Using a CRIS to allocate research funding based on research outputs

Liam Cleere
Senior Manger,
Research Analytics & Reporting

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Ireland’s largest university
• 32,000 students
• 1,300 academic staff
• 700 research staff
• 1,700 support staff
• 5,600 overseas students
• 6,500 international students in Dublin
• 8,000 graduate students
• 1,600 PhD students

Some **numbers**
Introduction

• Research activity is critical to University College Dublin’s reputation as a leading international university

• Many of the day-to-day costs of research activity are not covered by research grants

• In recognition of this, UCD has developed the *Output-Based Research Support Scheme (OBRSS)* to disburse research support funds to faculty based on their research outputs, as captured in **UCD’s Research Management System**
UCD Strategy

• Objective 1: Strategy 2020

  – “increase the quality, quantity and impact of our research, scholarship and innovation to levels equal to or exceeding those of a comparator group of top 100 universities”
Context

• International
  – Several countries have used output based funding models, e.g. Norway and Denmark

• UCD
  – Resource Allocation Model discontinued in Nov 2014
  – Need a method of financial resource allocation that is aligned to the UCD strategy
What is the Output based research support scheme?

- Uses publication and PhD supervision records, to allocate research funding to academic staff

- Points are allocated to different types of publications and supervision
  - Publications – last 3 years e.g. 2013 - 2015
  - PhD Supervision – current academic year

- Research Grants are awarded on points
Principles of the scheme

• **Fair**
  – Faculty should be actively involved in its creation and define its methodology

• **Transparent**
  – Metrics and data used in the model should be based on accessible and reproducible data

• **Easy to understand & implement**
  – to ensure that everyone in the university can play a part in performance improvement

• **Underpinned by the strategic objectives**
  – the model should reinforce the objectives of the Strategy 2015-2020 by rewarding progress towards those objectives

• **Rewards excellence**
  – the model should be designed so as to encourage excellence
Points scoring

Faculty

Publication records

RMS

Match publications to lists

‘Normal’ list

List of publication channels

‘Prestigious’ list

Calculate points based on publication type and channel

Calculate points based on number of students supervised

PhD Supervision records

Banner

 Register Students

Update profile

Research Grant Awarded
(based on total points)
# Points for publication & supervision

<table>
<thead>
<tr>
<th>Publication types</th>
<th>Points Level 1 'normal' (per publication)</th>
<th>Points Level 2 'prestigious' (per publication)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Journals Article</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Book Chapters</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Conference Publication</td>
<td>0.5</td>
<td>2</td>
</tr>
<tr>
<td>Edited Book</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Other Publication</td>
<td>0.5</td>
<td>2</td>
</tr>
<tr>
<td>Published Report</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supervision types</th>
<th>Points for Secondary Supervision (per student)</th>
<th>Points for Primary Supervision (per student)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD Supervision</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Assigning publication levels

• The channel list is divided into 2 levels: ‘normal’ & ‘prestigious’

• Level 1 (normal) comprises 87% of the source titles, while level 2 (prestigious) comprises 13%.
  – There are 22,699 journal titles and 1,407 publishers on the Danish authoritative list. In modelling this scheme a further 19,703 journal titles from Scopus were added – all level one by default.

• Danish model uses two overall guidelines for nomination to level 2
  – Perceived by the international research environment as the indisputably leading within the research area
  – In total publish a maximum of 1/5 of the research area’s scientific publications worldwide.
Additional parameters

• **UCD author factor**
  - multiply by 0.7 if there are two UCD academic staff on the paper;
  - multiply by 0.6 if there are three UCD academic staff on the paper;
  - multiply by 0.5 if there are four or more UCD academic staff on the paper

• **When total number of authors on a paper exceeds 100, multiply the result by 0.1**

• **International collaboration is rewarded by multiplying publication points for a publication with authors from different countries by 1.25**
Timeline

• **Design:**
  - Dec 2015 - Jan 2016: Refine the draft model

• **Refine:**
  - Feb - Apr 2016: Review of the publication channels contained in the authoritative lists
    - Feedback on draft model by 25th March
    - Feedback on publication channel lists by 29th April

• **Harvest:**
  - May 2016: First harvest
  - Oct 2016: Final harvest

• **Award:**
  - Nov - Dec 2016: Awards grants
2016 Results

• **724**: UCD Academic staff receive additional grant monies to help support their research activities.

• **€650k** in new research funding was allocated to academic staff to support their research activities using this scheme.

• **The creation of ranked publication channel lists** will guide academic staff on where to publish. This will help achieve objective #1 of the strategy to 2020 i.e. “increase the quality, quantity and impact of our research, scholarship and innovation to levels equal to or exceeding those of a comparator group of top 100 universities”. Improved research outputs directly influence international rankings and help enhance the university’s reputation - leading to increased rates of enrolment by high fee paying international students.

• **85% of academic staff updated their profiles** More complete and up to date information is available in the Research Information System for reporting purposes. This leads to time saving in report production.

