

# Annual report 2025





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**85,345**

articles published  
this year

**4.6**

average citations  
per article

**5<sup>th</sup>**

most cited  
publisher

## 2025 in numbers

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**1.4 billion**

article views and  
downloads this year

**222**

journals spanning  
1,700 specialties

**95%**

rated our  
articles as good  
or excellent

**94%**

of authors rated their  
peer review experience  
as good or excellent

**3.4 million**

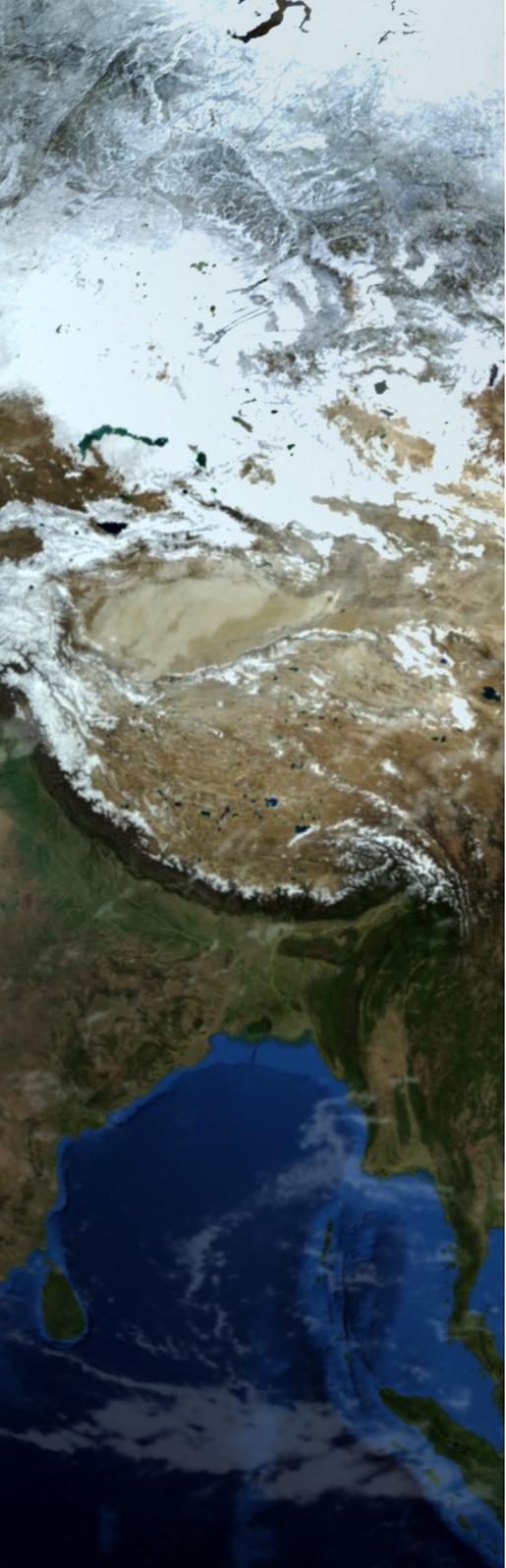
published  
authors

**740+**

institutions with  
publishing agreements

**\$3 million**

awarded by  
Frontiers Planet Prize



A message from our CEO

# Driving change through open, trusted science

**SCIENCE IS ENTERING A DEFINING ERA.** The world is asking for broader access, more transparency, and stronger confidence in research – at the same time as global challenges demand fast, urgent solutions.

At Frontiers, we see this as an opportunity, not a trade-off. When science is open, rigorous, and responsibly accelerated, it becomes the most powerful tool we have to drive progress for people and planet.

In 2025, our focus was on strengthening the foundations that make this possible. We doubled down on what matters most: quality, transparency, and trust. These principles sit at the heart of our mission – to make science open, trusted, and effective in delivering real-world impact.

## Innovating with AI for the next era of science

Artificial intelligence and agentic systems will shape how the next generation of scientific breakthroughs are made and shared. Used well, they increase efficiency, improve equity, and unlock insights at unprecedented speed. Used responsibly, they also strengthen transparency and confidence in research.

Our whitepaper, [Unlocking AI's untapped potential: responsible innovation in research publishing](#), released in December, explored this theme and set out our commitment to responsible and ethical AI development.

In early 2025 we also launched Frontiers FAIR<sup>2</sup> Data Management, the first AI-powered data management

service designed specifically for research. It uses AI to curate and structure data to be findable, accessible, interoperable, and reusable - so that datasets can form a lasting foundation that will enable future scientific breakthroughs.

We also advanced our AI Review Assistant, AIRA, a member of the team since 2018. This year, we integrated AIRA with industry-leading fraud screening tools, significantly strengthening our multilayered defenses against organized research fraud – a challenge faced by the whole publishing industry.

## Delivering quality at scale

At Frontiers, quality is not just a checkpoint. It is a culture. We are one of the world's largest research publishers, and our growth is grounded in quality. We have built a model that enables rigorous science to thrive at scale, powered by a three-pronged approach to research integrity: deep in-house expertise, independent editorial boards, and the responsible use of AI.

This approach delivers results. In 2025, 121 Frontiers journals held a Journal Impact Factor, 133 held a CiteScore, Frontiers is the 5th most cited publisher, and 95% of researchers visiting our website rated the quality of our articles as good or excellent. These outcomes reflect not only strong performance, but a system designed to earn and sustain trust.

## Putting open science on the global stage

Every effective climate policy, medical breakthrough, and advance in sustainable technologies relies on a foundation of open, trusted research. Making high-quality, trusted research openly available is the single most effective way to speed up innovation and prosperity worldwide.

In 2025, we continued to bring this message to global decision-makers through our partnership with the World Economic Forum, ensuring that scientific evidence is closer to those shaping policy and action.

We built on this momentum in 2026 with the launch of Frontiers Science House. Held at the World Economic Forum Annual Meeting 2026 in January, this new space placed transformative science at the heart of the global agenda.



Over an incredible week of sessions with speakers from industry, academia, and policy, we demonstrated that open science is the simplest way to accelerate the innovation cycle, positively impacting business, policy, and society.

The Frontiers Planet Prize awards ceremony is always one of the most inspirational moments of the year, celebrating researchers whose science offers scalable solutions to protect planetary health.

In 2025, three international champions were awarded USD 3 million collectively to accelerate the real-world impact of their work. Former champions have gone on to share their work at leading global forums, including COP30 and the Falling Walls Science Summit, accelerating impact far beyond academia.

## The future of scientific research

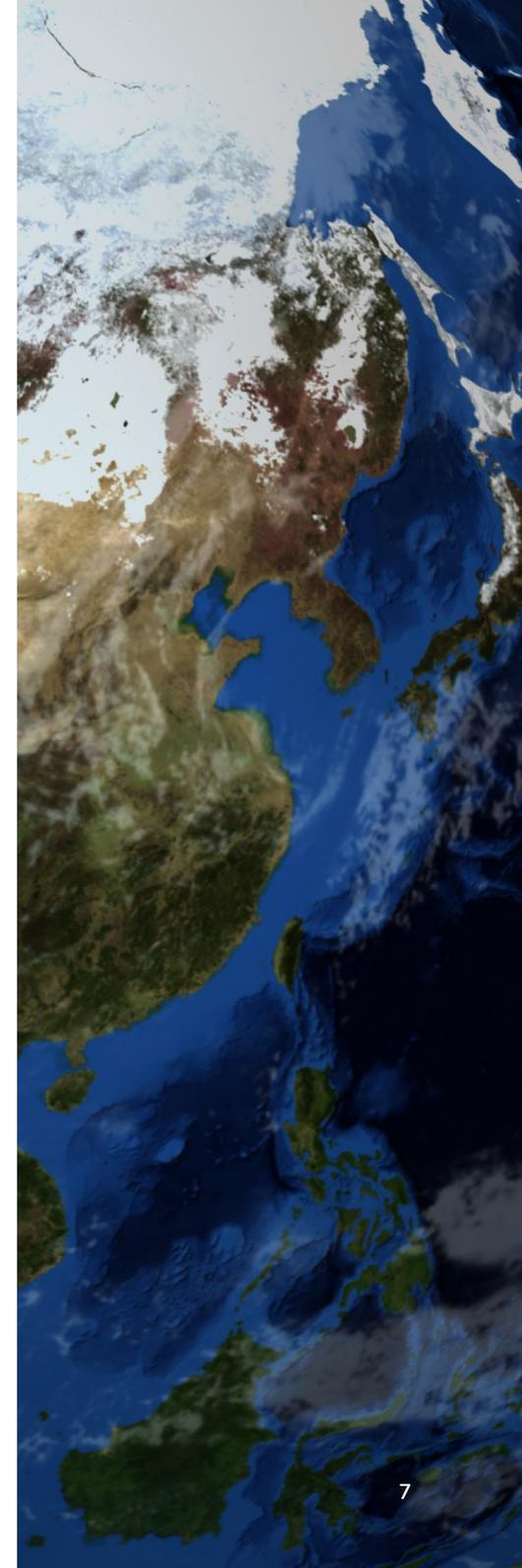
The progress captured in this report points toward a future in which:

