UNIVERSITY OF HULL

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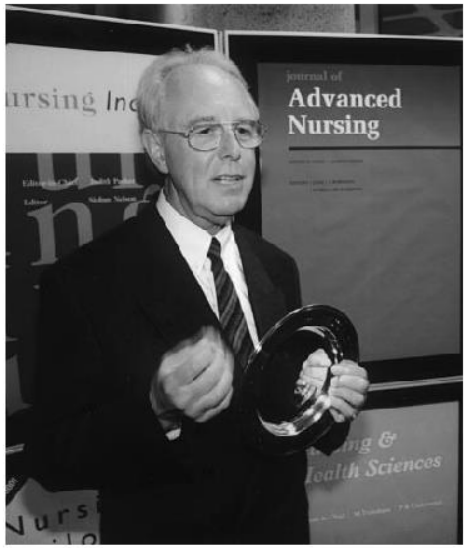
SCHOLARLY PUBLISHING AND RESEARCH IMPACT: A tribute to James P Smith

RCN International Research Conference

Sheffield, UK



Outline

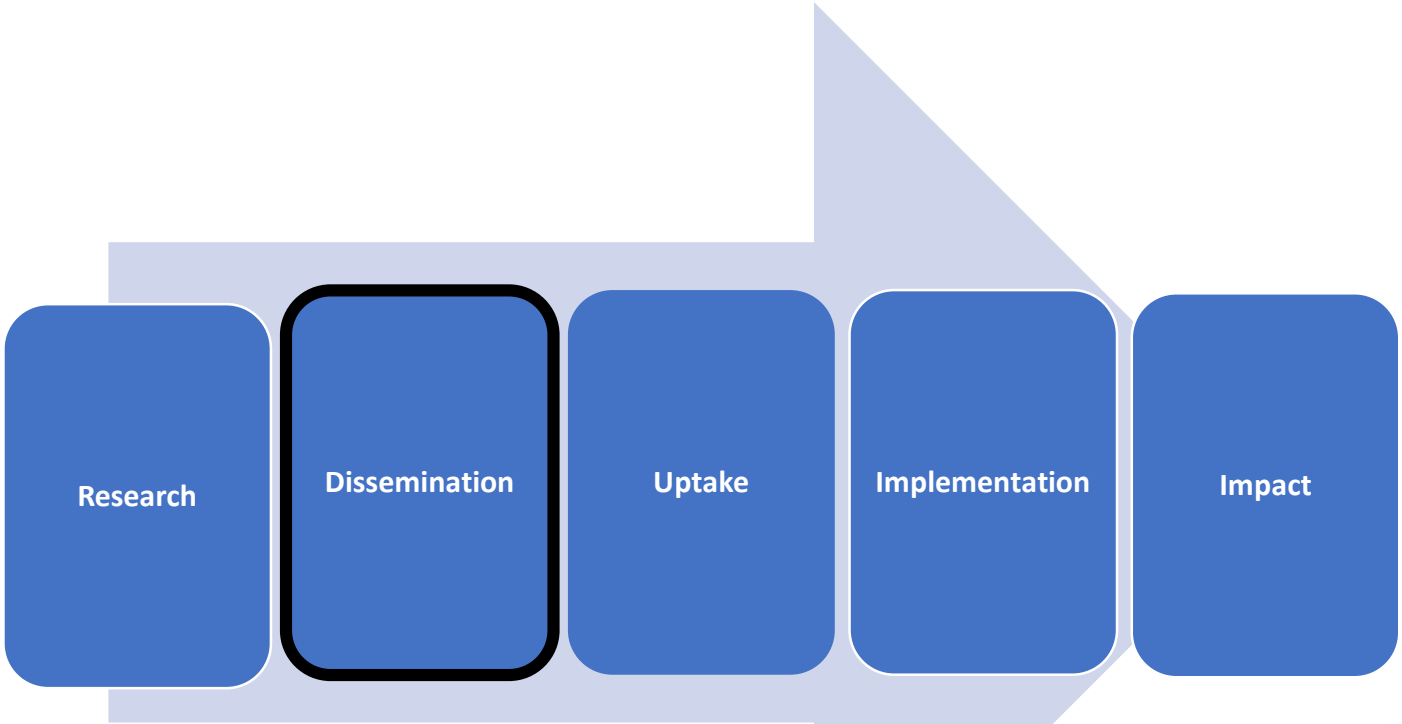
- Scholarly publishing and research impact: background and context
  - Alison J Tierney
- Measuring the impact of published research
  - Roger Watson
- Research outputs and impact in the REF: a quality relationship
  - Hugh P McKenna
- Postgraduate research students and early career researchers and the publication process
  - Parveen Azam Ali

Scholarly publishing and research impact: background and context

Alison J Tierney

‘the demonstrable contribution that excellent research makes to society and the economy’

Steps in the ‘pathway to research impact’



Scholarly publishing and research impact

For research to make an impact it first needs to be known about and publishing in scholarly journals is still the main medium for the dissemination of research

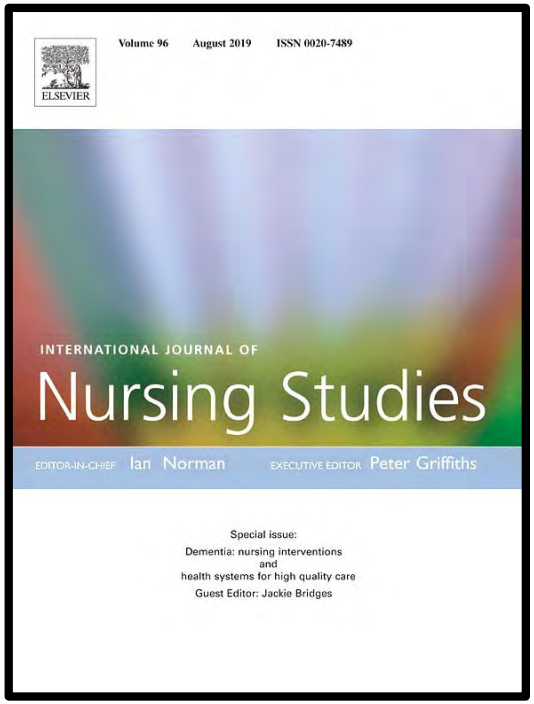
Scholarly journals

First scholarly journal '*Philosophical Transactions*'
Henry Oldenburg -Royal Society of London - 1665

Four functions:-

- ❑ Registration
- ❑ Dissemination
- ❑ Peer review
- ❑ Archival record

Nursing Research (1952), *Int. J. of Nursing Studies* (1963), *Journal of Advanced Nursing* (1976)



Why aren't practising nurses using research findings?

- ❑ they don't know about them
- ❑ they don't understand them
- ❑ they don't believe them
- ❑ they don't know how to apply them
- ❑ they're not allowed to use them

Hunt J (1981) Indicators for nursing practice: the use of research findings. *Journal of Advanced Nursing*, 6,3, 189-194.

1988 House of Lords select committee report looking at priorities in medical research criticised the NHS for *'failing to articulate its research needs and attend to the problems of implementation'*

