Wikimedia: linking research impact and open education

Martin Poulter
Jisc Wikimedia Ambassador 2013/14
@mlpoulter
"If you're serious about ensuring public engagement in your research then you need to make damn sure your work can be incorporated into Wikipedia. Wikipedia is the most important engagement channel for your research."
—Cameron Neylon, Public Library of Science

"The key challenge for the scholarly community [...] is to work actively with Wikipedia to strengthen its role in 'pre-research.' We need to build stronger links from its entries to more advanced resources that have been created and maintained by the academy."
—Casper Grathwohl, Oxford University Press
Open Education \( \text{V} \) Open Access

Verifiability
Research outputs

Impact
Citations
Readership

Students
Challenging, rewarding work

Universities
Skills
Scholarship
Low-cost

The world
Education
Accessible
For free

Vision of Britain homepage 2009 by GBHGIS Group, University of Portsmouth, CC-By-SA
Keble College, Oxford, Dimitri B., CC-By Iraqi medical students... U.S. Army photo, Public Domain
What is Wikimedia?

“What is Wikimedia?

“Imagine a world in which every single human being can freely share in the sum of all knowledge. That's our commitment.”
Wikimedia projects

• Free
• Multilingual
• Crowd-sourced from volunteers
• Open process
So far

- Around two billion contributions
- Around 80,000 regular contributors
- Around 500 million visitors per month
- About 24 million articles, 19 million media files
Some article hit rates

<table>
<thead>
<tr>
<th>Article</th>
<th>Monthly hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asperger Syndrome</td>
<td>426,803</td>
</tr>
<tr>
<td>Henry VIII of England</td>
<td>438,855</td>
</tr>
<tr>
<td>Volcano</td>
<td>160,940</td>
</tr>
<tr>
<td>Habeas Corpus</td>
<td>123,500</td>
</tr>
<tr>
<td>John Locke</td>
<td>179,382</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>226,934</td>
</tr>
<tr>
<td>World War I</td>
<td>516,579</td>
</tr>
<tr>
<td>Dependent and independent variables</td>
<td>220,831</td>
</tr>
</tbody>
</table>
TIL there's a domesticated cat that grows to be as large as a medium sized dog, and has the loyalty and playfulness of canines [en.wikipedia.org](en.wikipedia.org).

TIL that jury nullification has a dark side. Emmett Till a black boy talked "fresh" with a white girl and was murdered. The all white jury let off the killers. [en.wikipedia.org](en.wikipedia.org)

TIL The Twinkies on Zombieland were not real twinkies because Woodie Harrelson was a vegan [todayidoubt.com](todayidoubt.com)

TIL Donald Trump was a registered Democrat from 2001 to 2009. [nydailynews.com](nydailynews.com)

TIL that the human eye has independent blind spots. This blew my mind in class! [doobybrain.com](doobybrain.com)

TIL you can buy tame foxes online. They cuddle like a cat, but act like a dog [gibfox.com](gibfox.com)

TIL: The cost of the Iraq war is enough to provide water systems for every village, every person, on Earth. [economist blogs.nytimes.com](economist blogs.nytimes.com)

TIL what a baby aardvark looks like...weird! [laughingsquid.com](laughingsquid.com)

TIL what empire contained the largest percentage of the world's population ever...a bit more than China, India, and the EU contain today. Yeah, you guessed right: the Achaemenid.

TIL the Texas House has proposed slashing $27 billion from the budget, including huge cuts to education, nursing homes, and health care, but Friday, they approved a tax break for those who want to buy yachts costing $250,000 or more. [businessweek.com](businessweek.com)

TIL Best Buy will take any computer or CRT for recycling FREE. Good bye 20+ year old Mac Plus, and thank you Best Buy for doing a good thing. [imgur.com](imgur.com)

TIL there is a species of Jellyfish that is thought to be immortal [secure.wikimedia.org](secure.wikimedia.org)

TIL Wilson actually makes a volleyball with the Wilson from Castaway [wilson.com](wilson.com)
TIL that Queen Elizabeth II is Barack Obama's 16th cousin once removed.

TIL: Head Transplants are real and have been around since 1908.

TIL the verb snipe comes from the 1770's.

