

Knowledge and participatory gaps on Wikipedia, using the example of women scientists

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@Rosiestep | Northeastern University | Wikimedia DC | Women in Red

National Academy of Sciences | Washington, D.C. | 21 February 2020 | CC-BY-4.0

Wikipedia



- An encyclopedia
- Neutral point of view
- Free content
- Respect and civility
- No firm rules

Wiki... huh?



- ‘Wiki’: model of openly-editable content
- Hawaiian word meaning fast/quick
- 1995: coined by Ward Cunningham, inventor of the editing language used by Wikipedia editors

Jimmy Wales



“Imagine a world in which every single person on the planet is given free access to the sum of all human knowledge. That's what we're doing.” -Jimmy Wales

Wikimedia Foundation



WIKIPEDIA
The Free Encyclopedia



WIKIBOOKS
Open books for an open world



Wikiquote



WIKIDATA



WIKISOURCE



Wiktionary
The free dictionary



MediaWiki



**WIKIMEDIA
COMMONS**



WIKIVERSITY



WIKISPECIES
free species directory



WIKINEWS



**WIKIMEDIA
INCUBATOR**

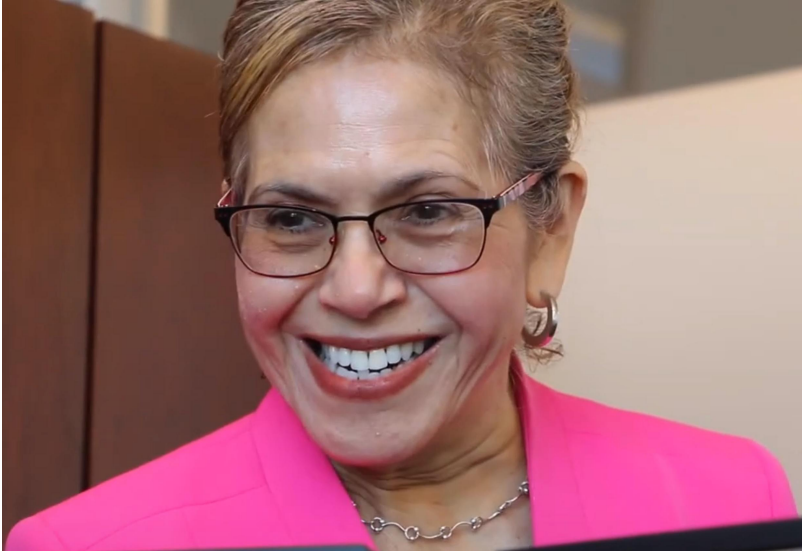


**WIKIMEDIA
META-WIKI**



**wiki
voyage**

Wikimedia Commons



Carmiña Londoño, 2019 SPIE Directors' Award.



Cornelia Denz, professor of Physics, presents at the SPIE Optics + Photonics conference.

Wikidata

label — **Douglas Adams** (Q42) — **item identifier**

description — English writer and humorist
Douglas Noël Adams | Douglas Noel Adams — **aliases**
▶ In more languages

Statements

property — **educated at** — **value**

St John's College	
end time	1974
academic major	English literature
academic degree	Bachelor of Arts
start time	1971

rank — **qualifiers**

statement group — **opened references**

▼ 2 references

stated in	Encyclopædia Britannica Online
reference URL	http://www.nndb.com/people/731/000023662/
original language of work	English
retrieved	7 December 2013
publisher	NNDB
title	Douglas Adams (English)

+ add reference

collapsed reference

Brentwood School

end time	1970
start time	1959

▶ 0 references

+ add (statement)





WIKIPEDIA
The Free Encyclopedia

- main
- talk
- source
- history
- watch
- tag
- csd
- last
- rpp
- prod
- xfd
- unlink

Welcome to **Wikipedia**,
the free encyclopedia that anyone can edit.
3,489,830 articles in English

- Arts
- Biography
- Geography
- History
- Mathematics
- Science
- Society
- Technology
- All portals

navigation

- Main page
- Contents
- Featured content
- Current events
- Random article
- Donate

search

interaction

- Help
- About Wikipedia
- Community portal
- Recent changes
- Contact Wikipedia

toolbox

- What links here
- Related changes
- Upload file
- Special pages
- Permanent link

print/export

- Create a book
- Download as PDF
- Printable version

languages

Today's featured article



The **Brill Tramway** was a six-mile (10 km) rail line in rural Buckinghamshire, England. It was privately built in 1871 by the 3rd Duke of Buckingham to help transport goods between his lands at Wotton House and the national rail network.