1990s

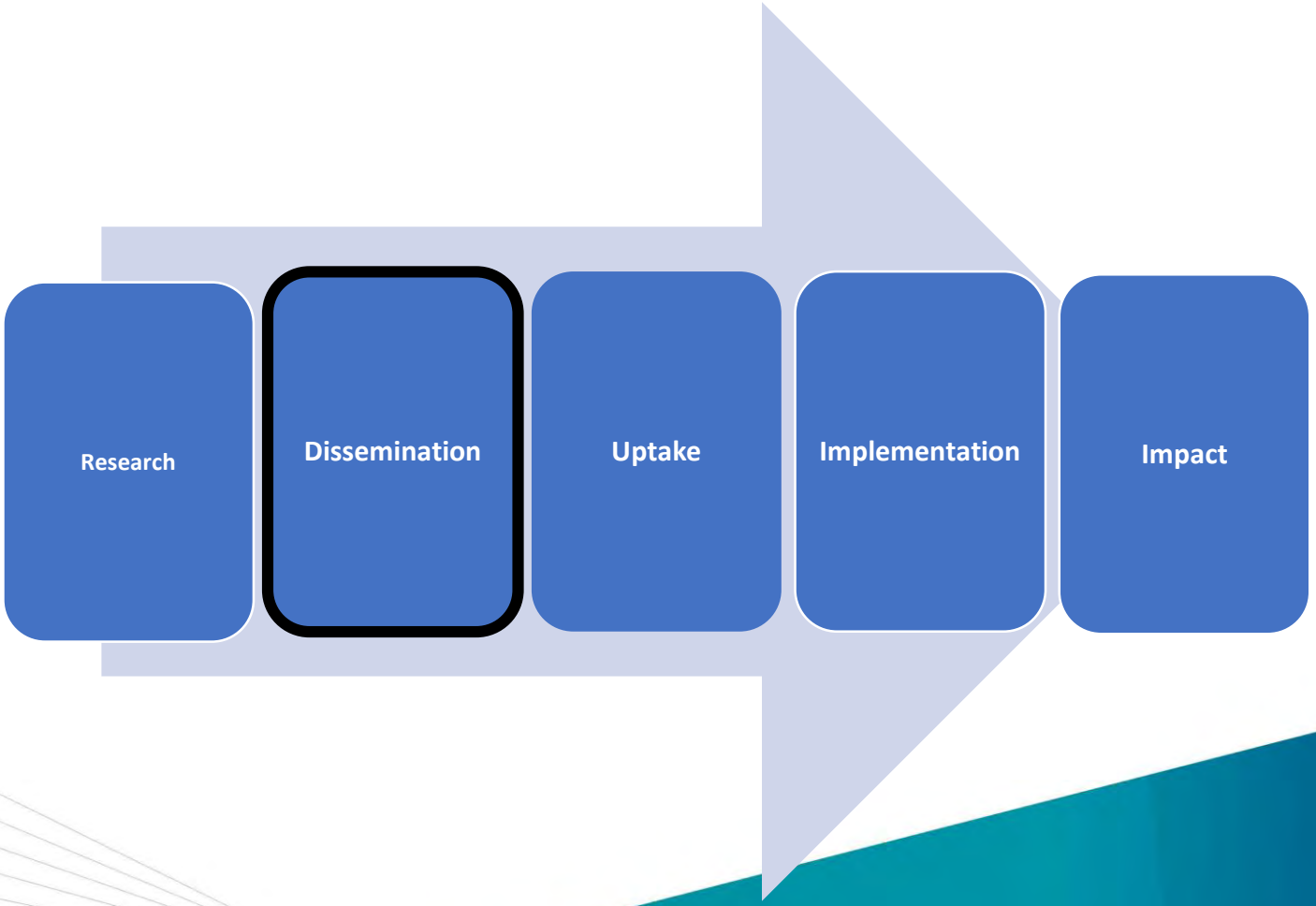
- 1991 R&D Strategy for the NHS > Strategy for Nursing Research
- Adoption of 'evidence-based' approach in health care
  - Cochrane Collaboration > Systematic Reviews
  - Exposed weaknesses in research and in its reporting
- Increasing scrutiny of research *quality* and *outputs*
  - RAE
  - Funders
  - Journals

quality, relevance, impact

- ❑Titles and keywords
- ❑Structured abstracts
- ❑Summary statements
  - oWhat is already known and this topic
  - o What this paper adds
- ❑Method in detail
- ❑Global perspective

Transformation of journal publishing

Steps in the ‘pathway to research impact’



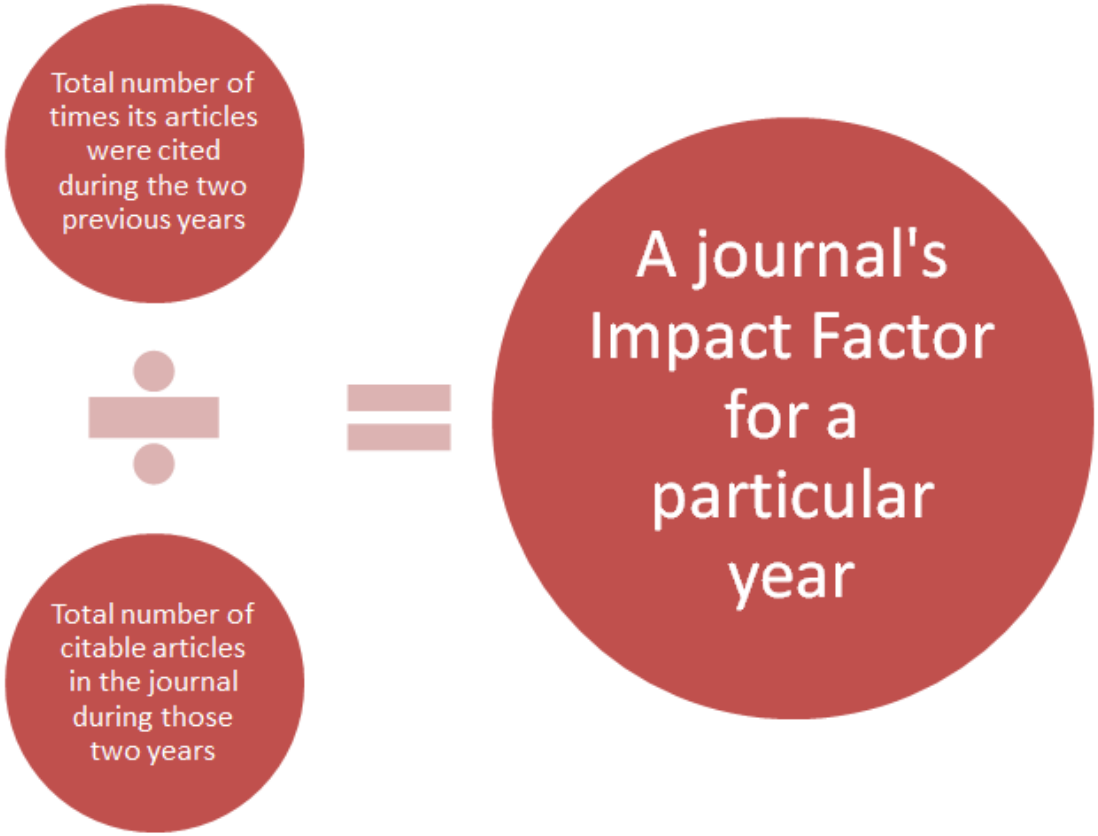
Measuring the impact of published research

