

Your research
is changing
the world



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A year of progress

In this report, we share highlights from across the Frontiers' community in 2022.

We explore how our work together has driven open science and empowered even more researchers to deliver solutions for healthy lives on a healthy planet, our mission for more than 15 years.

Scientists power modern society and it is thanks to advances in science that we enjoy longer, healthier, and more prosperous lives than ever before in human history.

Every decision we make starts with one consideration: what's best for the researcher? This approach forms the basis of our core values, which we believe are crucial to achieving our mission.



A safer future through open science

A safer future through open science

Throughout 2022, the threat of COVID-19 to our day-to-day lives gradually faded. Thanks to science, we are now free to live as we did before the pandemic struck in 2019. Open science has proven what we can achieve if collaboration can flourish, and we have free, immediate, and unrestricted access to all publicly funded research. In short, 2022 was a manifestation of the huge benefit open science can bring to mankind.

At Frontiers, our mission and commitment to open science remains as strong today as it has ever been. We continue to develop as an organization, not just in terms of scale, but also in terms of how we engage with and support the research community, whose needs sit at the heart of everything we do. We continued to take strides in making all of science open, so that researchers can collaborate better and innovate faster to deliver the solutions we so urgently need.

In the context of that mission, we welcomed some historic moments for open science last year. At the top of this list was the policy guidance from the United States White House Office of Science and Technology Policy (OSTP), which stated that the results of taxpayer-supported research should be made immediately available to the American public without restriction. It was a moment that made everyone who has been fighting for open science for more than 20 years proud of everything we have achieved together.

We also welcomed our new partnership with the World Economic Forum (WEF) after a long-standing collaborative relationship. Frontiers has joined the WEF's Centre for New Society and Economy to share evidence-based benefits of open science, and to build a bridge enabling companies to access scalable solutions to tackle the climate emergency. Discussing the positive impact of openly available science for economies, industry and society is another important step to accelerate the transition to open science.

Frontiers in 2022

Everyone who is part of our community - editorial board members, reviewers, partners, and staff - helped to make 2022 a landmark year.

In 2022 we remained the sixth largest and third most-cited research publisher, with an average article citation count of 5 - a figure which beautifully captures the impact and quality of the work researchers choose to publish with us. As well, 92% of surveyed visitors to our website rated the quality of our published articles as excellent or good.

A safer future through open science

We published 125,000 new research articles last year, which means we have now published more than 397,000 peer-reviewed, openly accessible articles that people all over the world can view and download openly.

We also launched 49 new journals, bringing the total number of our community-led journals to 189 across more than 1,500 academic disciplines. Each journal we launch is developed by a closely-knit scientific community based on trust and integrity. More than 243,000 leading researchers choose to work on our editorial boards, pioneering in their own fields and supporting the transition to open science.

Trust and integrity are the cornerstones of our work. If society cannot place its trust in science, and in scientific publishers, then society cannot have the information it needs to make the right decisions. Only the best, highest quality research can build that trust and help the world solve its most pressing challenges.

Our journals now attract authors from all over the world, which means quality control is paramount. Thanks to developments in our artificial intelligence review assistant (AIRA) and the growth of our research integrity team, more than half of the articles we reject are now rejected at the desk review stage, before they enter peer review. This means that our editorial boards can focus solely on developing and publishing high quality research.

Researcher centricity is a core value for us at Frontiers and we value feedback from the research community as a key part of our continuous improvement. Through the course of 2022 we received more than 150,000 pieces of feedback – in the form of survey responses, emails, and in-depth interviews. We found that 92% of our authors and 88% of reviewers rate their experience as excellent or good. But, of course, the small percentage of researchers who didn't have a good experience or tell us where there's room for improvement are even more important. Each piece of feedback contributes directly to our developments for the year ahead – thank you if you have been instrumental in providing this valuable feedback.

A safer future through open science

Accelerating science

Of course, there is still a long way to go. The determination and collaboration we saw for COVID-19 must now be urgently replicated across other areas, particularly climate change, which is now the key challenge of our generation. In October 2022, Professor Johan Rockström discussed how to keep our planet stable and resilient as part of our Frontiers Forum series. He outlined the actions we need to take if we are to keep Earth's operating space safe for future generations; decisive, evidence-led decisions driven through open, collaborative science. His message has now been watched by more than 1 million viewers and counting.

In that context, we welcomed the return of the Frontiers Forum both in person and virtually in 2023. Expert speakers outlined their visions of how science can help bring solutions to today's most pressing challenges. The Forum also played host to the announcement of the Frontiers Planet Prize winners, a new award celebrating scientific breakthroughs that have the greatest potential to stabilize our planet's ecosystem.

As we look ahead, we should inject an even greater sense of prioritization to accelerate science. Disseminating quality scientific research quickly and openly is key to enabling progress, and this is where publishers have a critical role to play. At Frontiers, we remain unwaveringly committed to fulfilling our responsibility and making sure every piece of research counts.

Thank you once more to everyone who has worked with and supported us, I look forward to working with you in the year ahead.

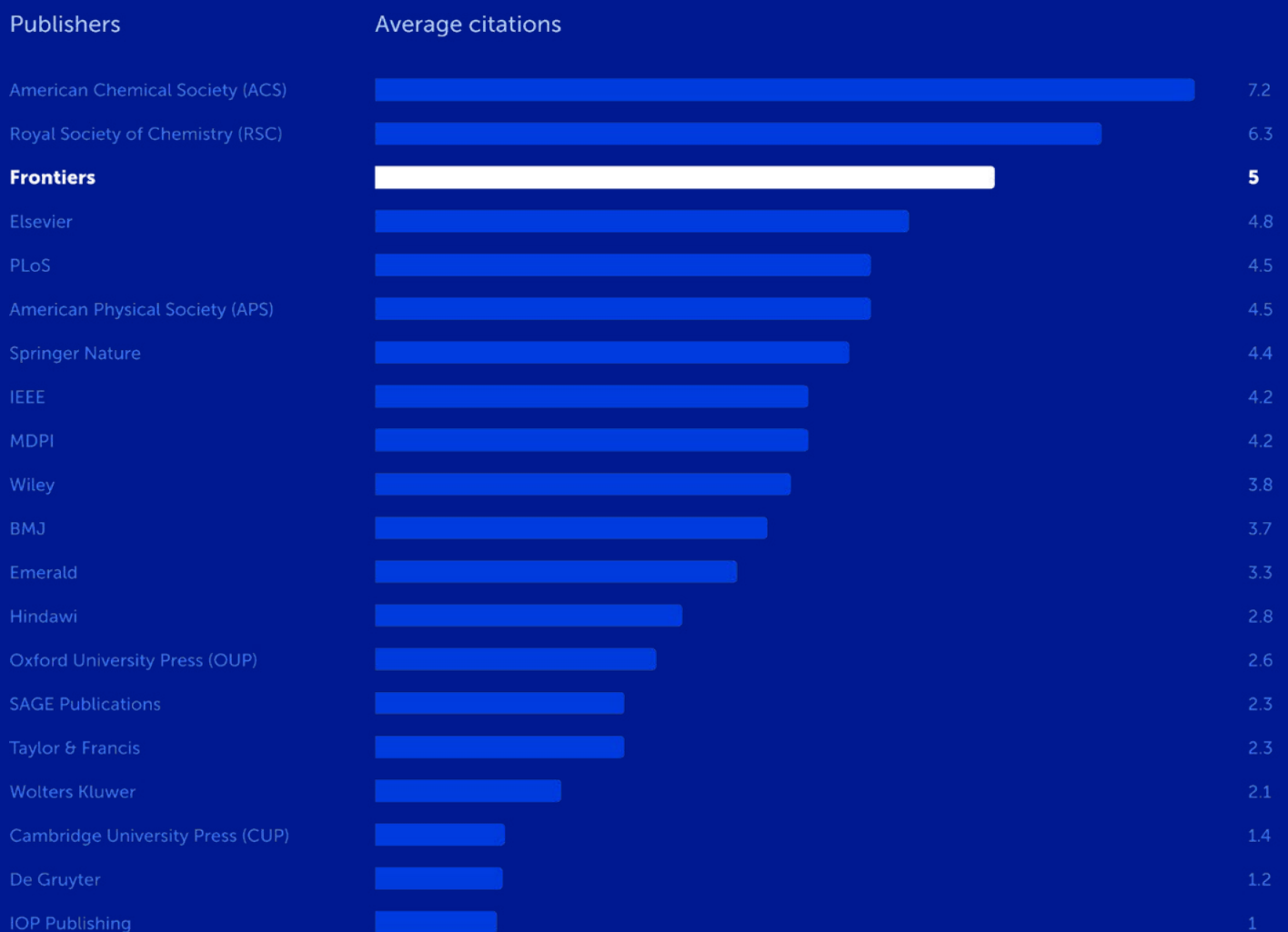


Kamila Markram

CEO and co-founder, Frontiers

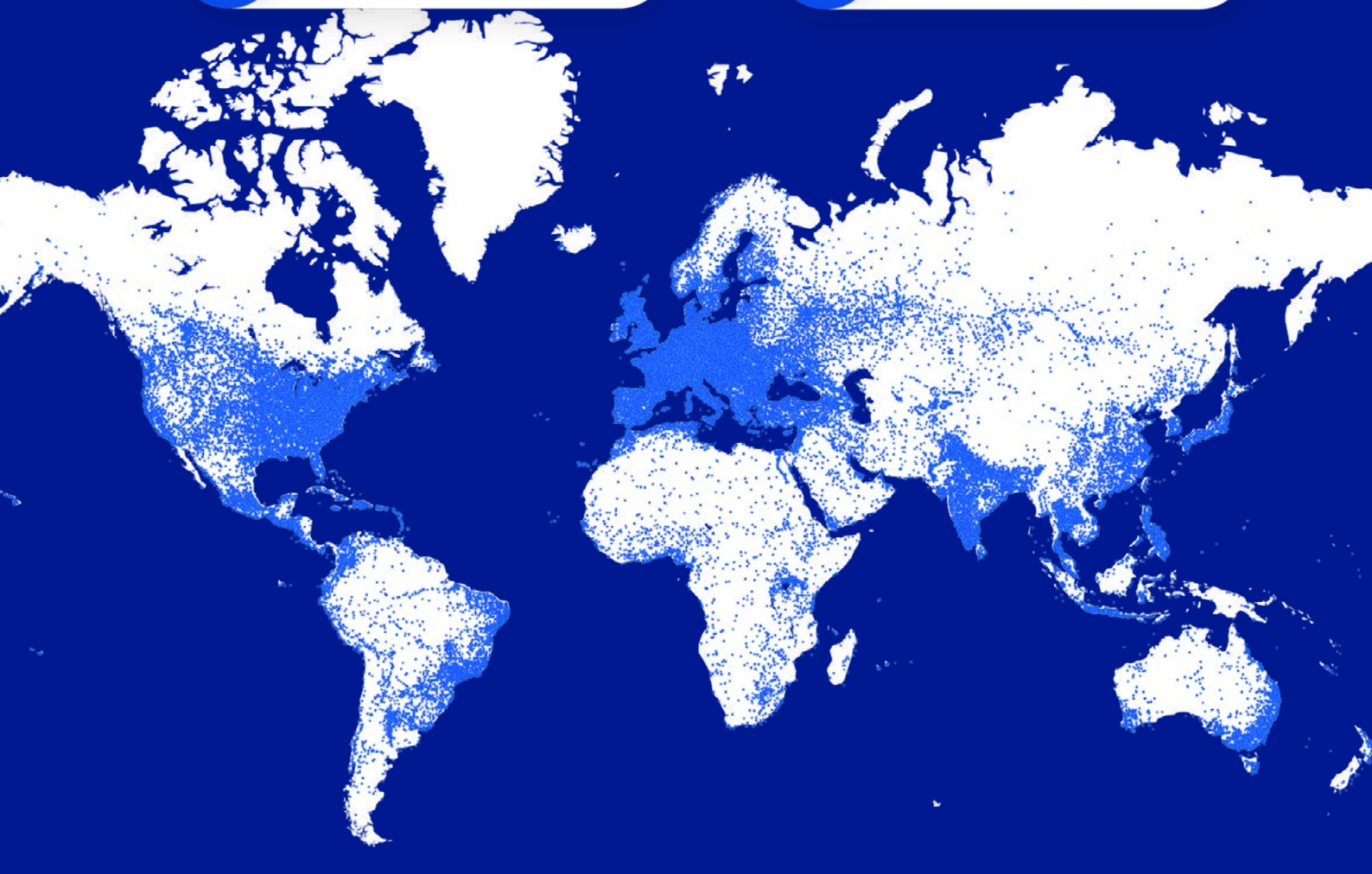
Key figures in 2022

Frontiers is the 3rd most-cited among the 20 largest publishers, with with an average of 5 citations per article.



Data source: analysis of the world's 20 largest publishers by volume, ranked by average number of citations in 2022, received by articles published in 2019, 2020 and 2021 (Dimensions, 2023)

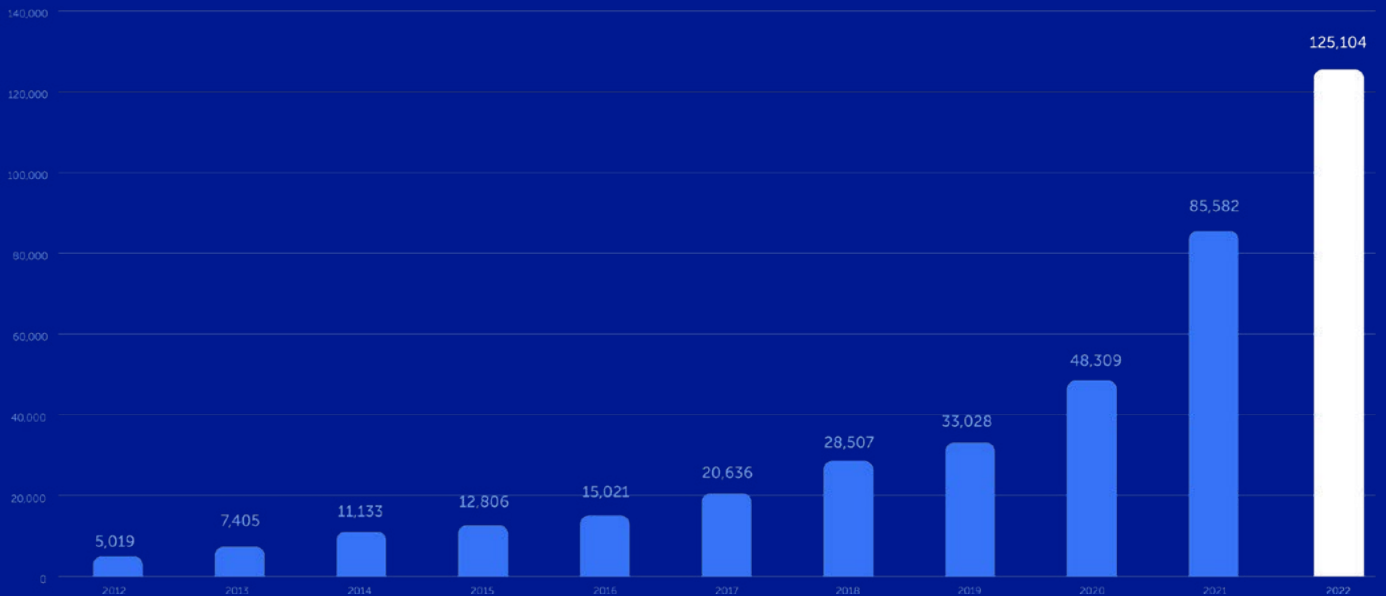
2.1 billion total views & downloads for your research.



Data source: total global citations and views & downloads for Frontiers' articles (Frontiers, 2022)



125,104 new open access articles published in 2022



Data source: total published articles, Frontiers 2022

2022 highlights



Unlocking US science

In August 2022 in a landmark move, the White House Office of Science and Technology Policy unveiled vital [new policy guidance](#) to make the results of publicly funded scientific research in the United States immediately free to access and available.

This move heralds a new era of world-class science and Frontiers stands ready to support partners in this crucial transition.



A year of transformational science

In 2022 Frontiers Forum featured four visionary keynote speakers, including Prof Johan Rockstrom, for virtual discussions science-led solutions to the greatest challenges of our time.

More than 15,000 attendees joined in real-time, and the videos have been viewed more than 5 million times.



Influencing global thinking on open science

In November 2022, Frontiers formalized its long-standing partnership with the World Economic Forum (WEF) by becoming a platform partner.

As part of the new agreement, Frontiers joined the WEF's Centre for New Society and Economy to share and promote evidence-based benefits of open science, and to influence global thinking on its positive impact on society.

01/ Journals

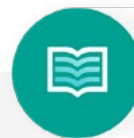
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New journal launches

We're publishing research in more fields than ever before

Over the past year, we launched **49** new journals and **349** new sections.

By the end of 2022, we had published 189 community-driven journals, many of which directly support the UN's Sustainable Development Goals (SDGs). Led by active researchers, our journals cover more than 1,500 academic disciplines – from aerospace engineering to zoology.

