



UNIVERSITY OF
LEICESTER

Undergraduate eJournals

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Overview

- Motivations for our modules
- How do the journals fit into an undergraduate module?
- Impact on students
- National and global reach
- How can you adapt them to your own programmes?
- Conference themes:
 - Enhancing the student experience
 - Students as partners

Motivation for our modules

- Provide students with experience of professional scientific communication skills & peer review.
- Enhance their collaborative working skills.
- Provide an authentic way of using existing scientific knowledge outside the context in which it is initially taught.
- Encourage creativity.
- Improve problem formulation & modelling skills.
- Provide basic media training and exposure
- Develop an initial publication portfolio: papers indexed on Google Scholar!
- To make it part of their core UG education rather than an extra credit activity.

Why are our journals different?

- Electronic, open access UG journals are not a new idea.
- As far as we are aware ours are the only ones that are:
 - *Directly integrated* into UG programmes (i.e. credit bearing).
 - *Supported* by academic contact hours.
 - *Embedded* within wider *skills training frameworks* within the programmes.
 - *Compulsory for entire cohort* rather than optional extras.

Physics Special Topics

- 10 Credits, 1 term
- Year 4 of MPhys degree
- Leicester students only
- Started 1996 (paper based)
- Open access 2008
- Fixed groups of 3-5 students

Journal of Interdisciplinary Topics

- 5 Credits, 1 term
- Year 3 of BSc & MSci degree
- Leicester & McMaster students
- Started 2012 (open access)
- Flexible groups of 1-3 students

Student roles

Motivation:

- Provide students with experience of professional (academic) scientific communication skills & the peer review process.
 - Enhance their collaborative working skills.
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- Run in exactly the same way as a professional journal:
 - **Author:** write original, quantitative papers.
 - **Referee:** critically review each others papers.
 - **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)
 - Involved with *press releases* and *interviews* (Natural Science).

What do the students write about?

- Papers are *short* (1-2 sides of A4)
- Content is generally structured around simple calculations or mathematical models rather than detailed prose discussion.
- Papers *must* be original: the science is not expected to be ground-breaking but the application and/or quantitative sections of the paper should be new.
- Advice is given on appropriate topics/content during the workshop sessions.

TV Shows
Common phrases
Films
Comics
Games
Books
Fairy Tales
Music
Real world experience

Motivations:

- Provide an authentic way of using their existing scientific knowledge outside the context in which they are initially taught.
- Encourage creativity.
- Develop more sophisticated problem formulation & mathematical modelling skills.
- Provide basic Media training and exposure

Example titles

Journal of Interdisciplinary Science Topics (JIST)

- Does Winnie the Pooh have a B12 Deficiency?
- Slapping Someone into Next Week
- Unravelling the Minion Genome
- A Penny for your Thoughts
- Is it possible to cry a river?

Physics Special Topics (PST)

- Could Bruce Willis Save the Earth?
- Trajectory of a Falling Batman
- Single Photon Vision
- The Skywalker Twins Drift Apart
- James' Giant Peach Transport across the Atlantic

Contact Time / Module Support

- Module Introduction Sessions
- Module Guidelines
 - PST: On website
 - JIST: Module Handbook
- Writing Workshops
 - PST: 1 x 4 hr
 - JIST: 4 x 1 hr
- Editorial Boards
 - PST: 8 x 1 hr
 - JIST: 8 x 1-2 hr

Activity	Date (Proposed)	Duration (hr)
Start of term	09/01/2017	
Introduction	13/01/2017	1
WS01 (Writing)	13/01/2017	1
WS02 (Writing)	20/01/2017	1
WS03 (Writing)	27/01/2017	1
WS04 (Ed board 1)	27/01/2017	1
WS05 (Writing)	03/02/2017	1
WS06 (Ed board 2)	10/02/2017	1
WS07 (Ed board 3)	17/02/2017	1
WS08 (Ed board 4)	24/02/2017	1
WS09 (Ed board 5)	03/03/2017	1
WS10 (Ed board 6)	10/03/2017	2
WS11 (Ed board 7)	17/03/2017	2
WS12 (Wrap up)	24/03/2017	2
	Writing (total)	4
	Ed board (total)	11

Assessment

- The marking scheme is slightly different for each module due to the way groups are formed
- Both assess:
 - The number and quality of referees reports
 - The number of papers published
- PST also assesses the *quality of papers* and *press releases*.

Physics Special Topics

- 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).

Journal of Interdisciplinary Topics

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

Impact on Students: Post-module MCQs



Impact on Students: Free format comments

- What has *satisfied* you most about this module?