- research data and results are widely and immediately accessible
- AI connects insights, reveals patterns, and accelerates discovery responsibly
- integrity is actively protected by shared standards and shared technology
- science has a stronger voice in shaping decisions about our planet's future.

Science is our most powerful tool to address the challenges of our time. At Frontiers, we remain committed to strengthening the systems that support it, so that knowledge can move faster, travel further, and deliver lasting impact.



**Dr Kamila Markram**  
CEO and Co-founder





## Frontiers Science House: changing how science impacts business, policy, and society

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50+ sessions

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168 speakers

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1,200+ attendees

In January, Frontiers put open science at the center of global conversation at the World Economic Forum Annual Meeting 2026 in Davos.

The idea was sparked at Davos 2025, where one absence became increasingly clear: while the world's most urgent challenges were being debated, a strong presence of science itself was missing from the discussion.

One year later Frontiers addressed that gap by launching Frontiers Science House with two clear objectives:

- Give outstanding scientists a genuine seat at the decision-making table
- Show that open science is the simplest and most cost-effective way to accelerate innovation and economic growth

The program spanned five days, each one focusing on a specific theme aligned to the most pressing frontiers of knowledge.

In vibrant, high-energy sessions, Nobel laureates, innovators, policymakers, and business leaders came together with a shared purpose.

Discussions ranged from fusion and quantum computing to AI in healthcare and the space revolution. Diverse in scope, every conversation was anchored in scientific evidence and the principles of openness and collaboration.

The response confirmed a clear enthusiasm for science to play a central role in global debate. Frontiers Science House demonstrated that open and transparent science is an accelerator for informed policy, responsible investment, and long-term progress.



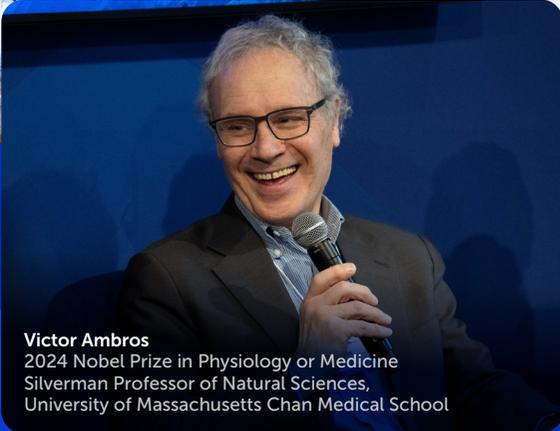
"I'm really grateful to Frontiers Science House for creating this red hot center of scientific knowledge, expertise, and passion in Davos."



**Jane Metcalfe**  
Executive Chair,  
Human Immunome Project



**Michiel Scheffer**  
President, European Innovation Council Board,  
European Commission



**Victor Ambros**  
2024 Nobel Prize in Physiology or Medicine  
Silverman Professor of Natural Sciences,  
University of Massachusetts Chan Medical School

"The issues of trust, transparency, and collaboration covered by Frontiers are important for us. Microsoft wants to combat misinformation by preserving transparency and openness."



**Lisa Monaco**  
President, Microsoft Global Affairs



**Jimmy Wales**  
Founder, Wikipedia



**Maria Leptin**  
President, European Research Council

"I want to congratulate Frontiers for the sessions you are running at Science House. Trust in science, the topic for the opening plenary, resonates well with us at Wellcome."



**John-Arne Røttingen**  
CEO, Wellcome



## Day 1 Open science



### Open science for global challenges

Setting the scene for Frontiers Science House, Kamila and Henry Markram and a panel of speakers from partners including Novartis, Wellcome, and Microsoft, discussed how science can help tackle global challenges if the right partnerships and knowledge-sharing frameworks are in place.

## Day 2 Human health



### Breakthrough innovation: redefining the future of medicine

How can advances in data, AI, and therapeutic platforms transform healthcare? With speakers Vas Narasimhan, Novartis, James Manyika, Google, Andrew McAfee, MIT Sloan School of Management, and Fareed Zakaria, CNN.

## Day 3 Planetary health

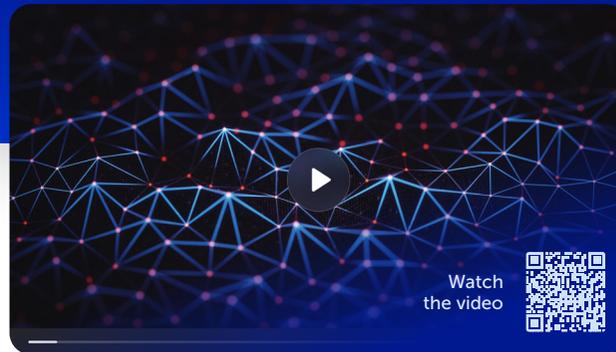


### Experts at odds: debating geoengineering

Paul Alivisatos, University of Chicago, Martin Siegert, University of Exeter, Gail Whiteman, University of Exeter Business School, and Adrian Monck, 7 Things, discussed what should be permissible in the race to limit global warming.

Day 4  
Technology

Day 5  
Governance



**Conquering quantum's next frontier**

With speakers from CERN, UNESCO, NVIDIA, Microsoft, University of California, and University of Calgary, this session looked at what may happen when quantum technologies reshape science and industry as profoundly as AI has.



**Restoring multilateralism with science diplomacy**

Developed in partnership with Geneva Science and Diplomacy Anticipator (GESDA) and European Space Policy Institute (ESPI), this session explored concrete policy levers that make science a verifiable tool for conflict prevention and sustainable global security.