TIL Muhammad had a cat. And he liked it quite a bit.

TIL you can stream mp3s from your Dropbox to Facebook.

TIL every single Beastle Boys reference.

TIL That Kirstin Gore, Al’s Daughter, Wrote for Futurama.

TIL about the Flesch-Kincaid readability scale.

TIL That the Russian Space Agency uses the Starfleet logo.

TIL a mafia hitman was hired to kill Dennis Kucinich in the 70's.

TIL there is a Snow White cartoon starring Betty Boop that pre-dated the Walt Disney classic by 4 years.

TIL McDonald's in Singapore delivers -- AND they have spicy chicken nuggets.

I've been watching Home Movies for years and TIL that Brendan's dad (Andrew Small) is voiced by Louis C.K., I felt my brains start leaking out of my ears.

TIL: Hermann Goring's nephew flew an American Bomber in WWII. His co-pilot was given orders to shoot him if he ever tried to land in Germany.
Open review processes

Confirmation bias is a featured article; it (or a previous version of it) has been identified as one of the best articles produced by the Wikipedia community. Even so, if you can update or improve it, please do so.

This article appeared on Wikipedia’s Main Page as Today’s featured article on July 23, 2010.

<table>
<thead>
<tr>
<th>Date</th>
<th>Process</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 29, 2009</td>
<td>Good article nominee</td>
<td>Listed</td>
</tr>
<tr>
<td>May 24, 2010</td>
<td>Peer review</td>
<td>Reviewed</td>
</tr>
<tr>
<td>July 6, 2010</td>
<td>Featured article candidate</td>
<td>Promoted</td>
</tr>
<tr>
<td>July 23, 2010</td>
<td>Today’s featured article</td>
<td>Main Page</td>
</tr>
</tbody>
</table>

Current Status: Featured article
Google searches for “Confirmation bias”
Is and Is Not
Wikimedia Commons

Sikh pilgrim at the Golden Temple in Amritsar, India by Paulrudd. CC-BY-SA
http://commons.wikimedia.org/wiki/File:Sikh_pilgrim_at_the_Golden_Temple_(Harmandir_Sahib)_in_Amritsar,_India.jpg

“Bronchial anatomy” by Patrick J. Lynch via Wikimedia Commons. CC-BY

Tracy Caldwell Dyson in Cupola ISS: NASA/Tracy Caldwell Dyson (Public Domain)
work it, you must feed it properly on pure food and drink only, and keep it strictly clean always, even from the minutest speck of dirt. For without a perfectly clean and healthy body you cannot do the arduous work of preparation; you cannot bear its ceaseless strain. But it must always be you who control that body, not it that controls you.

The astral body has its desires—dozens of them, it wants you to be angry, to say sharp words, to feel jealous, to be greedy for money, to
### Field Vole

**Sovereign state**
- United Kingdom

**Constituent country**
- England

**Region**
- South West England

**Ceremonial county**
- Bristol
  - (County corporate)

**Admin HQ**
- Bristol

**Royal Charter**
- 1155

**County status**
- 1373

**Government**
- **Type**
  - Unitary authority, City

- **Governing body**
  - Bristol City Council

- **Leadership**
  - Leader & Cabinet
  - Liberal Democrat (council NOC)

- **MPs**
  - Chris Skidmore (C)
  - Kerry McCarthy (L)
  - Charlotte Leslie (C)
  - Dawn Primarolo (L)
  - Stephen Williams (LD)

**Area**
- **Unitary, City, Ceremonial county**
  - 40 sq mi (110 km²)

**Elevation**
- 36 ft (11 m)

**Population (2011 est.)**
- **Unitary, City, Ceremonial county**
  - 428,200 (Ranked 7th amongst English Districts / 43rd amongst Ceremonial Counties)
  - 9,420/sq mi
  - 3,639/km²
  - 587,400 (2,006 ONS estimate)
  - 1,006,600 (LUZ2,009)
  - 85.5% White (79.6% White British)
  - 3.6% S. Asian
  - 5% Black
  - 2.4% Mixed Race
  - 2.5% E. Asian or Other Asian