Roger Watson

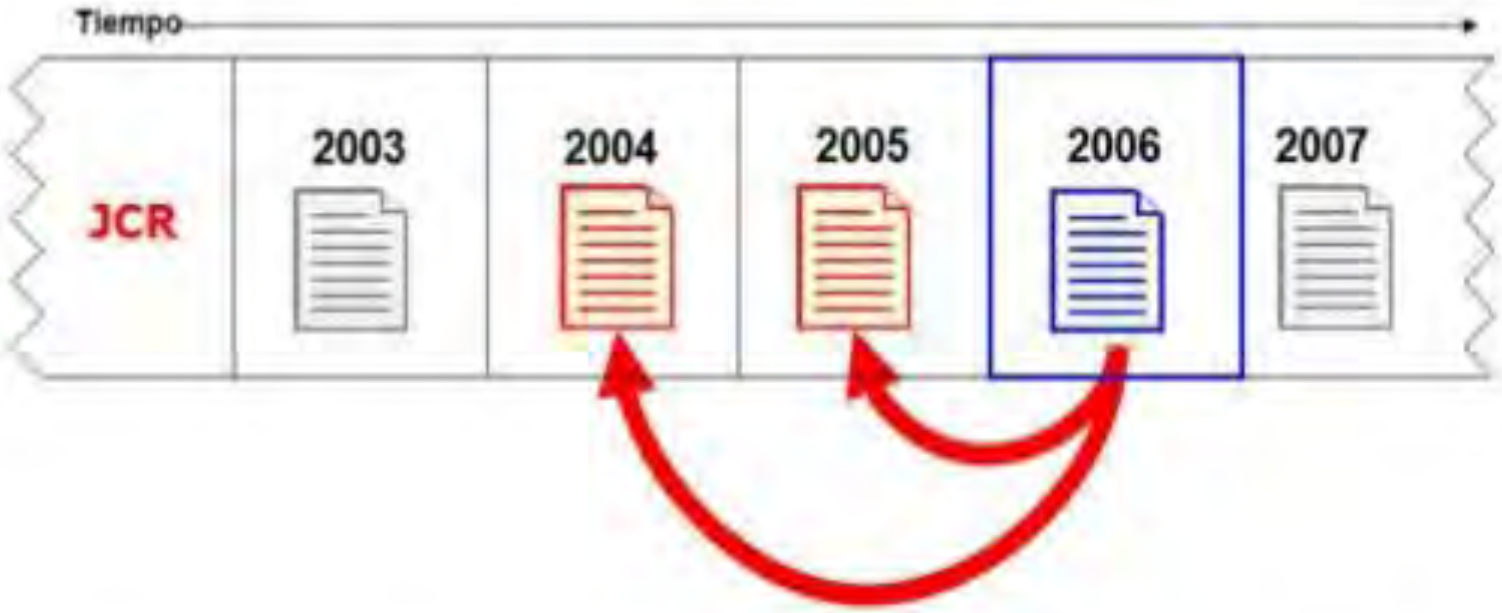
Measures of impact

- Clarivate journal impact factor
- Altmetrics
- Strategy

The impact factor

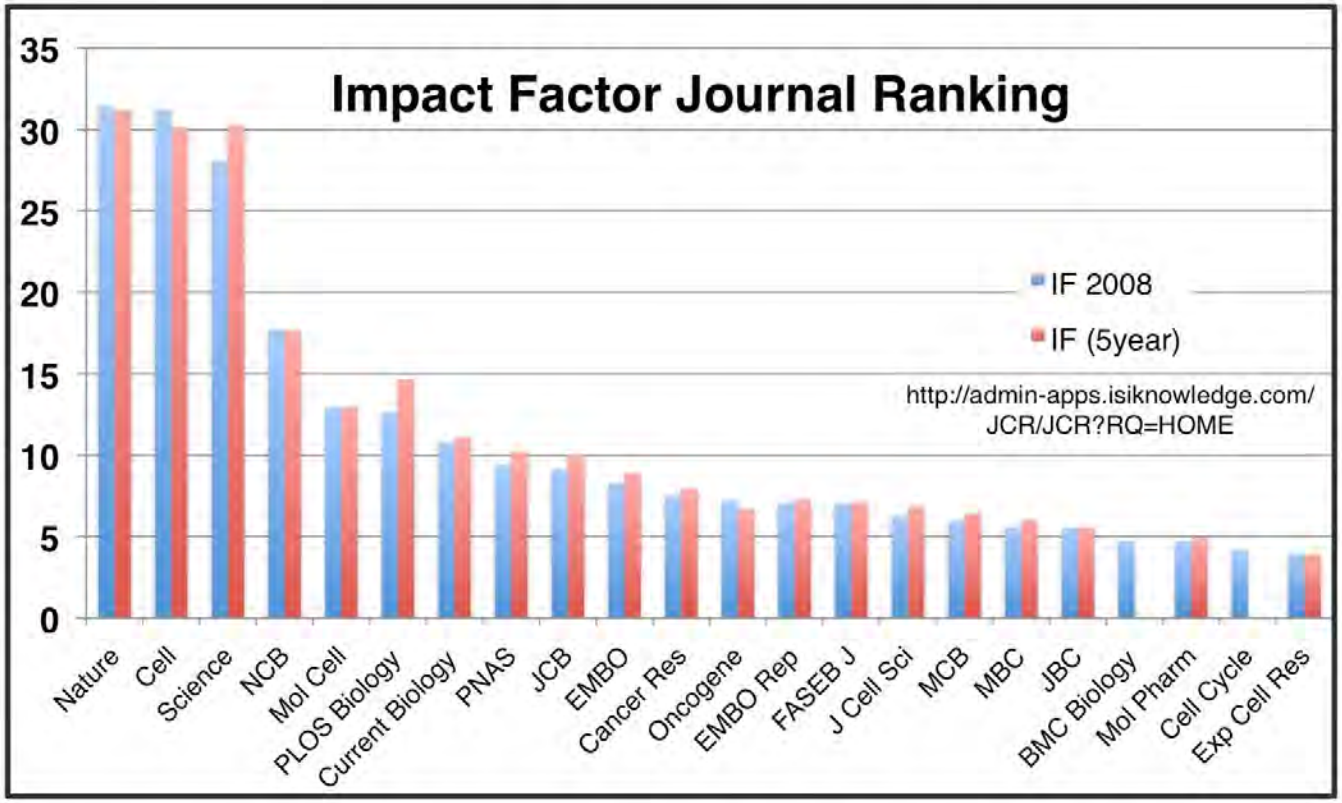


How do we calculate the ImpactFactor



$$\text{IMPACT FACTOR 2006} = \frac{\text{CITATIONS 2004-2005}}{\text{PUBS 2004-2005}}$$

Mar		itle ion)	ISSN	JCR Data						Eigenfactor™ Metrics	
				Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Articles	Cited Half-life	Eigenfactor™ Score	Article Influence™ Score
☐			0016-5085	55276	12.899	12.432	2.528	405	7.1	0.15164	4.032
☐			0270-9139	41640	10.840	10.912	1.920	402	6.6	0.10590	3.065
☐			0017-5749	28455	9.357	9.663	2.528	180	7.2	0.07076	2.867
☐	4	J HEPATOL	0168-8278	17413	7.818	6.624	2.559	222	6.1	0.04699	1.867
☐	5	GASTROINTEST ENDOSC	0016-5107	17856	6.713	6.593	1.453	395	5.7	0.04365	1.571
☐	6	AM J GASTROENTEROL	0002-9270	26199	6.012	6.380	1.580	312	6.9	0.06330	1.818
☐	7	CLIN GASTROENTEROL H	1542-3565	5503	5.642		0.939	179	3.3	0.03310	
☐	8	ENDOSCOPY	0013-726X	7323	5.545	4.791	0.729	140	5.3	0.02233	1.299
☐	9	SEMIN LIVER DIS	0272-8087	3049	5.171	5.326	0.447	38	7.9	0.00720	1.524
☐	10	INFLAMM BOWEL DIS	1078-0998	4625	4.643	4.530	0.889	216	3.5	0.01883	1.169
☐	11	NAT CLIN PRACT GASTR	1743-4378	1024	4.520	4.917	1.750	12	3.1	0.00620	1.461
☐	12	ALIMENT PHARM THER	0269-2813	11831	4.357	3.825	0.879	264	5.1	0.03715	0.989
☐	13	CURR OPIN GASTROEN	0267-1379	1547	4.331	3.088	0.535	71	3.0	0.00811	0.957
☐	14	LIVER TRANSPLANT	1527-6465								
☐	15	NEUROGASTROENT MOTIL	1350-1925								
☐	16	J VIRAL HEPATITIS	1352-0504								
☐	17	AM J PHYSIOL-GASTR L	0193-1857								
☐	18	LIVER INT	1478-3223								
☐	19	DIGEST LIVER DIS	1590-8658								
☐	20	J GASTROENTEROL	0944-1174								



Altmetrics

In scholarly and scientific publishing, **Altmetrics** are new metrics proposed as an alternative to the widely used journal impact factor and personal citation indices like the h-index.

(Wikipedia)

JAN
Informing Practice and Policy Worldwide through Research and Scholarship

Editorial

How academic nursing is being enriched by 'The Thriller Elite'

FREE

Philip Darbyshire PhD RN Professor of Nursing, Director[1,2,3] and David R. Thompson PhD RN Professor of Nursing[4]

Article first published online: 28 JAN 2014

DOI: 10.1111/jan.12350

Issue

Journal of Advanced Nursing

Volume 70, Issue 10, pages 2165–2166, October 2014

Am score 41

Additional Information (Show All)

How to Cite | Author Information | Publication History

Abstract | Article | References | Cited By

View Full Article (HTML) | Enhanced Article (HT

No abstract is available for this article.

SEARC
In this is
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ARTICLE
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Altmetrics scoring system

News	8
Blogs	5
Twitter	1
Facebook	0.25
Sina Weibo	1
Wikipedia	3
Policy Documents (per source)	3
Q&A	0.25
F1000/Publons/Pubpeer	1
YouTube	0.25
Reddit/Pinterest	0.25
LinkedIn	0.5
Open Syllabus	1
Google+	1
Patents	3

e altmetric donut visually represents the types (colors) and the frequency (thickness of the stripes) of mentions AAS) is located in the centre of the wheel. In this figure, the 649 score represents the highest AAS among the tudy, which was achieved by Schulz and Sherwood's (2008) article [Colour figure can be viewed at wileyonline

ource of altmetric scores for several reasons: (a) it

each article's title, authors, year of publication; pu

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Can Tweets Predict Citations? Metrics of Social Impact Based on Twitter and Correlation with Traditional Metrics of Scientific Impact

Gunther Eysenbach

JMIR (2011)

Twitations

Twimpact

Highly tweeted articles were 11 times more likely to be highly cited than less-tweeted articles (9/12 or 75% of highly tweeted article were highly cited, while only 3/43 or 7% of less-tweeted articles were highly cited; rate ratio 0.75/0.07 = 10.75, 95% confidence interval, 3.4–33.6). Top-cited articles can be predicted from top-tweeted articles with 93% specificity and 75% sensitivity.

Abstract ▾ Send to: ▾

Transplantation. 2014 Sep 15;98(5):490-6. doi: 10.1097/TP.0000000000000307.

Social media and online attention as an early measure of the impact of research in solid organ transplantation.

Knight SR[1].

⊕ Author information

Abstract

INTRODUCTION: Traditional measures of the impact of published research, such as citation counts, are limited to measuring academic impact. The use of social media and other online tools as alternative measures of research impact is gaining popularity and used by leading medical journals.

METHODS: MEDLINE was searched for articles published with subject headings relating to solid organ transplantation between August 1, 2011 and [illegible]S, and statistics regarding mentions in social media, social b[illegible]ites were retrieved from the data at www.altmetric.com. Data[illegible]ata and citation rates.