# Our publishing program

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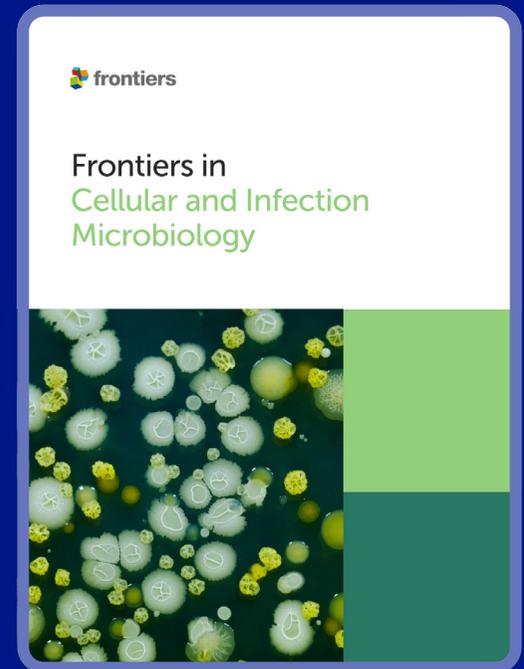
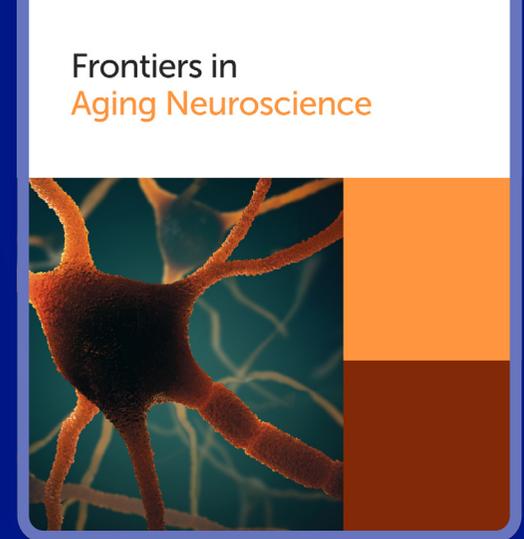
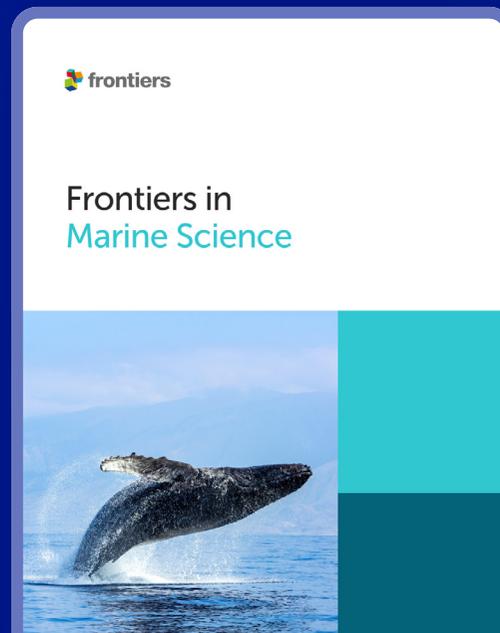
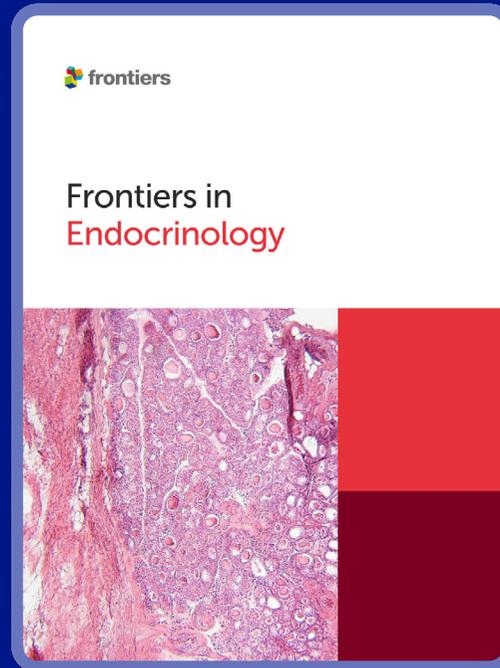
Our unique three-tiered publishing program places researchers at the center, delivering a first-class experience and ensuring open science publishing is available to more research communities.



# Leading journals and specialty sections

As of 2025, Frontiers publishes 222 active, community-driven journals spanning more than 1,700 academic specialty sections, many of which directly support research aligned with the United Nations Sustainable Development Goals.

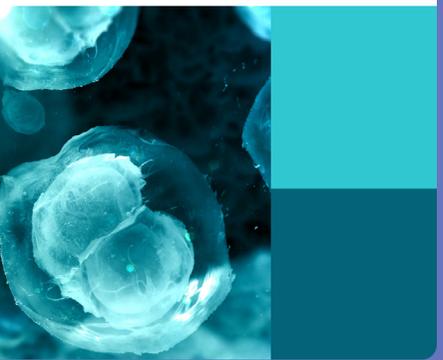
Our specialty section model allows journals to evolve alongside their fields. Field Chief Editors can launch new sections as disciplines emerge and converge, while scaling editorial boards to meet growing demand. This structure ensures that peer review remains rigorous, efficient, and led by active experts, even as journals expand in scope and impact.





frontiers

## Frontiers in Cell and Developmental Biology



222  
community-driven  
journals

1,700+  
specialty sections

### 2007-2012

Neuroscience, JIF 3.2  
Hum. Neuroscience, JIF 2.7  
Aging Neuroscience, JIF 4.5  
Behav. Neuroscience, JIF 2.9  
Cell. Neuroscience, JIF 4.0  
Comp.l Neuroscience, JIF 2.3  
Mol. Neuroscience, JIF 3.8  
Neural Circuits, JIF 3.0  
Neuroanatomy, JIF 2.3  
Neuroinformatics, JIF 2.5  
Neurorobotics, JIF 2.8  
Integr. Neuroscience, JIF 2.9  
Synap. Neuroscience, JIF 4.1  
Syst. Neuroscience, JIF 3.5  
Psychiatry, JIF 3.2  
Psychology, JIF 2.9  
Neurology, JIF 2.8  
Oncology, JIF 3.3  
Physiology, JIF 3.4  
Pharmacology, JIF 4.8  
Plant Science, JIF 4.8  
Microbiology, JIF 4.5  
Cell. Infect. Microbiol, JIF 4.8  
Immunology, JIF 5.9  
Endocrinology, JIF 4.6  
Genetics, JIF 2.8

### 2013-2016

Young Minds  
Pediatrics, JIF 2.0  
Chemistry, JIF 4.2  
Public Health, JIF 3.4  
Bio. & Biotech., JIF 4.8  
Physics, JIF 2.1  
Energy Research, JIF 2.4  
Earth Science, JIF 2.0  
Environ. Science, JIF 3.7  
Eco. and Evo, JIF 2.6  
Cell & Dev. Biology, JIF 4.3  
Marine Science, JIF 3.0  
Nutrition, JIF 5.1  
Surgery, JIF 1.8  
Cardio. Medicine, JIF 2.9  
Veterinary Science, JIF 2.9  
Molecular Biosci

Medicine, JIF 3.0  
Materials, JIF 2.9  
Ast. & Space Sci, JIF 2.6  
Robotics and AI, JIF 3.0  
Built Environment, JIF 2.7  
Mechanical Engineering, JIF 3.0  
Res. Metrics & Analytics, JIF 1.6  
Education, JIF 1.9  
Communication, JIF 1.6  
Sociology, JIF 2.2  
Applied Math. and Statistics, JIF 1.5

### 2017-2019

Sust. Food Systems, JIF 3.1  
For. & Gl. Change, JIF 3.2  
Big Data, JIF 2.3  
Blockchain, JIF 2.4  
Artificial Intelligence, JIF 4.7  
Water, JIF 2.8  
Sports and Active Living, JIF 2.6  
Sustainable Cities, JIF 2.1  
Digital Health, JIF 3.8  
Chemical Engineering, JIF 2.6  
Nanotechnology, JIF 3.8  
Human Dynamics, JIF 1.3  
Medical Technology, JIF 3.8  
Toxicology, JIF 4.6  
Political Science, JIF 1.9  
Agronomy, JIF 4.1  
Climate, JIF 4.1  
Computer Science, JIF 2.7

### 2020-2021

Adv. Drug. Alc. Res.  
Aerosp. Res. Comm.  
Aging, JIF 4.3  
Allergy, JIF 3.1  
Analytical Sci., JIF 1.9  
Animal Science, JIF 2.4  
Bioinformatics, JIF 3.9  
Biomaterials Sci.  
Catalysis  
Cl. Diabetes & Healthcare, JIF 2.2  
Comm. & Networks, JIF 2.4  
Conservation Sci., JIF 1.8