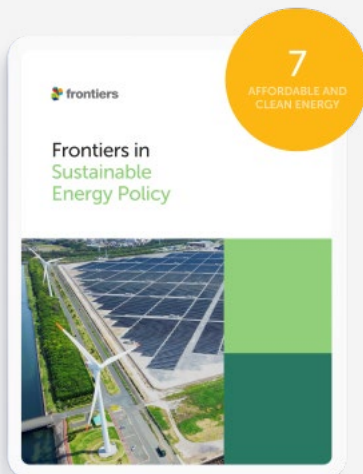
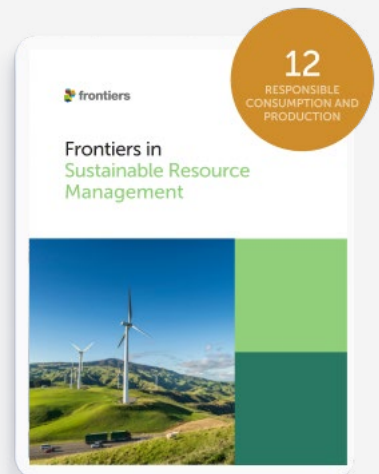
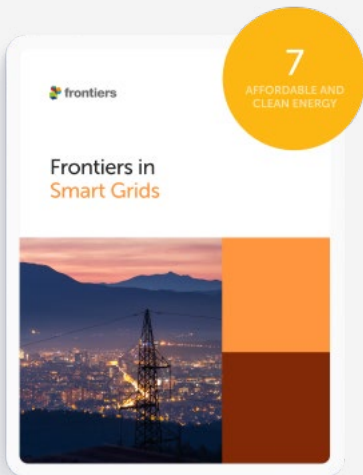
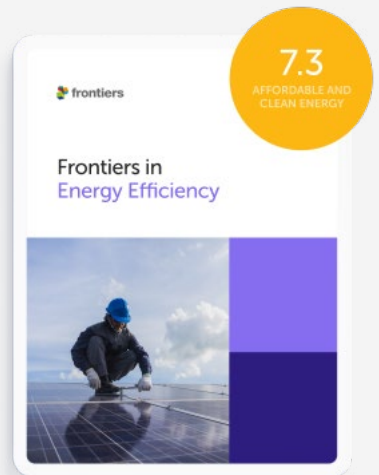
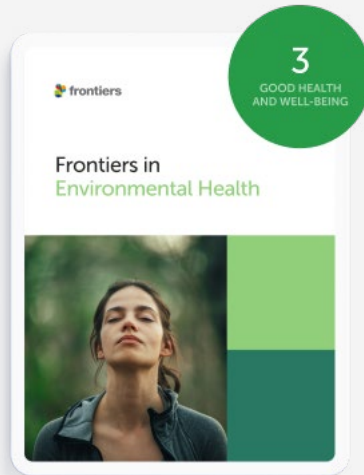
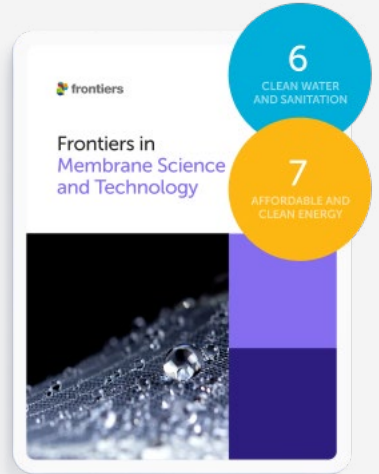


49 new journals
published in 2022

Our newly-launched journals in 2022

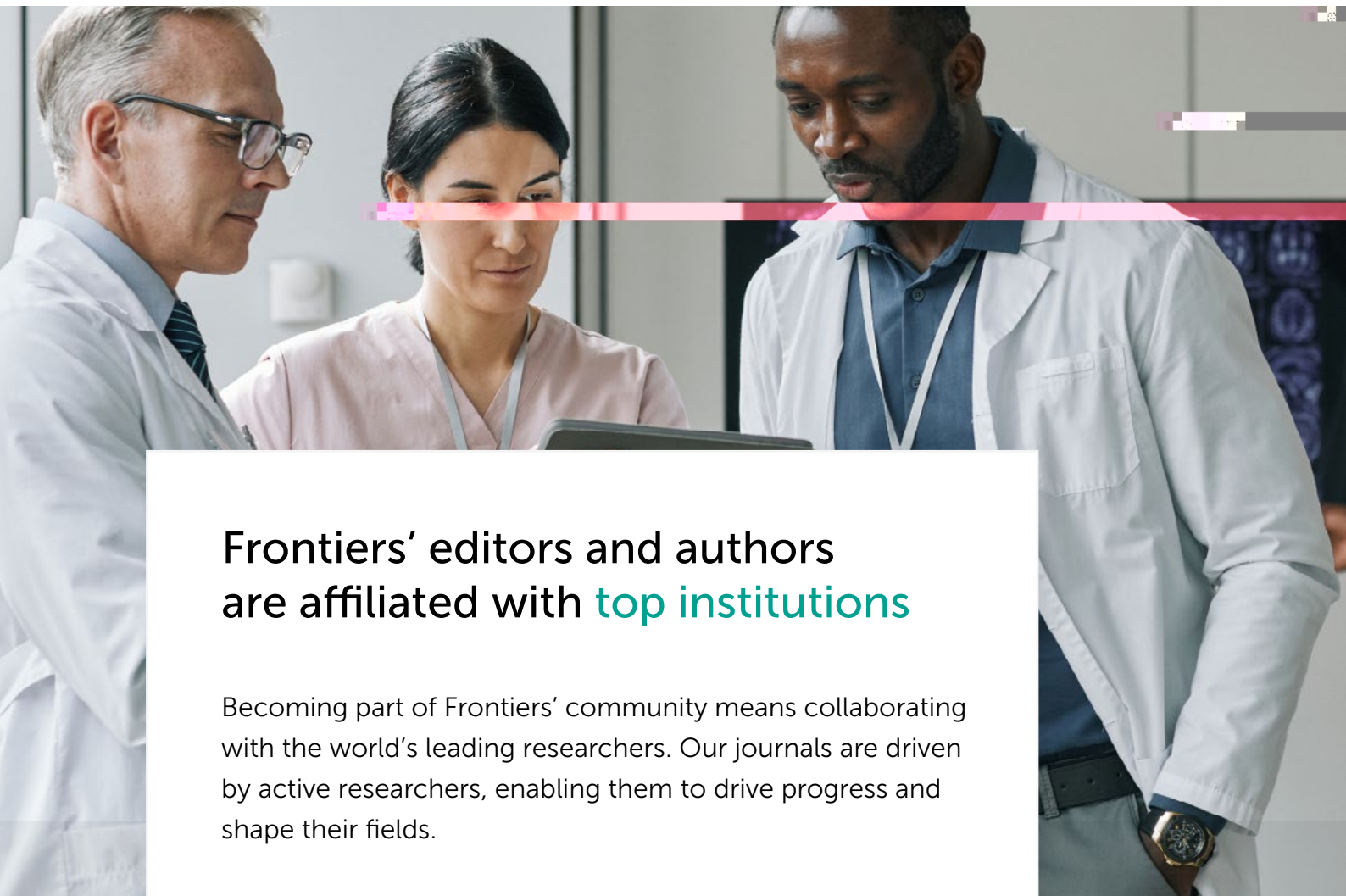
Frontiers in Aerospace Engineering	Frontiers in Dementia	Frontiers in Mammal Science
Frontiers in Amphibian and Reptile Science	Frontiers in Energy Efficiency	Frontiers in Membrane Science and Technology
Frontiers in Anesthesiology	Frontiers in Environmental Archaeology	Frontiers in Metals and Alloys
Frontiers in Antennas and Propagation	Frontiers in Environmental Economics	Frontiers in Microbiomes
Frontiers in Antibiotics	Frontiers in Environmental Engineering	Frontiers in Natural Products
Frontiers in Aquaculture	Frontiers in Environmental Health	Frontiers in Nuclear Engineering
Frontiers in Arachnid Science	Frontiers in Ethology	Frontiers in Parasitology
Frontiers in Batteries & Electrochemistry	Frontiers in Fuels	Frontiers in Quantum Science and Technology
Frontiers in Bee Science	Frontiers in Geochemistry	Frontiers in Sleep
Frontiers in Behavioral Economics	Frontiers in Hematology	Frontiers in Smart Grids
Frontiers in Bird Science	Frontiers in High Performance Computing	Frontiers in Stroke
Frontiers in Carbon	Frontiers in Horticulture	Frontiers in Sustainable Energy Policy
Frontiers in Cell Death	Frontiers in Imaging	Frontiers in Sustainable Resource Management
Frontiers in Chemical Biology	Frontiers in Lab-on-a-chip Technologies	Frontiers in Sustainable Tourism
Frontiers in Child and Adolescent Psychiatry	Frontiers in Language Sciences	Frontiers in The Internet of Things
Frontiers in Cognition	Frontiers in Lupus	Frontiers in Transplantation
	Frontiers in Malaria	

Our new journals support Sustainable Development Goals



Editors and authors

We work with **top researchers** from leading institutions across the globe

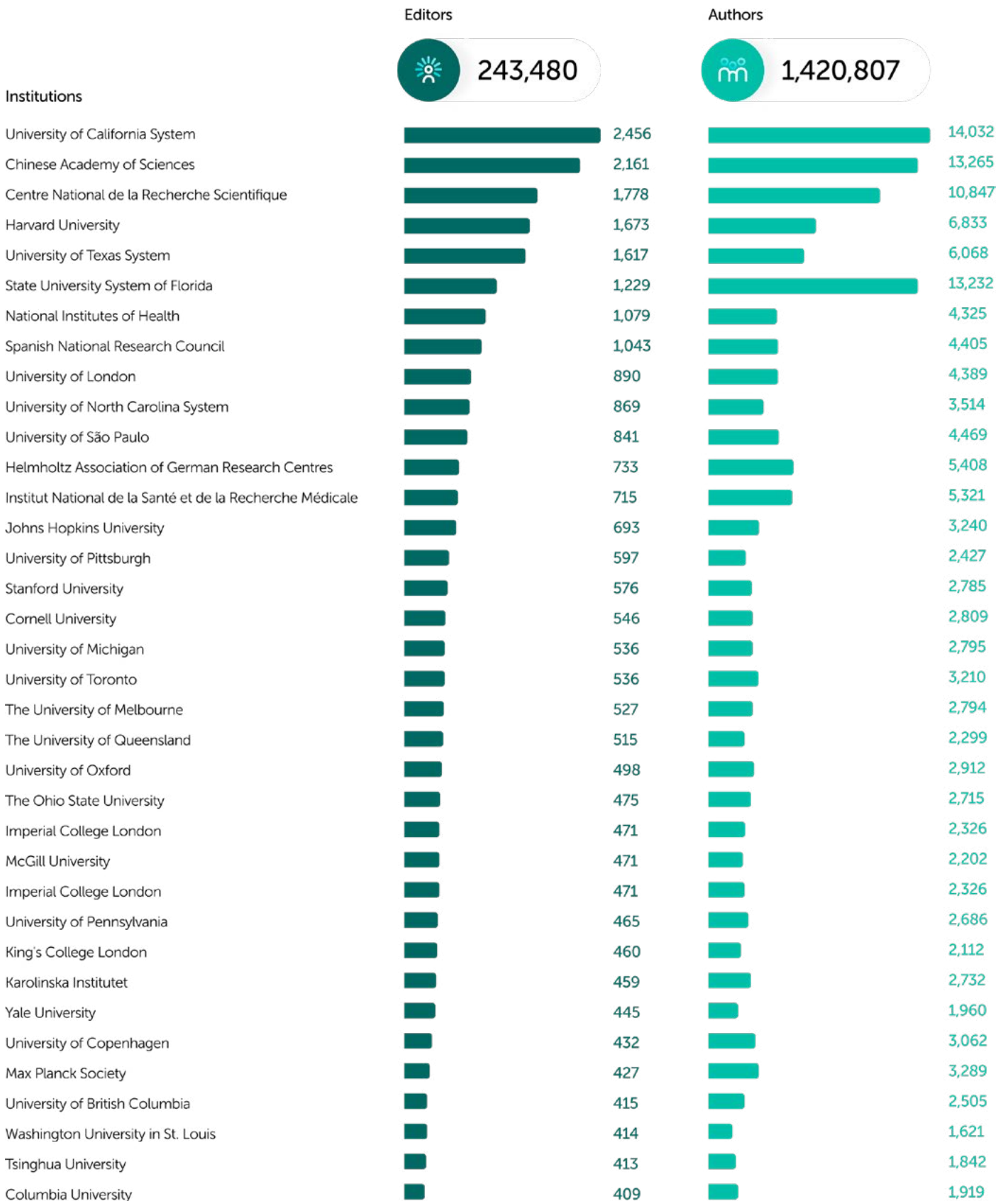


Frontiers' editors and authors are affiliated with **top institutions**

Becoming part of Frontiers' community means collaborating with the world's leading researchers. Our journals are driven by active researchers, enabling them to drive progress and shape their fields.

In 2022

- the Frontiers community grew to more than 1.4 million published authors and 243,000 editors across 164 countries
- 90,000 review, associate and chief editors joined our boards



Data source: Frontiers, December 2022.

Top 35 institutional affiliations for Frontiers' editors and published authors, ranked by total number of editors.

Supporting the research community

We want researchers in all academic fields and all countries of the world to benefit from open science.

Our fee support program means that all articles that pass peer review can be published open access – regardless of the author's field or funding situation.

In 2022, we provided 22.9 million US dollars in fee support to authors on 16,000 articles.



22.9 million US dollars in
fee support



Research Topics

Our highly-cited, high impact article collections

Stimulating collaboration

Research Topics are our multidisciplinary collections of high-quality articles curated around a cutting-edge theme.

Defined, edited, and led by renowned researchers, they unite the world's leading experts around the hottest topics – stimulating collaboration and accelerating science and discovery.

By the end of 2022 we had launched **7,676** Research Topics with ebooks.



2022 collection highlights



Neurodegenerative diseases

19 articles | 566,000 views

Examining the effect of bioactive compounds, diet, and lifestyle factors on neurodegenerative disease phenotypes

[Read more >](#)



Viral diseases

37 articles | 519,000 views

Uncovering the countermeasures, molecular virology, and pathogenesis of emerging and re-emerging viruses

[Read more >](#)



Psychedelic therapy

22 articles | 383,000 views

Understanding how the social and relational effects of psychedelic use impact therapeutic outcomes

[Read more >](#)



Antiviral plants

16 articles | 219,000 views

Evaluating the clinical application of plant products in the management of viral infection

[Read more >](#)



Vaccine safety

10 articles | 251,000 views

Novel approaches to balance vaccine efficacy and safety by addressing increased pro-inflammatory immune responses and their effects on other biological systems

[Read more >](#)



Circadian rhythms

6 articles | 344,000 views

Demonstrating why time-of-day is an important factor in maximizing the health benefits of exercise and physical activity for disease prevention and treatment

[Read more >](#)

02/ Impact

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Reach

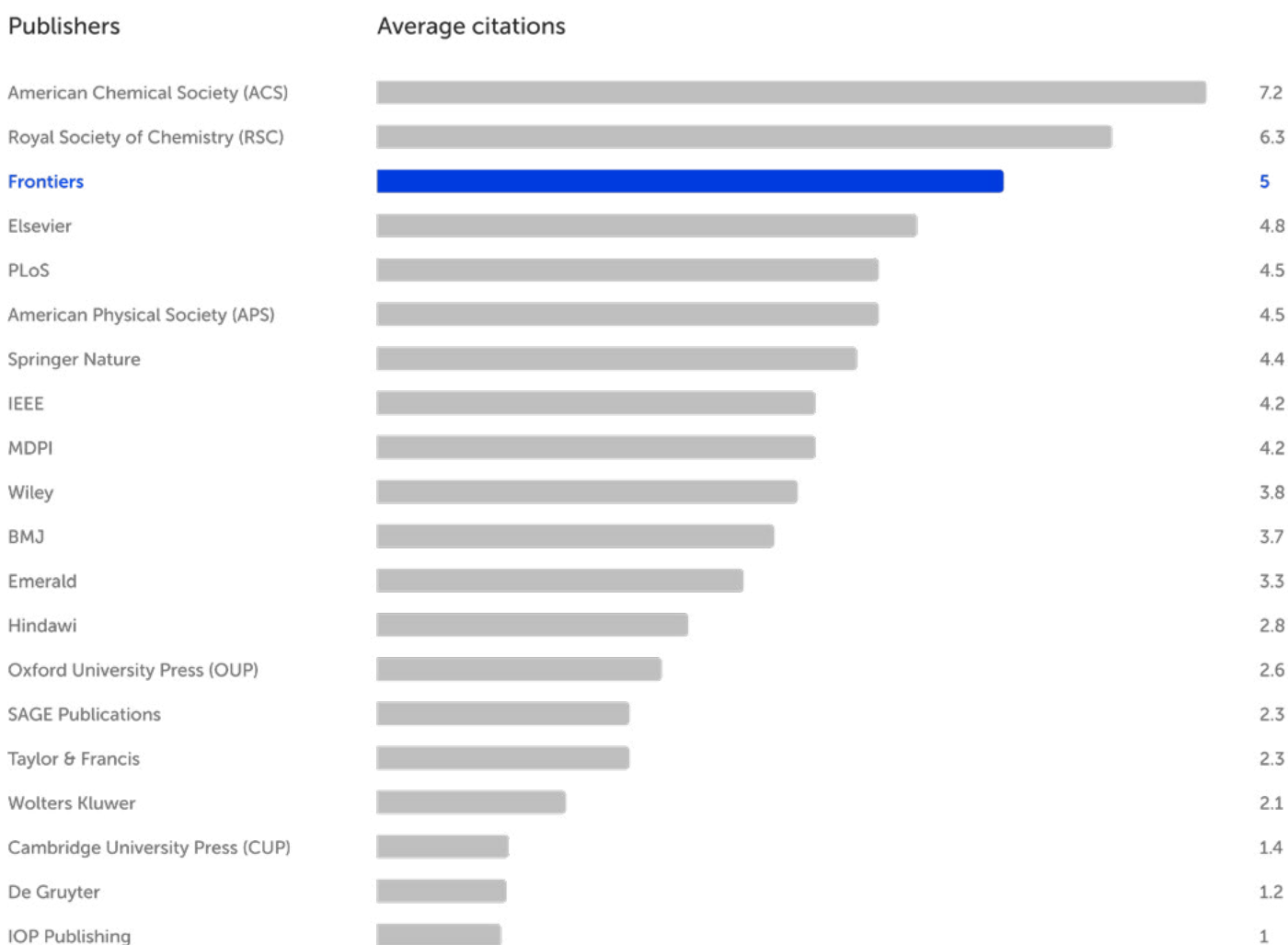
Your research is making
a difference – that's why
maximizing its impact
is important to us



We're the 3rd most-cited publisher

In 2022 Frontiers was the third most-cited publisher among the 20 largest publishers with an average of **5 citations per article**.