Lobbying from the nearby town of Brill led to its extension to Brill railway station and conversion to passenger use in early 1872. Although locomotives were bought, the line had been designed for horses and the trains travelled at average speeds of only 4 miles per hour (6.4 km/h). In the 1880s, the Duke of Buckingham planned to upgrade the route to main line standards and extend the line to Oxford, and in anticipation the line was named the Oxford & Aylesbury Tramroad. The extension to Oxford was never built.

Instead, the Brill Tramway became part of London's Metropolitan Railway. In 1933 the Metropolitan Railway became the Metropolitan Line of London Transport, and thus the Brill Tramway became part of the London Underground, despite being 40 miles (65 km) from London and not underground. In 1935 the London Transport management closed the Brill Tramway and the infrastructure was dismantled and sold. Little that remains other than the former junction station at Quinton Road, near the Buckinghamshire Railway Centre.

(more...)

Recently featured: *Cherry – Flywheel*, *Shyster and Flywheel* – Manchester Mark 1
 Archived: *By email* – Most featured articles...

Did you know

- ... that **William J. Olcott** (pictured), captain of the 1882 and 1883 Michigan Wolverines football teams, became the president of a railroad and a mining company?
- ... that Hudson's Bay Company officials learned of the **1709 Franco-**



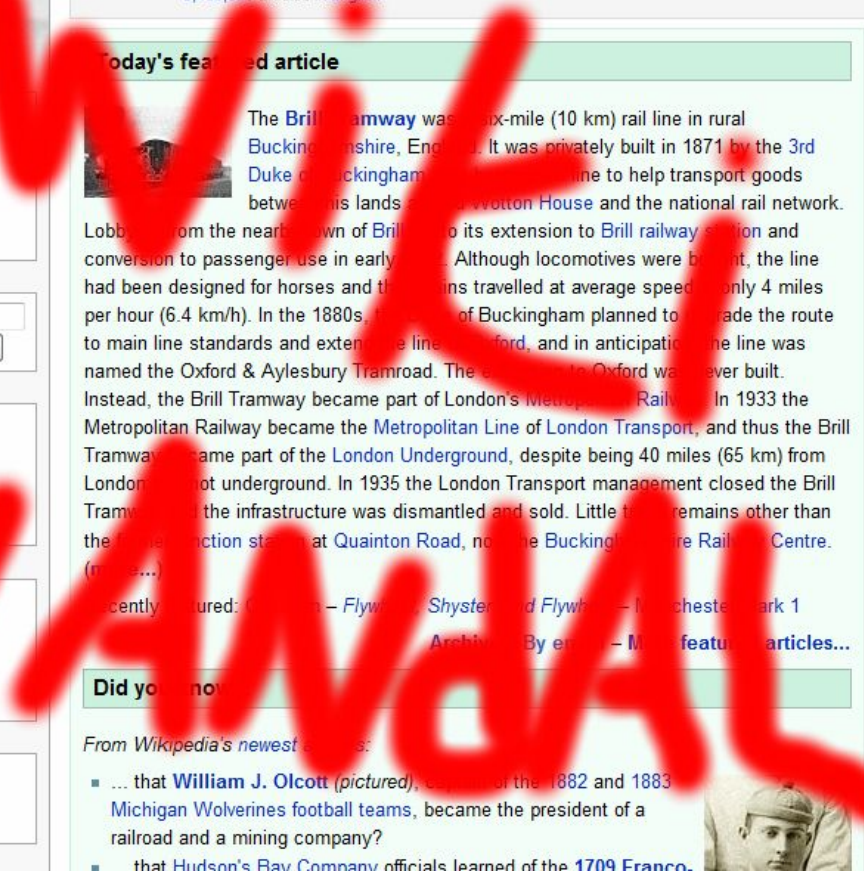
In the news

- Canadian–American actor **Leslie Nielsen** (pictured) dies at the age of 84.
- WikiLeaks releases a collection of more than 250,000 American **diplomatic cables**, including 100,000 marked "secret" or "confidential".
- Tom DeLay**, former Republican Majority Leader of the United States House of Representatives, is convicted of **money laundering** and conspiracy to commit money laundering.
- The Russian State Duma declares **Joseph Stalin** and other officials of the Soviet Union to have been responsible for the 1940 **Katyn massacre**.
- In a **parliamentary election** in the Democratic Party of the Friendly Islands wins a majority.
- Twenty-nine miners are presumed dead in a **second explosion** in the Pike River Mine, deadliest mining disaster in 96 years.



