Bibliometrics: An insider’s View

Sabina Robertson, University of Melbourne
Lynne Horwood, University of Melbourne
Jenny Cameron, Victoria University

CRIG: Information Literacy in Interesting Times
November 25, 2009
Presentation Overview

- Part One: Context (Sabina Robertson)
- Part Two: Measures, products and applications (Lynne Horwood)
- Part Three: Models of research support: (Jenny Cameron)
Part One: Context

- Government policies setting the research scene
- Rankings of universities
  - Promotion, awarding of research funds
- Our academics responding to new research environment
- ERA
  - Issues – different disciplines need different measures
Government imperatives

- Positioning Australia in the International arena
- Competition from India & China
- Identifying areas for research investment
- Attracting Researchers to Australia
- Universities accountable for R & D funding
FY 06-07 $5,973.9 M

Government investment in R&D

ARC

- 10% Energy & Environment
- 8% Other Technology
- 3% Rural
- 2% DSTO
- 2% CSIRO
- 4% Other Government Agencies
- 10% Industry Tax Concession
- 7% Other business
- 11% Universities
- 10% Health and Medical
- 27% ARC
- 10% CRCs
Sector investment in R&D

- Universities & MRIs: ~50%
- Government: ~29%
- Business: ~21%
Perspective from a University
Vice Chancellor

Rigorous monitoring and reviews:

- **International**
  - ranking systems: Shanghai Jiao Tong World Universities & Times Higher Education Rankings

- **National**
  - Performance reports, National protocols & audits

- **Local**
  - Internal faculty, departmental and divisional reviews with external reviewers

- **Reputation**
  - Individual reputations of institutions built up over long periods of time
  - Includes community engagement
High Quality University Systems

Current review and monitoring systems have achieved:

- Universities aspiring to quality and excellence in:
  - Research
  - Innovation
  - Student learning
  - Teaching
  - Community and industry engagement

- Universities actively pursuing their different missions

- Demand for university places

- Demand from government and industry for university research
Australian Universities: International Rankings

Australia has an international reputation of having a strong university system in research; teaching and learning; international Education

- Reflected in Universities in International Rankings system:
  - Shanghai Jiao Tong
    - 17 of 38 Australian Universities in Top 500;
    - 7 in Top 200
  - Times Higher Education (THE)
    - 12 Australian Universities in Top 200

- Australia performs highly on international rankings.
World University Rankings:
indicators used

- The rankings derived from calculations based on data gathered from the following indicators:
  - Academic peer review
  - Employer review
  - International academic staff ratio
  - International student ratio
  - Student : academic staff ratio
  - Citations per academic staff member (citation data supplied by Scopus)
Role of The Australian Research Council (ARC)

ARC roles:

- A statutory authority within the Australian Government’s Innovation, Industry, Science and Research portfolio.

- Advises the Government on research matters and manages the National Competitive Grants Program (NCGP).

- Responsible for the Australian research quality and evaluation system – the Excellence in Research for Australia (ERA) initiative.
Excellence in Research for Australia (ERA): the experience

Cluster Trials 2009:

- Cluster 1:
  - Physical, Chemical & Earth Sciences (PCE)

- Cluster 2:
  - Humanities and Creative Arts (HCA)
Submission data for ERA was collected for the following reference periods:

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Reference Period</th>
<th>Years</th>
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# Field of Research Codes

## Cluster One - PCE

<table>
<thead>
<tr>
<th>Discipline</th>
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<tr>
<td>ASTRONOMICAL AND SPACE SCIENCES</td>
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<tr>
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<tr>
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<tr>
<td>OTHER EARTH SCIENCES</td>
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</table>
Indicators for 2009 Trial

• Volume and Activity
  – Staffing & Research output Profile

• Ranked Journals

• Citation Analysis
  – Relative Citation Impact (RCI) against world and Australian institution benchmarks.
  – RCI Class & Centile Distribution

• Research Income
  – Broken down into categories and profiled against field average and full-time equivalent (FTE) staff numbers