**Coordinates**
- **51°27′N 2°35′W**

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#### Conservation status

- **Extinct**
- **Threatened**
- **Least Concern** (IUCN 3.1)

#### Scientific classification

- **Kingdom:** Animalia
- **Phylum:** Chordata
- **Class:** Mammalia
- **Order:** Rodentia
- **Family:** Cricetidae
- **Subfamily:** Arvicolinae
- **Genus:** Microtus
- **Subgenus:** Microtus
- **Species:** *M. agrestis*

#### Binomial name

- *Microtus agrestis* (Linnaeus 1758)

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#### Methionine

- **IUPAC name**
  - Methionine

- **Other names**
  - 2-amino-4-((methylthio)butanoic acid

**Identifiers**

- **Abbreviations**
  - Met, M

- **CAS number**
  - 59-51-8, 63-68-3 (L-isomer) ✓, 348-67-4 (D-isomer) ✓

- **PubChem**
  - 876

- **ChemSpider**
  - 853 ✓, 5907 (L-isomer)

- **UNII**
  - 73JWT2K6T3 ✓

- **EC-number**
  - 200-432-1

- **KEGG**
  - D04983 ✓

- **ChEBI**
  - CHEBI:16811 ✓

- **ChEMBL**
  - CHEMBL42336 ❌

- **ATC code**
  - V03AB26, QA05BA90, QG04BA90

- **Jmol-3D images**
  - Image 1
  - Image 2

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**SMILES**

[show]
"Often described as the most flamboyant and notorious of the major Romantics, Byron was celebrated in life for aristocratic excesses..."
"Often described as the most flamboyant and notorious of the major Romantics, Byron was celebrated in life for aristocratic excesses..."
The famous frog

“Frog diamagnetic levitation.jpg” by Lijnis Nelemans via Wikimedia Commons
Wiki-to-Journal and Journal-to-Wiki
Circular permutation in proteins

This article has been published in PLOS Computational Biology and can now be edited on the English Wikipedia.

Spencer Bliven¹, Andreas Prlic²

Author Affiliations [show]

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 its 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, post-translational modifications, or artificially engineered mutations. The result is a protein structure with different connectivity, but overall similar three-dimensional (3D) shape. The homology between portions of the proteins can be established by observing similar sequences between N- and C-terminal portions of the two proteins, structural similarity, or other methods.

Figure 1. Schematic representation of a circular permutation in two proteins. The first protein (outer circle) has the sequence a-b-c. After the permutation the second protein (inner circle) has the sequence c-a-b. The
Circular Permutation in Proteins

Spencer Bliven, Andreas Prlić


Editor: Shoshana Wodak, University of Toronto, Canada

Published: March 29, 2012
A **circular permutation** is a relationship between proteins whereby the proteins have a changed order of amino acids in their peptide sequence. The result is a protein structure with different connectivity, but overall similar three-dimensional (3D) shape. In 1979, the first pair of circularly permuted proteins – concanavalin A and lectin – were discovered; over 2000 such proteins are now known.

Circular permutation can occur as the result of evolutionary events, post-translational modifications, or artificially engineered mutations. The two main models proposed to explain the evolution of circularly permuted proteins are **permutation by duplication and fission and fusion**. Permutation by duplication occurs when a gene undergoes duplication to form a tandem repeat, before redundant sections of the protein are removed; this relationship is found between saposin and swaposin. Fission and fusion occurs when partial proteins fuse to form a single polypeptide, such as in nicotinamide nucleotide transhydrogenases.

Circular permutations are routinely engineered in the laboratory to improve their catalytic activity or thermostability, or to investigate properties of the original protein.

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What you wouldn’t do
Someone has recently had a conference presentation published, and is adding it as an external link to many different articles in the same subject area.
(2)

• In the overview article for a subject, a new user has added a paragraph saying that a particular new paper provides the first “rigorous and systematic” theorisation of the topic.
Across hundreds of articles related to your subject, short, unreferenced statements are being added. Almost all are subjective comments on the topic (rather than encyclopaedic text) or statements copied-and-pasted from other sources on the web.
Linking research and education
Sawley, North Yorkshire