On this day...

- November 30**: Independence Day (Guatemala); **Saint Andrew's Day** in Scotland; **Black Friday** in the United States
- 1700 – Great Northern War: King Charles XII (pictured) defeated Peter the Great at the **Battle of Poltava** in 1709.
- 1872 – The **first-ever international cricket match** took place at Hamilton Crescent, Glasgow, between





Volunteers

- “... 77 percent of Wikipedia articles are written by just one percent of Wikipedia editors...” (Daniel Oberhaus, "Motherboard, Tech by Vice", 7 Nov 2017)
- “Just 3,541 Wikipedia editors are considered ‘very active’, and very few of them are female.” (“New Statesman”, 8 Jan 2019)



Policies, guidelines, best practices

- https://en.wikipedia.org/wiki/Wikipedia:List_of_policies

Notability (WP:N)

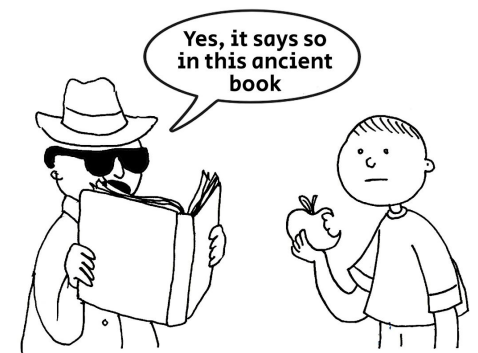
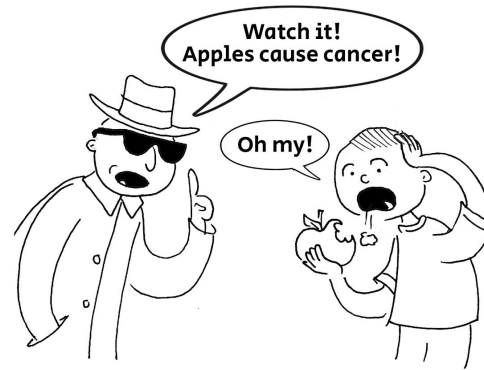
- “If a topic has received **significant coverage** in **reliable sources** that are **independent of the subject**, it is presumed to be suitable for a stand-alone article or list.”

- Median time to deletion tag: 2 minutes

This article may meet Wikipedia's [criteria for speedy deletion](#) as an article about a website, blog, web forum, webcomic, podcast, browser game, or similar web content that does not credibly indicate the importance or significance of the subject. See [CSD A7](#).

Reliable sources (WP:RS)

- Sources should be “published”, not “oral”.
- Online sources are convenient, but sources do not have to be available online.
- Sources in any language are acceptable.



Paid editing (WP:PAID)

- Issues:
 - Trust
 - Disclosure



Conflict of interest (WP:COI)

- Disclose any potential conflicts of interest on your userpage.
- Don't create an account in the name of your organization.



Conflict between editors

- Wikipedia can get frustrating.
- Take criticism as a learning opportunity.
- Wikipedia always wins. Don't bet against Wikipedia.



Gender gap: editors





Who is editing Wikipedia? Who isn't?

Who is editing Wikipedia? Who isn't?

2010	United Nations University study	12.6%	
2011	Wikipedia Editor Survey	8.5%	
2011	Wikimedia Foundation goal set: 25% women editors by 2015		
2015	No survey		
2018	Wikimedia Community Engagement Insights survey https://w.wiki/GUp	9%	<p>ED15: Gender across Wikimedia project contributors in 2018, weighted</p> <p>Other 1.0% Female 9.0% Male 90.0%</p>

“Conflict, confidence, or criticism”



Gender gap: content



Donna Strickland [edit]

ORES predicted quality: GA (4.22)

A *B-class* article from Wikipedia, the free encyclopedia
Canadian physicist, engineer, and Nobel laureate (Edit)

Donna Theo Strickland, CC (born 27 May 1959)^{[1][2][3]} is a Canadian **optical physicist** and pioneer in the field of **pulsed lasers**. She was awarded the **Nobel Prize in Physics** in 2018, together with Gérard Mourou, for the invention of **chirped pulse amplification**.^[4] She is a professor at the **University of Waterloo**.^[5]

She served as fellow, vice president, and president of **The Optical Society**, and is currently chair of their Presidential Advisory Committee. In 2018, she was named as one of **BBC's 100 Women**.^[6]

Contents [hide]

- Early life and education
- Career
- Awards and recognition
 - Nobel Prize
 - Order of Canada
- Selected publications
- Personal life
- See also
- Notes
- References
- External links