RESULTS: The search r[illegible]d at least one citation. Mentions in social media were 19.3%[illegible]ations, and online news outlets picked up eight articles. Significantly higher citation rates were associated with mention in social media, expert recommendation, social bookmarking, and for articles identified as meta-analyses, multicenter studies, randomized controlled trials, and reviews (all P<0.001). The odds of an article being highly cited were significantly increased by a mention in social media (odds ratio, 2.58; P<0.001). Qualitative analysis suggests that article topics discussed on social media are more likely to relate to the more controversial and emotive areas of transplantation.

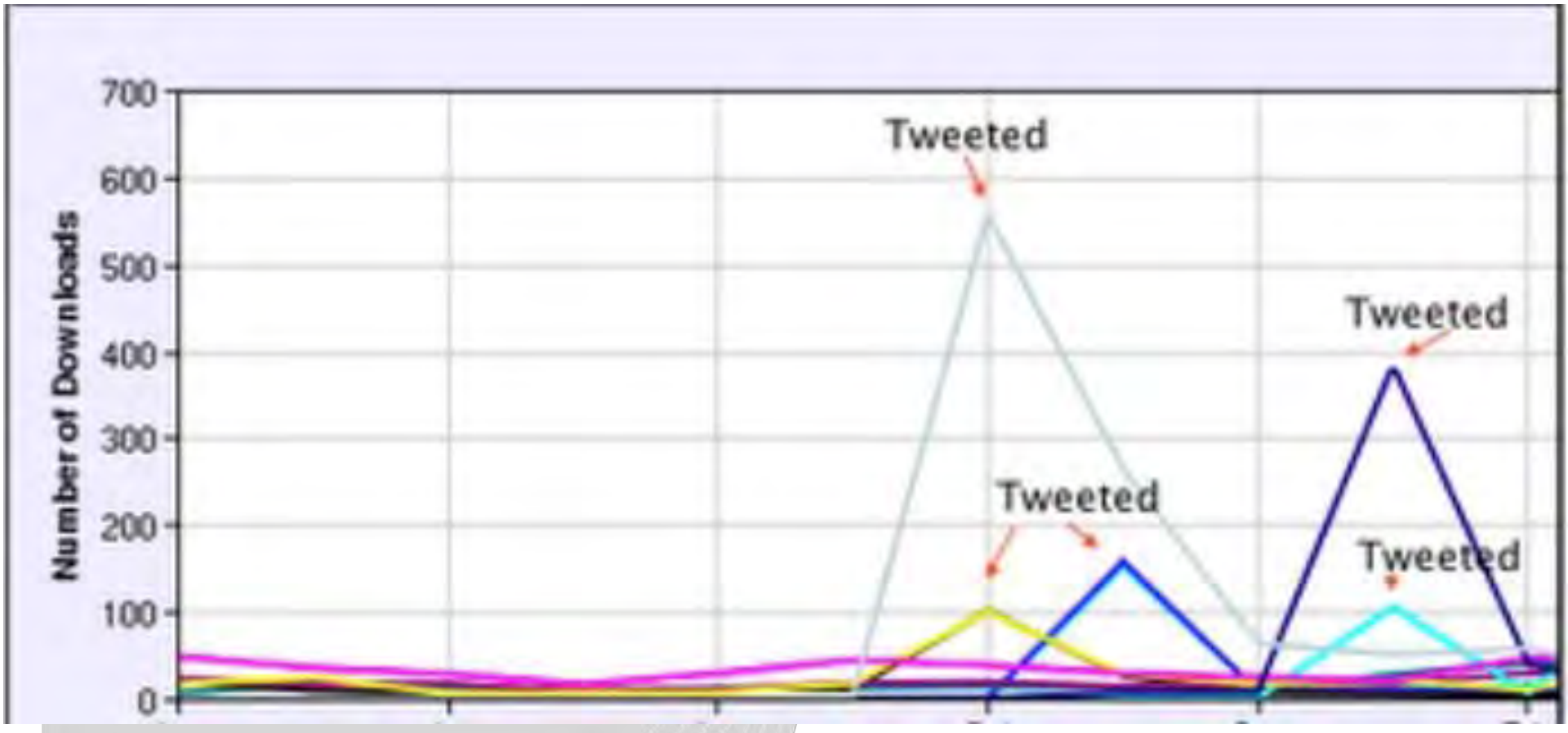
DISCUSSION: Social media and online attention act as early predictors of the impact of transplant research as measured by later citation rate. Blogging and expert recommendation, in particular, are associated with higher citation rates.

The odds of an article being highly cited were significantly increased by a mention in social media; OR 2.58, p<0.001

PMID: 25061904 [PubMed - indexed for MEDLINE]

The verdict: is blogging or tweeting about research papers worth it?

Eager to find out what impact blogging and social media could have on the dissemination of her work, ***Melissa Terras*** *took all of her academic research, including papers that have been available online for years, to the web and found that her audience responded with a huge leap in interest in her work.*


Number of Downloads
700
600
500
400
300
200
100
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2018 | Accepted: 13 November 2018
3921

REVIEW PAPER

WILEY JAN

Measuring the social impact of nursing research: An insight into altmetrics

Latefa Ali Dardas[1] | Amanda Woodward[2] | Jewel Scott[3] | Hanzhang Xu[3,4] | Faleh A. Sawair[5]

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[2]Duke University Medical Center Library and Archives, Durham, North Carolina

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[5]The University of Jordan Accreditation and Quality Assurance Center, Amman, Jordan

Correspondence
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Funding information
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors

Abstract

Aims: The objectives of this study were to (a) identify *nursing journal* articles that provoked the most online activity and discussion and (b) assess the association between these articles' altmetric scores and publication characteristics, citation counts; and publishing journals metrics.

Background: Altmetrics, or alternative metrics, have recently emerged as a complementary way of measuring the societal impact of research by assessing the public engagement with research output. To date, no studies have yet investigated the online attention about scientific papers published in the nursing field.

Design: Integration of quantitative and qualitative synthesized evidence.

Data sources and review methods: InCites Journal Citation Report was used to identify a list of nursing journals indexed in the Web of Science Core Collection. Altmetric Explorer was selected as an altmetrics harvesting tool. The search in Altmetric Explorer yielded 66,608 research outputs from 118 nursing journals. The articles with the top 100 altmetric attention score (AAS) were identified and a new

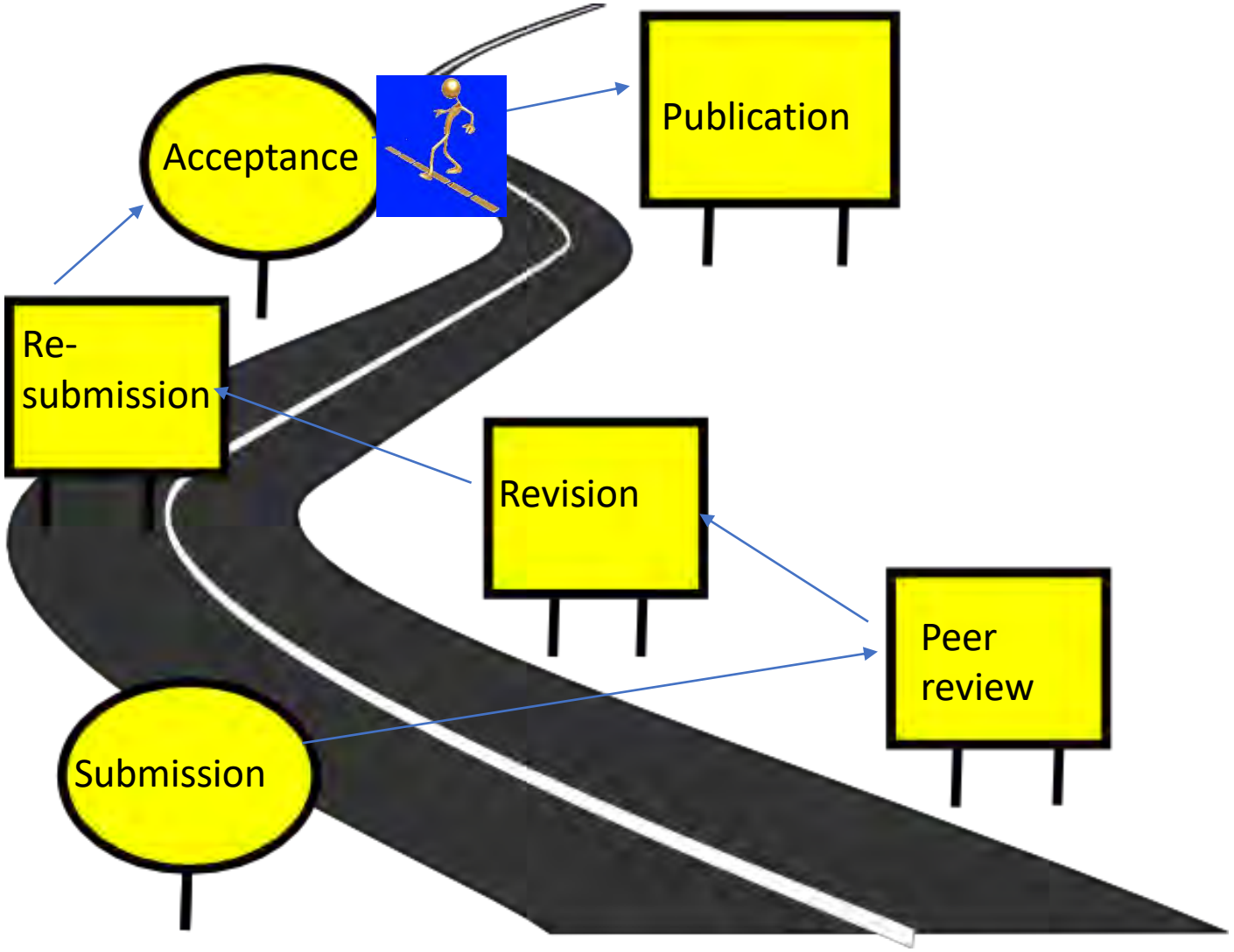
the influence research is exerting on a particular field.