Control Engineering  
Dental Medicine, JIF 1.8  
Drug Delivery  
Drug Discovery  
Drug Safety & Reg.  
Dystonia  
Electronics, JIF 2.1  
Electronic Materials  
Env. Chemistry, JIF 1.9  
Epidemiology  
Food Sci. & Tech.  
Fungal Biology, JIF 3.8  
Future Transportation, JIF 1.5  
Gastroenterology  
Genome Editing, JIF 4.4  
Global Women's Health, JIF 2.4  
Health Services, JIF 2.7  
Insect Science, JIF 3.0  
Int. J. Pub. Health, JIF 2.4  
J. Abd. Wall. Surg.  
Manufacturing Tech.  
Molecular Medicine  
Nephrology  
Network Physiology, JIF 3.0  
Neuroergonomics, JIF 1.9  
Neuroimaging  
Nuclear Medicine, JIF 1.4  
Ophthalmology, JIF 0.9  
Oral Health, JIF 3.1  
Pain Research, JIF 2.7  
Path. & Onc. Res., JIF 2.3  
Photonics  
Public Health Reviews, JIF 4.1  
Radiology, JIF 2.3  
Rehabilitation Sciences, JIF 1.9  
Remote Sensing, JIF 3.7  
Reproductive Health, JIF 2.9  
Sensors  
Signal Processing, JIF 2.6  
Soft Matter  
Soil Science, JIF 3.7  
Spanish J. Soil Sci, JIF 2.0  
Space Tech., JIF 1.3  
Sustainability, JIF 2.9  
Systems Biology, JIF 2.3  
Thermal Engineering  
Tropical Diseases

Urology, JIF 1.1  
Virology, JIF 1.6  
Virtual Reality, JIF 3.6

### 2022-2025

Frontiers in Science  
Acoustics  
Acta Virologica, JIF 0.8  
Adolescent Medicine  
Aerospace Engineering  
Amphibian and Reptile Science  
Anesthesiology  
Antennas and Propagation  
Antibiotics  
Arachnid Science  
Audiology and Otology  
Aquaculture  
Bacteriology  
Batteries and Electrochemistry  
Bee Science  
Behavioral Economics  
Bird Science  
British J. Bio. Sci, JIF 4.6  
Carbon  
Cell Death  
Chemical Biology  
Child and Adolescent Psychiatry  
Coatings, Dyes and Int. Eng.  
Cognition  
Complex Systems  
Dementia  
Developmental Psychology  
Disaster and Emergency Medicine  
Energy Efficiency  
Environmental Archaeology  
Environmental Economics  
Environmental Engineering  
Environmental Health  
Epigenetics and Epigenomics  
Ethology  
Eur. J. Cult. Man. & Pol, JIF 0.3  
Fish Science  
Freshwater Science  
Fuels  
Geochemistry  
Hematology  
High Performance Computing  
Horticulture  
Imaging  
Industrial Engineering  
Industrial Microbiology  
The Internet of Things  
Lab on a Chip Technologies  
Language Sciences  
Lupus  
Malaria  
Mammal Science  
Medical Engineering  
Membrane Science & Technology  
Metals and Alloys  
Microbiomes  
Natural Products  
Nuclear Engineering  
Oncology Reviews, JIF 5.2  
Organizational Psychology  
Parasitology  
Plant Physiology  
Protistology  
J. Phar & Pharm. Sci, JIF 4.3  
Quantum Sci. & Tech.  
RNA Research  
Sleep  
Smart Grids  
Social Psychology  
Stroke  
Sustainable Energy Policy  
Sustainable Res. Mgmt.  
Sustainable Tourism  
Synthetic Biology  
Transplantation  
Transplant International, JIF 3.0  
Tuberculosis  
Adv. Opt. Tech, JIF 3.0  
J Cutan Immunol All, JIF 0.9  
Pastoralism, JIF 2.9  
Exp. Biol. Med., JIF 2.7  
Biophysics  
Cancer Control & Society  
Detector Science & Tech  
Musculoskeletal Disorders  
Ocean Sustainability  
Photobiology  
Acta Biochimica Polonica, JIF 1.7

# SUSTAINABLE DEVELOPMENT GOALS



## Our journals support Sustainable Development Goals

From sustainable cities to water, our journals support the UN SDGs, an urgent call by all countries to safeguard peace and prosperity for people and the planet.

This echoes our own mission established in 2007 – making science open to accelerate the solutions we need for healthy lives on a healthy planet.



frontiers

### Frontiers in Energy Efficiency

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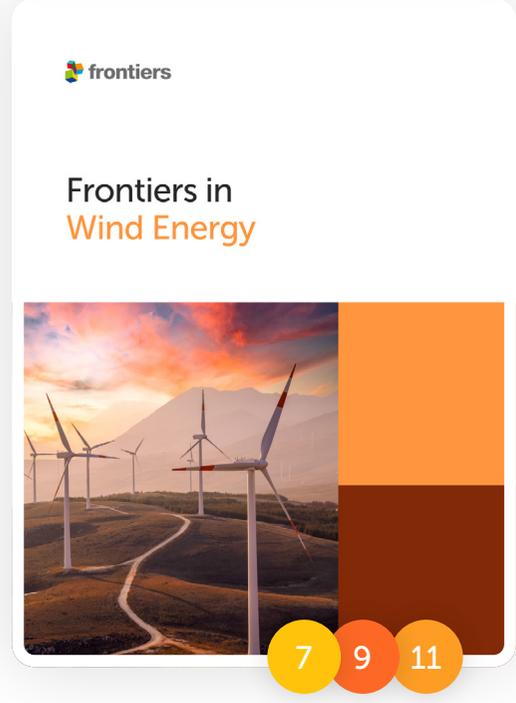
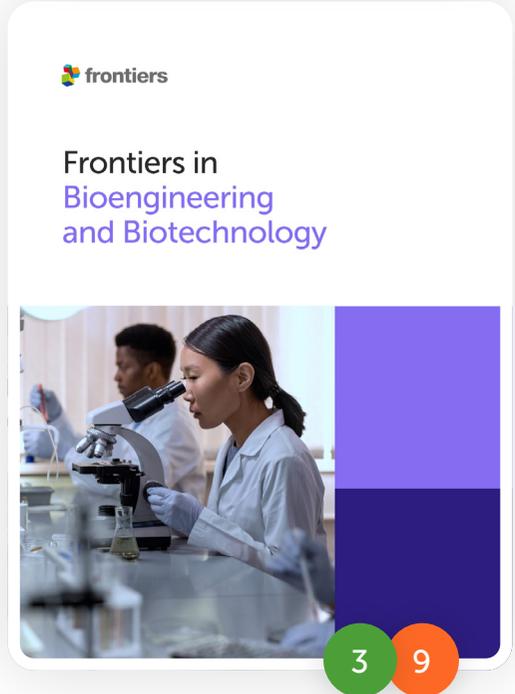
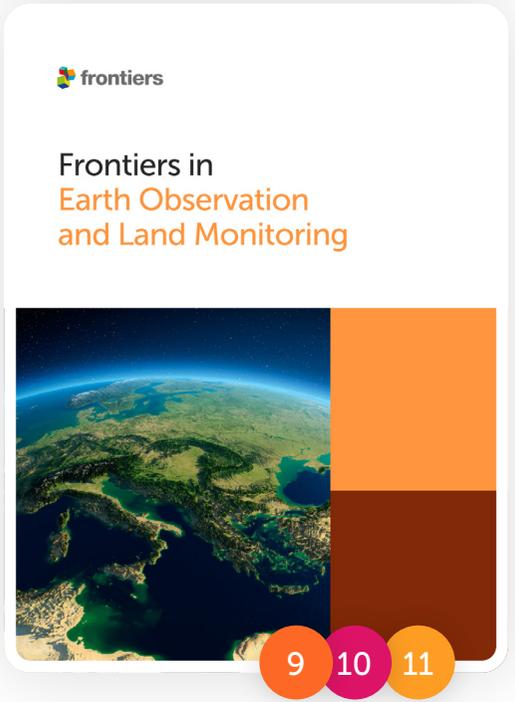
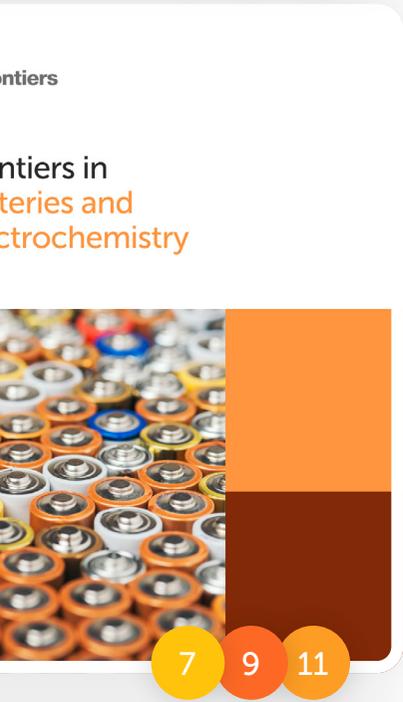
frontiers

### Frontiers in Neurology

3 9

frontiers

### Frontiers in Developmental Psychology



# Transformational science for healthy lives on a healthy planet

As Frontiers' flagship journal, Frontiers in Science showcases research that accelerates solutions to global challenges in human and planetary health. It engages academic communities, policy stakeholders, and wider society with high-quality transformational science.