Early life and education [edit]

Strickland was born on 27 May 1959, in **Guelph**, Ontario, Canada to Edith J. (née Ranney), an English teacher,^[7] and Lloyd Strickland, an electrical engineer.^[1] After graduating from Guelph Collegiate Vocational Institute, she decided to attend **McMaster University** because its **engineering physics** program included lasers and **electro-optics**, areas of particular interest.^[7] At McMaster, she was one of three women in a class of twenty-five. Strickland graduated with a **B.Eng.** degree in engineering physics in 1981.^[8]

Strickland studied for her graduate degree in **The Institute of Optics**,^[9] receiving a Ph.D. degree from the University of Rochester in 1984.^[10]

Donna Strickland



Donna Theo Strickland
27 May 1959 (age 60)
Guelph, Ontario, Canada

Education
McMaster University (BEng)
University of Rochester (MS, Ph.D)

Known for
Intense laser-matter interactions
Nonlinear optics
Short-pulse intense laser systems
Chirped pulse amplification
Ultrafast optics

Spouse(s)
Doug Dykaar
2

Awards
Alfred P. Sloan Research Fellowship (1998)
Fellow of the Optical Society (2008)
Nobel Prize in Physics (2018)

Scientific career
Fields
Physics
Optics
Lasers
Institutions
University of Waterloo
Thesis
Development of an ultra-bright laser and an application to multi-photon ionization (1988)

Katie Bouman [edit]

ORES predicted quality: GA (4.31)

U.S. computer scientist. A *C-class* article from Wikipedia, the free encyclopedia
U.S. computer scientist (Edit)

*Not to be confused with **Katie Bowmans***

Katherine Louise Bouman (/ˈbaʊmən/)^[1] born 1989/1990^[2]) is an American computer scientist working in the field of computer imagery.

She led the development of an algorithm for imaging black holes, known as **Continuous High-resolution Image Reconstruction using Patch priors** (CHIRP), and was a member of the **Event Horizon Telescope** team that captured the first image of a black hole.^{[3][4]}

As of June 2019, she is an assistant professor of computing and mathematical sciences at the **California Institute of Technology**.^{[5][6][7][8]}

Contents [hide]

- Early life and education
- Research and career
- References
- External links

Early life and education [edit]

Bouman grew up in **West Lafayette, Indiana**, and graduated from **West Lafayette Junior-Senior High School** in 2007. Her father, **Charles Bouman**, is a professor of **electrical and computer engineering** and biomedical engineering at **Purdue University**.^[9] As a high school student, she conducted imaging research at **Purdue University**.^[9] She first learned about the **Event Horizon Telescope** in school in 2007.^[10]

Bouman studied electrical engineering at the **University of Michigan** and graduated **summa cum laude** in 2011. She earned her master's degree (2013) and doctoral degree (2017) in electrical engineering and computer science from the **Massachusetts Institute of Technology** (MIT).^[11]

At MIT, she was a member of the **Haystack Observatory**.^{[12][13]} She was supported by a **National Science Foundation** Graduate Fellowship. Her master's thesis, *Estimating Material Properties of Fabric through the Observation of Motion*,^[14] was awarded the **Ernst Guillemin Award** for best Master's Thesis in electrical

Katie Bouman



Katie Bouman
Speaks about the Event Horizon Telescope in 2019

Katherine Louise Bouman
1989/1990 (age 29–30)

Education
Massachusetts Institute of Technology
University of Michigan

Known for
CHIRP algorithm

Scientific career
Computer vision · machine learning

Institutions
Massachusetts Institute of Technology
Harvard University

Thesis
Extreme Imaging via Physical Model Inversion: Seeing Around Corners and Imaging Black Holes

