Literature Tools

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Bibliometrics and Reference Management

Bibliometrics

Measures of Academic Literature

Bibliometrics

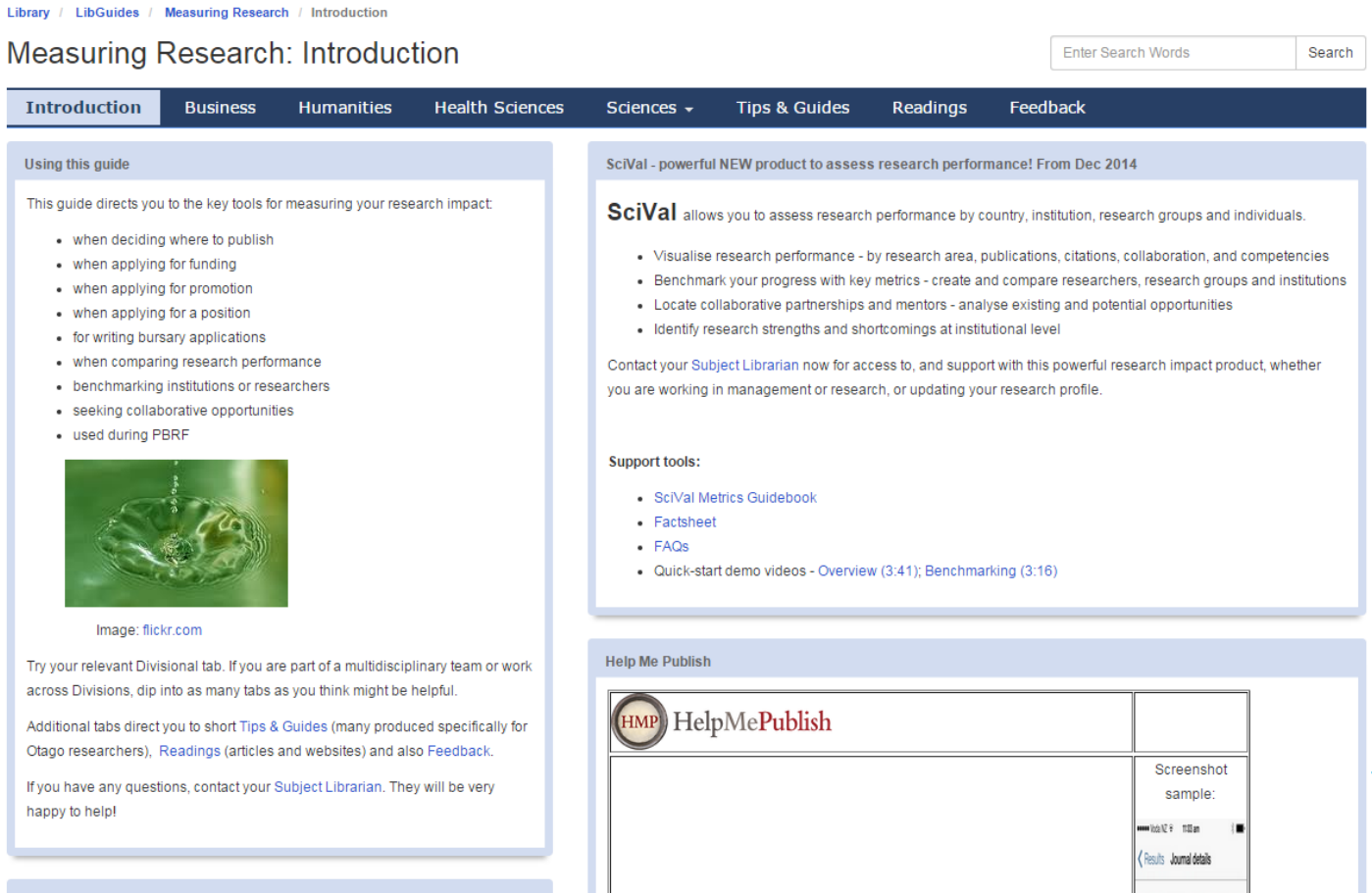
- Journal metrics
- Article metrics
- Alternative metrics (Altmetrics)
- Researcher metrics