Place	JIST: Natural Sciences	PST: Physics
1 st	<ul style="list-style-type: none"> • Freedom: Topic (13/35=37%) 	<ul style="list-style-type: none"> • Process (journal): Overall Mechanism of Scientific Publishing • Freedom: Topic (22/73=30%)
2 nd	<ul style="list-style-type: none"> • Academic: Publication (8/35=23%) 	<ul style="list-style-type: none"> • Academic: Publication (11/73=15%)
3 rd	<ul style="list-style-type: none"> • Process (journal): Refereeing • Process (journal): End Product (6/35=17%) 	<ul style="list-style-type: none"> • Process (journal): Refereeing • Process (writing): Writing (9/73=12%)
4 th	<ul style="list-style-type: none"> • Process (writing): Creativity (5/35=14%) 	<ul style="list-style-type: none"> • Process (writing): Creativity (8/73=11%)
5 th	<ul style="list-style-type: none"> • Academic: Knowledge • Academic: Critical Reflection (4/35=11%) 	<ul style="list-style-type: none"> • Process (journal): Editorial Boards • Future Career/Employability (7/73=10%)

Impact on Students: Free format comments

- What has *dissatisfied* you most about this module?

Place	JIST: Natural Sciences	PST: Physics
1 st	<ul style="list-style-type: none"> Marks/Method of Assessment Workload: Timetable other modules (12/35 = 34%) 	<ul style="list-style-type: none"> Workload: Amount (17/73 = 23%)
2 nd	<ul style="list-style-type: none"> Competition Module: Written guidelines (7/35 = 20%) 	<ul style="list-style-type: none"> Workload: Timetable and deadlines this module Ed board: Consistency-standards Quality of referees (13/73 = 18%)
3 rd	<ul style="list-style-type: none"> Ed board: Consistency-standards (6/35 = 17%) 	<ul style="list-style-type: none"> Workload: Timetable other modules Workload: Time consuming (11/73 = 15%)
4 th	<ul style="list-style-type: none"> Workload: Time consuming (5/35 = 14%) 	<ul style="list-style-type: none"> Module: Written guidelines (10/73 = 14%)
5 th	<ul style="list-style-type: none"> Workload: Amount Papers: Scientific Content (4/35 = 11 %) 	<ul style="list-style-type: none"> Marks/Method of Assessment (9/73 = 12%)

National/Global Reach

PST in the news

Physics Special Topics has received a great deal of media interest over the last few years. A few of the highlights are listed below.

The entries below are listed according to the year of publication in the journal.

2015/16

- **National Geographic** - exploration of PST papers and the benefits of curiosity driven research
- Santa's relativistic journey
 - **BBC radio Leicester interview: skip to 2:45:20**
- Science of superheroes - compilation of 7 years of PST papers
 - **Telegraph**
 - **Guardian**
 - **Science Explorer**
 - **Australian Network News**
- Draining of a lifetime
 - **Daily Mail**
 - **phys.org**
 - **Leicester Mercury**

2014/15

- The Skywalker twins drift apart
 - **Times Higher Education**
 - **The Telegraph**
 - **The Radio Times**
 - **Leicester Mercury**
- Pyramid of Geezers
 - **Physics World 28**, No. 6 June 2015
 - **Focus: Science and Technology**

JIST in the News

2016

General mentions:

- **Gerard Kelly and Partners** - 1 June 2016
- **University of Leicester Blog** - 1 June 2016
- **University of Leicester Blog** - 9 May 2016
- **University of Leicester Student Blog** - 29 February 2016
- **University of Leicester Press Release** - 20 February 2016

How might the force work?

Leah Ashley, Rowan Reynolds, Robbie Roe

- **University of Leicester** - 4 May 2016
- **Phys.org** - 4 May 2016
- **Science Newsline** - 4 May 2016
- **STEAM Register** - 4 May 2016

What would the world be like to a borrower?

Jonathan Panuelos, Laura Green (McMaster Exchange)

- **The Telegraph** - 3 May 2016
- **Journal Focus** - 3 May 2016
- **The Guardian** - 4 May 2016
- **Daily Mail** - 4 May 2016
- **Brief Report** - 4 May 2016
- **ElectricScienceNews** - 4 May 2016
- **Bugle Daily News** - 4 May 2016
- **Helena Pielichaty** - 4 May 2016
- **BBC** - 6 May 2016
- **The News Quiz (BBC)** (24 minutes in) - 6 May 2016
- **Gulf News** - 8 May 2016
- **Jist News** - May 2016

- <http://www2.le.ac.uk/departments/physics/physics-special-topics/news>
- <http://www2.le.ac.uk/departments/interdisciplinary-science/research/student-research-2/jist-journal-of-interdisciplinary-science-topics/jist-in-the-news-1>

National/Global Reach

“The panel was **particularly impressed** by the Journal of Special Topics... The finished journal was found to be **very impressive... a valuable piece of work that the students could show prospective employers**”

