



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.
- 
- 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.



## 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
	<b>Writing (total)</b>	<b>4</b>
	<b>Ed board (total)</b>	<b>11</b>

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

# Impact on Students: Free format comments

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

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

# 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

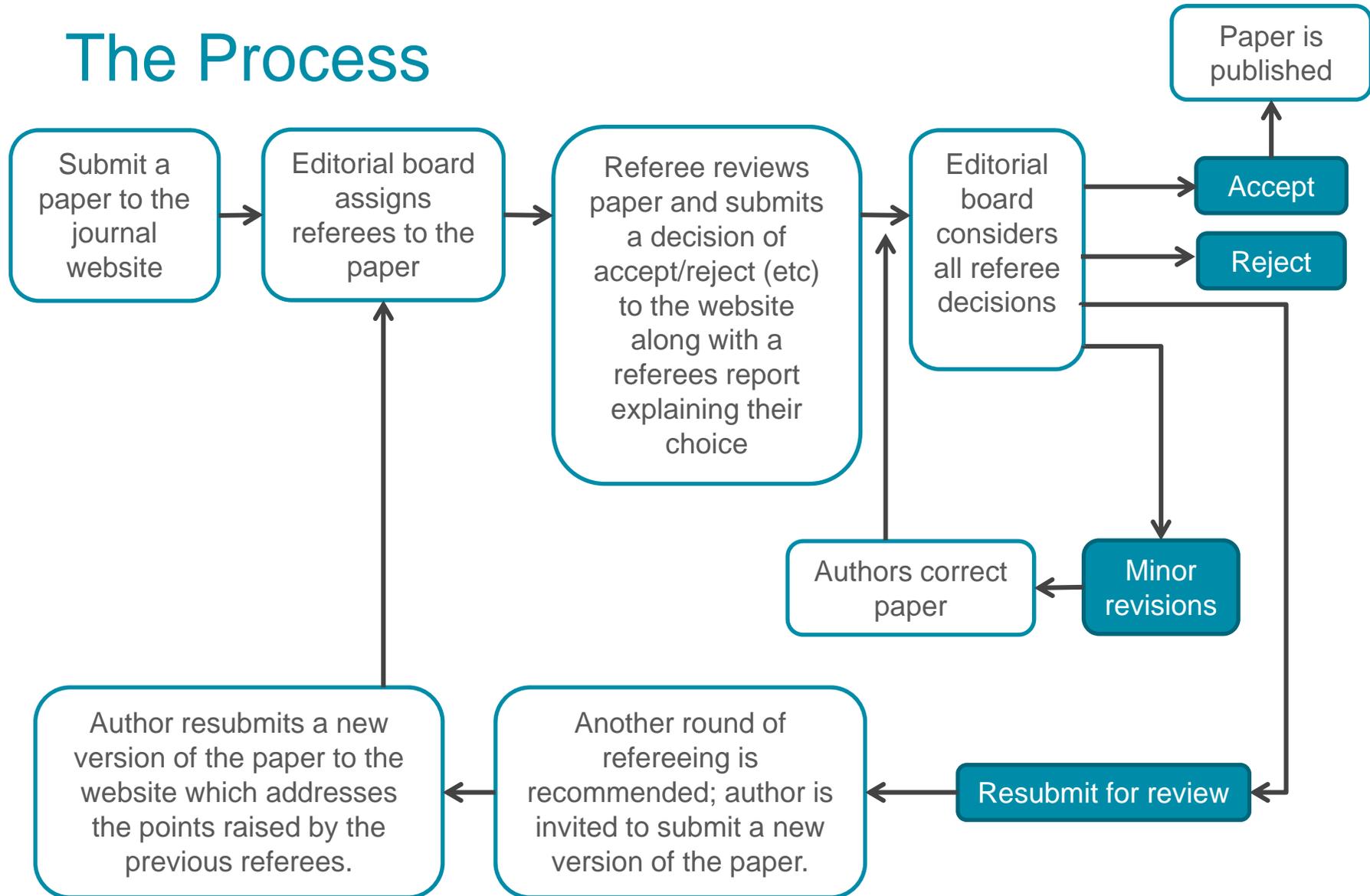
- Inspiring new journals
  - **Press Start** <http://press-start.gla.ac.uk/index.php/press-start>
    - (University of Glasgow: Game Studies. Game design/development, Psychology, Philosophy, Sociology, Film and Television, Literature, History, Computing Science and History of Art)
  - **iScientist** <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](mailto:cph9@le.ac.uk) & [mr6@le.ac.uk](mailto: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
	<b>Total</b>	<b>111</b>	<b>274</b>	<b>239</b>	<b>87</b>
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
	<b>Total</b>	<b>50</b>	<b>140</b>	<b>96</b>	<b>69</b>

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