From Wikipedia, the free encyclopedia

Sawley is a village and civil parish in the Harrogate district of North Yorkshire, England. It is about 4 miles (6.4 km) west of Ripon. From this position, the Yorkshire Dales are to the west and the North Yorkshire Moors and coast are to the east. The village is location within Nidderdale, an area of outstanding natural beauty. Sawley is one of 27 parish councils who represent the interests of the people who live in the area.\[1\]

In the 1870s, Sawley was described as "a township-chapelry, with a village and four hamlets, in Ripon parish, W. R. Yorkshire."\[2\] The township's four hamlets were Cowbush, Hungate, North Pastures, and Rispleth.\[3\]

Contents [hide]
1 History
2 Present day
3 Places of interest
4 References
5 External links

History [edit source | edit beta]

Sawley dates back to the Saxon era\[4\] where it gained its name from Old English and the Anglian dialect. From this period, Sawley is directly translated as "Willow-tree wood" \[5\] The village is thought to have been the main source of stone for the construction of Fountains Abbey in the 10th century. The world heritage site which is now maintained by the National Trust is approximately two miles away from the village.\[6\]

Sawley is mentioned in the Domesday Book as "Sallai" or "Sallaia", in the Burgshire Hundred of the West Riding of Yorkshire. It comprised 18 villagers, 21 smallholders, 1 freeman, and 1 thane, with 40 ploughlands, a meadow of 85 acres (0.34 km\(^2\)), woodland of 1 league, a mill and a fishery. In 1066 the Lord was Ealdred, Archbishop of York St Peter. After 1086 the created Lord of the Manor title was given to the new Archbishop of York, Thomas of Bayeux, who also became Tenant-in-chief.\[7\][8]

From 1837, Sawley was part of the Ripon registration district but has been involved in several changes regarding these districts and boundaries. In 1946, the parish was transferred to the Ciaro registration district. During this same change, Sawley had a boundary change where part of the area was transferred to the parish of High and Low Bishopside. During this time, the total...
Writing an online encyclopaedia

Critical understanding
Active involvement
Digital fluency (of various kinds)
Read & evaluate sources
Analyse; restructure
Attention to detail: reviewing and improving
Originality (plagiarism is not an option)
Collaboration, including global
How does an encyclopedia article differ from a student essay?
Wikipedia Educational Assignments

- Course leader chooses a range of relevant Wikipedia articles
- Students and T.A.s get Wikipedia training
- Students prepare and review drafts
- Students interact with other Wikipedians
- Lecturer reviews articles before and after the course
- Students write reflective paragraphs
How it works

(Teaching assistants, students, staff members)

In-person help

Instructor

Campus Ambassador

Campus Ambassador

Students

Online Ambassador

Online help

Slide by Annie Lin of the Wikimedia Foundation, CC-BY-SA
Impact on article quality: pilot project

![Article Quality Before and After Student Assignments Chart]

- **Period**
  - Red: After
  - Blue: Before

*Chart shows the distribution of article quality scores before and after student assignments.*
Impact on article quality: Spring 2012

By Luis Campos (Wikipedia user Lfcampos), CC-BY-SA
Student experience

• 72% of students (from a US survey reported by the Wikimedia Foundation) preferred a Wikipedia assignment to a conventional assignment.
What might go wrong?
Wikipedia Educational Assignments

Education/Reasons to use Wikipedia

Welcome | Reasons to use Wikipedia | Assignment Design | The Syllabus | Materials for Teaching | Case Studies | Get Involved

Wikipedia is an opportunity to teach students essential 21st century skills that most will use in their careers and personal lives. Wikipedia is a valuable public resource, and in a classroom environment students learn how to contribute and use it properly. Curricula can and should include Wikipedia!

Students use Wikipedia. It is very critical that we, meaning academia, get on board with this, because it is going to happen if we like it or not. We need to

Student Engagement

When using Wikipedia in a class assignment, student motivations and learning outcomes vary widely, but one constant is that students are more engaged in a Wikipedia assignment than a traditional assignment. Here are some of the benefits students state for using Wikipedia in the classroom:

- The global audience — most students appreciate that their work could be viewed by thousands.
Thanks

martin.poulter@wikimedia.org.uk
wiki.wikimedia.org.uk
infobomb.org
Twitter: @mlpoulter