• Applied
  – Patents sealed & Commercialisation income
Summary of the 2009 Trial Submissions

• Cluster 1 (Physical, Chemical and Earth Sciences)
  – 39 out of 41 institutions submitted data
  – Just over 40,000 research outputs were submitted

• Cluster 2 (Humanities and Creative Arts)
  – All 41 institutions submitted data
  – Just over 47,000 research outputs were submitted including 7,000 creative works
2009 PCE Trial

Institutions

- Prepare submission data
- Communicate directly with Scopus to tag journal articles

ARC

- Receive submission
- Send EIDs to Scopus to obtain citations
- Create indicator profiles

Web: arc.gov.au | Email: info@arc.gov.au
ERA: Eligible Research Output

For the PCE and HCA clusters, the common eligible research output types were:

- Books: Authored Research
- Book: Chapters in Research Book
- Journal Articles: Refereed, Scholarly Journal
- Conference Publication: Full Paper Refereed.
Criteria used to select 20% of research output as follows:

- articles that are published in A* or A category journals [ERA journal lists](#)
- books that discipline heads consider to have had a major impact in the field - not limited by publisher
- book chapters – assessed on criteria set by ERA Committee of experts
Use of Information gathered from ERA cluster trials

- The Australian Research Council (ARC) will publicly release outcomes of the evaluations for Clusters One and Two aggregated to the national level but not broken down to the level of individual institutions.

- ARC will also make available to individual institutions analyses of their own disciplines. These individual analyses will not be publicly released by ARC.
## Clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Field</th>
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<tbody>
<tr>
<td>1</td>
<td>Physical, Chemical &amp; Earth Sciences</td>
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<tr>
<td>2</td>
<td>Humanities and Creative Arts</td>
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<td>3</td>
<td>Engineering and Environmental Sciences</td>
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<td>4</td>
<td>Social, Behavioural and Economic Sciences</td>
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<tr>
<td>5</td>
<td>Mathematics, Information and Communication Sciences</td>
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<tr>
<td>6</td>
<td>Biological Sciences and Biotechnology</td>
</tr>
<tr>
<td>7</td>
<td>Biomedical and Clinical Research</td>
</tr>
<tr>
<td>8</td>
<td>Public and Allied Health, and Health Sciences</td>
</tr>
</tbody>
</table>
Published data
- Research reports
- Research performance
- Grants results
- Citation data

Quick links
- Research codes
- Forms
- Find an Expert
- ERA

Collecting your data
- Research Income
- Research publications
- Research expenditure (ABS Survey)

Contact
- Research Performance Analysis Group (RPAG)
- Publication Coordinators
- Academic Liaison Officers

Research data and performance
The Research Performance Analysis Group (RPAG), located in the Melbourne Research Office, provides support for the collection of Research Income and Research Publications data. This contributes to the annual governmental Higher Education Research Data Collection. The Group also helps prepare a number of internal reports and publications which collate and analyse the research output of the University.

Why is this data important?
- The Government uses it to calculate performance-based funding allocations
- The University also uses it to allocate research-related funds to Faculties
- It builds reliable staff research and scholarship profiles, facilitating collaboration via resources such as Find an Expert
- Staff can maintain a dynamic bibliography of their work within Themis
An Academic’s response: Dr Christopher Marshall

Dr Christopher Marshall
Senior Lecturer in Art History and Museum Studies

Qualifications
PhD (Unimelb); BA (Hons.) (Unimelb)

Biography
Christopher Marshall completed his University of Melbourne PhD dissertation on the Neapolitan Baroque painter Domenico Gargiulo in 1994 before taking up a lecturership at Melbourne University in the following year. Among the many awards he has received are two years funding from the Australian Research Council, Small Grant award, the Paul Mellon Visiting Senior Fellowship, for a period of study at the Centre for Advanced Study in the Visual Arts, National Gallery of Art, Washington DC, a Visiting Senior Lecturing Fellowship at the Department of Art and Art History, Duke University and a Senior Fellowship at the Henry Moore Institute, Leeds.