Doctoral advisor
William T. Freeman

Website
www.cms.caltech.edu/people/kbouman

External video

How to take a picture of a black hole, Katie Bouman,



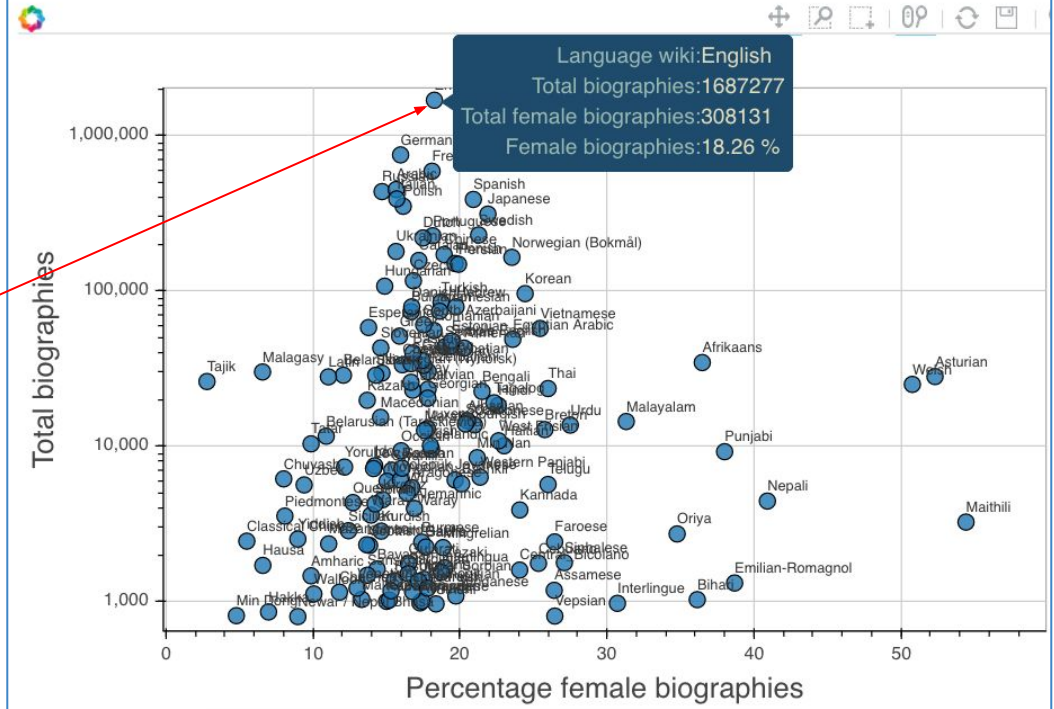
Women's biographies: a 1957 Venezuelan encyclopedia

- “...*Diccionario biográfico, geográfico e histórico de Venezuela*, -Ramón Armando Rodríguez (1957)

● 3.6%

Percentage of biographies about women

All time, as of 17 Feb '20



- Oct 2014: **15.53%**
- 17 Feb 2020: **18.26%**

- <http://whgi.wmflabs.org/gender-by-language.html>

% of women's scientist biographies

Gender Gap by occupation

Occupation ▲	Total ▼	Total with gender ▼	Females ▼	% Fem. ▼	Gap	Males ▼	% Mal. ▼	Others ▼	% Oth. ▼
agent	3,311,455	3,209,217	573,452	17.869 %		2,634,587	82.094 %	1,178	0.037 %
worker	1,642,656	1,577,779	215,334	13.648 %		1,361,943	86.320 %	502	0.032 %
creator	1,568,603	1,520,948	365,985	24.063 %		1,154,148	75.883 %	815	0.054 %
professional	1,119,574	1,073,605	150,530	14.021 %		922,753	85.949 %	322	0.030 %
sports figure	807,432	798,712	117,139	14.666 %		681,493	85.324 %	80	0.010 %
artist	795,516	776,856	219,995	28.319 %		556,321	71.612 %	540	0.070 %
athlete	784,450	776,549	115,705	14.900 %		660,766	85.090 %	78	0.010 %
author	612,323	595,067	120,367	20.227 %		474,390	79.720 %	310	0.052 %
competitive player	536,164	530,903	52,640	9.915 %		478,234	90.079 %	29	0.005 %
position	515,678	500,024	76,387	15.277 %		423,523	84.701 %	114	0.023 %
politician	513,578	483,366	56,182	11.623 %		427,072	88.354 %	112	0.023 %
erudite	507,992	491,360	78,387	15.953 %		412,860	84.024 %	113	0.023 %
writer	447,502	434,403	93,448	21.512 %		340,702	78.430 %	253	0.058 %
researcher	444,189	429,036	65,341	15.230 %		363,604	84.749 %	91	0.021 %
scientist	294,872	283,041	41,699	14.732 %		241,280	85.246 %	62	0.022 %
musician	256,387	250,804	61,144	24.379 %		189,496	75.555 %	164	0.065 %
association football player	251,162	249,117	11,388	4.571 %		237,725	95.427 %	4	0.002 %
actor	245,492	241,279	108,133	44.817 %		132,879	55.073 %	267	0.111 %

Thank you

Rosie Stephenson-Goodknight, *“Knowledge and participatory gaps on Wikipedia, using the example of women scientists”*, 2020, National Academy of Sciences, CC BY 4.0

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