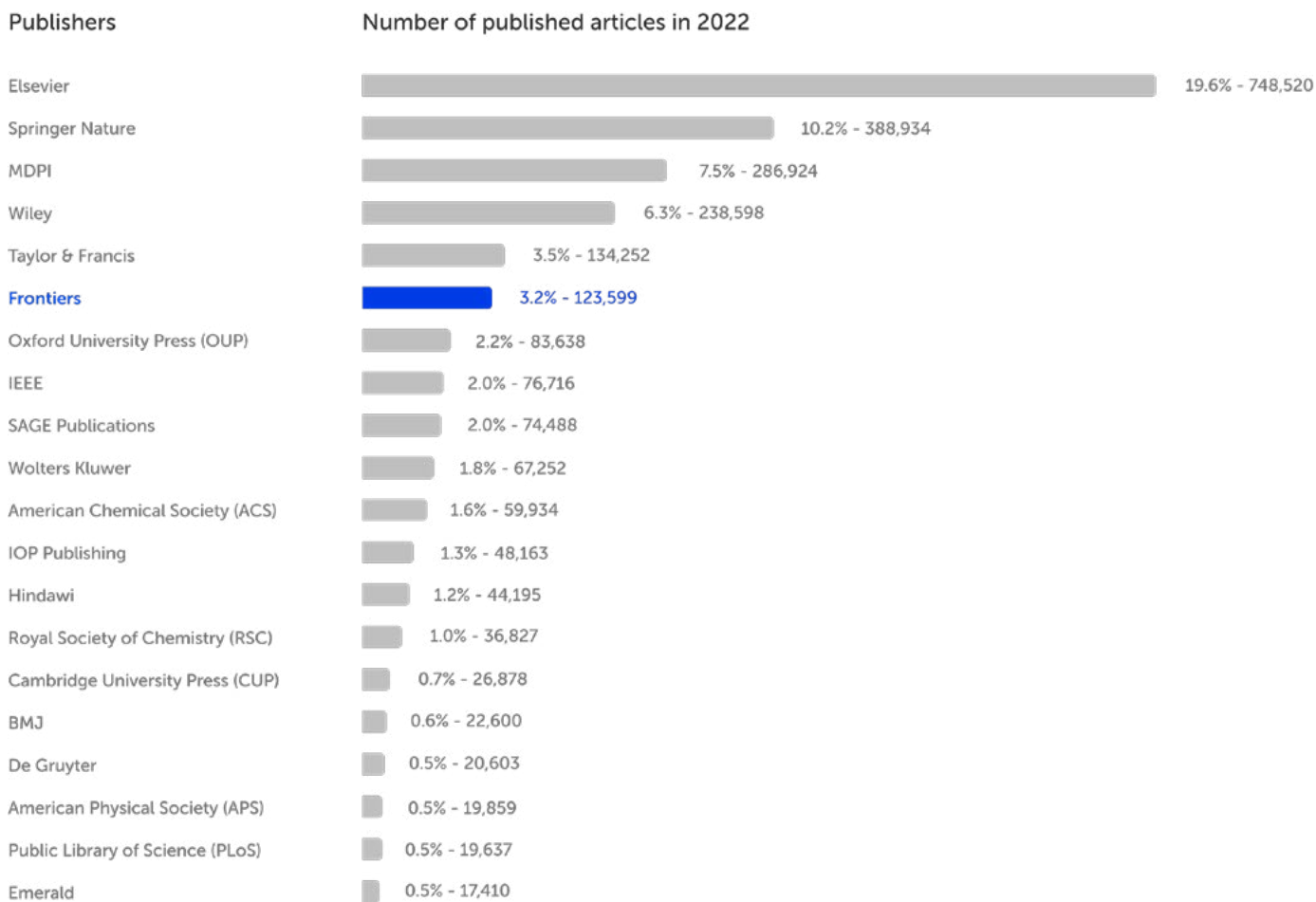
Frontiers was also the most cited among multi-disciplinary publishers.



Data source: analysis of the world's 20 largest publishers by volume, ranked by average number of citations in 2022, received by articles published in 2019, 2020 and 2021 (Dimensions, 2023).

We're the 6th largest publisher

Frontiers was the sixth largest publisher by number of published articles up to and including 2022.



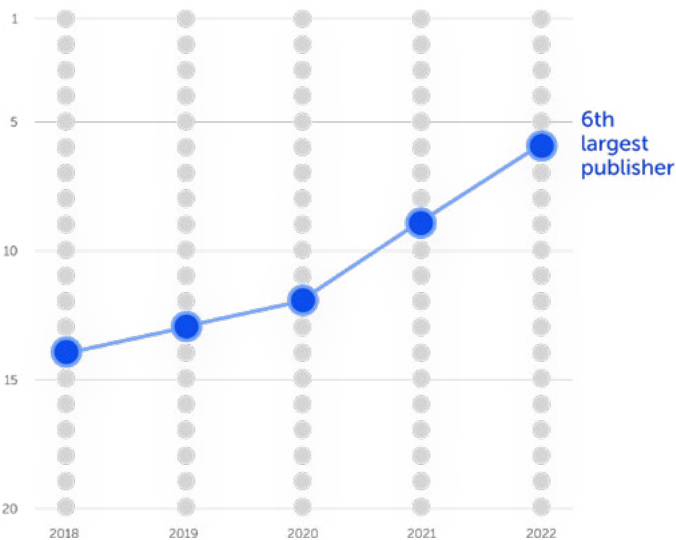
Data source: Dimensions 2022

Maintaining scientific excellence at scale

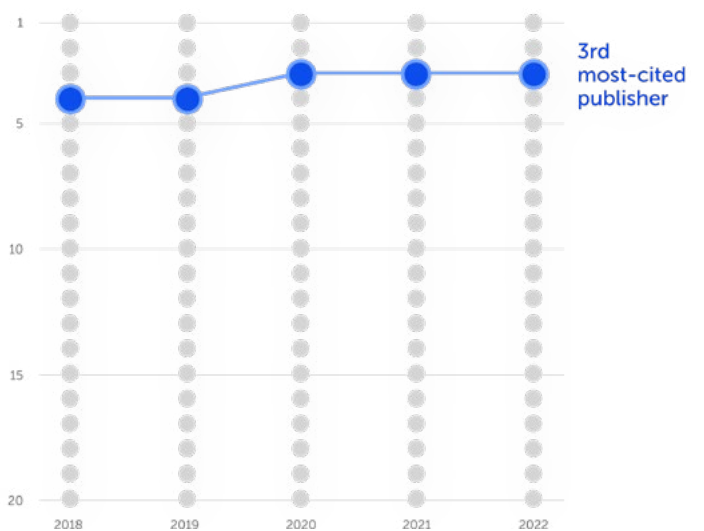
We have maintained high quality while growing in terms of the quantity of articles we publish.

The graphs below show Frontiers' ranking by volume of articles published (left) and ranking for average citations (right). Since 2018 we have remained consistently in the top five most-cited publishers while increasing in article numbers.

Articles published
Frontiers' publisher ranking by volume



Average citations
Frontiers' publisher ranking by average citations



Data source: Dimensions 2022. Publishers ranked by total articles published and by number of average citations generated to articles published in a three-year window.

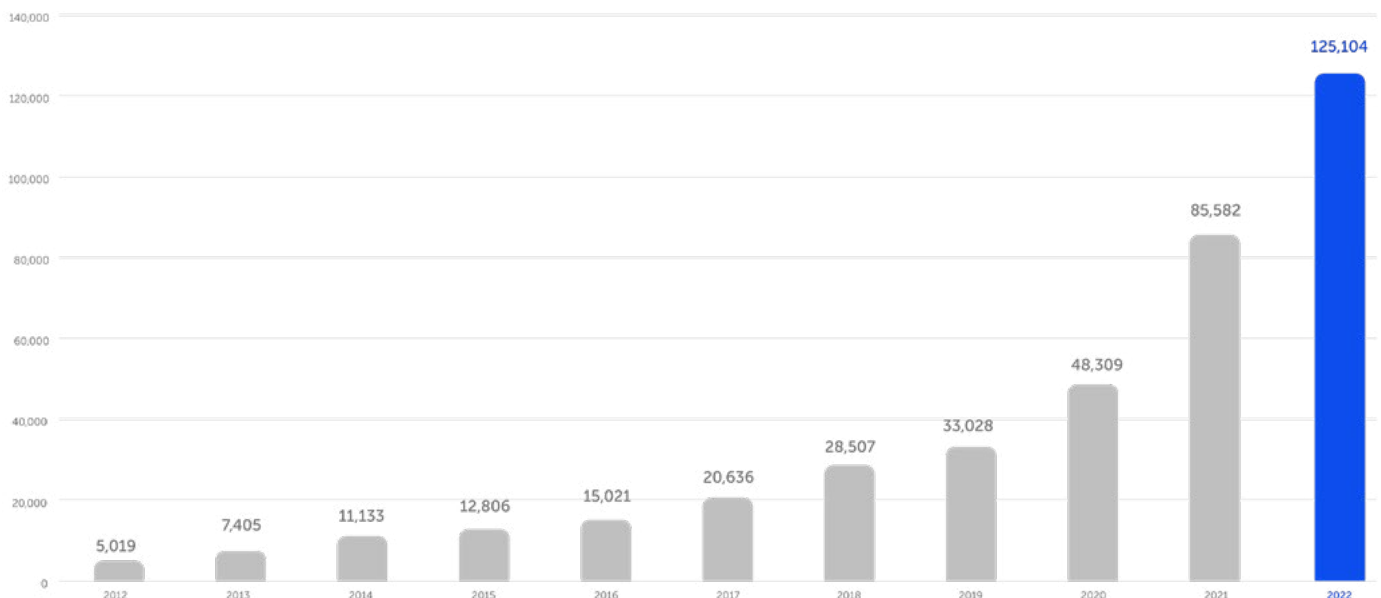
397,928 total articles now openly accessible

More researchers than ever before chose us as their trusted publisher of choice.

In 2022 we published more than 125,000 new articles, an increase of 47% compared to 85,000 in the previous year.

Every article is freely and permanently available immediately after publication, ensuring maximum readership and visibility.

Articles published (per year)



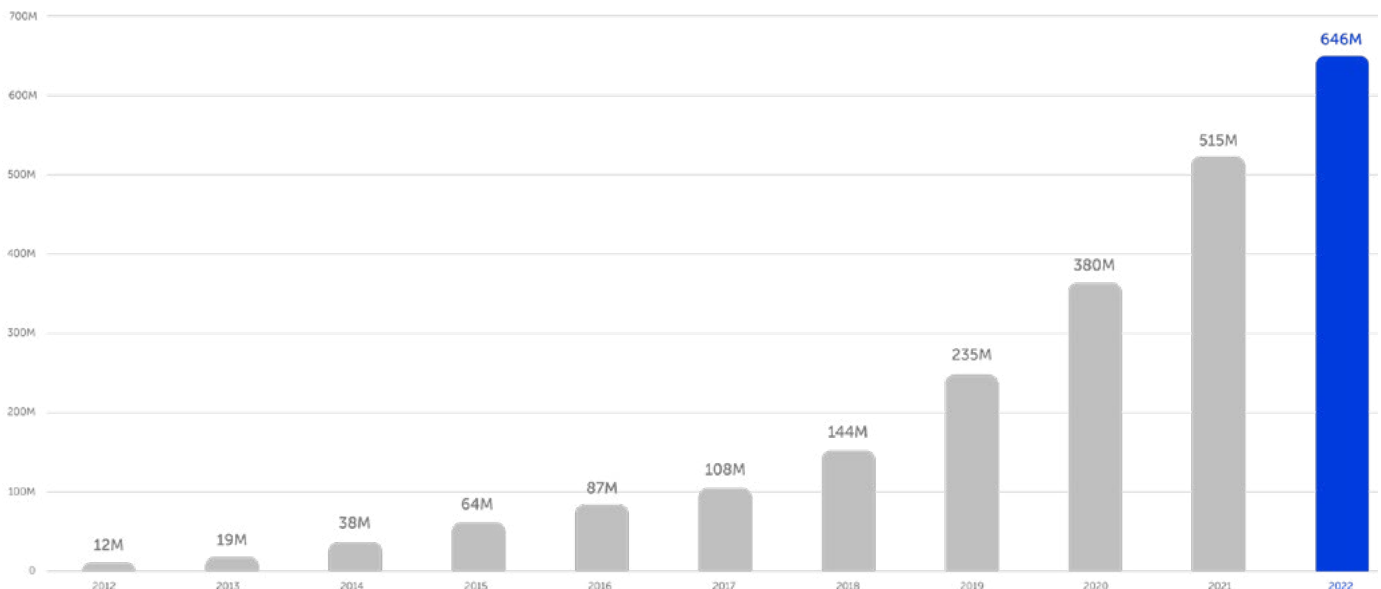
Data source: Frontiers, total published articles (articles published in 2010 and 2011, and since 2022 are not depicted in the graph)

Highly visible, highly cited research

The research we publish is viewed, shared, and cited more than ever before, demonstrating the power of open access.

In 2022 Frontiers' articles were viewed and downloaded **646 million** times across the world, totaling **2.1 billion** views and downloads overall.

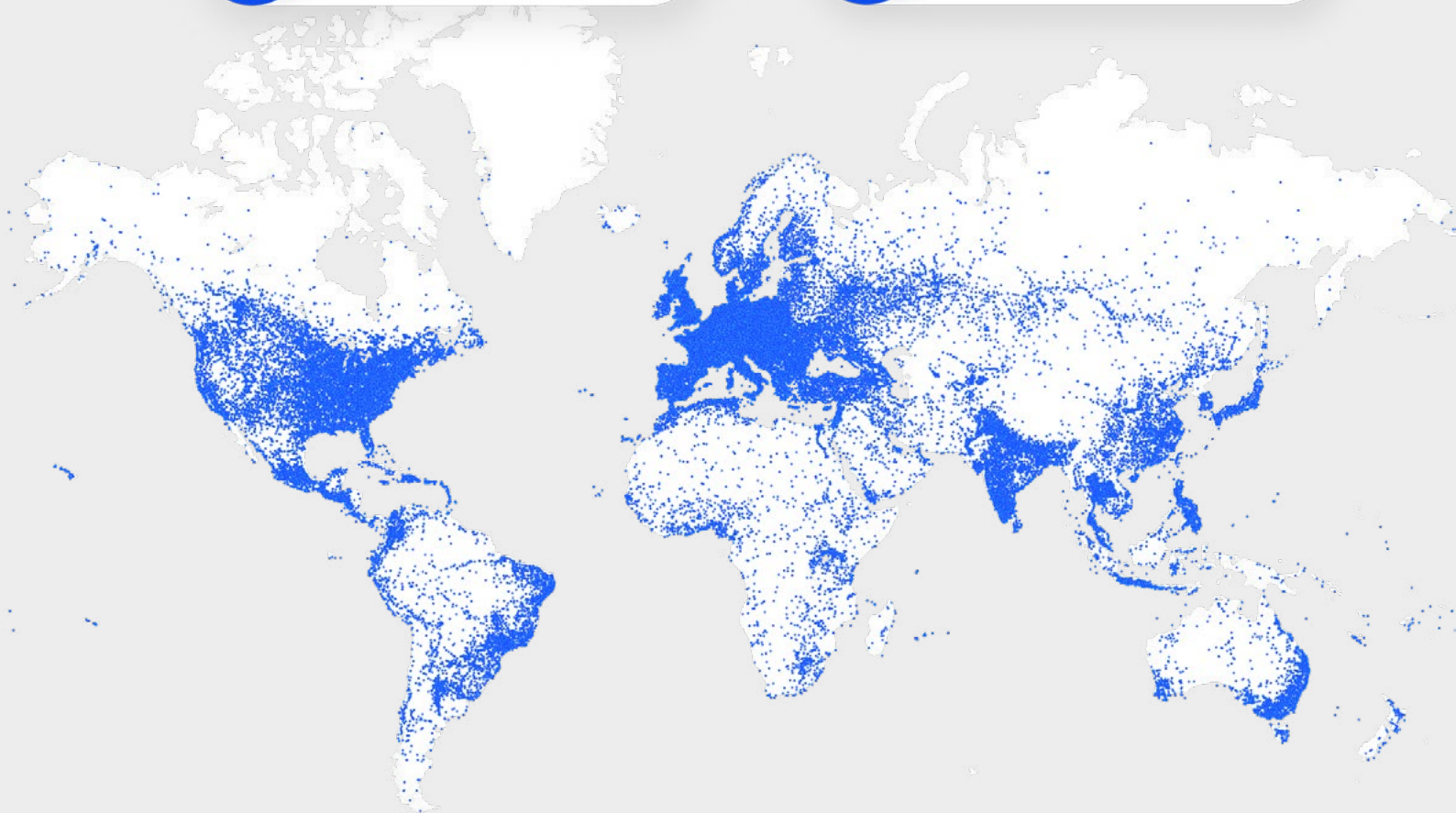
Articles views and downloads (per year)



Data source: Frontiers 2022

Total global citations and views & downloads for **Frontiers' articles**

There is an innovator in every corner of the globe: our articles were cited by researchers all over the world in the past year, now totaling **6.4 million** – an increase of 16% from the previous year.



Data source: Dimensions, 2023.

Journal impact

We have a home for your research in one of our impactful open access journals



Influential journals, defining their fields

Journal Impact Factor and CiteScore

Following the 2023 release of the Web of Science Group's Journal Citation Report (JCR 2022) and Scopus' CiteScore, 72 of the journals published by Frontiers have a Journal Impact Factor and 79 journals have a CiteScore.

18 of Frontiers' journals are in the top 25% in at least one category.



Largest Journal Impact Factor increase

Frontiers in Integrative Neuroscience increased its Journal Impact Factor by **9%**, to **3.5**.



Highest CiteScore increase

Frontiers in Nanotechnology increased its CiteScore from 1.1 in 2021 to **3.5** in 2022.

The Journal Impact Factor is the average number of citations received in the last year to articles published in the previous two years. It is measured each year by the Web of Science Group and reported in the Journal Citation Reports (JCR). The 2022 Journal Impact Factors, published in the 2023 Journal Citation Report, are based on citations in 2022 for articles published in 2020 and 2021.