His 2001 publication, *Macmillan Interpreting Art: A Guide for Students* is a standard text for Australian secondary art education and was shortlisted for the 2002 Australian Awards for Excellence in Educational Publishing. Further recognitions of Christopher Marshall’s curriculum and teaching achievements include a two-time nomination for the Australian Awards for University Teaching (Humanities and the Arts) and the inaugural University of Melbourne Faculty of Arts Teaching Award received in 2003.

Christopher Marshall teaches undergraduate units and supervises graduate students in the areas of Renaissance, Baroque and contemporary art; art curatorship, collecting and the art market; and the history and philosophy of museums.

Research strengths
Art History journals

These journals are published by the School or organisations with which it is affiliated and/or edited by members of staff. They are exemplary of innovative research in Art History.

The Australian and New Zealand Journal of Art (AANZJA)

The bimonthly refereed journal of the Art Association of Australia and New Zealand. Until the establishment of the Art History program at the University of Melbourne.

www.artjournal.net

e-maj

The Internet based affiliate of Melbourne Art Journal. e-maj is an online journal published by the Fine Arts Network. Dedicated to publishing postgraduate and undergraduate research in art history and museology, as well as reviews of recent exhibitions, e-maj aims to provide a forum for the publication of research by emerging scholars, as well as those who present their art and museology.

www.melbourneartjournal.unimelb.edu.au/E MAJ/

Melbourne Art Journal (MAJ)

An art history journal published annually by the Fine Arts Network containing a variety of art history topics, from medieval to twentieth century, European, Australian, and Asian. It is also considered as such by DECT, the Australian Government academic research body. Articles aim to be both readable and accessible to the general reader.

www.melbourneartjournal.unimelb.edu.au/MAJ/
Measures, products and uses

- Evaluating researchers
- Measuring citation impact (research impact)
- Evaluating journals
The $h$-index was developed in 2005 by Jorge Hirsch, a condensed-matter physicist at the University of California in San Diego. Hirsch’s aim was to qualify the impact and quantity of an individual scientist’s research output.

Hirsch’s original paper appears at: http://arxiv.org/abs/physics/0508025
### h-index and citation patterns

#### Overview

This is a citation overview for a set of 84 documents.

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#### h Index = 25

Of the 84 documents considered for the h-index, 25 have been cited at least 25 times.

Scopus does not have complete citation information for articles published before 1996. More Information
<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Authors</th>
<th>Year</th>
<th>Journal</th>
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<tr>
<td>25.</td>
<td>Intracellular localization and loss of copper responsiveness of Mnk, the murine homologue of the Menkes protein, in cells from blotchy (Mo(blo)) and brindled (Mo(br)) mouse mutants</td>
<td>La Fontaine, S., Firth, S.D., Lockhart, P.J., Brooks, H., Camakaris, J., Mercer, J.P.B.</td>
<td>1999</td>
<td>Human Molecular Genetics</td>
<td>8 (6), pp. 1069-1075</td>
<td>26</td>
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</table>
h-index and Web of Science

ISI Web of Knowledge

Distinct Author Set: camakaris, J

Title: COMPARISONS OF COPPER DEFICIENCY STATES IN THE MURINE MUTANTS BLOTCHY AND BRINDLED - CHANGES IN COPPER-DEPENDENT ENZYME-ACTIVITY IN 13-DAY-OLD MICE
Author(s): PHILLIPS III, CAMAKARIS J, DANKS DM
Source: BIOCHEMICAL JOURNAL Volume: 238 Issue: 1 Pages: 177-183 Published: AUG 15 1986

Title: Signals regulating trafficking of Menkes (MNK: ATP7A) copper-translocating P-type ATPase in polarized MDCK cells
Author(s): Greenough M, Pasa L, Velzkoboom I, et al.
Source: AMERICAN JOURNAL OF PHYSIOLOGY-CELL PHYSIOLOGY Volume: 287 Issue: 5 Pages: C1463-C1471 Published: NOV 2004