• **Only 3% of academic staff queried the results of the scheme**. This compares with 50% on other internal funding schemes.

  • Academic staff are automatically entered into the scheme, if successful their awards are registered for them by the research office. This **saves academic time where compared to other funding schemes** where staff have to apply for funding.
### Very positive reactive to the scheme

| What a lovely surprise! Many thanks for this | Many thanks for confirming this award. **For what it is worth, I think this is one of the most interesting, well thought out and well managed initiatives I’ve encountered in over 30 years in academia.**
|
| Lecturer in Business | Trying to capture an element of quality (over quantity) remains important and this scheme seems to attempt to do that. It would be wonderful to see similar scheme adopted for teaching efforts - one that included an element of quality.
|
| Just a note to say thanks for getting this going. I think it is a really good idea. It is a welcome positive communication to get!. I will be hoping to keep my grant in reserve so that I can buy a pump when the next one breaks down completely (that is one of my extreme irritations in the lab - there is no other source of such funding) | Professor of Medicine |
| Professor of Chemistry | |
| Thank you for your message. I am delighted with the award. I think it is a great initiative. | Many thanks for this. I am extremely happy to hear that I have been awarded this grant, and I look forward to putting it to good research use. |
| Associate Professor of Law | Lecturer in English |
| Thank you very much for the support. This will encourage me to improve further. | |
Next Steps following last years scheme

• The scheme should be run again (this year)

• Publication channel lists should be reviewed
  – especially the percentage of outputs that are classified as ‘prestigious’ by the scheme in some schools

• OBRSS points system should be adopted by the university as the measure of research activity
  – i.e. if a person has more than zero OBRSS points they are research active; the total number of OBRSS points indicate the intensity of the research activity.

• OBRSS results should inform the academic promotions process

• OBRSS channel lists should be used by schools to inform their publication strategies
How points are calculated

- **Publication output points** = $B \times C \times F \times N$, where
  - $B$ = Basic points (based on if publication is on ‘normal’ or ’prestigious’ list)
  - $C$ = collaboration factor (multiply by 1.25 if there are any external authors on the paper)
  - $F$ = UCD author factor (multiply by 0.7 if there are two UCD academic staff on the paper; multiply by 0.6 if there are three UCD academic staff on the paper; multiply by 0.5 if there are four or more UCD academic staff on the paper)
  - $N$ = if the total number of authors on a paper exceeds 100, multiply the result by 0.1

- **PhD supervision points** = number of PhD students supervised by each academic staff member in the current academic year. Two points are awarded for being a primary or secondary supervisor. Points are capped at 20 for PhD supervision.
## Worked Example

<table>
<thead>
<tr>
<th>Publication Type</th>
<th>Journal Name / Publisher</th>
<th>Publication list</th>
<th>International Multiplier?</th>
<th>UCD Author Multiplier</th>
<th>Total Author Multiplier</th>
<th>Basic Points</th>
<th>Points per publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td>Blackwell Publishing Ltd.</td>
<td>'prestigious'</td>
<td>1</td>
<td>0.7</td>
<td>1</td>
<td>8</td>
<td>5.60</td>
</tr>
<tr>
<td>Conference Publication</td>
<td>9th International Conference on Equine Exercise Physiology</td>
<td>Not on list</td>
<td>1</td>
<td>0.7</td>
<td>1</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Peer Reviewed Journal</td>
<td>Equine Veterinary Journal</td>
<td>'prestigious'</td>
<td>1</td>
<td>0.7</td>
<td>1</td>
<td>3</td>
<td>2.10</td>
</tr>
<tr>
<td></td>
<td>Journal of Applied Physiology</td>
<td>'prestigious'</td>
<td>1</td>
<td>0.6</td>
<td>1</td>
<td>3</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>Nature communications</td>
<td>'normal'</td>
<td>1.25</td>
<td>0.6</td>
<td>1</td>
<td>3</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>P L o S Genetics</td>
<td>'prestigious'</td>
<td>1</td>
<td>0.7</td>
<td>1</td>
<td>3</td>
<td>2.10</td>
</tr>
<tr>
<td></td>
<td>P L o S One</td>
<td>'normal'</td>
<td>1</td>
<td>0.7</td>
<td>1</td>
<td>1</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Total Publication Points: **13.05**

€ per point: **€35.00**

€ for publications: **€456.75**

<table>
<thead>
<tr>
<th>Supervision Type</th>
<th>Student</th>
<th>Supervision type</th>
<th>Basic Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD Supervision</td>
<td>Student 1</td>
<td>Primary</td>
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</tr>
<tr>
<td></td>
<td>Student 2</td>
<td>Primary</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Student 3</td>
<td>Primary</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Student 4</td>
<td>Secondary</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Supervision Points: **7**

€ per point: **€35.00**

€ for publications: **€245.00**

Value of Total Grant: **€701.75**