What are the key findings?

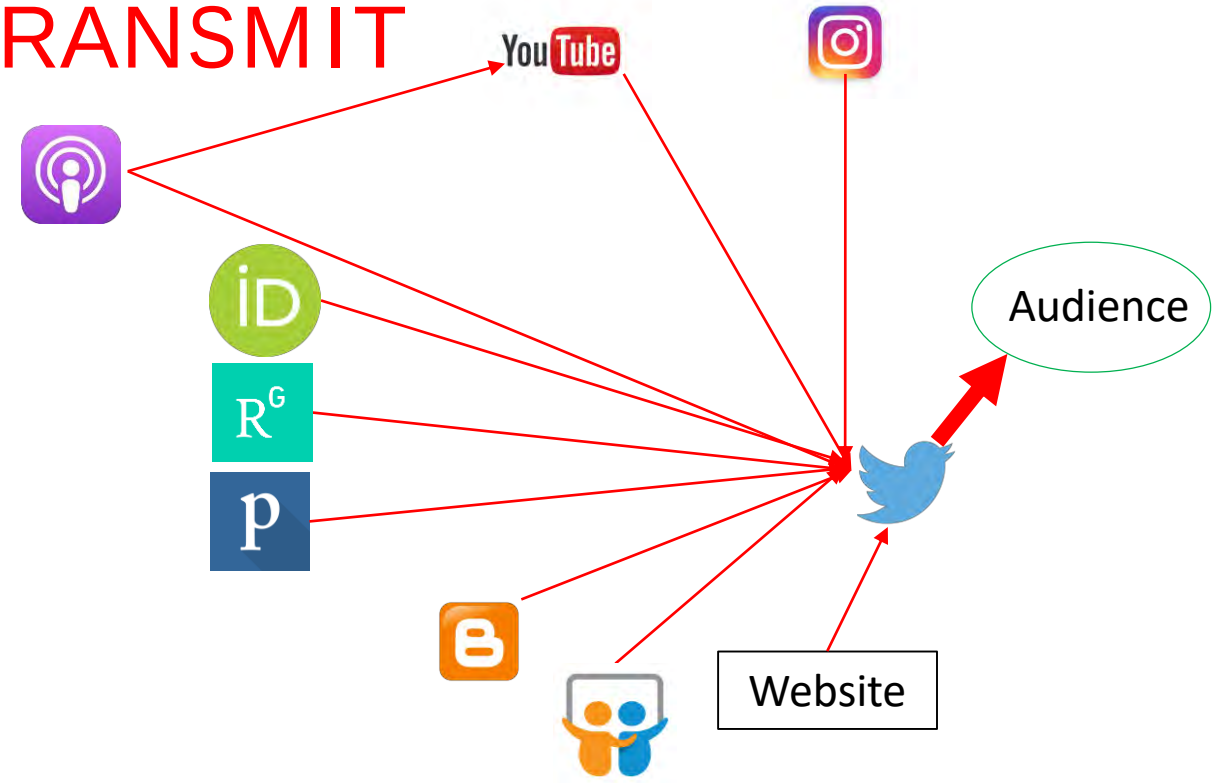
- Of the top 100 articles included in the study, the *Journal of Advanced Nursing* published the highest number of articles (N = 26; Median AAS = 179).
- The articles were mostly discussed on Twitter followed by news outlets and Mendeley.
- Articles indexed in the nursing journals attracted low online attention compared with articles published in other health journals.
- Most online attention came from the USA and UK.
- There was a significant relationship between articles' altmetric attention scores and their citation counts on Scopus and Web of Science.

How should the findings be used to influence policy/practice/research/education?

- Findings can help nursing researchers identify which out-


Acceptance
Publication
Re-
submission
Revision
Peer
review
Submission

Link your social networking sites - TRANSMIT



Research outputs and impact in the REF: a quality relationship

Hugh P McKenna

Presentation Outline

- Brief overview of Research Impact in REF.
- Structure of an Impact Case Study.
- Evidence of impact through 2* outputs.
- Relationship between Quality and Impact.
- Making your research more impactful.
- Differentiate weak from Strong Case Studies.

Brief Overview of Research Impact In REF

- Increasing importance of Research Impact internationally.
- Reflects universities' societal and economic role.
- Publicly funded research to be more accountability to the taxpayer.
- REF introduced in 2014 to replace the previous Research Assessment Exercise (RAE), on-going since 1986.
- REF evaluates three elements with different weightings:
    1. Originality, significance and rigour of research outputs (60%);
    2. Reach and significance of impact (25%);
    3. Vitality and sustainability of research environment (15%).
- Evidence of impact is provided in the form of impact case studies.
- Case studies evaluated by expert sub-panels.

Structure of a REF Impact Case Study

Institution:
Unit of Assessment:
Title of case study:
1. Summary of the impact *(indicative maximum 100 words)*
2. Underpinning research *(indicative maximum 500 words)*
3. References to the research *(indicative maximum of six references)*
4. Details of the impact *(indicative maximum 750 words)*
5. Sources to corroborate the impact *(indicative maximum of 10 references)*

Percentage types of Outputs submitted across the 4 Main REF Panels

	MPA Science		MPB Engineering		MPC Social sciences		MPD Humanities and arts	
REF2014	Outputs	%	Outputs	%	Outputs	%	Outputs	%
Books and chapters	228	0.3	197	0.8	8,307	15.9	18,168	46.3
Conference proceedings	81	0.1	2,056	7.9	233	0.4	380	1.0
Journal articles	73,039	99.1	23,521	90.9	42,545	81.5	15,749	40.2
Other	331	0.4	108	0.4	1,105	2.1	4,914	12.5
REF case studies								
Books and chapters	274	2.1	282	6.3	1,819	16.9	3,409	40.0
Conference proceedings	150	1.2	686	15.4	195	1.8	334	3.9
Journal articles	11,752	91.7	3,263	73.4	7,102	65.9	3,251	38.1
Other	631	4.9	213	4.8	1,649	15.3	1,523	17.9

(*Dr Martin Szomszor (2017) Research Data Mechanics and Impact. Consultant Data Scientist Digital Science)*

Evidence of impact through 2* outputs

The impact must have been underpinned by 'EXCELLENT' research (=/>2*) produced in 20 year period 1 Jan 2000 to 31 Dec 2020. Must show that the underpinning research was 'the difference that made the difference'.

The submitting unit can provide up to 6 references for the outputs.

All forms of output cited as underpinning research will be considered on an equal basis.

May include, but are not limited to: publications, new materials, devices, images, artefacts, products and buildings; confidential or technical reports; intellectual property in patents; performances, exhibits or events; non-print media.

Evidence of impact through 2* outputs

Panels will consider the evidence of research quality, and **may** review outputs referenced in a case study.

The sub-panels will not expect each referenced output to meet the 2* quality threshold, but will wish to be satisfied that the research as a whole was of at least two-star quality.

A panel will grade a case study as unclassified if it judges that the underpinning outputs was not of at least two-star quality.

11% of audit queries related to the underpinning research. 25% of these were subsequently unclassified (Rand Europe, 2017).

Provided the sub-panel is satisfied that the 2* quality threshold has been met, the quality of the underpinning research will not be taken into consideration as part of the assessment of the reach and significance of the claimed impact. (a 2 stage process).

Evidence of impact through 2* outputs

Research outputs underpinning a case study may also be included in a submission as an output. The assessment of the impact case study will have no bearing on the assessment of the quality of the output. However, the assessment of the quality of the output may inform the assessment of the case study, in terms of assuring 2* threshold.

The research outputs may, but need not, have been submitted to a previous RAE or REF 2014.

Include the following details for each cited output:

- author(s)
- title
- year of publication
- type of output and other relevant details required to identify the output

References to the research

(best three references starred)

1. Shadbolt, N., Gibbins, N., Glaser, H., Harris, S. and schraefel, m. c. (2004) CS AKTive Space or how we stopped worrying and learned to love the Semantic Web. *IEEE Intelligent Systems,* 19 (3), pp. 41-47.

