WIKIPEDIA-INTEGRATED MEDICAL JOURNALS

A KEY HEALTH LITERACY AND OUTREACH PLATFORM
OUTLINE

- Combining reach and rigour
- Implementation models & examples
- What does the future hold
COMBINING REACH AND RIGOUR
COMPATIBLE INTERFACES BETWEEN TWO WORLDS
WHO READS WIKIPEDIA?

- Thesis: 1-10
- Median Journal: 800
- Top 5% Journal: 3,000
- Median Wikipedia page: 10,000 pa
- Top 5% Wikipedia page: 1,000,000 pa

Readership includes:
- Patients
- Students
- Journalists
- Lawmakers
- Clinicians

# Similarities and Differences

<table>
<thead>
<tr>
<th></th>
<th>Academic Journal</th>
<th>Wikipedia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Readership size</strong></td>
<td>Small and brief</td>
<td>Very large and extended</td>
</tr>
<tr>
<td></td>
<td>Median article - 800 total</td>
<td>Median article - 10,000 per year</td>
</tr>
<tr>
<td></td>
<td>Top 5% article - 3000 total</td>
<td>Top 5% article - 1,000,000 per year</td>
</tr>
<tr>
<td><strong>Readership composition</strong></td>
<td>Other academics, often within narrow field</td>
<td>General public as well as experts and professionals</td>
</tr>
<tr>
<td><strong>Peer review</strong></td>
<td>Pre-publication, private review by 2-4 subject specialists</td>
<td>Post-publication public review of a sort by subject generalists</td>
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<tr>
<td></td>
<td></td>
<td>‘Good article’ - 1 reviewer</td>
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<tr>
<td></td>
<td></td>
<td>‘Featured Article’ - 5-12 reviewers</td>
</tr>
<tr>
<td><strong>Reputation</strong></td>
<td>Varies by journal but generally extremely high</td>
<td>Public generally trust</td>
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<tr>
<td></td>
<td></td>
<td>Academics have mixed opinions by improving</td>
</tr>
<tr>
<td><strong>Authorship</strong></td>
<td>Small number with relevant, accredited expertise. Organised group with lead and corresponding authors.</td>
<td>Large number with mixed expertise levels.</td>
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<td></td>
<td></td>
<td>Loose organisation. Many pseudonymous or anonymous.</td>
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<tr>
<td><strong>Timeliness</strong></td>
<td>Static</td>
<td>Constantly updated</td>
</tr>
<tr>
<td></td>
<td>Updated by new publications</td>
<td>Only one consensus version</td>
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IMPLEMENTATION MODELS

PRACTICAL AND PROVEN METHODS
BRIDGING THE ACADEMIC DIVIDE

- Content published into both Wikipedia and academic corpus
  - Stable, citable, peer-reviewed journal version
  - Living version with extreme impact of Wikipedia

- Example journals
  - PLOS Genetics
  - PLOS CompBiol
  - PLOS ONE
  - Wiki.J.Med
  - Wiki.J.Sci
  - Wiki.J.Hum
  - Open Medicine
  - Gene
  - RNA Biology

- Compatible with any OA journal
- Simplest workflow
- Well-suited to topics that are missing/start/stub on Wikipedia

- Restricted by Wikipedia’s CC-BY-SA license
- May be only option for highly-developed pages (full replacement typically more difficult Class B and above)

- Compatible with closed journal
- Two versions can be tailored to different audiences
- Increased work for authors and reviewers

**Wikipedia Article Quality**

- **Articles are rated**
  - Importance
  - Quality

- **Top two quality ratings**
  - Promoted by review
  - Can also be revoked by review

- **Status**
  - Displayed on talk page
  - Affects ideal updates mechanisms

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**Wikipedia’s psychology pages**

<table>
<thead>
<tr>
<th>Quality</th>
<th>Importance</th>
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<tbody>
<tr>
<td>Top</td>
<td>High</td>
</tr>
<tr>
<td>FA</td>
<td>1</td>
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<tr>
<td>GA</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>17</td>
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<tr>
<td>C</td>
<td>15</td>
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<tr>
<td>Start</td>
<td>9</td>
</tr>
<tr>
<td>Stub</td>
<td>4</td>
</tr>
<tr>
<td>Absent</td>
<td>?</td>
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</table>

**Update using Wikipedia page contents as starting point**

**Update by re-writing from scratch**

In all quality ratings cases, individual article *sections* can typically be rewritten from scratch.
**EXAMPLE CASE STUDIES**

<table>
<thead>
<tr>
<th>Quality</th>
<th>FA</th>
<th>GA</th>
<th>B</th>
<th>C</th>
<th>Start</th>
<th>Stub</th>
<th>Absent</th>
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**FULL REVIEW ARTICLES**
- Existing high-quality Wikipedia article updated and submitted
  - Hippocampus
- Wikipedia article previously existing but flawed/outdated
  - Lysine
- Wikipedia article previously completely absent/stub
  - Anthracyclines

**ARTICLE SECTIONS**
- Section of Wikipedia article warranted own page
  - Gene structure
- Wikipedia articles previously lacked images
  - Cell disassembly during apoptosis
Circular Permutation in Proteins

Spencer Bilven, Andreas Pričić

Circular permutation describes a type of relationship between proteins, whereby the proteins have a changed order of amino acids in their protein sequence, such that the sequence of the first portion of one protein (adjacent to the N-terminus) is related to that of the second portion of the other protein (near the C-terminus), and vice versa (see Figure 1). This is directly analogous to the mathematical notion of a cyclic permutation over the set of residues in a protein.