IOP

National/Global Reach

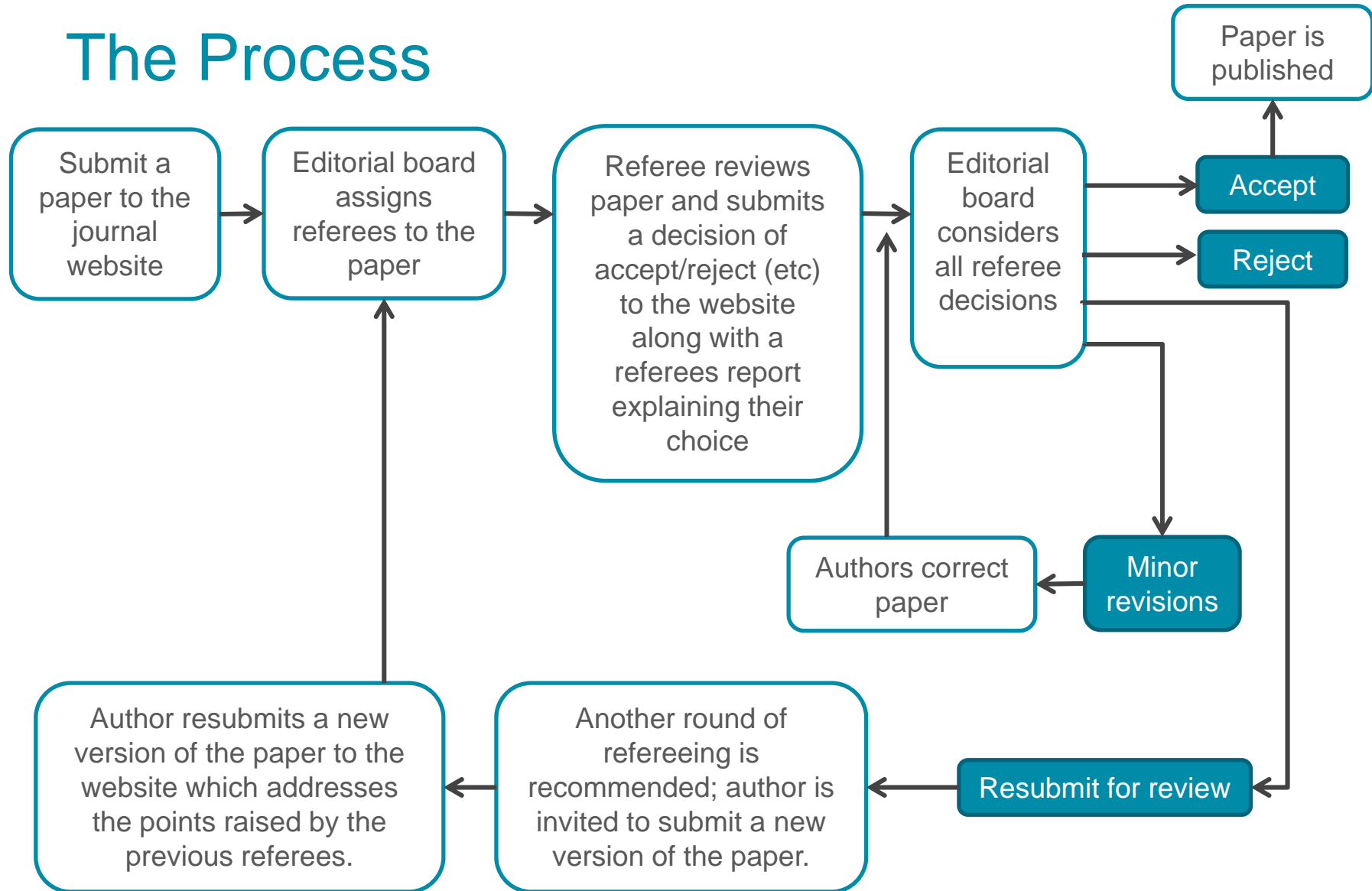
- Inspiring new journals
 - **Press Start** <http://press-start.gla.ac.uk/index.php/press-start>
 - (University of Glasgow: Game Studies. Game design/development, Psychology, Philosophy, Sociology, Film and Television, Literature, History, Computing Science and History of Art)
 - **iScientist** <https://journals.mcmaster.ca/iScientist/index>
 - (McMaster University, Canada: Natural Sciences)
- Further interest from:
 - Nottingham Trent University (School of Arts and Humanities)
 - University of Leicester (Department of Mathematics)

How can you adapt this to your own programmes?

- Examples so far have shown that this type of module can be flexibly deployed:
 - Our modules are term long (5/10 credits) but they could easily be year long
 - *Assigned, fixed or adaptable, student chosen* groups
 - Variable support for writing workshops is possible depending upon your students' strengths
 - Journal topic and paper length is entirely up to the learning objectives you want to meet:
 - A few/longer papers focusses on the *writing* and *critiquing* process
 - More/shorter papers focusses on the *publication* process and *applying knowledge to new situations*
- We are more than happy to consult on how you can deploy this in your own course (cph9@le.ac.uk & mr6@le.ac.uk).



The Process



Submission and Publication Rates

	Year	Students	Papers Submitted	Papers Published	'Success' Rate (%)
PST	2012-13	28	70	64	91
	2013-14	22	73	70	78
	2014-15	36	78	67	86
	2015-16	25	53	51	96
	Total	111	274	239	87
JIST*	2012-13	12	20	17	85
	2013-14	10	36	18	50
	2014-15	15	42	33	79
	2015-16	13	42	28	67
	Total	50	140	96	69

*Note: These values only include Leicester students for a direct comparison