WEB OF SCIENCE Scopus

2. * Shadbolt, N., Berners-Lee, T. and Hall, W. (2006) The Semantic Web Revisited. *IEEE Intelligent Systems* 21(3), pp. 96-101.

WEB OF SCIENCE Scopus Am score 20

3. Alani, H., Dupplaw, D., Sheridan, J., O'Hara, K., Darlington, J., Shadbolt, N. and Tullo, C. (2007) Unlocking the Potential of Public Sector Information with Semantic Web Technology. In, *The 6th International Semantic Web Conference (ISWC), Busan, Korea,*

Scopus Am score 4

4. * Alani, H., Hall, W., O'Hara, K., Shadbolt, N., Chandler, P. and Szomszor, M. (2008) Building a pragmatic Semantic Web. *IEEE Intelligent Systems*, 23, (3), 61-68.

WEB OF SCIENCE Scopus

Grants supporting underpinning research

1. PI Shadbolt EPSRC Funded Advanced Knowledge Technologies (AKT) IRC £7.5m (2000-07 GR/N15764/01) AKT — rated outstanding scoring 35 out 36 at final review

2. PI Shadbolt EPSRC Funding large Grant EnAKTinG the unbounded Web of Data £1.94m (2009-2012 EP/G008493/1)

3. PI Shadbolt EPSRC/DTI Market Blended Insight £0.8m (2006-2010 DT/E007104/1)

4. PI Shadbolt EPSRC Programme Grant for SOCIAM — the theory and practice of Social Machines £6.15m (2012-2017 EP/J017728/1)

Evidence of impact through 2* outputs

If researchers move to a different institution before outputs were produced, the submitting HEI must make clear that the research was undertaken when the researcher was at that institution and it made a distinct and material contribution to the impact claimed.

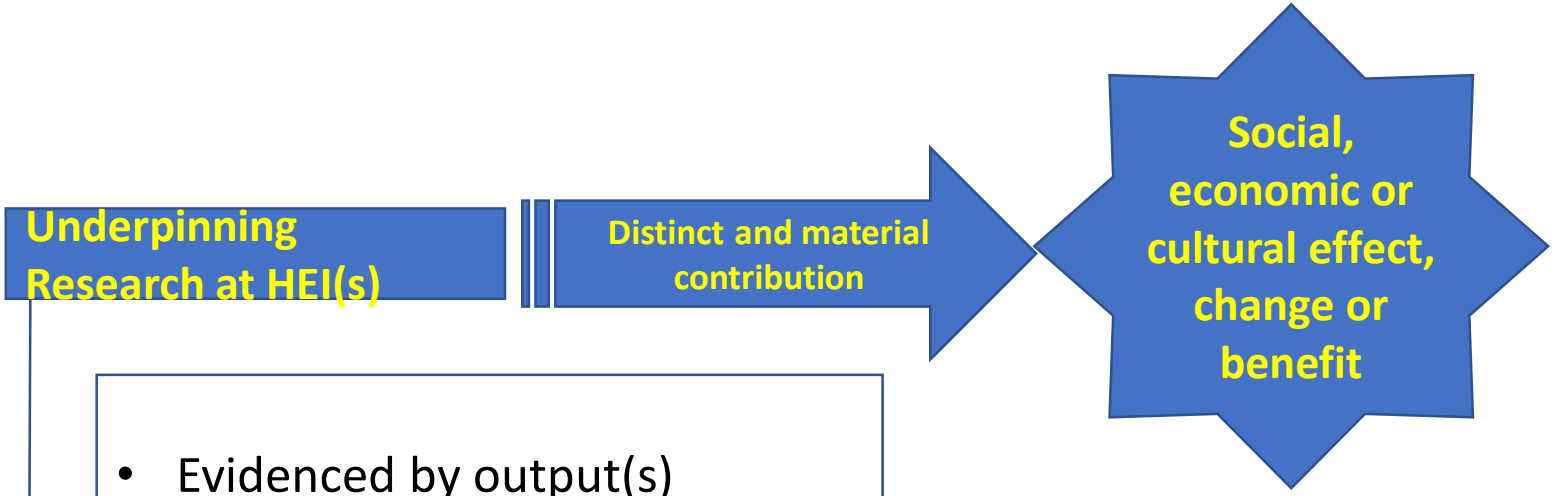
The end of the period for the 2* outputs (31 December 2020) extends beyond the end of the period for the impact (31 July 2020). This recognises that research may have had impact prior to the publication of the outputs.

2* Outputs equates with quality that is recognised internationally for the criteria: **ORIGINALITY, SIGNIFICANCE AND RIGOUR'.**

Underpinning outputs must meet all the criteria

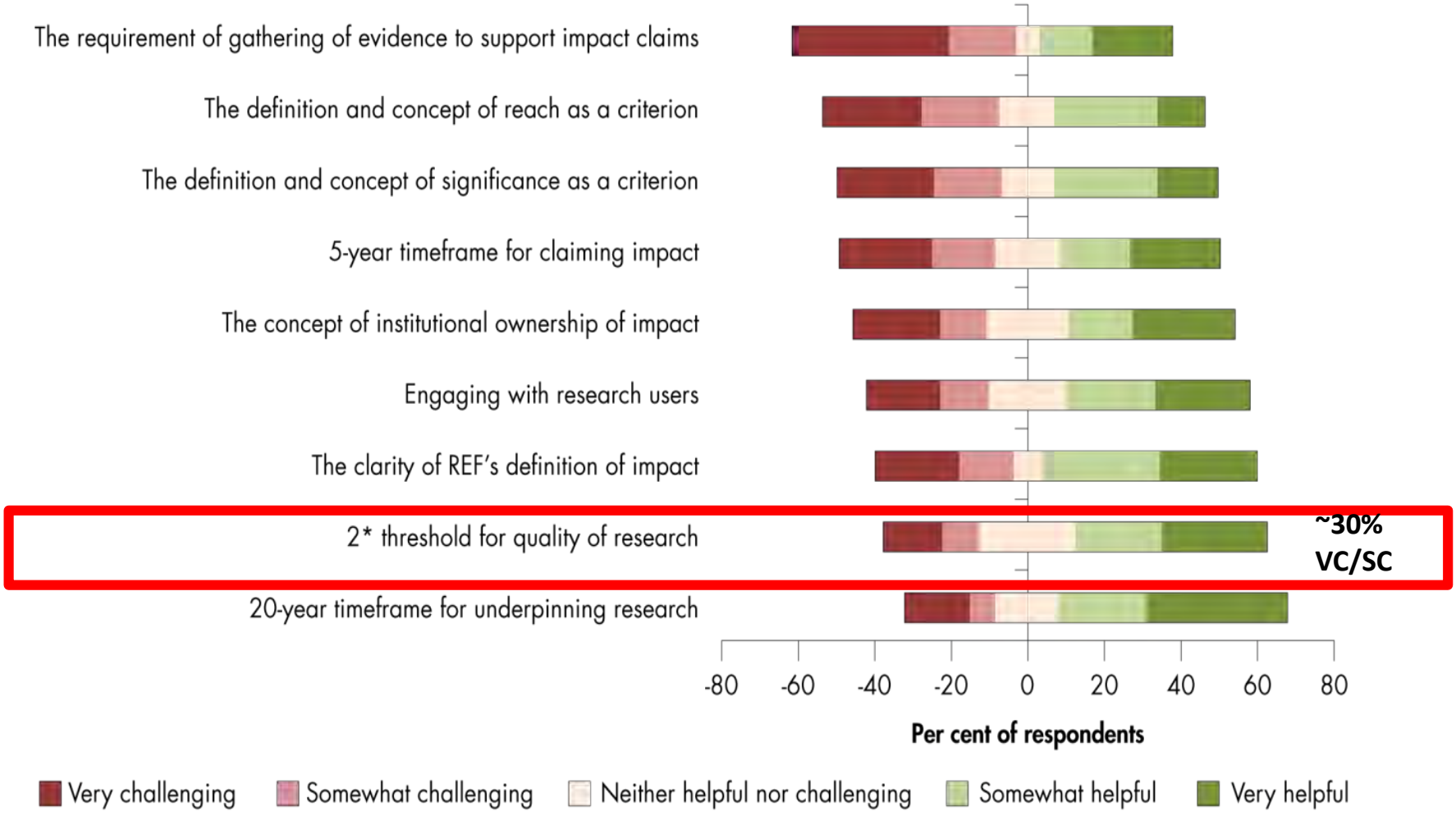
"Your manuscript is both good and original; but the part that is good is not original and the part that is original is not good." (Dr Samuel Johnson 1709-1984).