Circular permutation can be the result of evolutionary events, prevertebrate codification, or artificially engineered mutations. The result is a protein structure with different connectivity, but overall similar three-dimensional (3D) shape. The interactions between portions of the proteins can be established by observing similar sequences between 5'- and 3'-termini portions of the two permuted variants of cyclic wild-type proteins. SISYPHUS is a database that contains a collection of hand-crafted manual alignments of proteins with structural relationships, several of which have circular permutations.

Evolution

There are two main models that are currently being used to explain the evolution of circularly permuted proteins: permutation by duplication and fusions and fission. The two models have compelling examples supporting them, but the relative contribution of each model in evolution is still under debate. Other, less common, mechanisms have been proposed, such as "cut and paste" or "third-wheel" assembly.

References

The 2012 version of this article has passed academic peer review (here), and has been published in PLOS Computational Biology and can be cited as:


The WikiJournal User Group publish a set of open-access, peer-reviewed academic journals with no publishing costs to authors. Its goal is to provide free, quality-assured knowledge. Secondly, it aims to bridge the Academia-Wikipedia gap by enabling expert contributions in the traditional academic publishing format to improve Wikipedia content.
A WikiJournal’s Publishing Flow

Preprint server

Public peer review

Publication

WikiMedia
Highly accessed
Broad readership
Editable and updatable

Citable
Stable
Indexed
Version of record

Highly accessed
Broad readership
Editable and updatable

A WikiJournal’s publishing flow

Preprint server

Wikipedia as preprint

Public peer review

Versioning

Wikipedia-integration

Publication

Citable
Stable
Indexed
Version of record

Highly accessed
Broad readership
Editable and updatable

PDF
HTML
doi

Committee on Publication Ethics

- WikiJMed ethics statement audited and approved by COPE

- WikiJMed.org/Ethics_statement

- Attribution of CC material
  - Images / videos / other media: Attribution and license type at end of the figure legend
  - Text <1 paragraph / <10% of final work: Hyperlink to contributor list 'Acknowledgements' section
  - Text >1 paragraph / >10% of final work: Hyperlink to the full contributor list included in the author list (typically as a hyperlinked "et al"). Treated as “Large group authorship”.

- Ownership
  - Journal article released by authors under creative commons license of their choice
  - Material integrated into Wikipedia may be edited by anyone (inc. authors) and will evolve over time

- What constitutes a preprint
  - Wikipedia can be treated as a preprint server where the submitting author has been a significant contributor

- Dual publication into Wikipedia
  - Material that complies with Wikipedia's guidelines (e.g. reviews / images) can be directly integrated via CC license
  - Material that does not (e.g. original research / opinion / speculation) can be cited as a source in a Wikipedia article
Sooooo... WHO PAYS?

- Reader subscription / author (e.g. Gene, RNA Biol)
  Typically charge subscription fees
  Article processing fee of $3300 and $2000 respectively

- Journal fee waiver (e.g. PLOS)
  For Topic Page review articles, PLOS waives its usual $2250 processing fee

- Charitable foundation (e.g. Wiki.J.Med.)
  Web hosting cost is covered by the Wikimedia Foundation
  Editors donate volunteer labour so no fees of any kind
What does the future hold?

Maximising potential value
**WikiMedia Journal Hosting Platform**

<table>
<thead>
<tr>
<th>Host</th>
<th>Wikipedia Sister project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>In whole</td>
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<tr>
<td></td>
<td>In part</td>
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<tr>
<td></td>
<td>One-off</td>
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<tr>
<td>Example</td>
<td>WikiJournals</td>
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<tr>
<td></td>
<td>PLOS Genetics</td>
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<tr>
<td></td>
<td>examples in negotiation</td>
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<tr>
<td>Features</td>
<td>Free interface for formatting articles ready for Wikipedia</td>
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<tr>
<td></td>
<td>Expert editors who give free advice and assistance</td>
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<td></td>
<td>Specialist tools for facilitating the process</td>
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</tbody>
</table>
POSSIBLE PARTNERSHIP SYSTEM

- One-off partnering with subject-specialist journals
  Specialist journal: Invite authors, identify peer reviewers
  WikiJournal: Advises on wikipedia policy compliance, readability and formatting

- Resulting article co-published in specialist journal & WikiJournal

- Then copied into Wikipedia per ‘journal-first’ model

- Co-publishing example:
Contact

Email Thomas.Shafee@gmail.com
Google Scholar Thomas Shafee
ResearchGate Thomas Shafee
LinkedIn Thomas Shafee

Journals

*WikiJournal of Medicine* (WikiJMed.org)
*WikiJournal of Science* (WikiJSci.org)
*PLOS* (TopicPagesWiki.plos.org)

Wikipedia

My userpage Search “User:TShafee”
WikiProject Psychology Search “WP:PSY”