Title: Mechanisms of A beta mediated neurodegeneration in Alzheimer's disease
Author(s): Crouch P, Harding SME, White AR, et al.
Source: INTERNATIONAL JOURNAL OF BIOCHEMISTRY & CELL BIOLOGY Volume: 40 Issue: 2 Pages: 181-198 Published: 2008

Title: Gene knockout of amyloid precursor protein and amyloid precursor-like protein-2 increases cellular copper levels in primary mouse cortical neurons and embryonic fibroblasts
Author(s): Bellahm SA, Ciccottone GD, Needham BE, et al.
Source: JOURNAL OF BIOCHEMISTRY Volume: 34 Issue: 3 Pages: 249-258 Published: OCT 2014
A Google Scholar Universal Gadget enables users to search for the total number of citations of author(s). It provides a total citation count, total number of cited publications and Jorge E. Hirsch’s $h$-Index.
Sources for $h$-index calculation – comparison of the three products

Web of Science
117 papers
$h$-index = 31

Google Scholar
158 publications
$h$-index = 34

Scopus
84 papers
$h$-index = 25
Evaluating researchers

**New Socratic Index**

- Measured over 2004 – 2008 (5 years)
- Only divided by UWA researchers
- Not multiplied by pro rata factor for staff starting after 2004 – these staff highlighted in green

1. Publications are awarded points as follows:

   **Publication Type** | **Points**
   ---------------------|----------
   Nature & Science papers | 5
   Journal Papers not indexed by Thompson 1 |
   Journal Papers indexed in Social Sciences 4 |
   Journal Papers indexed in Social Sciences 3 |
   Journal Papers indexed in Science Index 2 |
   Conference paper | 0.5
   All other publication types | As per UWA public:

2. Grants

   - > $5000 and < $50,000 1 point
   - > $50,000 and < $500,000 2 points
   - > $500,000 3 points
   - DEEWR Category 1 Grants points multi

3. HDR Completions.
Citation analysis

- Examines the elements of bibliographic records
- Studies relationships between citations
- Measures the amount of activity in a subject category, journal, country or topic
Citation counts and 3 products


Cited **460** times *(Google Scholar)*
Cited **339** times *(Web of Science)*
Cited **349** times *(Scopus)*
Groundwater exploitation and its impact on the environment in the North China Plain

Source: ISI Web of Knowledge®, www.thomsonreuters.com
Subjects with the most journals include

- literature and literary theory (30% of new titles)
- general arts and humanities (22%)
- history (17%)
- visual/performing arts (16%)

More than half (60%) are published from the EMEA (Europe, Middle East and Africa) region, 38% from the Americas and 2% are from Asia-Pacific.
<table>
<thead>
<tr>
<th>Document (sort by relevance)</th>
<th>Author(s)</th>
<th>Date</th>
<th>Source Title</th>
<th>Cited By</th>
</tr>
</thead>
</table>
Alternatives to *Web of Science* and *Scopus*

- CiteSeerX (Information Technology)
- Google Scholar (Multidisciplinary)
- ScienceDirect (Multidisciplinary)
- Business Source Premier (Business research database)
Most Cited Computer Science Articles

The list is automatically generated and may contain errors. The list is generated in batch mode and citation counts may differ from those currently in the CiteSeerX database, since the database is continuously updated.

Analysis on groundwater table drawdown by land use and the quest for sustainable water use in the Hebei Plain in China

Yueqing Xu, Xingguo Mo, Yunlong Cai, and Xiaolin Li

*Department of Resources, Environment and Geography, Peking University, Key Laboratory for Earth Surface Processes, The Ministry of Education, Beijing 100871, PR China

1Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing 100101, PR China


Abstract

Increased water use in the Hebei Plain during the last decades has caused serious groundwater level decline and many geological problems which have become the biggest threat to social–economic sustainability. Thus, to determine the factors resulting in the groundwater decline and to develop a practical plan for long-term groundwater use appear to be necessary in this region. In this paper, a water balance model is used in conjunction with regression techniques to estimate the groundwater recharge coefficient and the specific yield (defined as the ratio of the volume of water that a saturated rock or soil will release by gravity drainage to the volume of rock or soil) and the groundwater withdrawn by different water use sectors and the corresponding drop in the water-table are analyzed. The decline in water-table by different crops and water economic benefit of crops are discussed in detail in order to suggest sustainable use of groundwater resources in the Hebei Plain. Finally, sample policy scenarios are developed to show how groundwater in the Hebei Plain could be used in a sustainable manner. In our study, it is found that agriculture is the major consumer of groundwater, with about 85% of the total groundwater withdrawals. Agriculture is mainly caused by agricultural water use. Production of winter wheat exerts a great negative influence on the groundwater system. Winter wheat is the most water consuming crop and result in significant decline of groundwater table. Water economic benefit of winter wheat is lower than that of other crops and withdrawing winter wheat seems to be a rational option to make sustainable use of groundwater. With foresight and regional planning, the limited water resource can be used sustainably to generate maximum social benefits. This paper will provide information necessary for land-use planning in a severe water shortage region where farmland is mainly irrigated by groundwater. Therefore, the Hebei Plain is a place where the concept of groundwater management is essential.

Keywords: groundwater table drawdown, Land use; Sustainable groundwater use; The Hebei Plain
Database: Business Source Premier

Database: Business Source Premier

Database: Business Source Premier
Researcher ID

http://researchanalytics.thomsonreuters.com/
Tracking hot papers

- Science Watch
- Essential Science Indicators
- Highly Cited.com
<table>
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<th>Name</th>
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<th>Country</th>
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<td>Angus, James Alexander</td>
<td>University of Melbourne</td>
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<td>Clarke, Adrienne Elizabeth</td>
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<td>Tucker, Rodney S.</td>
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"Highly cited researcher"
Essential Science IndicatorsSM has been updated as of May 1, 2009 to cover an 10-year plus two-month period, January 1, 1999-February 28, 2009.

Information for New Users

Citation Rankings:
- Scientists
- Institutions
- Countries/Territories
- Journals

Most Cited Papers:
- Highly Cited Papers (last 10 years)
- Hot Papers (last 2 years)

Citation Analysis:
- Baselines
- Research Fronts

Commentary:

The Notices file was last updated Fri May 1 11:22:31 2009

Acceptable Use Policy

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Journal evaluation

➢ To which journal should you submit your high profile research for publication?
Rejecta Mathematica

► Journal for papers rejected elsewhere
Measuring journal quality – journal ranking systems

- Impact factor is one measure
- Journal rankings by subject grouping
- ARC list of journals
- CORE – computing journals
- ERIH – humanities
- BARDsNET - economics
### Journal Citation Reports

#### Journal Summary List

**Journals from: subject categories ENVIRONMENTAL STUDIES**

**Sorted by:** Impact Factor

**2008 JCR Social Science Edition**

**Ranking is based on your journal and sort selections.**

<table>
<thead>
<tr>
<th>Mark</th>
<th>Rank</th>
<th>Abbreviated Journal Title (linked to journal information)</th>
<th>ISSN</th>
<th>Total Cites</th>
<th>JCR Data</th>
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<th>Article Influence™ Score</th>
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<td>ANNU REV ENV RESOUR</td>
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Journal Citation Reports

- 5 year impact factor as a new measure
### Impact Factors

**Journal: ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES**

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<tr>
<th>Mark</th>
<th>Journal Title</th>
<th>ISSN</th>
<th>Total Cites</th>
<th>Impact Factor</th>
<th>5-Year Impact Factor</th>
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</table>

- **Cited Journal**
- **Citing Journal**
- **Source Data**
- **Journal Self Cites**