**1,000+**  
citations in three years

Frontiers in Science reached a major milestone in 2025, surpassing 1,000 citations in fewer than three years, a powerful signal of its rapid influence and scientific relevance. By the end of 2025, the journal had received 1,112 citations across 110 articles spanning 29 interdisciplinary research hubs.

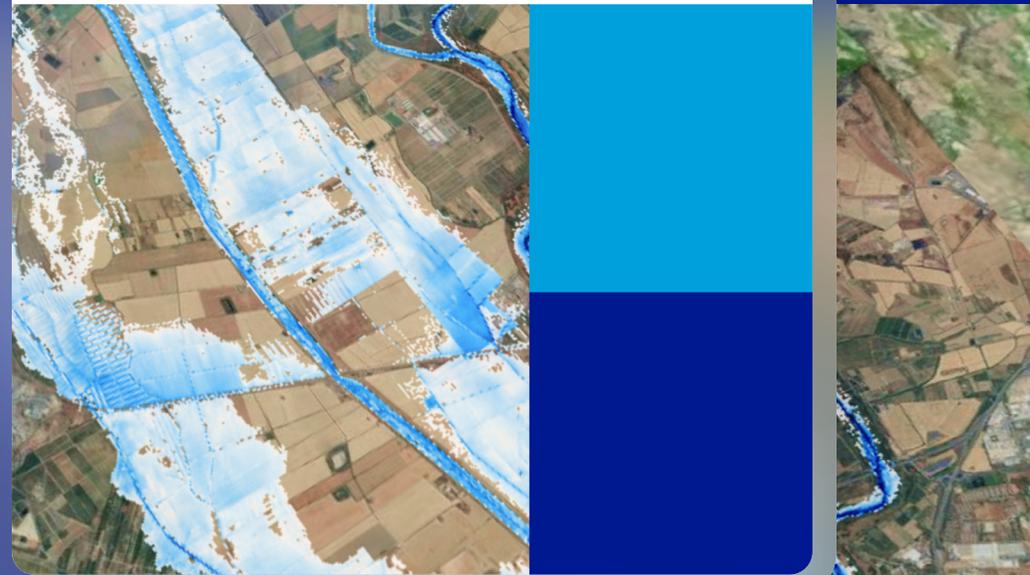
**3.3 million**  
article views

**337,000+**  
article downloads

**1,112**  
citations



## Frontiers in Science



Since its launch in 2023, the journal has achieved 3.3 million views and 337,000 downloads.

Research published in *Frontiers in Science* has attracted significant media attention, with 119 mentions in top-tier outlets and 1,454 mentions across all media.

Beyond publication, the research is amplified through online deep dive events, bringing scientists together to explore findings in depth. These sessions are attended and viewed by thousands of people in the wider scientific community, helping translate insights into action.

**BBC** **CNN** *Le Monde*

*The Atlantic* **NewScientist**

“The work that *Frontiers in Science* and the authors have done has had a phenomenal influence, which has translated to immediate impact in a governance setting. Our paper was released in 2025 and acted on by the Antarctic Treaty Consultative Parties shortly thereafter: a timely and useful outcome.”



**Steven Chown**

Monash University Australia  
*Frontiers in Science* author



Find out more



## The obesity-climate change connection

Rising obesity rates and climate change are viewed as separate global crises, yet both are shaped by industrial food systems that promote overconsumption and intensify environmental pressures. Could reforming our food environments address these challenges?

## Polar geoengineering: risks and realities

Earth’s coldest regions help regulate the global climate, but climate change-driven warming is destabilizing polar ice at alarming rates. Could large-scale geoengineering proposals protect against ice-sheet loss and slow down sea-level rise?



Find out more



Find out more



## Toward next-generation artificial intelligence hardware

As AI expands and becomes more complex, today’s computer architectures are struggling to keep up, wasting time and energy shuttling data between separate memory and processing chips. Can a new generation of hardware overcome these physical limits?

# Frontiers' Research Topics: shining a spotlight on your research

Frontiers' Research Topics are open, collaborative article collections focused on an emerging research theme.

Defined and led by expert researchers, they bring together communities to write, review, and publish new research around a shared interest – sparking conversation and stimulating future collaboration.

While Research Topics are curated by expert editors, they remain open to the wider research community, attracting contributions from researchers with aligned interests.

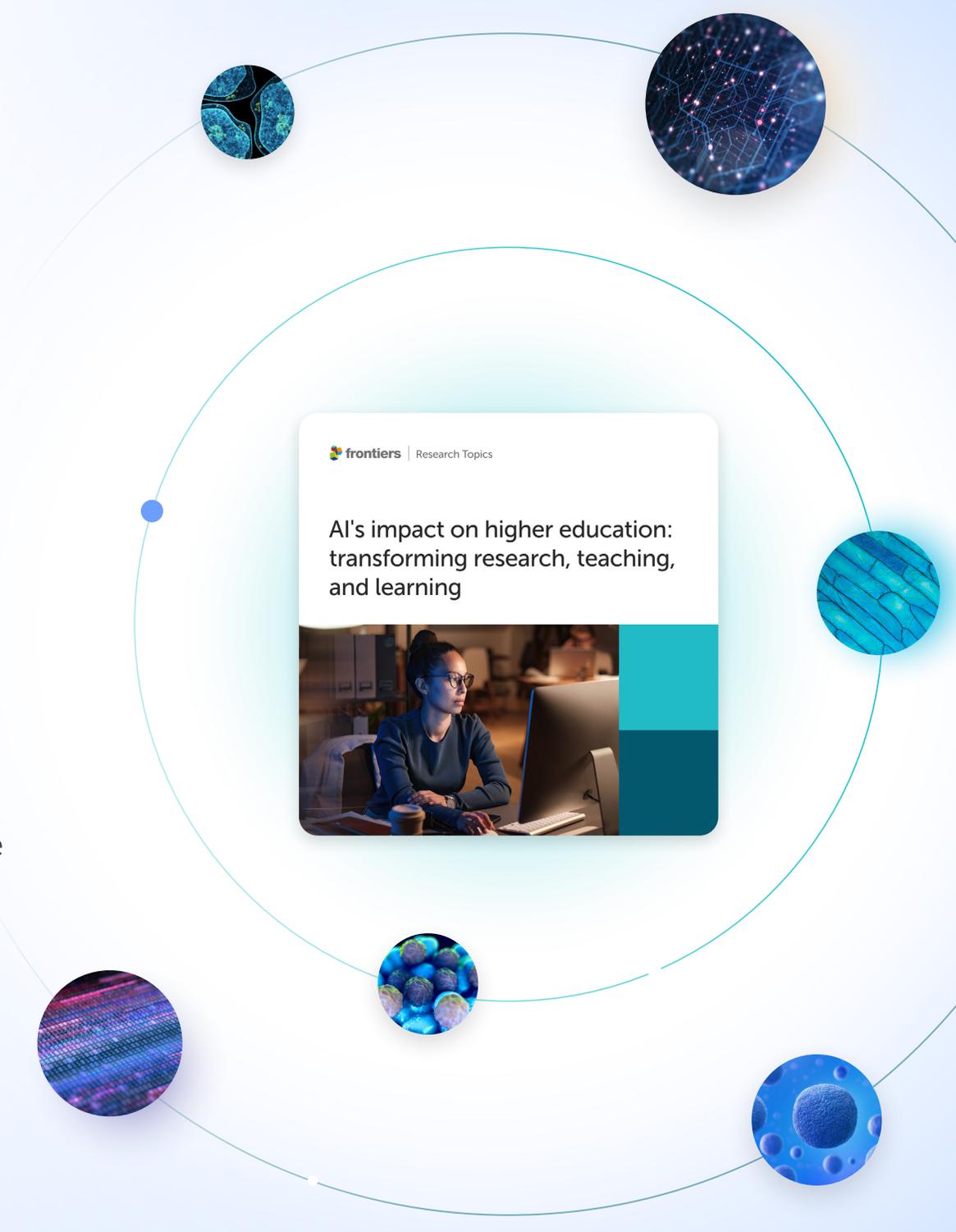
All articles are subject to Frontiers' rigorous peer review standards, ensuring quality, consistency, and trust across every collection.