Evidence of impact through 2* outputs



- Evidenced by output(s) between 1 Jan 2000 – 31 Dec 2020.
- Quality that is equivalent to at least two star.
- Up to 6 key references (not every output referenced has to be 2*)
- Can include proxy indicators of quality

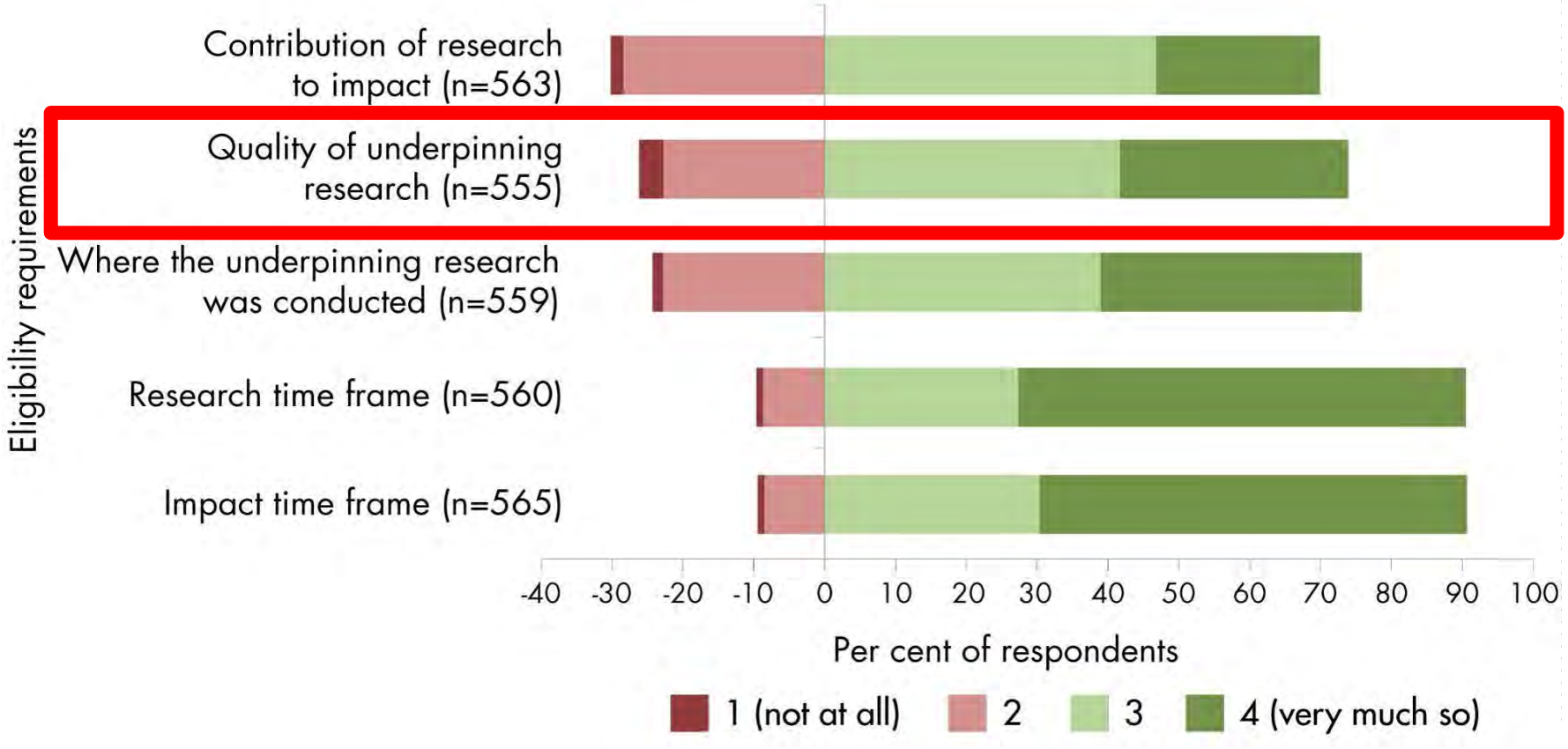
Views of HEI's on Research Impact



(Susan Guthrie (2017). Broader Impact: Changing criteria, changing behavior. Rand Europe.)

Views of REF Panel Members on Guidance for assessing Research Impact

- Approximately 25% (n=555) of sub-panel members and impact assessors found it difficult to rate the criterion of the quality of underpinning research.

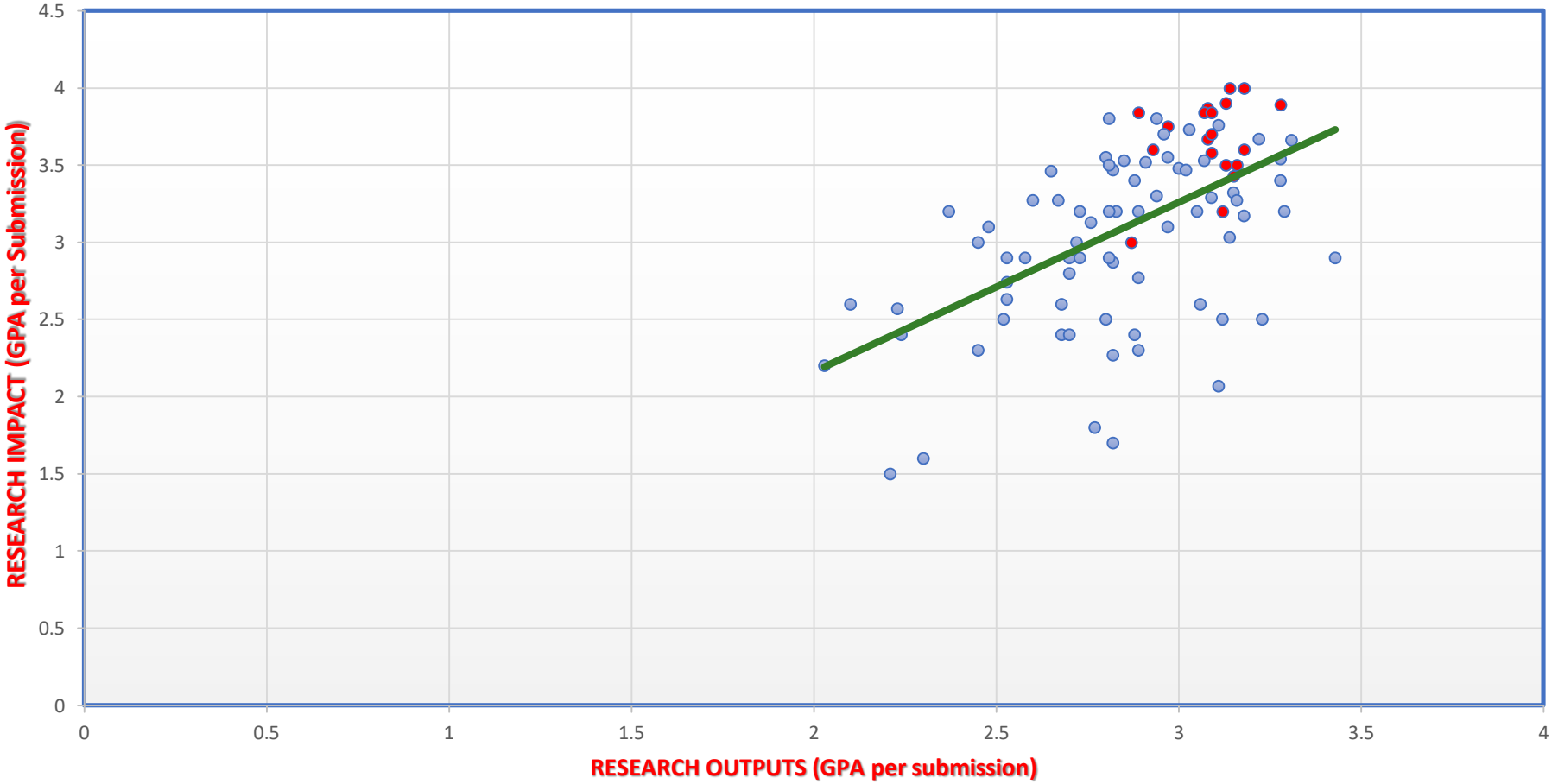


(Susan Guthrie (2017). Broader Impact: Changing criteria, changing behavior. Rand Europe).