The CiteScore journal impact metric measures the average citations received in a four-year time window to selected documents published in the same four years. The 2022 CiteScores are based on citations received in 2019-2022 for articles, reviews, conference papers, book chapters, and data papers published 2019-2022, and divides this by the number of these documents published in 2018-2021. CiteScore covers all journal titles in Elsevier's Scopus database and is released once a year.

Journal	2022 Impact Factor	2022 CiteScore
Frontiers in Aging Neuroscience	4.8	5.2
Frontiers in Agronomy		2.5
Frontiers in Applied Mathematics and Statistics	1.4	2.2
Frontiers in Artificial Intelligence	4.0	3.9
Frontiers in Astronomy and Space Sciences	3.0	3.4
Frontiers in Behavioral Neuroscience	3.0	4.6
Frontiers in Big Data	3.0	4.6
Frontiers in Bioengineering and Biotechnology	5.7	6.7
Frontiers in Blockchain	3.1	
Frontiers in Built Environment	3.0	4.0
Frontiers in Cardiovascular Medicine	3.6	2.6
Frontiers in Cell and Developmental Biology	5.5	6.3
Frontiers in Cellular and Infection Microbiology	5.7	6.4
Frontiers in Cellular Neuroscience	5.3	8.6

Journal	2022 Impact Factor	2022 CiteScore
Frontiers in Cellular and Infection Microbiology	5.7	6.4
Frontiers in Cellular Neuroscience	5.3	8.6
Frontiers in Cellular and Infection Microbiology	5.7	6.4
Frontiers in Chemistry	5.5	7.3
Frontiers in Climate		3.3
Frontiers in Communication	2.4	2.7
Frontiers in Computational Neuroscience	3.2	4.8
Frontiers in Computer Science	2.6	3.2
Frontiers in Conservation Science		0.9
Frontiers in Digital Health		2.2
Frontiers in Earth Science	2.9	3.2
Frontiers in Ecology and Evolution	3.0	4.3
Frontiers in Education	2.3	2.3
Frontiers in Endocrinology	5.2	5.6

Journal	2022 Impact Factor	2022 CiteScore
Frontiers in Environmental Science	4.6	3.1
Frontiers in Forests and Global Change	3.2	4.7
Frontiers in Genetics	3.7	5.2
Frontiers in Human Neuroscience	2.9	4.4
Frontiers in ICT		7.4
Frontiers in Immunology	7.3	9.4
Frontiers in Integrative Neuroscience	3.5	4.0
Frontiers in Marine Science	3.7	5.2
Frontiers in Materials	3.2	4.7
Frontiers in Mechanical Engineering	2.3	3.6
Frontiers in Medicine	3.9	3.6
Frontiers in Microbiology	5.2	7.8
Frontiers in Molecular Biosciences	5.0	4.8
Frontiers in Molecular Neuroscience	4.8	6.7

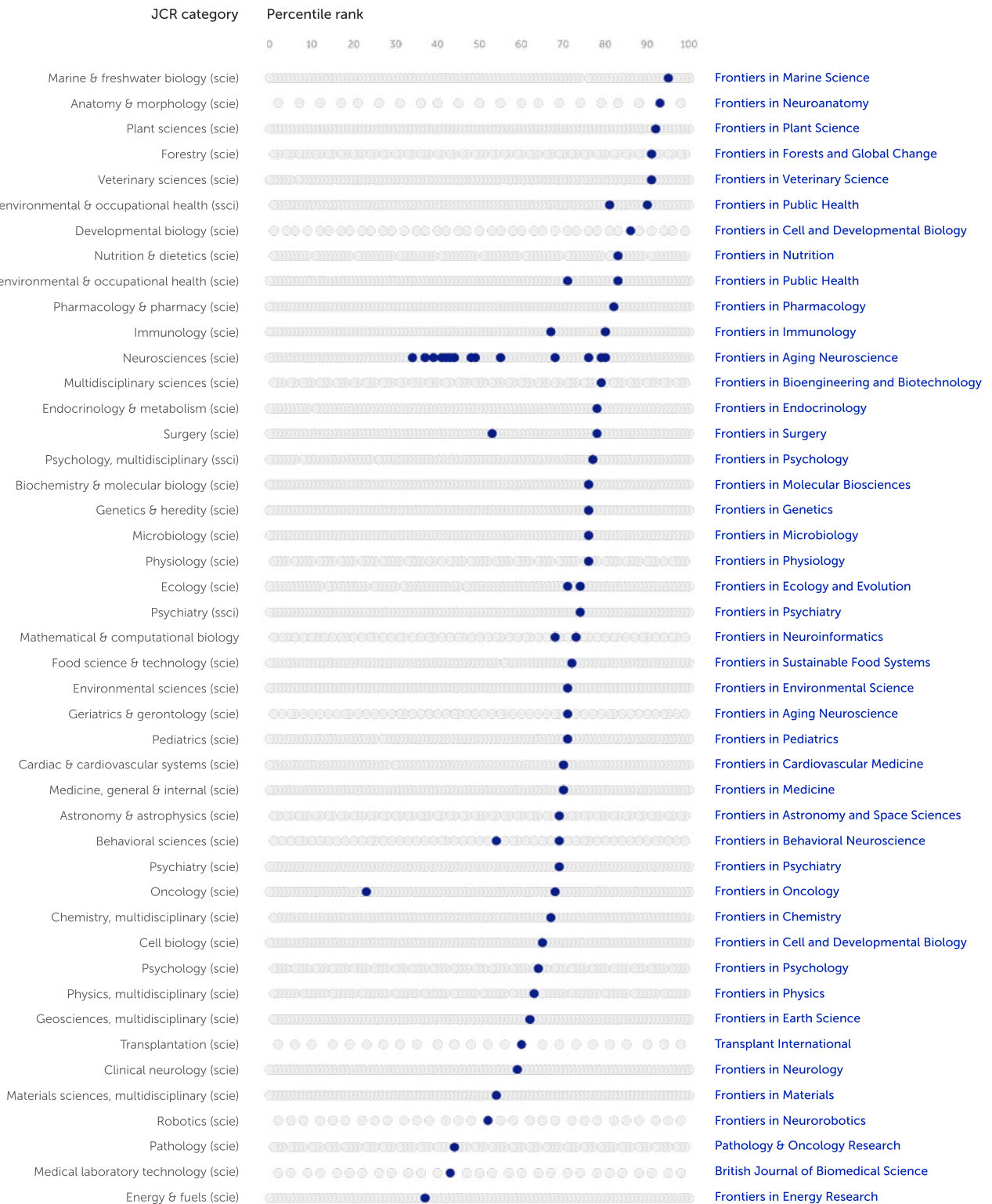
Journal	2022 Impact Factor	2022 CiteScore
Frontiers in Nanotechnology		3.5
Frontiers in Neural Circuits	3.5	4.6
Frontiers in Neuroanatomy	2.9	5.0
Frontiers in Neuroinformatics	3.5	5.3
Frontiers in Neurology	3.4	4.8
Frontiers in Neurorobotics	3.1	5.0
Frontiers in Neuroscience	4.3	6.8
Frontiers in Nutrition	5.0	3.5
Frontiers in Oncology	4.7	5.2
Frontiers in Oral Health		1.1
Frontiers in Pediatrics	2.6	3.3
Frontiers in Pharmacology	5.6	6.3
Frontiers in Physics	3.1	3.8
Frontiers in Physiology	4.0	6.1

Journal	2022 Impact Factor	2022 CiteScore
Frontiers in Plant Science	5.6	7.1
Frontiers in Political Science		1.6
Frontiers in Psychiatry	4.7	5.4
Frontiers in Psychology	3.8	4.5
Frontiers in Public Health	5.2	3.8
Frontiers in Reproductive Health		0.4
Frontiers in Robotics and AI	3.4	4.9
Frontiers in Sociology	2.5	2.8
Frontiers in Sports and Active Living	2.7	1.6
Frontiers in Surgery	1.8	1.1
Frontiers in Sustainable Cities	2.8	2.3
Frontiers in Sustainable Food Systems	4.7	5.3
Frontiers in Synaptic Neuroscience	3.7	4.7
Frontiers in Systems Neuroscience	3.0	5.0

Journal	2022 Impact Factor	2022 CiteScore
Frontiers in Veterinary Science	3.2	3.8
Frontiers in Virtual Reality		2.9
Frontiers in Water	2.9	1.2
Acta Virologica	1.7	2.2
Advanced Optical Technologies	1.8	3.0
British Journal of Biomedical Science	1.9	4.3
European Journal of Cultural Management and Policy	0.2	
International Journal of Public Health	4.6	5.0
Journal of Pharmacy and Pharmaceutical Sciences	2.7	5.9
Oncology Reviews	3.6	7.8
Pathology and Oncology Research	2.8	5.7
Public Health Reviews	5.5	5.6
Spanish Journal of Soil Science		1.8
Transplant International	3.1	4.5

Journal Impact Factor percentiles

The Journal Impact Factor is the average number of citations received in the last year to articles published in the previous two years. It is measured each year by the Web of Science Group and reported in the Journal Citation Reports (JCR). 2022 Journal Impact Factors are based on citations in 2022 for articles published in 2020 and 2021. This graph shows the percentile rank of Frontiers' journals (blue dots) in their respective JCR category.



Total journal citations

Many of our journals rank among the most influential in their fields, including the most cited in neurosciences, immunology, microbiology, pharmacology, genetics, developmental biology, psychology, and plant sciences.

Ranking of the top 10 most-cited journals in JCR categories (released in 2023 by Web of Science Group). The bars show the total number of citations received in 2022 for articles published in 2020 and 2021. Frontiers' journals are highlighted in blue.

Developmental Biology (SCIE) (39 Jour...

1st	Frontiers in Cell and Devel...		29,504
2nd	DEVELOPMENTAL CELL		4,948
3rd	DEVELOPMENT		3,473
4th	SEMINARS IN CELL & DEVE...		2,553
5th	GENES & DEVELOPMENT		2,352
6th	PLACENTA		1,639
7th	REPRODUCTION		1,207
8th	DEVELOPMENTAL BIOLOGY		1,096
9th	DEVELOPMENTAL PSYCH...		683
10th	DEVELOPMENTAL DYNAMI...		676

Genetics & Heredity (SCIE) (175 Journa...

1st	Frontiers in Genetics		15,972
2nd	Genes		12,187
3rd	NATURE GENETICS		9,069
4th	ONCOGENE		8,564
5th	MOLECULAR BIOLOGY AN...		7,928
6th	BMC GENOMICS		7,671
7th	GENOME BIOLOGY		7,328
8th	MOLECULAR THERAPY		5,254
9th	PLoS Genetics		4,963
10th	GENE		4,662

Immunology (SCIE) (161 Journals)

1st	Frontiers in Immunology		66,854
2nd	CLINICAL INFECTIOUS DIS...		28,331
3rd	Vaccines		17,405
4th	NATURE REVIEWS IMMUN...		13,441
5th	Frontiers in Cellular and Inf...		12,163
6th	International Immunophar...		11,597
7th	Journal for ImmunoTherap...		11,372
8th	BRAIN BEHAVIOR AND IM...		10,901
9th	Vaccine		10,854
10th	Immunity		10,586

Microbiology (SCIE) (136 Journals)

1st	Frontiers in Microbiology		38,359
2nd	CLINICAL INFECTIOUS DIS...		28,331
3rd	Microorganisms		20,586
4th	Frontiers in Cellular and Inf...		12,163
5th	NATURE REVIEWS MICRO...		10,396
6th	PLoS Pathogens		10,090
7th	Pathogens		9,828
8th	mBio		9,267
9th	JOURNAL OF INFECTIOUS...		8,542
10th	CLINICAL MICROBIOLOGY...		8,536

Neurosciences (SCIE) (274 Journals)

1st	Frontiers in Neuroscience j...		39,014
2nd	Frontiers in Neurology		14,319
3rd	NEUROIMAGE		12,221
4th	BRAIN BEHAVIOR AND IM...		10,901
5th	MOLECULAR PSYCHIATRY		10,489
6th	Neuron		8,644
7th	Nature Human Behaviour		8,469
8th	Brain Sciences		8,427
9th	NATURE NEUROSCIENCE		7,810
10th	BRAIN		7,713

Pharmacology & Pharmacy (SCIE) (279...)

1st	Frontiers in Pharmacology		33,775
2nd	BIOMEDICINE & PHARMA...		21,361
3rd	Pharmaceutics		18,460
4th	LIFE SCIENCES		15,718
5th	JOURNAL OF CONTROLLE...		13,091
6th	International Journal of Ph...		12,659
7th	JOURNAL OF ETHNOPHA...		12,167
8th	Biomedicines		11,976
9th	Antibiotics-Basel		11,704
10th	International Immunophar...		11,597

Plant Sciences (SCIE) (238 Journals)

1st	Frontiers in Plant Science		29,280
2nd	Plants-Basel		20,698
3rd	Agronomy-Basel		16,823
4th	NEW PHYTOLOGIST		14,731
5th	JOURNAL OF ETHNOPHA...		12,167
6th	JOURNAL OF EXPERIMENT...		7,952
7th	PLANT PHYSIOLOGY AND ...		7,381
8th	PLANT JOURNAL		7,067
9th	PLANT PHYSIOLOGY		6,696
10th	Molecular Plant		6,402

Psychology, Multidisciplinary (SSCI) (14..)

1st	Frontiers in Psychology		36,868
2nd	COMPUTERS IN HUMAN B...		8,847
3rd	CURRENT PSYCHOLOGY		7,211
4th	JOURNALS OF GERONTOL...		3,962
5th	AMERICAN PSYCHOLOGIST		3,507
6th	Perspectives on Psycholog...		2,891
7th	Current Opinion in Psychol...		2,451
8th	PSYCHOLOGICAL SCIENCE		2,349
9th	PSYCHO-ONCOLOGY		1,852
10th	PSYCHOLOGICAL BULLETIN		1,837

Endocrinology & Metabolism (SCIE) (14...)

1st	Frontiers in Endocrinology		14,502
2nd	DIABETES CARE		11,794
3rd	JOURNAL OF CLINICAL EN...		9,283
4th	Cell Metabolism		8,745
5th	FREE RADICAL BIOLOGY A...		7,029
6th	Lancet Diabetes & Endocri...		5,693
7th	BIOLOGICAL TRACE ELEM...		5,094
8th	Nature Metabolism		4,673
9th	DIABETOLOGIA		4,249
10th	Nature Reviews Endocrinol...		4,133

Physiology (SCIE) (81 Journals)

1st	Frontiers in Physiology		16,360
2nd	JOURNAL OF CELLULAR P...		8,667
3rd	JOURNAL OF PHYSIOLOG...		3,505
4th	International Journal of Be...		2,784
5th	PHYSIOLOGICAL REVIEWS		2,657
6th	AMERICAN JOURNAL OF P...		2,536
7th	AMERICAN JOURNAL OF P...		2,115
8th	JOURNAL OF APPLIED PH...		2,115
9th	Pesticide Biochemistry and...		2,040
10th	AMERICAN JOURNAL OF P...		1,902

Psychology (SCIE) (79 Journals)

1st	PSYCHOLOGICAL MEDICINE	6,334
2nd	JOURNALS OF GERONTOLOGY	3,962
3rd	Frontiers in Human Neurosciences	3,936
4th	JOURNAL OF CHILD PSYCHOLOGY	2,449
5th	INTERNATIONAL JOURNAL OF PSYCHOLOGY	2,413
6th	PSYCHO-ONCOLOGY	1,852
7th	PSYCHOLOGICAL BULLETIN	1,837
8th	PSYCHOPHYSIOLOGY	1,796
9th	DEPRESSION AND ANXIETY	1,751
10th	INTERNATIONAL PSYCHOLOGICAL REVIEW	1,538

Clinical Neurology (SCIE) (212 Journals)

1st	JOURNAL OF AFFECTIVE DISORDERS	18,619
2nd	Frontiers in Neurology	14,319
3rd	NEUROLOGY	11,640
4th	STROKE	8,488
5th	BRAIN	7,713
6th	JAMA Neurology	7,387
7th	World Neurosurgery	7,204
8th	LANCET NEUROLOGY	7,110
9th	JOURNAL OF NEUROLOGY	6,645
10th	Alzheimers & Dementia	6,037

Geriatrics & Gerontology (SCIE) (54 Journals)

1st	Aging-US	15,942
2nd	Frontiers in Aging Neuroscience	6,679
3rd	JOURNAL OF THE AMERICAN GERIATRICS SOCIETY	5,164
4th	BMC Geriatrics	5,155
5th	Journal of the American Medical Association	5,117
6th	AGEING RESEARCH REVIEWS	4,883
7th	JOURNALS OF GERONTOLOGY	4,091
8th	JOURNALS OF GERONTOLOGY	3,962
9th	AGING CELL	3,481
10th	Journal of Cachexia Sarcopenia and Muscle	3,025

Marine & Freshwater Biology (SCIE) (111 Journals)

1st	Marine Pollution Bulletin	13,300
2nd	AQUACULTURE	12,741
3rd	Frontiers in Marine Science	11,590
4th	FISH & SHELLFISH IMMUNOLOGY	5,447
5th	JOURNAL OF APPLIED PHICOLOGY	2,400
6th	ESTUARINE COASTAL AND MARINE SCIENCE	2,314
7th	AQUATIC TOXICOLOGY	2,197
8th	Regional Studies in Marine Biology	1,997
9th	MICROBIAL ECOLOGY	1,919
10th	ICES JOURNAL OF MARINE SCIENCE	1,917

Oncology (SCIE) (245 Journals)

1st	Cancers	51,928
2nd	Frontiers in Oncology	40,266
3rd	JOURNAL OF CLINICAL ONCOLOGY	30,062
4th	LANCET ONCOLOGY	16,541
5th	CA-A CANCER JOURNAL FOR CLINICAL ONCOLOGISTS	16,048
6th	CLINICAL CANCER RESEARCH	14,567
7th	ANNALS OF ONCOLOGY	13,723
8th	Journal for ImmunoTherapy and Oncology	11,372
9th	CANCER RESEARCH	10,590
10th	Molecular Cancer	10,220

Psychiatry (SCIE) (155 Journals)

1st	JOURNAL OF AFFECTIVE DISORDERS	18,619
2nd	Frontiers in Psychiatry	18,079
3rd	PSYCHIATRY RESEARCH	13,864
4th	BRAIN BEHAVIOR AND IMMUNITY	10,901
5th	MOLECULAR PSYCHIATRY	10,489
6th	Lancet Psychiatry	9,395
7th	Translational Psychiatry	6,930
8th	PSYCHOLOGICAL MEDICINE	6,334
9th	JAMA Psychiatry	5,910
10th	BMC Psychiatry	5,179

Psychiatry (SSCI) (142 Journals)

1st	JOURNAL OF AFFECTIVE D...	18,619
2nd	Frontiers in Psychiatry	18,079
3rd	PSYCHIATRY RESEARCH	13,864
4th	Lancet Psychiatry	9,395
5th	PSYCHOLOGICAL MEDICI...	6,334
6th	JAMA Psychiatry	5,910
7th	JOURNAL OF PSYCHIATRI...	5,108
8th	DRUG AND ALCOHOL DEP...	4,994
9th	International Journal of M...	4,885
10th	ADDICTION	3,668

Public, Environmental & Occupational ...

