lead for one of the journals helping the students to write their own papers.
The two undergraduate e-journals at Leicester are the Journal of Special Topics (also known as Physics Special Topics) which is the original version for the Physics degree course and the Journal of Interdisciplinary Science Topics which is the more recent ‘spin off’ for Natural Science students.

Both are available online at the URLs listed.
Motivation for this module:

- Introduce students to professional (academic) scientific communication skills & the peer review process.
- Enhance collaborative working skills.
- Using scientific concepts outside the context in which they are initially taught.
- Develop creativity, formulation of problems & mathematical modelling.
- Media exposure: publications indexed on Google Scholar (etc)!

Understanding the academic publishing process is important for any undergraduate but rather than giving them a chalk-and-talk run through in a lecture we decided to give them ‘hands on’ practice. Not only is this more engaging but it brings in the value added properties of enhancing their collaborative working skills, applying their existing knowledge in novel situations, developing their creativity etc.

It also gives them the opportunity to experience media exposure (more on that later) and it provides them with peer-reviewed paper listings on Google Scholar etc which is great for PhD applications.
The journals have gone through several incarnations over the years. The Physics journal was started in 1996 as a purely paper based exercise, however, this had a huge administrative overhead associated with collecting the different paper drafts, referees reports etc. Over the years this process was streamlined by first using our VLE (Blackboard) in 2001 and then swapping over to professional journal software in 2006. Even then the journal remained entirely ‘in-house’. In 2009 the Physics journal was first released online prompting the students to be even more conscientious about what they wrote! Last year Natural Sciences started its own journal.
Whilst the nature of the two journals is broadly similar they both have different areas of scientific emphasis and they are run slightly differently on the two degree programmes.

Physics run it for their MPhys finalists and expect them to put in ~75 hours of work.

Natural Sciences on the other hand runs a slightly condensed version (we expected fewer papers to be submitted per student) for the BSc and MSci students in their third year.
The students get to experience all aspects of the academic publishing process: from authoring short, original papers; to reviewing each others papers and writing referee reports; to sitting on Editorial Boards deciding who reviews what, considering referee recommendations, to making the final decisions on what gets published.

I can tell you that they are very critical of each others work – no-one gets a free pass!

Once published they get to work with the University Press Office. Natural Science students may be interviewed for press releases whilst Physicists write their own.

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**Student roles**

- Run in exactly the same way as a professional journal:
  - **Author**: write original, quantitative articles (1-2 pages).
  - **Referee**: critically review each others articles.
  - **Editorial Board**: review referee reports & make final decisions whether to publish or not.

- Opportunity to work with the University Press Office: Writing a *press release, podcast* and/or *short films* (Physics) or being *interviewed* (Natural Science).
This rather complicated flowchart shows the process in more detail, including the various recommendations that the referees can make such as ‘accept’ or ‘resubmit for review’. Students very rarely outright reject papers unless there is a good reason (e.g. plagiarism).

Their first papers are often go through 2 or 3 review rounds before being accepted whilst later papers are often accepted after only 1 round, as they know what is expected of them.
As previously stated the papers must be short, original and, where possible, quantitative in nature. They often seek inspiration from popular culture: movies, TV, music etc. Whatever they pick it is just a novel framework for the paper – they must contain serious science.

For example ‘Slapping Someone into Next Week’ uses special relativistic principles to calculate how hard you have to hit someone so that they achieve a velocity whereby they experience one week of time compared to one second of the attacker’s time. I was particularly impressed by this paper as it was written by a Natural Science student who self-identified as being weak in Physics but the idea inspired them.
Unsurprisingly these popular culture topics tend to grab the attention of various media groups and you can see from this slide a selection of some of the papers that have got coverage. All of these examples are from Physics as the Natural Sciences journal was still in progress when I had to submit these slides to the conference organisers!
Some of the papers have even gone viral! “Trajectory of a Falling Batman” was picked up by pretty much all of the major news outlets and the author was even interviewed on CNN! Subsequently his paper has been used as the core resource for a set of language teaching materials due to its accessible and interesting nature.
Now on to the nitty gritty. The journal sounds like a good idea but how do you mark it? In both cases the students acquire points from both papers and referee reports. Their overall point total is then scaled to the year average point score to get a percentage mark.

To ensure that the students don’t ‘cheat’ this system by submitting leads of rubbish papers they only get full marks, i.e. 3 in Natural Sciences, if the paper is accepted and published. 2 is awarded if the paper was accepted but no final version received. 1 is awarded if the paper was ‘in progress’ when the module finishes. Similarly a good referees report gets 1 mark but a partial attempt only gets 0.5.

### Marking

- Assessed by the number and quality of referees reports, publications and press releases.
- Points scaled to % at the end of module based on cohort’s overall submissions.

#### Natural Sciences:
- Papers = 0-3, Referee report = 0-1.
- Referees reports marked by staff as the journal progresses.
- Papers reviewed by staff at the end.

#### Physics:
- Submission = 1, Referee report = 0-1, Publication = 2, Press Release = 1-3.
- Papers and press release re-reviewed by staff at end, simple ABCD grading.
- +3 marks for A-graded papers, - 3 marks for D-graded papers (and -1 for reviews of these papers).
Finally the overall feedback from our students is very positive. The bar chart shown on the slide represents last year’s Physics cohort. The quotes are from both Physics and Natural Science students. In particular I would like to draw your attention to the Institute of Physics quote.