Bibliometrics Usage

- Funding
- CV: Employment, Promotions
- Publishing Strategy
- Focus Literature Search
- Disseminate Own Research
  - Journal Rank
  - Impact/wide audience
  - What colleagues read

Measuring Research (Library Guide)

- http://otago.libguides.com.ereserve.otago.ac.nz/c.php?g=171510&p=1131171



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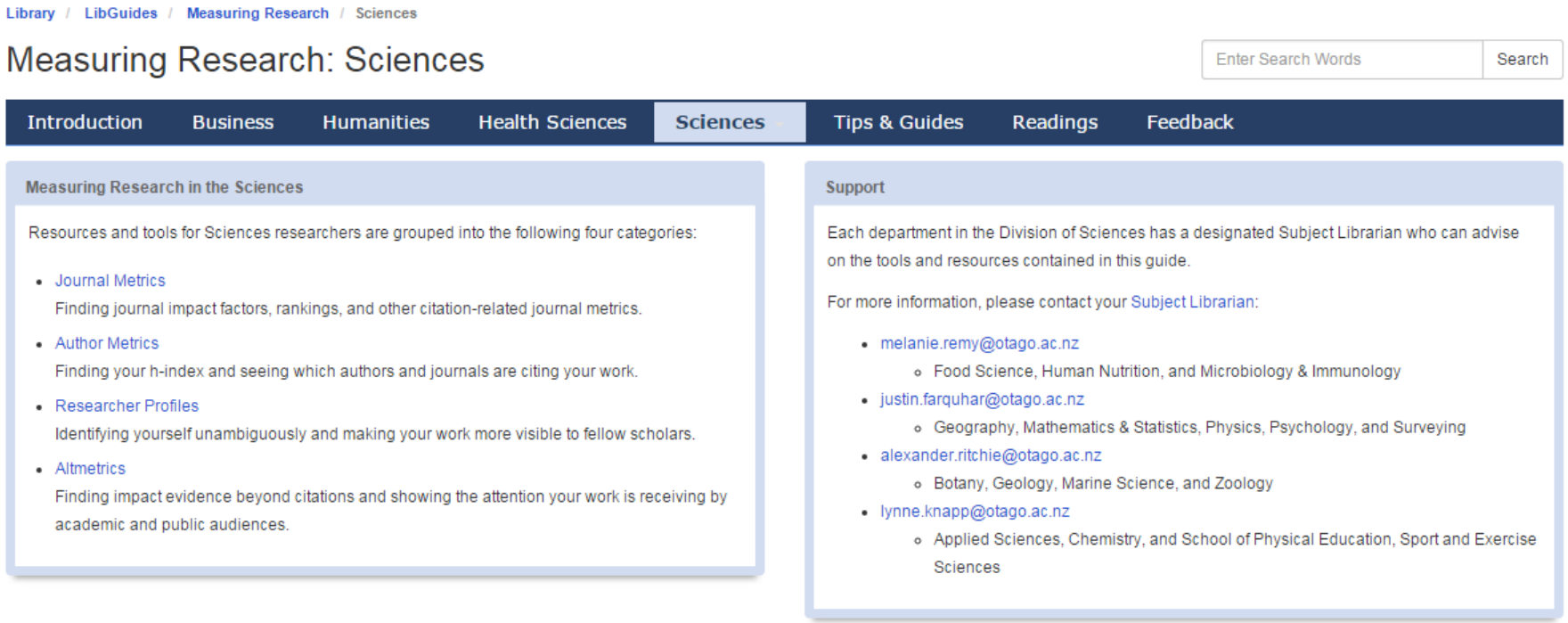