1st	Frontiers in Public Health	15,982
2nd	Lancet Global Health	8,410
3rd	SOCIAL SCIENCE & MEDIC...	7,799
4th	BMJ Global Health	6,908
5th	Lancet Public Health	6,302
6th	ACCIDENT ANALYSIS AND ...	5,060
7th	AMERICAN JOURNAL OF P...	4,775
8th	Journal of Adolescent Heal...	4,193
9th	AIDS AND BEHAVIOR	3,881
10th	PUBLIC HEALTH	3,355

Veterinary Sciences (SCIE) (144 Journals)

1st	Animals	18,104
2nd	Frontiers in Veterinary Scie...	8,704
3rd	FISH & SHELLFISH IMMUN...	5,447
4th	Transboundary and Emergi...	4,500
5th	THERIOGENOLOGY	2,654
6th	Animal	2,500
7th	BMC Veterinary Research	2,246
8th	VETERINARY MICROBIOL...	1,927
9th	DEVELOPMENTAL AND CO...	1,797
10th	JOURNAL OF VETERINARY...	1,647

Pediatrics (SCIE) (130 Journals)

1st	PEDIATRICS	9,572
2nd	Frontiers in Pediatrics	6,453
3rd	JAMA Pediatrics	6,319
4th	Lancet Child & Adolescent ...	4,983
5th	JOURNAL OF PEDIATRICS	4,437
6th	Journal of Adolescent Heal...	4,193
7th	PEDIATRIC RESEARCH	3,606
8th	Children-Basel	3,593
9th	EUROPEAN CHILD & ADOL...	3,296
10th	PEDIATRIC BLOOD & CAN...	3,204

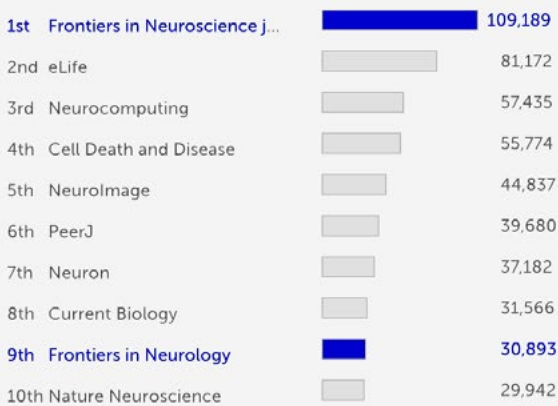
*Neurosciences (SCIE) category: The ranking is calculated from 2021 Journal Impact Factor citations to all journals in the Frontiers in Neuroscience journal series. The Frontiers in Neuroscience journal series includes all Frontiers journals in the Neurosciences (SCIE) category except for Frontiers in Neurology.

CiteScore

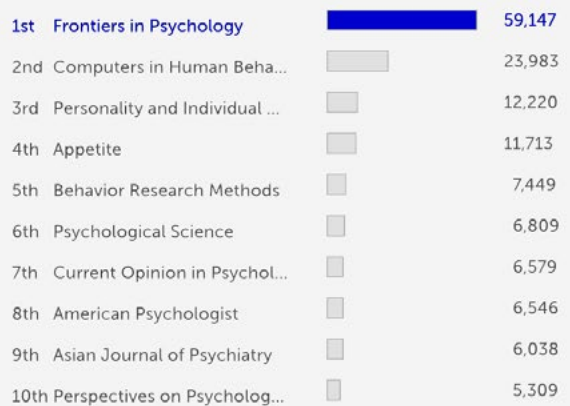
Ranking of the top 10 most-cited journals in 2022 CiteScore categories (released in 2023 by Scopus, Elsevier).

The bars show the total number of citations received in 2019–2022 for articles, reviews, conference papers, book chapters and data papers published in 2019–2022. Frontiers’ journals are highlighted in blue.

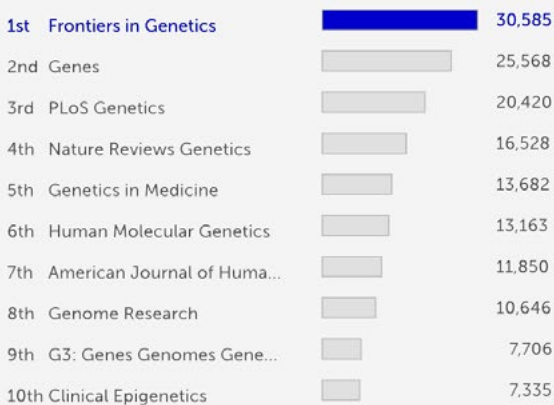
Neuroscience subject area (570 journals)



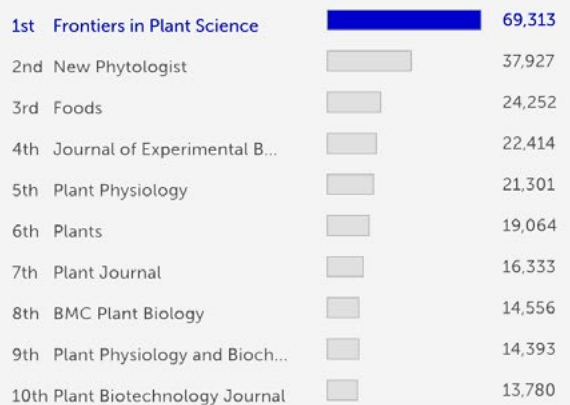
Psychology (all) (209 journals)



Genetics (clinical) (86 journals)



Plant Science (482 journals)



Pharmacology (medical) (255 journals)

1st	Frontiers in Pharmacology	59,680
2nd	Cochrane Database of Syst...	28,881
3rd	European Review for Medi...	28,555
4th	Antimicrobial Agents and ...	27,945
5th	OncoTargets and Therapy	24,096
6th	American Journal of Trans...	18,648
7th	International Journal of An...	18,418
8th	Journal of Antimicrobial C...	18,388
9th	Alimentary Pharmacology ...	13,698
10th	Pharmacology and Therap...	13,661

Developmental Biology (80 journals)

1st	Frontiers in Cell and Devel...	20,553
2nd	Developmental Cell	17,251
3rd	Development (Cambridge)	16,553
4th	International Journal of Bi...	13,198
5th	Seminars in Cell and Devel...	10,754
6th	Stem Cell Reports	10,636
7th	Brain Research	9,947
8th	Neurobiology of Aging	9,699
9th	Genes and Development	9,225
10th	Clinical Epigenetics	7,335

Immunology (213 journals)

1st	Frontiers in Immunology	147,328
2nd	Cell Death and Disease	55,774
3rd	Blood	47,409
4th	Immunity	36,746
5th	Journal of Allergy and Clini...	32,283
6th	Journal of Virology	30,280
7th	PLoS Pathogens	27,290
8th	Nature Reviews Immunolo...	24,692
9th	Nature Microbiology	23,671
10th	Fish and Shellfish Immunol...	22,995

Immunology and Allergy (200 journals)

1st	Frontiers in Immunology	147,328
2nd	Immunity	36,746
3rd	Journal of Allergy and Clini...	32,283
4th	Nature Reviews Immunolo...	24,692
5th	Journal of Infectious Disea...	23,617
6th	International Immunophar...	22,691
7th	Journal of Immunology	22,665
8th	Nature Immunology	22,612
9th	Journal for ImmunoTherap...	22,178
10th	Annals of the Rheumatic Di...	21,371

Microbiology (156 journals)

1st	Frontiers in Microbiology	110,482
2nd	Journal of Virology	30,280
3rd	mBio	29,274
4th	PLoS Pathogens	27,290
5th	Foods	24,252
6th	Cell Host and Microbe	24,249
7th	Nature Microbiology	23,671
8th	Nature Reviews Microbiolo...	23,038
9th	Microorganisms	21,878
10th	ISME Journal	18,620

Histology (61 journals)

1st	Frontiers in Bioengineering...	18,409
2nd	Bone	10,606
3rd	Journal of Extracellular Ve...	8,946
4th	Cell Systems	7,494
5th	Histopathology	7,097
6th	Cell and Tissue Research	6,487
7th	Brain Structure and Function	5,287
8th	Microscopy Research and ...	3,845
9th	Cytometry. Part A : the jou...	3,156
10th	Bone Research	3,135

Microbiology (medical) (118 journals)

1st	Frontiers in Microbiology	110,482
2nd	Clinical Infectious Diseases	60,760
3rd	International Journal of Inf...	23,799
4th	Nature Microbiology	23,671
5th	Emerging Infectious Diseas...	23,668
6th	Microorganisms	21,878
7th	Microbiome	18,485
8th	International Journal of An...	18,418
9th	Journal of Antimicrobial C...	18,388
10th	Frontiers in Cellular and Inf...	17,904

Psychiatry and Mental Health (529 jour...

1st	Journal of Affective Disord...	34,848
2nd	Frontiers in Psychiatry	25,536
3rd	Psychiatry Research	25,012
4th	Molecular Psychiatry	23,157
5th	Journal of Alzheimer's Dise...	21,573
6th	Alzheimer's and Dementia	14,766
7th	The Lancet Psychiatry	14,396
8th	Translational Psychiatry	13,767
9th	Neuropsychopharmacology	13,579
10th	Drug and Alcohol Depend...	12,917

Pharmacology (303 journals)

1st	Biomedicine and Pharmac...	67,879
2nd	Frontiers in Pharmacology	59,680
3rd	European Journal of Medic...	39,905
4th	Antimicrobial Agents and ...	27,945
5th	Pharmacological Research	22,963
6th	International Immunophar...	22,691
7th	Journal for ImmunoTherap...	22,178
8th	Journal of Ethnopharmac...	21,480
9th	European Journal of Phar...	18,962
10th	Cellular and Molecular Life...	18,921

Physiology (medical) (101 journals)

1st	Circulation	53,944
2nd	Frontiers in Physiology	48,713
3rd	Free Radical Biology and M...	22,001
4th	Cardiovascular Research	12,751
5th	Physiological Reviews	11,862
6th	Heart Rhythm	10,662
7th	Europace	10,181
8th	American Journal of Physi...	8,936
9th	Journal of Applied Physiol...	8,070
10th	Sleep	7,836

Endocrinology, Diabetes and Metaboli...

1st	Diabetes Care	40,078
2nd	Frontiers in Endocrinology	27,376
3rd	Journal of Clinical Endocri...	23,516
4th	Diabetologia	15,388
5th	Diabetes, Obesity and Met...	15,356
6th	The Lancet Diabetes and E...	15,265
7th	Diabetes Research and Cli...	14,504
8th	Diabetes and Metabolic Sy...	13,175
9th	Nature Reviews Endocrinol...	12,403
10th	Obesity Surgery	12,315

Neurology (170 journals)

1st	NeuroImage	44,837
2nd	Frontiers in Neurology	30,893
3rd	Molecular Neurobiology	23,218
4th	Journal of Neuroinflamma...	17,332
5th	NeuroImage: Clinical	14,135
6th	Human Brain Mapping	12,716
7th	Movement Disorders	12,473
8th	Annals of Neurology	12,391
9th	Journal of Neurology	11,999
10th	Neurobiology of Disease	11,718

Global and Planetary Change (109 jour...

1st	Global Change Biology	31,324
2nd	Frontiers in Marine Science	22,616
3rd	Agricultural and Forest Met...	15,760
4th	Nature Sustainability	15,034
5th	Environmental Earth Scien...	13,323
6th	Quaternary Science Reviews	11,736
7th	International Journal of Ap...	10,933
8th	Journal of Advances in Mo...	8,832
9th	Climatic Change	8,070
10th	Global Environmental Cha...	7,988

Oceanography (139 journals)

1st	Marine Pollution Bulletin	35,551
2nd	Frontiers in Marine Science	22,616
3rd	Marine and Petroleum Geo...	15,845
4th	Journal of Geophysical Re...	12,772
5th	Palaeogeography, Palaeocl...	10,243
6th	Estuarine, Coastal and Shel...	8,755
7th	Ocean and Coastal Manag...	8,322
8th	Limnology and Oceanogra...	7,249
9th	Global and Planetary Chan...	6,102
10th	ICES Journal of Marine Sci...	5,574

Neuropsychology and Physiological Ps...

1st	Neuroscience and Biobeha...	17,634
2nd	Frontiers in Human Neuros...	10,585
3rd	Trends in Cognitive Sciences	8,182
4th	Cortex	7,710
5th	Frontiers in Behavioral Neu...	6,316
6th	Psychophysiology	4,725
7th	International Journal of Ps...	3,232
8th	Biological Psychology	3,166
9th	Quarterly Journal of Experi...	2,887
10th	Sleep Health	2,144

Environmental Science (miscellaneous...

1st	Sustainability	181,699
2nd	Frontiers in Marine Science	22,616
3rd	Nature Climate Change	17,941
4th	Atmosphere	15,801
5th	3 Biotech	8,668
6th	Urban Studies	5,950
7th	Urban Climate	5,568
8th	Climate Policy	3,883
9th	Environmental Innovation ...	3,639
10th	ISPRS Annals of the Photo...	3,419

Physiology (180 journals)

1st	Journal of Cellular Physiol...	56,330
2nd	Frontiers in Physiology	48,713
3rd	New Phytologist	37,927
4th	Cell Metabolism	30,227
5th	Antioxidants	26,722
6th	Cellular Physiology and Bi...	26,293
7th	Journal of Experimental B...	22,414
8th	Plant Physiology	21,301
9th	Circulation Research	18,637
10th	Plant Physiology and Bioch...	14,393

Pediatrics, Perinatology and Child Heal...

1st	Pediatrics	25,869
2nd	Journal of Pediatrics	13,907
3rd	Frontiers in Pediatrics	10,719
4th	JAMA Pediatrics	10,573
5th	Journal of Maternal-Fetal a...	9,396
6th	Pediatric Blood and Cancer	8,479
7th	Child Development	7,715
8th	Journal of Pediatric Surgery	7,688
9th	Journal of Adolescent Heal...	7,660
10th	Child Abuse and Neglect	7,547

Ocean Engineering (98 journals)

1st	Ocean Engineering	30,065
2nd	Nonlinear Dynamics	24,808
3rd	Frontiers in Marine Science	22,616
4th	Desalination and Water Tre...	9,562
5th	Journal of Marine Science ...	8,674
6th	Applied Ocean Research	6,504
7th	International Journal of Im...	6,443
8th	Geological Society Special ...	6,120
9th	Coastal Engineering	4,755
10th	Computational Mechanics	4,087

Veterinary (all) (183 journals)

1st	Vaccine	26,565
2nd	Animals	20,157
3rd	Frontiers in Veterinary Scie...	11,378
4th	Transboundary and Emergi...	11,094
5th	BMC Veterinary Research	7,616
6th	Veterinary Microbiology	6,859
7th	Parasitology Research	6,027
8th	Journal of Veterinary Inter...	5,356
9th	Animal Bioscience	4,161
10th	Veterinary World	4,053

Neurology (clinical) (359 journals)

1st	Neurology	32,935
2nd	World Neurosurgery	32,449
3rd	Frontiers in Neurology	30,893
4th	The Lancet Neurology	22,432
5th	Stroke	20,833
6th	JAMA Neurology	18,523
7th	Alzheimer's and Dementia	14,766
8th	NeuroImage: Clinical	14,135
9th	Journal of Neurosurgery	14,002
10th	Human Brain Mapping	12,716

Neuroscience (misc) (31 journals)

1st	DMM Disease Models and ...	5,349
2nd	Brain Injury	2,557
3rd	Frontiers in Neuroanatomy	2,528
4th	Frontiers in Neuroinformat...	2,469
5th	Frontiers in Neural Circuits	2,118
6th	Frontiers in Computational...	2,084
7th	Psychiatry Research - Neur...	1,856
8th	Journal of NeuroImmune ...	1,841
9th	Journal of Electromyograp...	1,718
10th	Frontiers in Systems Neuro...	1,576

Aging (36 journals)

1st	Oxidative Medicine and Ce...	30,724
2nd	Aging	24,393
3rd	Frontiers in Aging Neurosci...	13,985
4th	Journals of Gerontology - ...	11,017
5th	Aging Cell	10,435
6th	Neurobiology of Aging	9,699
7th	Age and Ageing	8,016
8th	Experimental Gerontology	7,786
9th	Ageing Research Reviews	6,908
10th	Aging clinical and experim...	6,216

Neuroscience (all) (112 journals)*

1st	eLife	81,172
2nd	PeerJ	39,680
3rd	Neuron	37,182
4th	Frontiers in Neuroscience	35,784
5th	Current Biology	31,566
6th	Nature Neuroscience	29,942
7th	PLoS Biology	22,734
8th	Journal of Alzheimer's Dise...	21,573
9th	EMBO Journal	17,385
10th	Journal of Neuroinflamma...	17,332

Materials Science (miscellaneous) (124 ...)