### Journal Information

- **Full Journal Title:** ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES
- **ISO Abbrev. Title:** Annu. Rev. Environ. Resour.
- **JCR Abbrev. Title:** ANNU REV ENV RESOUR
- **ISSN:** 1543-5938
- **Issues/Year:** 1
- **Language:** ENGLISH
- **Journal Country/Territory:** UNITED STATES
- **Publisher:** ANNUAL REVIEWS
- **Publisher Address:** 4139 EL CAMINO WAY, PO BOX 10139, PALO ALTO, CA 94303-0139
- **Subject Categories:** ENVIRONMENTAL STUDIES

### Eigenfactor Metrics

- **Eigenfactor™ Score:** 0.00556
- **Article Influence™ Score:** 3.438

### Additional Links

- **GO TO C E CONNECT**
- **Unimelb ISSN Search**

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### Journal Impact Factor

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Your (real) Impact Factor

\[
\text{Impact Factor (corrected)} = \frac{\# \text{ times your work is cited} - \# \text{ citations that actually trash your work} - \# \text{ times you cited yourself (nice try)} - \# \text{ times you were cited just to pad the introduction section}}{-\# \text{ citations the editor pressured the author to include to increase the journal's impact factor}} + \# \text{ original articles you've written} + \# \text{ articles you were included in out of pity or politics} + \# \text{ not-so-original articles you've written copied and pasted}
\]
Impact factor criticism

“Beware the tyranny of impact factors”.
“Challenging the tyranny of impact factors”.
“Corruption of journal impact factors”.
“Impact factors ‘flawed, misleading and unfair’”.
“Journal impact factors for the individual scientist: an unnecessary evil”.
“Let’s dump the factors”.
“Nightmare impact factor”.
“The dreaded impact factor is back to haunt us!”.
“The impact factor – ‘Misleading, unscientific and unjust’”.
“The impact factor – what it is and where it is useless”.
“The journal ‘impact factor’: a misnamed, misleading, misused measure”.
“The malign influence of impact factors”.
“The perfidy of impact factors”.
“The tyranny of the impact factor”.
“Worshiping false idols: the impact factor dilemma”.
Food for thought

- Elite journals wield huge influence and control over scientists’ lives (Corbyn 2009)
- Sir John Sulston US Nobel Laureate:
  - Pressure to publish prematurely
  - His work not published in a top journal
  - Treadmill of re submissions
  - Provides citations for many, but does little for scientific enterprise, eg long author lists, but some may have marginal contribution
Part Three: Models of research support

- Understanding the context
- Understanding the uses
- Levels of support
Libraries responding to the research environment

Librarians need to understand the context:

- Research funding highly competitive
- Culture of evaluation
- Imperative to be ‘research active’
- Bibliometrics can be confusing!
Seizing the moment

- Bibliometrics – a perfect opportunity to reconnect with academic staff
- They are looking to us for guidance
- Show our expertise (and can spill over to other areas, eg trust to embed IL)
- But we need to understand the uses (in detail!) that they are making of bibliometrics
  - Professional development for library staff
Use of metrics

- For grant applications
- Academic promotion
- Recruitment
- Research assessment (school, research centre, whole university)
- Where to publish
One use: ARC grant application

Researchers need to nominate their ten career-best publications:

- Can be up to 3 pages, ie paragraph per item
- Say why each one is best (they must FIGJAM to be competitive!)

F14. Recent significant publications (2004 onwards)
(Please attach a PDF with a list of your recent significant publications. Use asterisks to identify publications relevant to this Proposal. Include books and book chapters, refereed journal articles and refereed conference papers (20 pages maximum).)

F15. Ten career-best publications
(Please attach a PDF with a list of your ten career-best publications (3 pages maximum).)

F16. Other evidence of impact and contributions to the field, for example, patents, major exhibitions, compositions or performances, honours and awards, other professional activities.