“The streamlined process for developing research themes has made it possible to bring work together around important emerging topics in a faster, more inclusive and agile way. This has enabled us to create a successful and truly global journal that makes an important and unique contribution to our field.”



**James Evans**

The University of Manchester  
Field Chief Editor, Frontiers in Sustainable Cities



frontiers | Research Topics

### AI's impact on higher education: transforming research, teaching, and learning



Find out  
more



### Exploring mental health in vulnerable populations in developing countries

Sheds light on promoting mental health among vulnerable populations, addressing the dynamic and complex relationship between the mental health of specific vulnerable groups.

152k views | 41 articles



Find out  
more



### Formation of immunological niches in tumor microenvironments: mechanisms and therapeutic potential

Deepens our understanding of the formation and function of immunological niches within the tumor microenvironment and their role in cancer progression and immune evasion.

109k views | 30 articles



Find out  
more



### Probiotics for Global Health: Advances, Applications and Challenges

Explores the role of probiotics in promoting global health and contributing to the accomplishment of Sustainable Development Goal 3.

225k views | 32 articles

# FAIR<sup>2</sup> Data Management: an intelligent way to organize, share, and publish data

Despite advances in open science, researchers still struggle with fragmented, inconsistently formatted data that is difficult to curate and reuse.

In 2025 we launched Frontiers FAIR<sup>2</sup> Data Management, a first-of-its-kind data management service that makes research data citable, reusable, and AI-ready.

By combining AI-assisted curation with FAIR principles, FAIR<sup>2</sup> strengthens data reproducibility, accelerates discovery, and ensures that high-quality data delivers real-world impact.

## WHAT IS FAIR?

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The first step in using or reusing datasets is to find them. FAIR data meets the principles of findability, accessibility, interoperability, and reusability.

FAIR<sup>2</sup> builds upon these principles by introducing AI-readiness and a structured, open specification ensuring data is optimized for modern computational research.



## FAIR<sup>2</sup> Data Article

The FAIR<sup>2</sup> Data Article is a new article type that focuses exclusively on a single dataset rather than testing specific hypotheses. This new publication format ensures that high-value datasets receive the same recognition, visibility, and citation opportunities as traditional research articles while

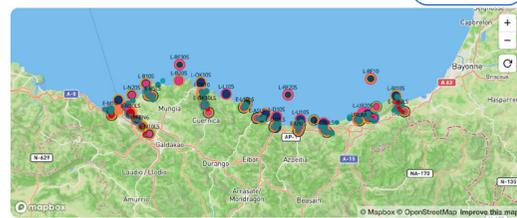
## See FAIR<sup>2</sup> Data Articles in action

### Marine biodiversity and environmental data: an AI-ready, open dataset from the long term Basque Country monitoring network

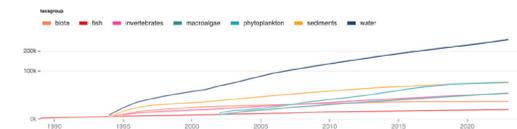
#### Abstract

This dataset provides 26 years of environmental monitoring data (1995–2023) from 61 stations in the estuaries and coastal areas of the Basque Country in the Bay of Biscay. Covering 130 variables across water, sediments, and biota, it includes detailed records of phytoplankton, macroalgae, macroinvertebrates, and fish. Compiled in collaboration with the Basque Water Agency (LIRA), the dataset supports analysis of environmental responses to human pressures and management interventions, identifying patterns of environmental quality improvement within a context of natural variability. Provided in a FAIR<sup>2</sup> Data Package, the dataset is structured to ensure Findability, Accessibility, Interoperability, Reusability, and Artificial Intelligence-readiness, facilitated by structured metadata and Application Programming Interface access. This resource is intended for researchers and policymakers examining anthropogenic and natural influences on aquatic ecosystems, contributing to sustainable management, conservation practices, and alignment with European directives, including the Water Framework Directive.

#### Data Explorer



#### Cumulative number of samples



#### Top 10 Taxa: Number of samples collected



remaining accessible and reusable for the global research community.

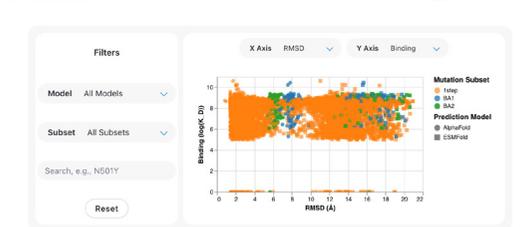
The articles are peer-reviewed and citable. This ensures that datasets are rigorously assessed for quality, and it means that the work can achieve the impact it deserves, informing future research.

### Structure-based prediction of SARS-CoV-2 variant properties: machine learning on mutational neighborhoods to predict the behavior of viral variants

#### Abstract

This dataset presents a structure-enriched resource of theoretical and empirical SARS-CoV-2 spike receptor-binding domain (RBD) variants, developed under the STAYAHEAD project for pandemic preparedness. It integrates large-scale in silico structure predictions with empirical biophysical measurements. The dataset includes 3,705 single-point Wuhan-Hu-1 RBD variants and 100 higher-order Omicron BA.1/BA.2 variants, annotated with AlphaFold2 and ESMFold metrics and BioByte sequence-based predictors. Structural descriptors—RMSD, TM-score, pIDDT, solvent accessibility, hydrophobicity, aggregation propensity—are linked to ACE2 binding and expression data from deep mutational scanning. Provided as a FAIR<sup>2</sup> Data Package, it supports structure–function analysis, variant modeling, and responsible reuse in virology, structural biology, and computational protein science.