1st	Environmental Science: Na...	14,084
2nd	Materials Today Energy	7,980
3rd	Engineering	6,876
4th	Frontiers in Physics	6,452
5th	Applied Nanoscience (Swit...	5,779
6th	Frontiers in Materials	5,056
7th	Quantum Science and Tec...	4,570
8th	Journal of Cultural Heritage	4,282
9th	InfoMat	4,269
10th	Electrochemical Energy Re...	3,853

Biochemistry, Genetics and Molecular ...

1st	Advanced Science	52,803
2nd	Stem Cell Research and Th...	18,281
3rd	ACS Synthetic Biology	10,287
4th	Frontiers in Molecular Bios...	6,791
5th	Life Science Alliance	3,595
6th	Journal of Ginseng Research	3,353
7th	Fermentation	3,352
8th	Biochemistry (Moscow)	2,591
9th	Plant Direct	1,506
10th	Cell Stress	1,165

*Neuroscience subject area: The ranking is calculated from 2021 CiteScore citations to all journals in the Frontiers in Neuroscience journal series. The Frontiers in Neuroscience journal series includes all Frontiers journals in the field of Neuroscience except for Frontiers in Neurology.



How we measure performance

We benchmark the quality, impact, and influence of our journals using a range of metrics and performance indicators.

As a signatory of the [San Francisco Declaration on Research Assessment \(DORA\)](#), we support the responsible use of journal Impact Factors, other quantitative research metrics, and innovative ways of evaluation.

As well as Journal Impact Factor and CiteScore, we monitor overall citation rate, aggregate views, and downloads, as well as press and social media mentions.

Media

Frontiers' articles achieved **international visibility** last year

In the news

Frontiers' articles were featured more than 29,000 times by international news outlets in 2022 including The Washington Post, The Guardian and BBC World News.



29,786 news mentions in 2022
(Altmetric, 2022)



191,066 total news mentions
(Altmetric, 2022)

Forbes

l'HUFFPOSTI

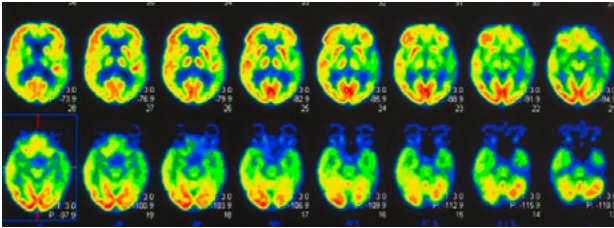
**The
New York
Times**

**BBC
WORLD
NEWS**

CNN

**The
Guardian**

2022 news and feature highlights

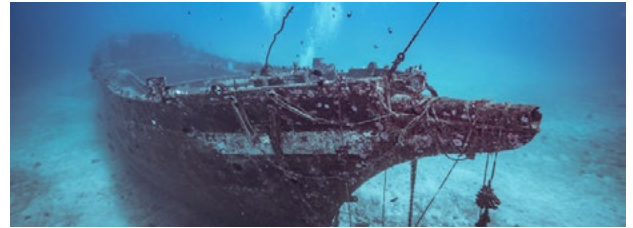


Replay of life before death

The Guardian | 23 Feb 2022

Imagine reliving your entire life in the space of seconds. A study published to Frontiers in Aging Neuroscience suggested that your brain may remain active and coordinated during and even after the transition to death, and be programmed to orchestrate the whole ordeal.

[Read more >](#)



Polluting WWII shipwreck

The Washington Post | 29 Oct 2022

Researchers discovered that an 80 year old historic World War II shipwreck is still influencing the microbiology and geochemistry of the ocean floor where it rests. In Frontiers in Marine Science, they showed how the wreck is leaking hazardous pollutants, influencing the marine microbiology around it.

[Read more >](#)



Happy monkey, happy gut

Bloomberg | 11 Nov 2022

Friendly monkeys have higher levels of helpful bacteria and lower levels of potentially disease-causing microbes in their guts, according to a study published in Frontiers in Microbiology. Monkeys engaging in friendly social interactions with peers are more likely to have an abundance of gut bacteria known to benefit the immune system.

[Read more >](#)



Vegetables and cardiovascular disease

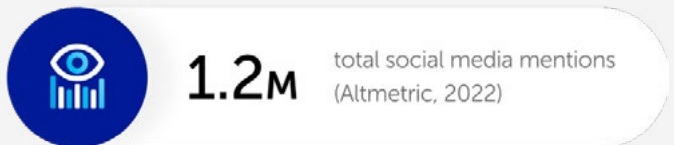
BBC | 21 Feb 2022

A sufficient intake of vegetables is important for maintaining a balanced diet and avoiding a wide range of diseases. But might a diet rich in vegetables also lower the risk of cardiovascular disease? Unfortunately not, according to a study published in Frontiers in Nutrition.

[Read more >](#)

On social media

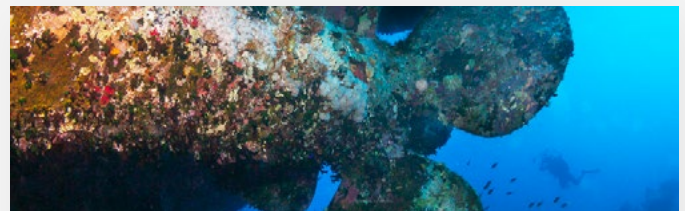
In 2022, Frontiers' articles were mentioned more than **363,000** times across all social media channels – an increase of **65%** over the previous year.



Bedtime behavior for parents

Twitter | 784 interactions

Researchers studied parental methods to help toddlers sleep across 14 cultures and the effect on the child's temperament.



Shipwreck forms sea-life habitat

Facebook | 638 interactions

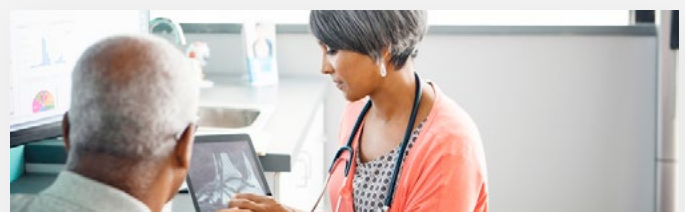
Historic wooden shipwrecks alter seafloor microbial communities and provide a potential new habitat for marine life.



Primates' virtuoso singing duets

Twitter | 1,023 interactions

The notes within duets between female and male Gursky's spectral tarsiers are taxing for the singers, presumably due to physiological constraints.



Diversity in digital health

Facebook | 621 interactions

As part of our women in science series, Professor Wendy Chapman discusses what motivates her to continue pushing for the digital transformation of healthcare.

03/ Peer review

50 | Quality

52 | Speed

Quality

Only **the best science** can solve the world's biggest challenges - that's why our peer review is so important.

A rigorous and transparent review

Your research deserves a thorough and fair review, one that truly supports you to make improvements and publish the highest quality final article. Our collaborative process connects authors directly with reviewers to have a constructive conversation about the manuscript.

Each article we publish goes through this transparent review process, handled by the most relevant experts in their field.

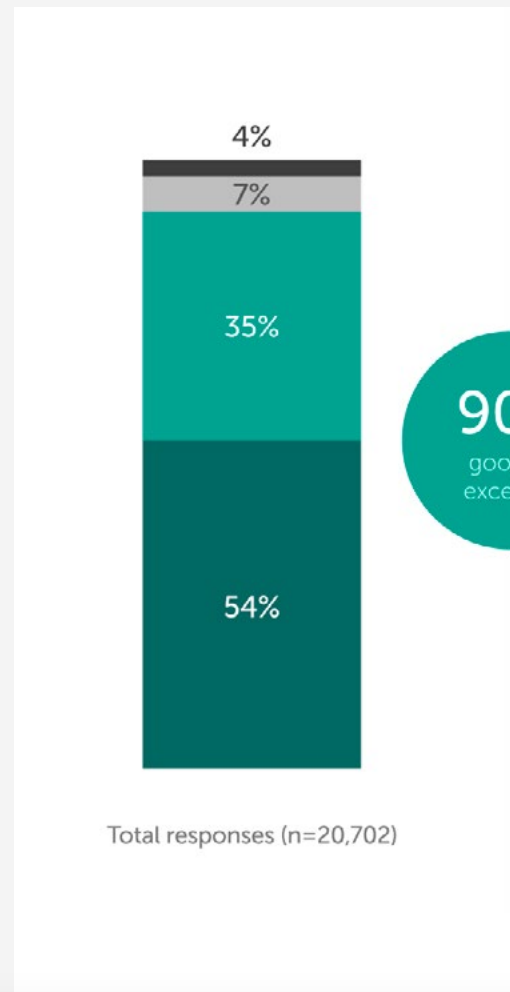


Our peer review is rated as excellent

We asked visitors to our website to share their thoughts about our unique peer review process. More than half of respondents rated it as excellent.

Survey question | How do you rate the quality of Frontiers' peer review?

Data source: Frontiers' survey, January to December 2022



“I found the experience of working with our editor, reviewers and production team to be excellent. Everyone was highly professional, competent, respectful, and generous. Our manuscript was much improved in the process.”



Vita Rabinowitz

Frontiers author, City University of New York

Speed

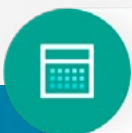
We offer one of **the most efficient** systems among academic publishers

We know you want to publish your research quickly, so that other researchers can access, read, and start to build on your work.

Frontiers' publishing platform is custom-built to be fast, efficient, thorough, and to provide a great experience.

Our collaborative review forum guides authors, reviewers, and editors smoothly through the review process and alerts them when any action is required.

This, along with a focus on process optimization, has resulted in an average time from submission to decision of **73 days** in 2022, down from 77 days in 2021.

**73 DAYS**

average time from submission to final decision

**30 DAYS**

average publication time for accepted articles





Did you know?

Our artificial intelligence assistant can now make up to 20 quality checks in just a few seconds.

Revolutionizing how high-quality research is published

With the latest custom-built technology and artificial intelligence, we're pushing boundaries to create a faster, more efficient peer review.

Our artificial intelligence review assistant (AIRA) was an industry-first, and it means we can balance the need for speed with our unwavering focus on high quality.

AIRA supports our reviewers and editors by making automated quality checks - from assessing language accuracy and the integrity of figures, to detecting plagiarism and conflicts of interest.

“The Frontiers team works tirelessly with editors to streamline the article management process, **using state-of-the-art AI tools and information portals to fast-track the editing, review and decision-making process.**”



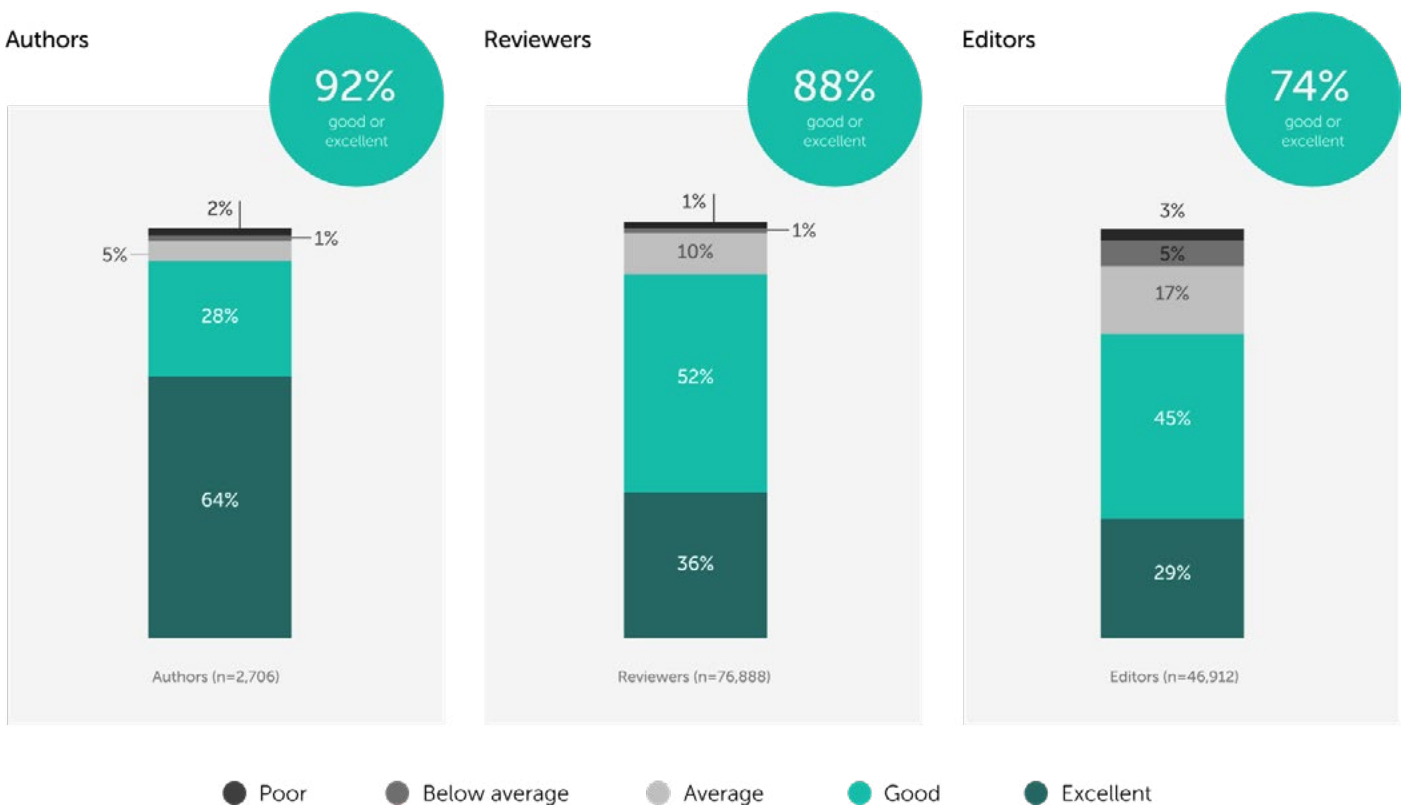
Matthew McCabe

Specialty Chief Editor, Frontiers in Artificial Intelligence

Most authors, reviewers, and editor rate their experience as excellent or good

Our peer review platform was built in-house and is under continual development - so we can be sure it responds to your needs.

In 2022 we asked 126,506 accepted authors, handling editors and reviewers how they would rate their recent experience of our peer review process.

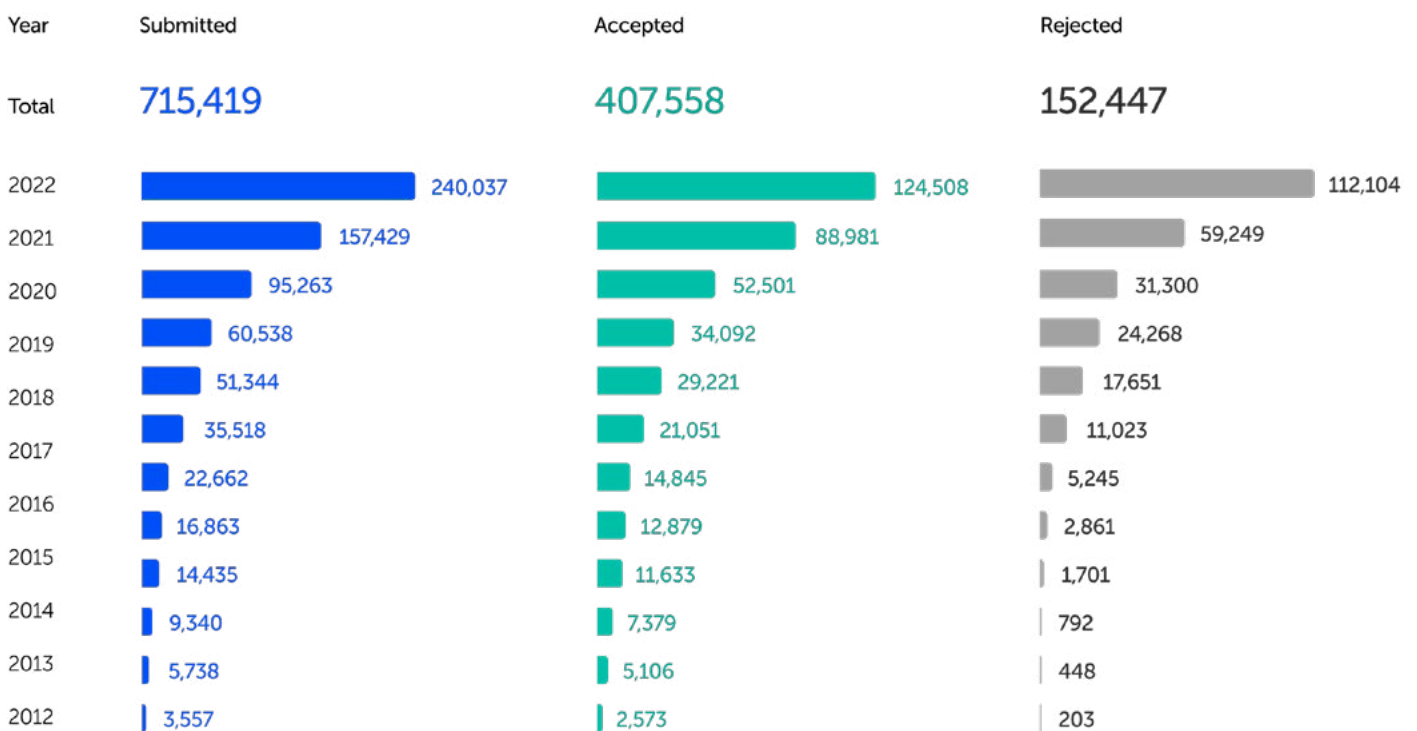


Data source: Frontiers' surveys, January to December 2022

Submissions, acceptances, and rejections

Our peer review is designed to be thorough and efficient, so you receive a fair decision on your manuscript as soon as possible.

In 2022 the rejection rate for articles was on average 40% across all Frontiers journals, and as high as 79% in some journals.