(Write a maximum of 1875 characters (approx 250 words).)
Levels of support

- Intensive: UNSW
- Self-help: Vic Uni
- Something in between?
Intensive support

- RIMS at UNSW
- Restructure to create Research Impact Measurement Service
- Produce ‘Research Impact Statement’ and more specialised ‘Grant Application Statement’ for academics
- 7 EFT staff / 50% of their time spent on creating citation reports for researchers
Self-help

- Train the researcher to do it themselves (VU)
- Develop, advertise and deliver ‘Research Quality’ or ‘Citation Tracking’ workshops
- Timed to critical dates ie grant applications or academic promotions applications due soon
- Collaborate with University Research Office, co-presenters
- Sessions at different campuses
- Wording used to market sessions very important
Something in between?

- Ad hoc intensive support to individuals (even with a self help model this happens at VU)
- Intensive support to target groups
- …combined with workshops
- Good web pages… some examples
Research output and impact

Metrics - information for researchers

Increasingly metrics are being used as a measure of research impact, or research influence of an individual scientist or group. Metrics must always be considered in context (citation patterns vary in different disciplines) and should never be used as the only measure. When used in conjunction with peer review some metrics are quite robust.

You can use metrics to illustrate your track record when applying for grants and promotion. If it is difficult to search for your publications (other authors share your name and initials; or inconsistent use of your name and initials, or mistakes in the database records) it may be useful to use ResearcherID.

Different types of metrics commonly used

- Citation metrics – the statistical analyses of citation counts
- Bibliometrics – broader term includes publication counts, citation analyses and content analyses
- Webometrics – includes download counts and number and type of hyperlinks

Citation metrics

Citation metrics, the statistical analyses of citation counts, have found widespread application in the research community in the area of research evaluation. They are being used to infer quality or academic impact at the level of an individual article, a journal, an individual researcher, as well as aggregated to infer quality at the research group, discipline, organisational unit within an institution, institution and country level.

For an individual article, the number of times it has been cited by other articles is generally considered to be indicative of the article’s academic impact, with the assumption being that research articles of high academic quality are likely to be cited more often than those of lesser quality. Other metrics, including secondary citations (the number of citations received by the articles citing the article) have also emerged.
UNSW

Research Impact

Research Impact Guide
Guide for UNSW researchers.
Tools and support to assist with measuring and monitoring research impact.

- Citation tools
- Journal impact
- Indices
- Profile
- ERA
- Support
Measuring Research Impact

The University of Western Sydney nurtures a distinctive, high-impact research culture, committed to enhancing our region’s cultural, economic, environmental and educational development, and responsive to contemporary challenges in Greater Western Sydney and beyond. Comprehensive detail about research at UWS can be found on the UWS website.

Measuring research impact is important for a number of reasons:
- Grant/Funding applications
- Staff Promotion/employment applications

Research impact can be measured by two main methods:
- Citation tracking
- Impact of journal in which the work is published

For further information contact the Research Services Library.
Issues re support

Intensive - full ‘research impact’ report:

- Sustainability?
- Responsibility with the librarian to corroborate from multiple sources and provide accurate data (this is what is SO time consuming)
- It is not always clear what measures should be used in which context – shouldn’t the researcher decide?
- But UNSW service has elevated the library’s profile
Issues re support

Ad hoc:
- Inequitable? Can’t do for everyone
- Does everyone know about this service?
- People (managers/researchers) don’t know just how time intensive it is (unrecognized)

Self help:
- Academics are time poor
- And may leave a workshop still confused
What are you doing?

How much effort should you go to?
Workshop discussion

University of Melbourne:
- Bibliometrics workshops for library staff; RHD students; training for supervisors
- Staff assist with grant applications; ERA
- Don’t call it a class, call it a forum/seminar

Deakin University:
- Developing a research support strategy framework: bibliometrics just a part of this
Workshop discussion

RMIT:
- Individual support from liaison librarians
- Citation tracking covered briefly in postgrad sessions (for Eng/Sci)
- Developing a research support plan

Other issues:
- Combining staff & students in single session tricky
- Some admitted at end of workshop that they hadn’t focussed in this area yet
Initiatives

- Positioning librarians to support research
- Role of CRIG in supporting developments in research support
- Recommendation
  - Establishment of regular fora librarians working in the field of research support