#### Data Explorer



#### Variant: A103C | Model: AlphaFold | Subset: 1step

Mutation Site: 50  Cartoon  Surface  Spacefill  Bonds

Color: Secondary Structure  Spin

TNLCPFGEVFNATRFASYIYWNKRKISNCVADYSLVNSASFSTFKCYGVSPITKLNLDLCLFTNIVYDSFVIRGDEVRIQ  
CCVWNSNLDKSKVGGNYNYLRYLRFKSNLKFPRDIDISTEIQAGSTPCNGVEGFCYFLPSYGFQPTNGVGYGF

#### Summary for A103C



#### Data Package

- License: ODC-By (Open Data Commons Attribution License v1.0)
- Version: 1.0
- Data Package DOI: 10.7554/odccat.v1.0.1
- Publication DOI: 10.26434/chemrxiv-2023-35174

Find out more



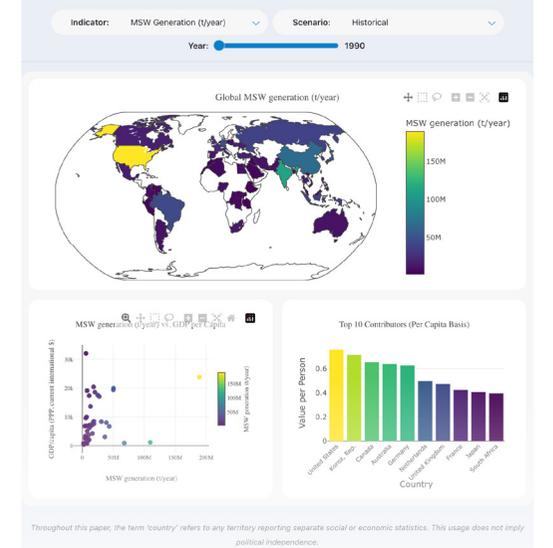
### Global waste sector dataset (1990–2050): scenario-based projections of generation, emissions, and socioeconomic drivers

#### Abstract

Strategy planning for global climate goals requires structured, multisectoral data linking environmental pressures with socioeconomic drivers across time and geography. However, internationally harmonized, machine-actionable datasets integrating waste generation, waste-related greenhouse gas (GHG) emissions, and socioeconomic indicators remain scarce. This study provides a harmonized, AI-ready dataset to support global analyses of municipal solid waste (MSW) and associated emissions. This FAIR<sup>2</sup> dataset provides historical (1990–2020) and forecasted (2021–2050) national-level data for 43 countries, covering MSW generation, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions, GDP per capita (PPP), and population. Forecasts were generated using an ensemble of fixed-effects regression models and artificial neural networks informed by economic and demographic trends. By linking MSW, emissions, and socioeconomic drivers within a standardized structure, the dataset enables analyses including benchmarking, equity assessments, and decoupling analysis. While limited to national aggregates and subject to scenario uncertainty, the dataset complies with FAIR<sup>2</sup> principles, supporting reuse and traceability.

#### Data Explorer

Select a scenario and year to explore MSW-related data. Click or use the selection tools on the map to filter by country.



*Throughout this paper, the term 'country' refers to any territory reporting separate social or economic statistics. This usage does not imply political independence.*

#### Data Package

- License: ODC-By (Open Data Commons Attribution License v1.0)
- Version: 1.0
- Data Package DOI: 10.7554/odccat.v1.0.1
- Publication DOI: 10.26434/chemrxiv-2023-35174

Find out more



# Our institutional partnerships: supporting sustainable open science

We are committed to financial models that support sustainable open access to science for both researchers and institutions.

With publishing agreements in place that cover more than 740 institutions, we simplify the payment of article processing charges and provide financial discounts for authors.

More than 80 institutions are now covered by our flat fee agreements, paying one annual fee to cover unlimited publishing from members of their academic community. This greatly improves the experience for authors, who can then publish with us without the administration of handling an invoice. The agreements also provide simplicity, stability, and transparency to institutions in their financial planning and budgeting for publishing services.

## We pioneered fully transparent agreements at a national level



Austria consortium



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Consortium of Swiss Academic Libraries (CSAL)



German National Library of Medicine (ZB MED)



Qatar National Library



Slovenian Consortium of Academic and Research Institutions (CTK)



Norwegian Agency for Shared Services in Education and Research (Sikt)

## We also partner with funder organizations



## Our consortium-wide agreements support large communities of researchers



HELMHOLTZ

MAX PLANCK  
GESELLSCHAFT





“Bibliosan’s agreement with Frontiers is our first with a pure open access publisher. This has been a major step towards making the results of publicly-funded research in Italy openly available by making it easier for biomedical researchers in Italy to publish their research in fully open journals. That’s why the agreement still lives on today.”



**Dr. Moreno Curti**

Bibliosan Coordinator  
IRCCS Policlinico San Matteo, PAVIA

# Supporting our research community

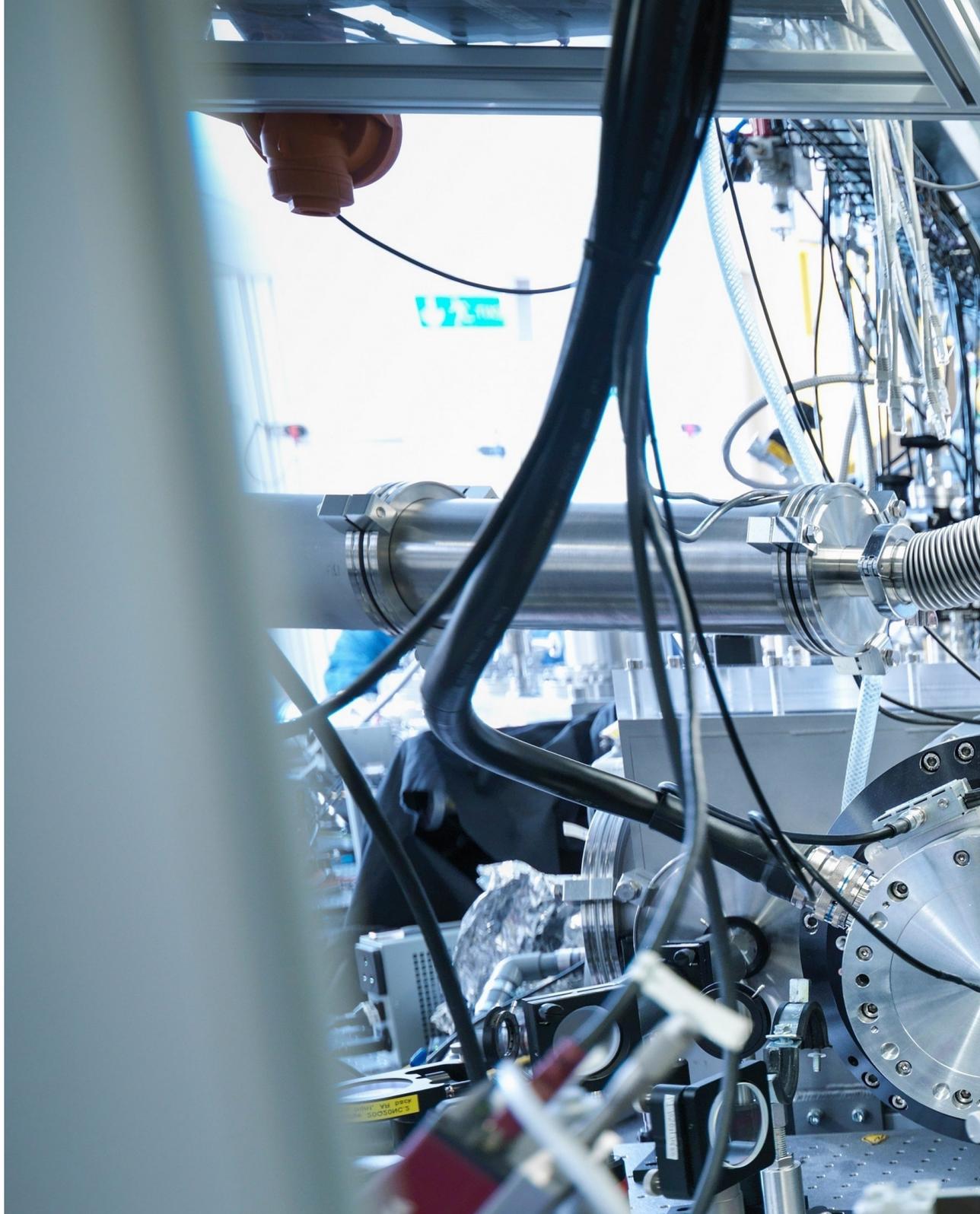
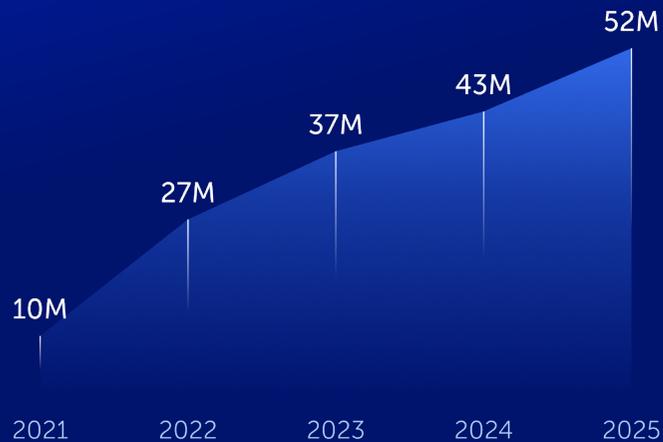
Our fee support program ensures that the ability to publish open access is determined by the quality of research, not by an author's institutional funding situation.