Journal Metrics

- Impact Factor (Reuters, 1955)
  - Established measure of journal impact, dominant in academia (until recently)
  - Based on Web of Science: Journal Citation Reports (JCR)
  - Average No. Citations (over last 2 years)
  - Ranking/quartile (subject by IF) depends on field
  - http://admin-apps.webofknowledge.com.ereserve.otago.ac.nz/JCR/JCR
- Scopus
  - Competing 'contextual' alternative (adjusted by field)
  - Based on Science Direct (bigger, more recent)
  - Scimago JR (SJR) Rank
  - IPP raw impact / publication
  - SNIP subject normalised impact / publication (over last 3 years)
  - http://www.scimagojr.com/ (Journal Rank, Compare Journals)
- Measure quality of journals, find papers of general interest (e.g, Journal Club)

Metrics

Scopus

- Article metrics
  - Citation
    - Used for Journal Impact Factor
    - Measure of peer esteem, influence, validation
    - Supported by Web of Science (Reuters), Scopus (Elsevier), and Google Scholar (not reliable db)
  - Altmetrics
- Researcher metrics
  - Number of publications/citations
  - h-index
    - number of papers (*N*) with at least *N* citations each
    - Depends on database and names published under (use one consistently)
  - Researcher IDs
    - Databases have different researcher IDs: WoS Researcher ID, Scopus Author ID, Otago MyResearch
    - Integrated with Open Researcher and Contributor ID (ORCID)

Bibliometrics - Caveats

- Self-citation (journal/researcher/group)
- Retraction
- Journal impact is an average (most papers not cited)
- Citation is not always quality or application (could be critique or controversy)
- Research takes time for impact (older articles have more citations)
- Highly cited papers may not be applied or well viewed in the future
- Requires indexing in a database (database-specific)
- Change over time

Bibliometrics - Caveats

- Journal Ranking depends on database and field selection
  - Still need to think about relevance to field, e.g, is *Bioinformatics* a good statistics journal?
- Competing companies with similar products
  - In practice researchers just use which metric makes them look better
- Established high impact journals maintain the status quo
  - Open-access journals emerging
  - Different publishing models have different impact and ethics
- Fields have different publishing culture
  - Co-authorship
  - Number of papers cited
  - Data or software provided

Alternatives: Altmetrics

- Impact and quality of an article by online activity
  - Social media (twitter, facebook, Github, LinkedIn
  - Blogs
  - Newspapers (press coverage)
  - Mendeley readership: Shares, clicks, views, saves, downloads
- http://www.altmetric.com (bookmarklet for Chrome/Firefox)
- Promote online discussion, outreach, science communication, education, lay audience newspapers, government policy
- More complete picture – does not claim to be better than existing pre-metrics
- Available for use by publishers, researchers, and institutions
- Publicity is not always good publicity (e.g., Wakefield paper)
- Topics of general interest will get wider coverage (e.g., health/env research)
  - Whether we want emphasis on community value in research recognition is debatable

Reference Managers

Tools to Organise Literature, Automate Citation, and Referencing

BIBTEX

THOMSON REUTERS
ENDNOTE

zotero

Papers³
for Windows

Role of Reference Managers

- Computerised library system to manage literature
- Manage literature in assignments, article, and thesis writing
  - Collect and Store
  - Organise and Annotate
  - Cite and Share
- Embed citations in documents
- Import referencing styles for courses and journals
- Generate bibliography

Functionality of Reference Managers

- Import citations
- Import/attach PDF files
- Search personal library
- Group/tag articles
- Edit reference fields
- Edit citation style
- Export citation to document
- Export Bibliography to document
- Sync library to the web

Recommended Reference Systems

- BibTex (Open-source)
  - Integrates with LaTeX
  - Exported by most reference managers and article websites
- EndNote (Reuters)
  - Retail, subsidised by the university ($15 for personal computer)
  - Integrates with MS Word/PPT
  - Supported by the university: studentdesktop, library workshops, and support
  - Available for Mac/Windows
- Mendeley
  - Similar functionality, cross-platform, free
  - Enables sharing papers and networking
- Variety of alternatives available (most now have PDF storage and web integration)