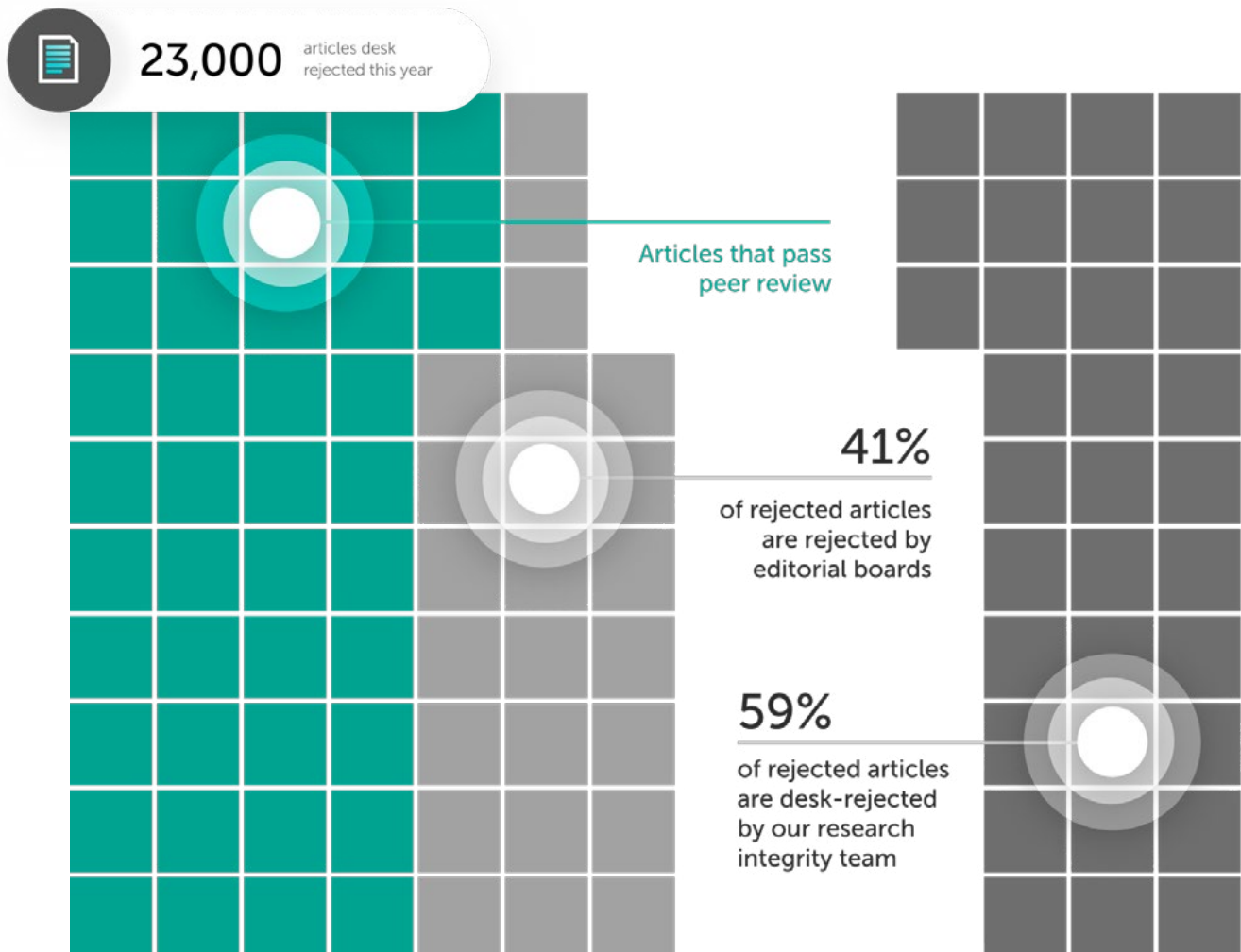


Our support through desk rejection

Each year, thousands of articles that don't meet our rigorous quality standards are rejected by our in-house research integrity team before they reach the peer review stage.

This means our editors and reviewers aren't burdened with low-quality articles and can focus on making great research even better.

The graph below shows what percentage of rejected articles are done so by editors, and what percentage by our research integrity team. By the end of 2022, 59% of rejected articles are rejected at the desk review stage.



04/ Innovation

58 | Our platforms

62 | We're listening

Our platforms

Smarter, faster, more accessible

Our relentless focus on empowering researchers means we continually innovate and make improvements to our platforms, based on feedback from many scientists.

We build and maintain all our tools and platforms in-house as this allows us to react to researchers' needs quickly and efficiently.

From the very beginning, we've pioneered the use of technologies like artificial intelligence to make scientific publishing smarter, faster, and more accessible.

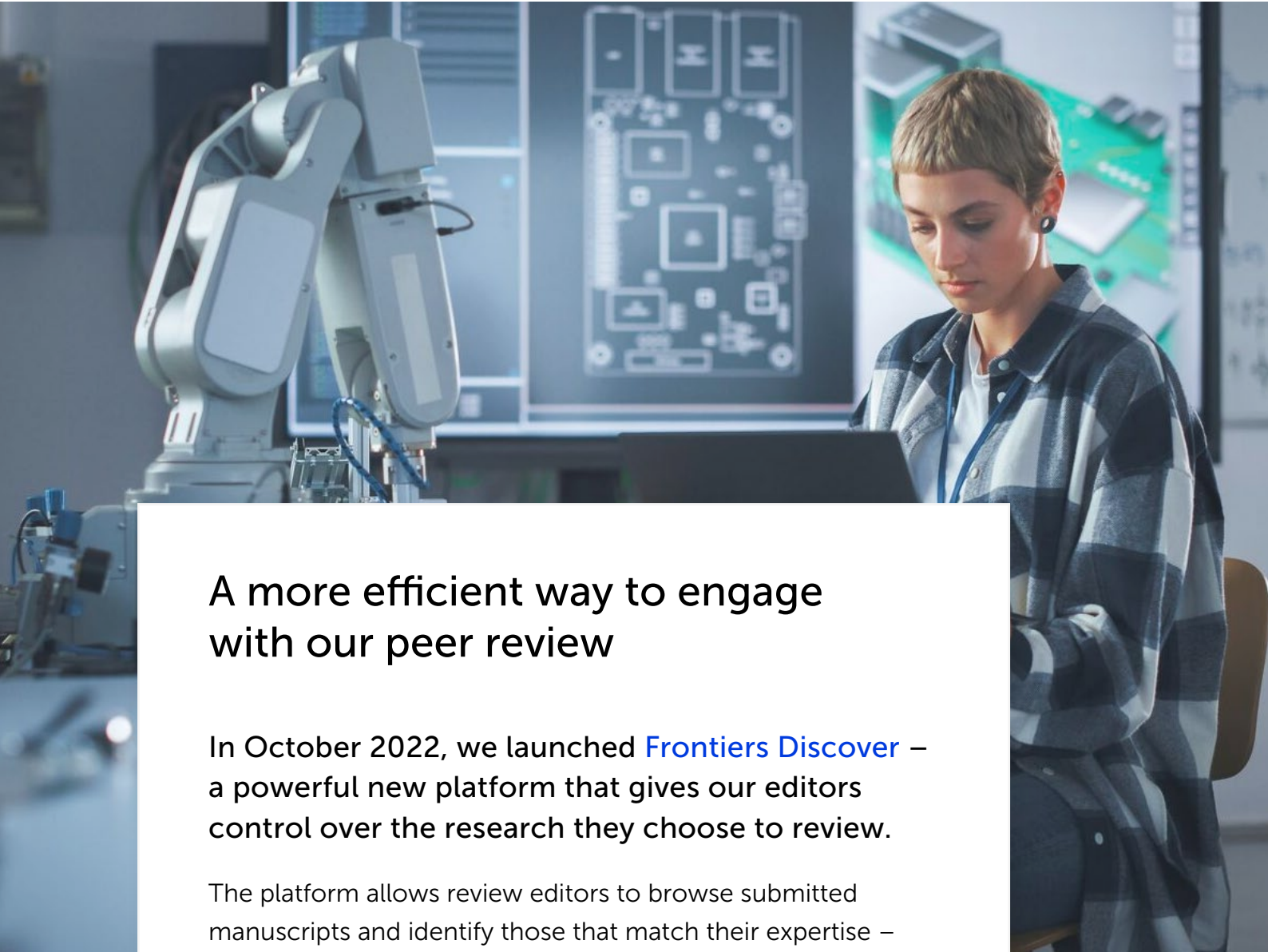


The power of AI

Our artificial intelligence review assistant (AIRA) was an industry first when it launched in 2020.

In 2022 we made its results directly available to our editors and reviewers for the first time, informing and speeding up their own review.

Browse, **discover**, engage



A more efficient way to engage with our peer review

In October 2022, we launched **Frontiers Discover** – a powerful new platform that gives our editors control over the research they choose to review.

The platform allows review editors to browse submitted manuscripts and identify those that match their expertise – a more efficient process than receiving, and potentially declining, invitations for unsuitable review assignments.

Frontiers Discover also allows our editors to maintain control of the peer review process. All review editors that volunteer through the platform are vetted by our associate editors, specialty chief editors or field chief editors, to ensure the highest quality peer review experience.

Making it easier to find and access research

In 2022, we refreshed our website

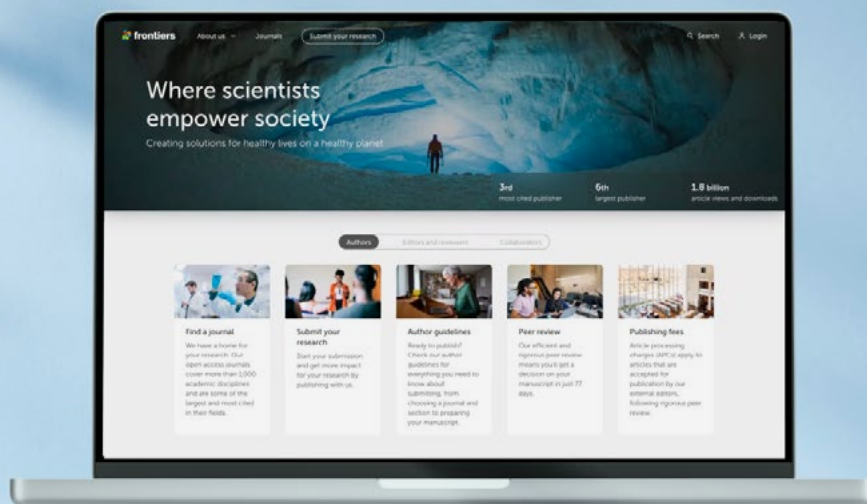
We took the opportunity to update our visual identity and the technology platform that drives our site.

The improved website, launched in July 2022, is bold, focused, and warm, and places research and the researcher front and center.

It's now even easier to find and access research thanks to improved navigation and better information architecture.

Behind the scenes, improvements to search engine optimization (SEO) means articles published in a Frontiers journal will be even more visible and discoverable.

[Discover our new website >](#)



Support when you need it

Based on your feedback we launched a live online chat function, so that you can contact our customer service team when it suits you best.

The live chat is accessible from our online review forum and enables authors, reviewers, and editors to receive instant support from customer service specialists during the peer review process. A short waiting time for assistance (1.4 second on average), and a quick resolution for queries (10-minute average duration) ensure the best peer review experience.



Our live chat

1.4 seconds
average waiting time

10 minutes
average chat duration



Journal impact

We obsess over
how we can meet the needs
of the research community



Our support

In 2022 we continued to make strides in improving how we serve our community.

Researcher-centricity - from better communication to continuing to develop our review forum - was top of our agenda.

We value your feedback

We want to know what works for our community and how we can empower researchers most effectively. Over the past year, we've conducted:



more than **100** in-depth interviews with our editors and viewers about their experience



46,912 feedback surveys with our editors



76,888 feedback surveys with our reviewers



2,706 feedback surveys with our authors



1,860 feedback surveys with our topic editors and coordinators



A year-long survey to gather thoughts from our website visitors

This feedback informs our work – from the smaller details of our everyday operation to our bigger objectives for the year ahead.

You rated our services as high quality

Since 2021 we have been asking visitors to our website for their thoughts and opinions on our work.

Thanks to the feedback of more than 22,000 visitors, we have a full picture of how well we're supporting the research community and what we can improve.

Last year we continued to receive exceptionally high quality ratings, including for our editorial boards and the articles we publish.

Survey question | Please rate Frontiers on the quality of our:



05/ Partnerships

- 66 | National and institutional agreements
- 68 | Publishing partnerships

National and institutional agreements




Improving the way researchers are supported to publish

National agreements

We pioneered fully transparent national agreements to improve the ways researchers are supported when publishing open access.

Our agreements simplify the process for authors publishing in Frontiers' journals and help contribute to the growing number of research articles that are openly available to all.

As of 2022 we have 10 national agreements in place, with Austria, Finland, Italy, Luxembourg, Norway, Qatar, Spain, Switzerland, Sweden, and the UK.

				
Austria Landmark national OA deal	Finland Landmark national OA deal	Italy Landmark national OA deal	Luxembourg Landmark national OA deal	Norway 2nd nordic national OA deal
				
Qatar 1st OA deal in the Middle East	Spain Landmark national OA deal	Sweden 1st nordic national OA deal	Switzerland Landmark national OA deal	UK Largest national OA deal

We also have **consortia** with

				
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Institutional partnerships



Our institutional partnerships streamline the funding process for researchers and institutions.

This means that authors are released from some or all of the responsibility for article processing charges when they publish with us. We now have 658 institutional partners – including 136 new partners who joined the program in 2022. They include:



[Read more >](#)

Publishing partnerships

Supporting the transition to open access

Our publishing partnerships enable societies and institutions to transition their journals to open access, while benefiting from our state-of-the-art platform.

We established seven new partnerships with societies and other organizations in 2022 – including the European Journal of Cultural Management and Policy (EJCMP), the journal of the European Network on Cultural Management and Policy. EJCMP is the first journal in the humanities field to transition to Frontiers under the gold open access model, marking a significant step for both partners.

In 2022, we increased the number of open access articles published in partner journals from 312 to more than 800 – an increase of 156% – as well as unlocking access to over 6,000 archived articles.

“We chose Frontiers for their open access expertise, systems, and flexibility – all of which are being delivered upon. Moreover, we are particularly enjoying working with their friendly and creative team”



Maggie Simmons

Director of Publishing,
Geological Society of London



Our journals

[See all journals ›](#)


Aerospace Research Communications

Chief editors

Yao Zheng

School of Aeronautics and Astronautics,
Zhejiang University, Hangzhou, China

Feng Liu

Department of Mechanical and Aerospace Engineering,
University of California, Irvine, USA



European Journal of Cultural Management and Policy

Chief editor

Elena Borin

Link Campus University, Italy



Journal of Pharmacy & Pharmaceutical Sciences

Chief editor

Fakhreddin Jamali

University of Alberta, Edmonton, Canada

06/ Outreach

- 71 | Advocacy
- 73 | Frontiers Forum
- 77 | Frontiers for Young Minds

Advocacy

Influencing global thinking on open science

We actively create strong links to bring the benefits of open science to more people.

In November 2022, we formalized our long-standing partnership with the World Economic Forum (WEF) by becoming a platform partner.

As part of the new agreement, Frontiers joined the WEF's Centre for New Society and Economy to share and promote evidence-based benefits of open science, and to influence global thinking on its positive impact on society.

"It is more important than ever to identify and promote innovative, cutting-edge thinking if we are to address economic, social, environmental, and technological challenges. **Our exciting new partnership will feed valuable insights and expertise into global initiatives ... to shape prosperous, resilient, and equitable economies and societies that create opportunity for all.**"



Martina Szabo

Head of Knowledge Communities,
World Economic Forum



Our policy outreach

Frontiers' Policy Labs initiative seeks to strengthen the connection between robust scientific research and informed policymaking.

We create a space where global experts and thought leaders can discuss and strengthen the dialogue between science and policy.

In August 2022 in a landmark move, the White House Office of Science and Technology Policy unveiled vital new policy guidance to make the results of publicly funded scientific research in the United States immediately free to access and available.

All updated public access policies will be fully implemented by the end of 2025, which means all funded research in the US will be open by 2026.



We asked some leading experts to share their reactions to the Nelson memo – the signal it sends, its likely impact, and the challenges facing its delivery.

[Read their thoughts here >](#)

Frontiers Forum

Where visionary thinkers discuss science-led solutions **for healthy lives on a healthy planet**



A year of transformational science

The Frontiers Forum brings together researchers, policymakers, and other experts from around the world to explore the latest data and fresh perspectives for addressing the greatest challenges of our time.

Since 2020, our Forum has taken a virtual format, allowing researchers from all around the world to join and discuss – whatever their location and time zone.

In 2022, we welcomed **four visionary keynote speakers** and **12 expert contributors** for virtual discussions on science-led solutions to the greatest challenges of our time.

More than **15,000 attendees** joined in real-time, and the videos have been viewed more than **5 million times**.

In 2022, the speakers and panelists included a Nobel prize winner as well as representatives from the World Health Organization, African Academy of Sciences, and leading conservation organizations.





KEYNOTE

The **CRISPR** health revolution

Nobel prize winner Prof Doudna explained how CRISPR-based therapies are already transforming the lives of patients with previously limited treatment options. She also gave her vision for how her serendipitous discovery will revolutionize healthcare for us all.

Prof Jennifer Doudna

Professor of Biochemistry, Biophysics and Structural Biology, University of California, Berkeley, USA

Panelists

- Prof Andrea Crisanti
Professor of Molecular Parasitology, Imperial College London, UK
- Prof Françoise Baylis
University Research Professor, Dalhousie University, USA
- Dr Soumya Swaminathan
Chief Scientist, World Health Organization, Switzerland

KEYNOTE

Extinguishing the **wildfire crisis**

Prof Adams outlined the latest science on wildfires, including how we can move from the current focus on fire suppression, to science-based solutions adapted to local ecosystems, cultures, and communities.