UoA3 Research Outputs and Impact (n=94)

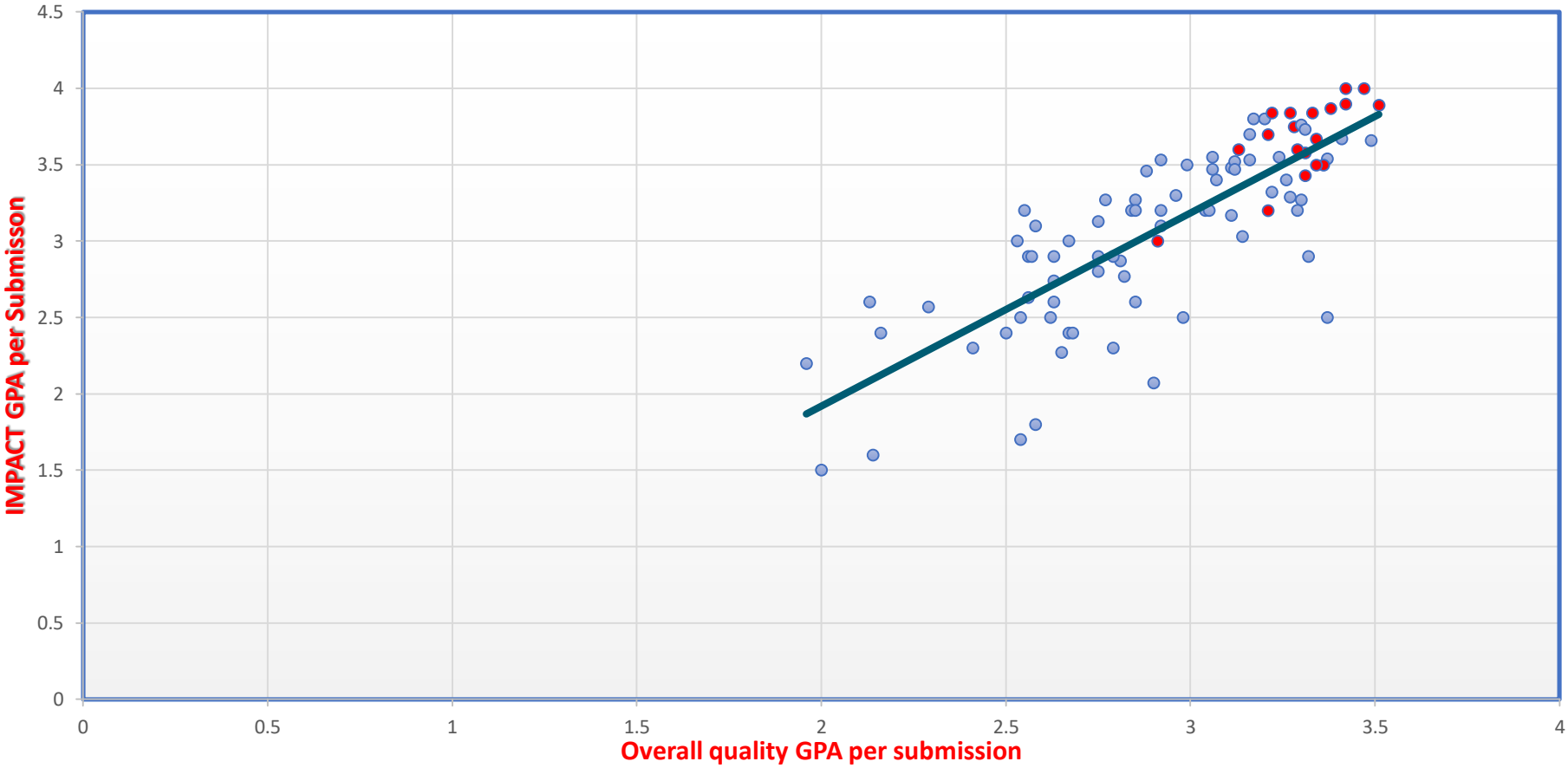
(GPA I.5=4.0) (GPA O=2.03-3.43)

Pearson 0.58



UoA3 Overall Quality and Research Impact: (n=94) (GPA I.5=4.0) (GPA O=1.96-3.89)

Pearson= 0.83



Impactful Researchers

RESEARCHER		IMPACT
Isaac Newton		laws of universal **Gravitation**
Michael Faraday		The 'Father of **Electricity**'
Charles Darwin		Science of **Evolution**
Gregor Mendel		Science of **Genetics**
Max Planck (NL)		Discovery of **Energy Quanta**
Albert Einstein (NL)		Theory of **Relativity**
Niels Bohr (NL)		Science of **Atomic Structure**
Francis Crick (NL)		The makeup of **DNA**
Peter Higgs (NL)		The **Higgs Boson**

Ulster University

(NL= Nobel Laureate)

Publications Vs Impact
Bibliometrics for Impactful Scientists

RESEARCHER	NO OF PUBS	CITATIONS	CITATIONS PER PUB	H-INDEX
Isaac Newton	4	7,468	1,867	**4**
Michael Faraday	23	6,288	273	**18**
Charles Darwin	29	84,575	2,916	**27**
Gregor Mendel	1	2,442	2,442	**1**
Max Planck	32	6,787	212	**27**
Albert Einstein	130	72,286	556	**74**
Niels Bohr	52	21,069	405	**38**
Francis Crick	65	43,758	673	**54**
Peter Higgs	5	11,903	2,381	**5**
Mean	41	26,306	1,182	**29**

Belikov, AV, Belikov, VV (2016) A formula to estimate a researcher's impact by prioritizing highly cited publications. BioRxiv. **doi:** https://doi.org/10.1101/058990

Higgs Boson

Ensuring that your work is impactful

- Who are the audiences for my outputs, and what are the potential/actual impacts on them?
- When should I engaged with stakeholders?
- How will I communicate and engage with stakeholders (not just disseminate)?
- How do I need to translate materials to meaningfully engage my stakeholders?
- What pathways do I need to follow to achieve impact?
- How can I best describe and evidence the pathway to impact?

Ensuring that your work is impactful

- How will I track impact and demonstrate its achievement?
- What will the reach and significance of the impact be?
- What resources do I need in to realise impacts?
- How will I transfer knowledge into the domains it needs to be in for impact to occur?
- What impact is realistic within the project and what is expected longer term for a later REF?

Outstanding Vs Weak Impact

Outstanding	Weak
Gave clear indication of the underpinning research and explanation for its 2* (or above) quality.	Failed to set out the thread of evidence linking the research to the impact and to establish the 2* quality of the research.
Gave clear explanation of how the research results had brought about the change, effect or benefit.	**Focused on the reputation/esteem of the researcher and unit rather than the impact.**
Understood the distinction between dissemination and impact.	**Presented dissemination as impact.**
Provided clear (and not overstated) account of the Reach and Significance of the impact.	**Made unconvincing or overstated claims of the Reach and Significance of the impact.**
When corroborating sources were followed up, they justified the claims made.	When corroborating sources were followed up, they did not back up the claims made or did not respond.

Outstanding Vs Weak Impact

Outstanding	Weak
Evidence based statements.	**Excessive publication lists or URL links, some inaccessible.**
Within the word limit and guidelines. (New mandatory fields for REF2021)	**Did not adhere to guidelines. (e.g. research was not undertaken at the submitting institution)**
A articulate, well written and interesting story.	Lack of coherence and dense narrative, journalistic.
The underpinning sciences was strong.	**Has unnecessarily 'drummed up' or 'dumbed down' the narrative**
Impact of CPD Programmes - Knowledge Transfer.	2* threshold not met so Case study not assessed

Research Impact: Further Information

- http://www.fasttrackimpact.com/single-post/2015/10/16/How-to-write-a-winning-research-impact-case-study
- http://impact.ref.ac.uk/CaseStudies/
- https://www.atn.edu.au/siteassets/publications/atngo8.pdf
- https://academic.oup.com/rev/article/23/1/21/2889056/Assessment-evaluations-and-definitions-of-research

Postgraduate research students and early career researchers and the publication process

Parveen Azam Ali

Academic Publishing: Changes over time

Scientific information was exchanged with encrypted letters between small group and conversation was private

Typewriter invented; Rigid formats were prescribed by publishers to make publication process consistent and efficient

Invent of electronic technology and word processors- manuscript preparation and revisions changed drastically; mailing of the manuscript become electronic too

Worldwide web/ internet invented; Electronic transmission made mailing easier

Open Access

Video publication; interactive image embedding became possible

?

1665

1900

1970

1980

2012

Some Questions ECRs have?

- Writing techniques
- Submission process
- Peer review process
- Dealing with rejections/ resubmissions?
- Where do publish?
- Quantity/ quality?

Some Questions ECRs may have?

- Types of articles and intended purpose
  - Letters, short communications
  - Review articles (types of reviews)
  - Scholarly / opinion pieces
  - Research articles
  - Methodological papers?
- How to choose right journals
- Understanding journal matrix
- What is impact factor and does it matter
- Paper ranking for REF (3* or 4*) and how to achieve it
- Distinction between journals (predatory/ non-predatory) and does it matter?

Other Challenges

- Conflicting Advice
- Lack of Mentorship
- Too many demands on time (for example: Peer reviewing)
- Help available but not available
- Can’t ask question if you don’t know what to ask
- Lack of technical skills
- Understanding impact and its various forms

Some questions about future

- Will publishing in journals be so important in future?
- What are other ways of sharing information?
- Are results only relevant for researchers an scientific community?
- What is impact and how it should be measured?

James Patrick Smith OBE FRCN

4 May 1934 to 15 June 2018