Prof Mark Adams

Professor of Bioscience and Innovation, Swinburne University of Technology, Australia

Panelists

- Prof Michelle Mack
Professor of Ecosystem Ecology, Northern Arizona University, USA
- Sunita Narain
Director General, Center for Science and Environment, India
- Doreen Robinson
Head of Biodiversity and Land, UN Environment Program, Kenya



KEYNOTE

A safe and just future within planetary boundaries

Globally renowned earth scientist Prof Johan Rockström, who pioneered the planetary boundaries framework, presented new data on the status of these boundaries and critical Earth system tipping points.

Prof Johan Rockström

Director, Potsdam Institute for Climate Impact Research, Germany

Panelists

- Prof Peng Gong
Professor of Global Sustainability, University of Hong Kong, Hong Kong SAR
- Prof Felix Dapore Dakora
President, African Academy of Sciences, Kenya
- Prof Phoebe Koundouri
Professor, Athens University of Economics and Business, Greece



KEYNOTE

Coral reefs: from climate victims to survivors

Top-cited coral expert Prof Ove Hoegh-Guldberg, who was among the first to sound the alarm of the threat posed by ocean warming and acidification to marine ecosystems, gave an update on coral reef health globally and an outlook for the future.

Prof Ove Hoegh-Guldberg

Professor of Marine Studies,
University of Queensland, Australia

Panelists

- Prof Maoz Fine
Professor, Hebrew University of Jerusalem, Israel
- Lisa Carne
Director and Founder, Fragments of Hope, Belize
- Dr Nancy Knowlton
Sant Chair in Marine Science Emerita, Smithsonian National Museum of Natural History, USA

Frontiers for Young Minds

Engaging the **next generation** of researchers



Award-winning outreach

Frontiers for Young Minds is our unique outreach program, involving young people aged 8-15 as peer reviewers of scientific articles.

The journal has become a global leader, recognized as a Science Engagement Winner at the Falling Walls Science Summit 2022.

Fully and freely accessible online, we publish in English (supported by the Frontiers Research Foundation and on key projects by the Jacobs Foundation), Hebrew (supported by the Sami Sagol Foundation) and Arabic (supported by the King Abdullah University of Science and Technology). We're due to add Mandarin Chinese and French to our portfolio in 2023.

6,100 young reviewers

805 mentors

1,115 total articles

31,244,567 total article views and downloads



2022 highlights

VIP



Replacing Animal Testing: How and When?

THOMAS HARTUNG

When we started using small animals such as mice and rats for testing more than 100 years ago, there were not many alternatives. Today, we have more knowledge and a greater number of options.

[Read the article >](#)

VIP



The Solar Eclipse That Validated Einstein's Theory of Relativity

HANOCH TFREUND

The year 1905 was one of the most productive years in the scientific career of the Jewish-German physicist Albert Einstein. That year, he formulated the theory of special relativity.

[Read the article >](#)

VIP



How Scientists Forecast Volcanic Eruptions

VALERIO COCELLA

Volcanic eruptions are impressive demonstrations of the activity of our planet. While some eruptions may be safely observed from distance, many eruptions may be hazardous to the populations and the environment.

[Read the article >](#)

MOST VIEWED



Are Noisy Hospitals Making Us Sick?

G. CHATZILAMPRI, F. STEVENS

Studies show that people trying to recover need peace and quiet. But despite all the "quiet please" signs, noise in hospitals is one of the main reasons patients cannot sleep, besides physical pain.

[Read the article >](#)

Frontiers for Young Minds Nobel Collection vol 1

Our innovative Nobel Collection continues to attract today's most distinguished scientists to connect with our young minds community, adding five new publications in 2022 - now with **10 Laureate authors** featured in total. In 2022 the Nobel Collection, as a key initiative of Frontiers for Young Minds, has been featured in the Washington Post.

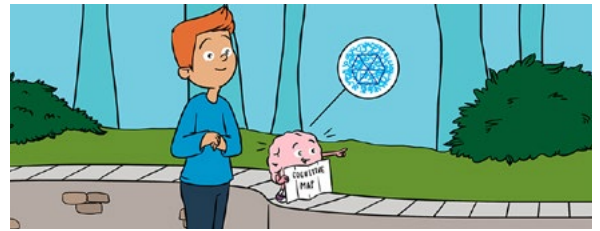


Sparks in the Brain: The Story of Ion Channels and Nerve Cells

Bert Sakmann

Understanding the communication between nerve cells in the brain is key to understanding how the brain works. Let us dive together into the electrifying world of nerve cell communication. This article explores the discovery of ion channels, which paved the way to understanding the origin of electrical activity in the brain, and other organs like the heart.

[Read more >](#)



How Do We Find Our Way? Grid Cells in the Brain

May-Britt Moser

Getting from one place to another is one of the most fundamental and vital skills in the animal kingdom, and for humans. This article outlines some of the main components of this internal navigation system, focusing on the grid cells - an amazing and surprising group of nerve cells that create a coordinate system in the brain.

[Read more >](#)

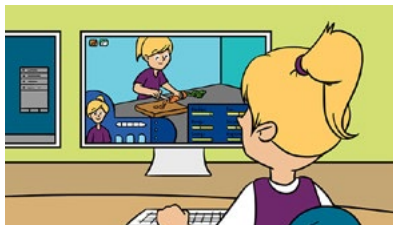


Quasi-Crystal, Not Quasi-Scientist

Dan Shechtman

Crystals are solid materials with building blocks - atoms, ions, or molecules - that are arranged in a highly organized manner, often in a repeating pattern. In special crystals called quasi-crystals, these blocks are organized in a non-repeating manner. Some of these quasi-crystals have unique physical properties and are useful for a variety of applications.

[Read more >](#)



Computer Simulation in Service of Biology

Michael Levitt

Computer simulation is an important research tool in today's scientific world. You could think of these simulations as a computer game, in which a virtual world is created that works according to certain rules. This article explains how computer simulations are used in the world of structural biology to study the structure and function of molecules.

[Read more >](#)

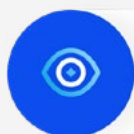


Human Riddles in Behavioral Economics

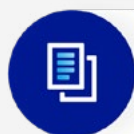
Daniel Kahneman

Human behavior is a diverse, complex, and highly interesting phenomenon. This article explores the main findings of prospect theory, which explains human choices in situations that involve gambling. Professor Daniel Kahneman shares important insights from his career and explains why happiness has two faces.

[Read more >](#)



100M+ total social
media views



705k+ collection
views

07/ Community

83 | Our people

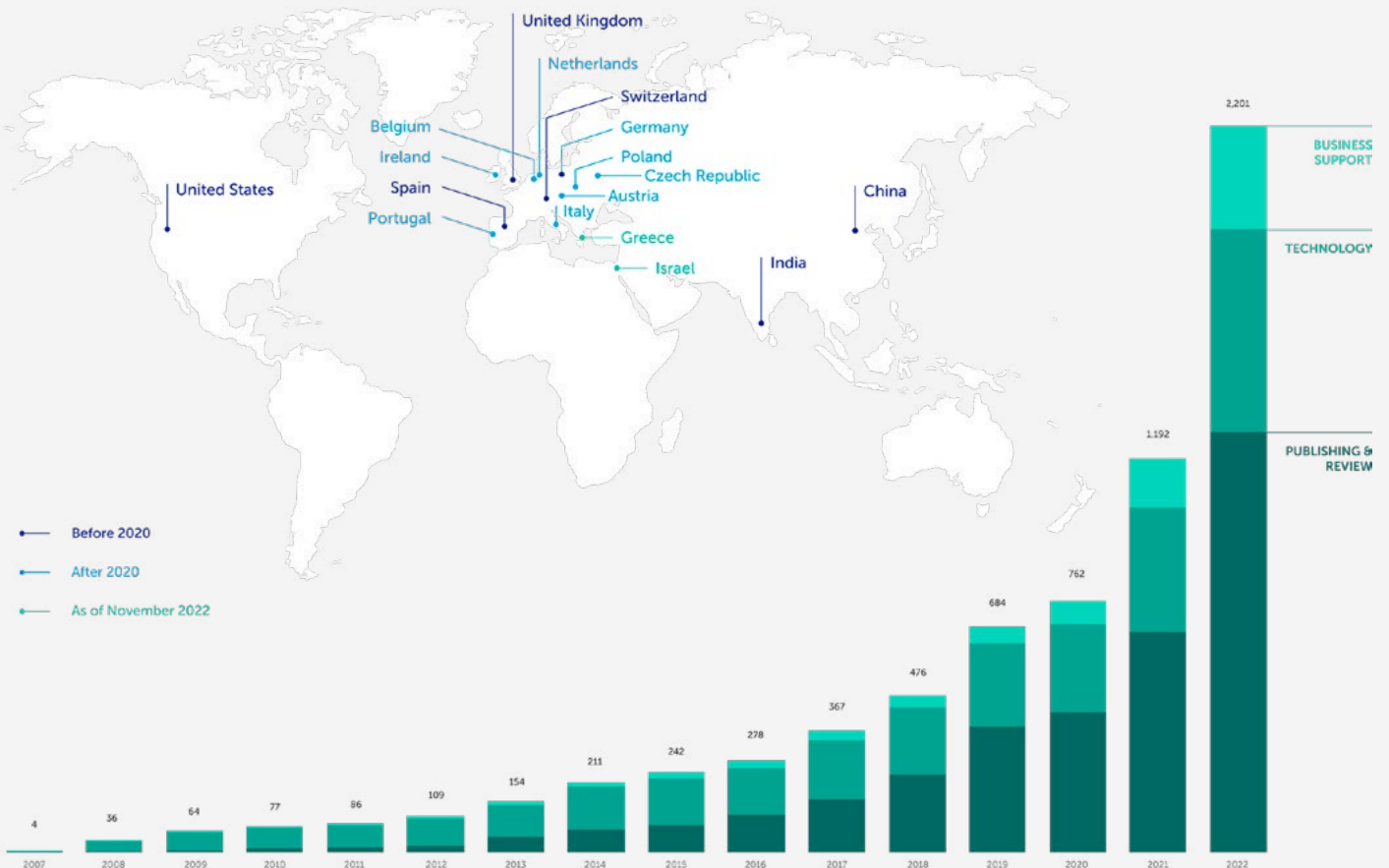
85 | Our culture

Our people

Colleagues from 82 different nationalities contribute to our mission

Our headquarters are in Lausanne, Switzerland, with 17 other country locations across Europe, North America, and Asia.

By the end of 2022 we employed more than 2,200 professionals supporting you in managing and developing journals, research integrity and peer review, technology, communication, and other functions.



In 2022, we recruited and onboarded **1,196 new people**

We responded to our growth and increase in submissions by building up our teams to support you better - from journal development to peer review and quality control.



2,440 Frontons as of 31 March 2023



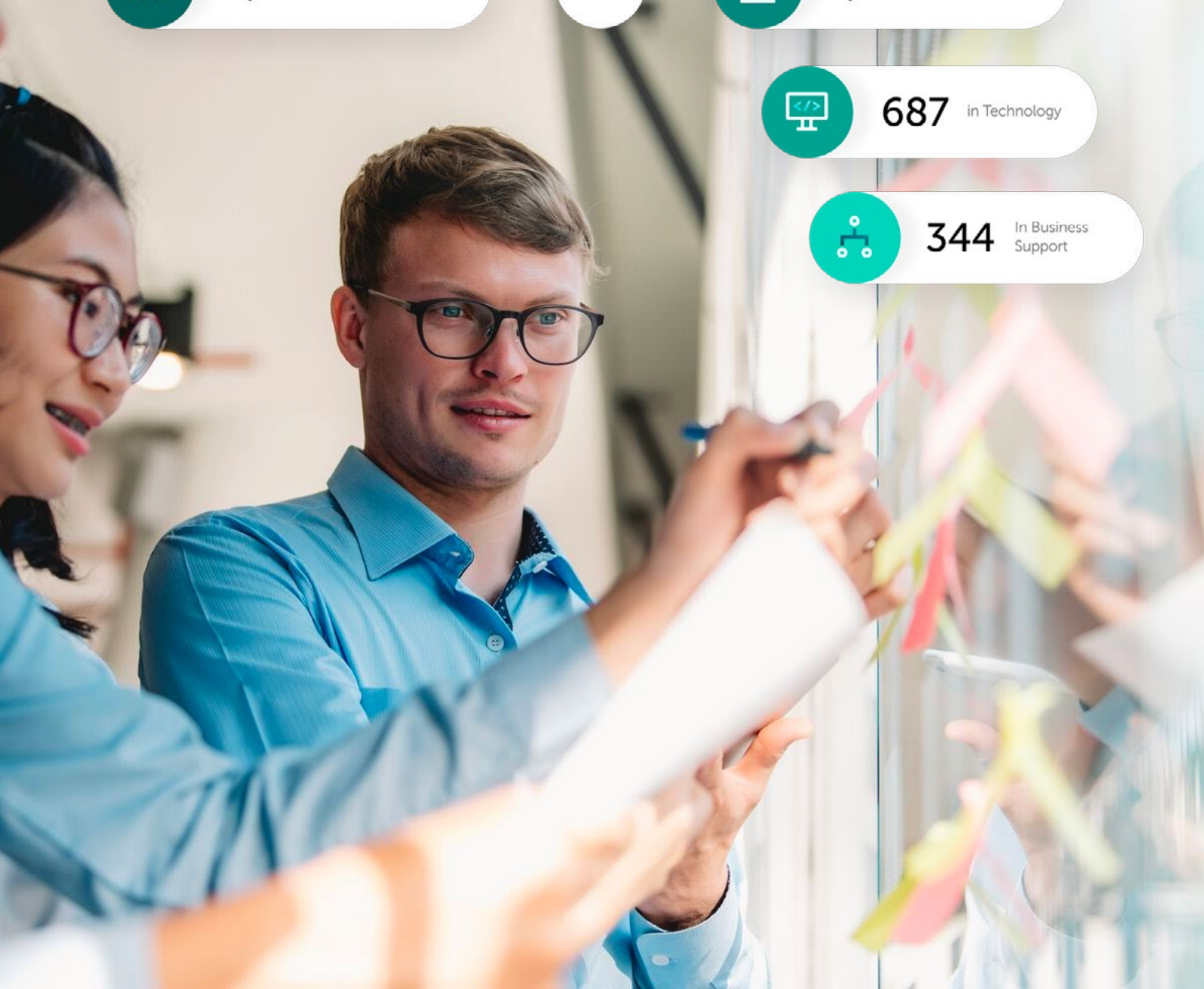
1,409 In Publishing and Review



687 in Technology



344 In Business Support



Our culture

A diverse, inclusive community of like-minded people

Values and culture: [our golden thread](#)

Our employees, known as 'Frontons', have something in common: their passion for science and its impact on the world.

Our mission and core values create a golden thread through our work. In 2022 we relaunched our Culture Code, to bring our values to life for Frontons and to define who we are, what we stand for and the behavior we value in our colleagues.

How [we work](#)

Each team member makes an important contribution – from the editorial office to product development, from our policy team to our HR professionals.

Since 2021, we have adopted a 'remote first' work philosophy, which means that our Frontons collaborate online and support our authors, editors, and reviewers from their homes. This provides a more flexible working environment for our employees and means we have been able to expand our recruitment across the globe.



“It’s so much more than a job - it’s a community of like-minded people fighting for healthy lives on a healthy planet, and having a little fun in the process.”



Hannah Kulmatycki

Journal Launch Specialist, Frontiers



Diversity, equity, and inclusion

As a global publisher, Frontiers supports and represents our diverse community of employees, authors, editors, and reviewers. We create a culture in which everyone feels valued, supported, safe and respected.

We're committed to ensuring everyone belongs – regardless of their age, race, ethnicity, nationality, cultural background, religious belief, gender/gender identity, sexuality, marital status, family situation, disability, or socioeconomic status.

Through meaningful and impactful actions – from our flexible working policies to our recruitment processes – we foster diversity of thought, equitable practices, and inclusive behavior to ensure everyone can thrive both professionally and personally.

With numerous social, economic, and political factors affecting the safety and wellbeing of our global communities, Frontiers commits to scaling up our DEI activities to show support and make a positive impact, both internally and in the wider world.



Our **name change** policy

In 2022 we introduced a new policy making it easier for authors to retrospectively change either their name, pronouns, or both. The policy was created as part of our commitment to improving equity, diversity and inclusion in publishing and covers name changes made for any reason, including marital status, gender identity, or religion.

[Read more about the policy >](#)

Creating an inclusive culture

Creating an inclusive culture is the responsibility of all employees, not just leaders, so this year we launched our first employee resource groups (ERGs) to support and represent our diverse communities of Frontons.

These groups are:

- pride
- gender equity
- race, ethnicity, and cultural heritage
- disability and neurodiversity.

Representation is crucial, and with Frontons all over the world, it's important to ensure everyone can come to work and be proudly authentic, no matter how they identify. These new employee-led groups are the latest steps we're taking to ensure everyone's voice is heard and aim to provide a sense of community, safe-spaces, and support, but also engage, educate, and empower.



Giving back to the community

We're proud of the annual volunteer efforts made by Frontons - contributing to healthy lives on a healthy planet in whichever way they can.

We encourage our people to participate in volunteering activities with charity partners, either individually or through organized group initiatives in our office locations. To make this possible, each Fronton receives three working days per year that they can dedicate to volunteer efforts.

Over the past year, Frontons spent 662 hours volunteering. All monetary donations were supported through our donation-matching program, as well as corporate donations to charitable causes in 2022.



“We take our mission seriously. That’s why we provide our employees with opportunities to make a difference, and to contribute to healthy lives on a healthy planet. **Frontons know that they can dedicate their time and expertise to make a direct impact to their own community.**”



Francesca Tettamanzi

Sustainability Manager, Frontiers



About **Frontiers**

Frontiers is the 3rd most-cited and 6th largest research publisher. We publish groundbreaking discoveries by the world's top experts.

Scientists empower society and our mission is to accelerate scientific discovery by making science open. We place the researcher at the center of everything we do and enable the research community to develop the solutions we need to live healthy lives on a healthy planet.

Powered by custom-built technology, artificial intelligence, and rigorous quality standards, our research articles have been viewed more than 2.1 billion times, reflecting the power of research that is open for all.





Creating solutions
for healthy lives
on a healthy planet

frontiersin.org