A portion of our income from article processing charges is reinvested to support researchers whose institutions are unable to pay publishing fees, ensuring that valuable research can be shared openly.

In 2025 we waived more than USD 9 million in fee support across 11,300 published articles, making a total of USD 52 million in support over the past five years.

## USD 52 million

fee support 2021-2025





# Our impact

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Your research is making a difference.  
We maximize its reach and impact  
to accelerate scientific discovery.





## An innovator in every corner of the globe

In 2025, we published 85,345 new articles, each openly and permanently available immediately after publication, ensuring maximum readership and visibility.

**85,345**

new articles published in 2025

In 2025, articles published by Frontiers were viewed and downloaded 1.4 billion times, making a total of 4.6 billion views and downloads to date.

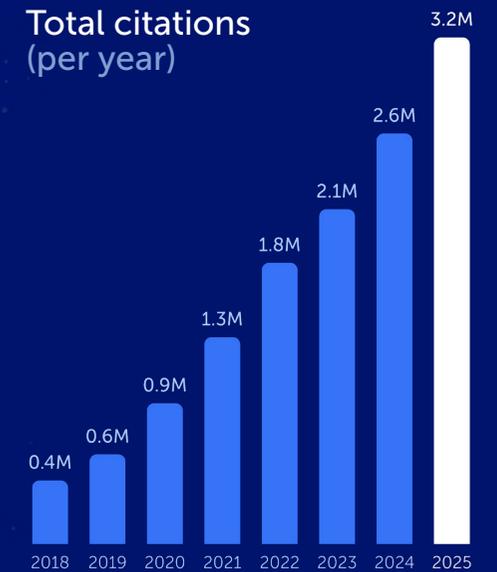
**4.6 billion**

total article views and downloads

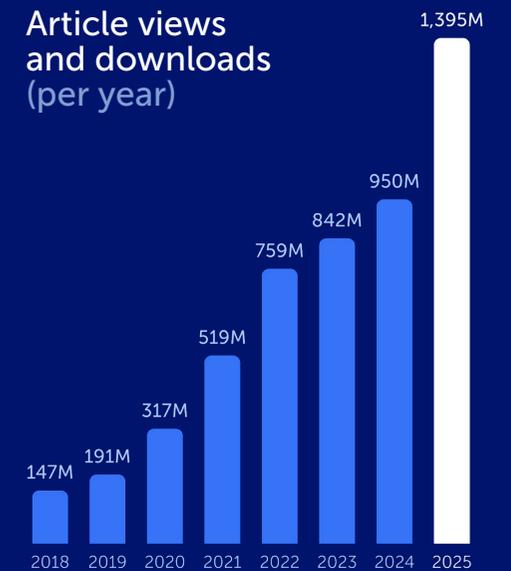
Articles published in our journals were cited by researchers all over the world in the past year, now totaling 14 million.

**14 million**

total citations

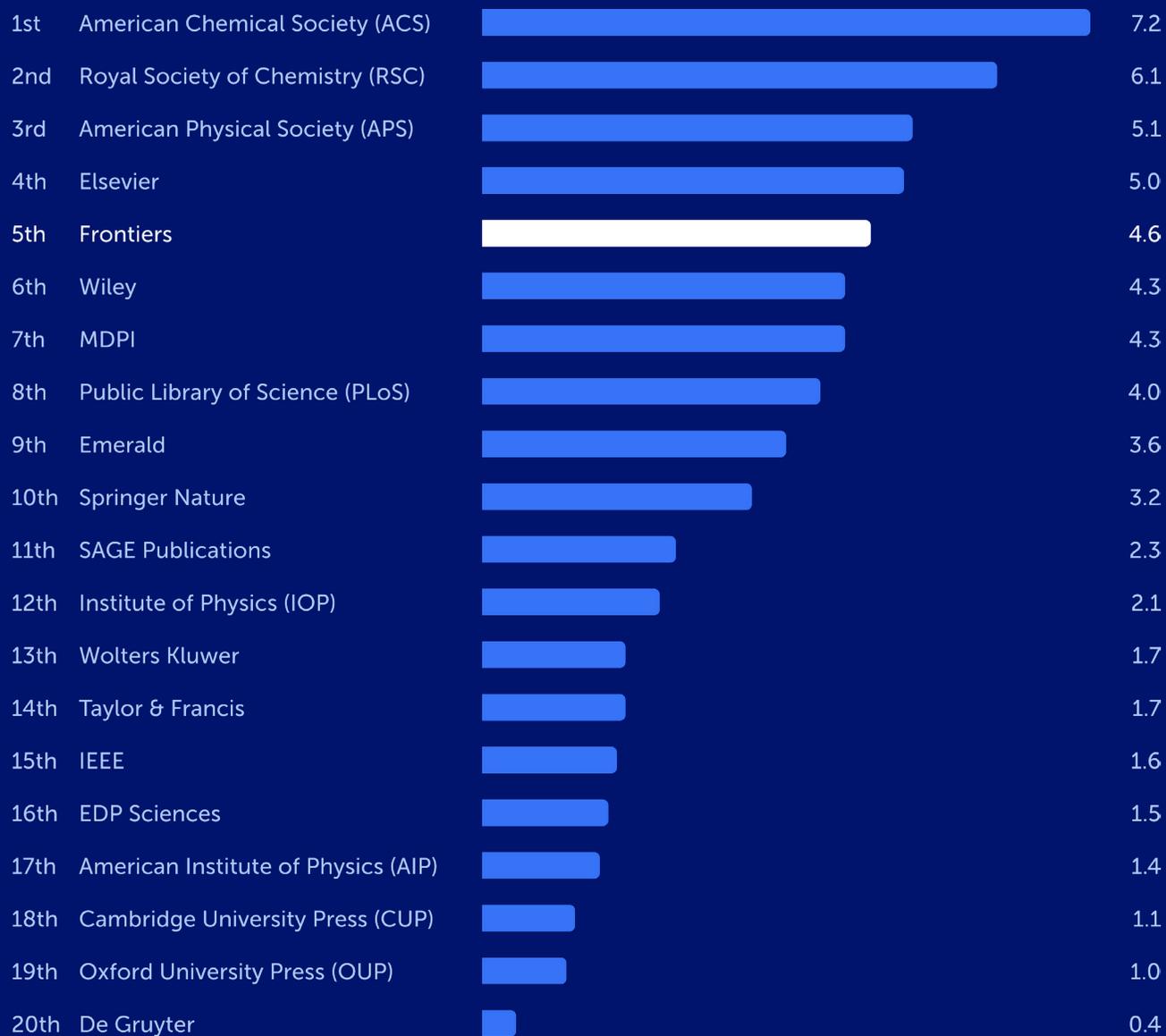


Data source: Dimensions, March 2026



Data source: Frontiers 2025

## Average citations (by publisher)



Data source: Dimensions 2025. The graph shows average citations received in 2025 to articles published in 2023 and 2024.

## Highly visible, highly cited research

Frontiers is the fifth most cited publisher among the 20 largest publishers with an average of 4.6 citations received in 2025 to articles published in 2023 and 2024.

---

**5th**  
most cited publisher

---

**4.6**  
average citations

# Your research made headlines in 2025

Articles published in Frontiers' journals were featured more than 41,000 times in the news.

## 41,188

news mentions in 2025 (Altmetric)

## 298,896

total news mentions (Altmetric)



EL PAÍS

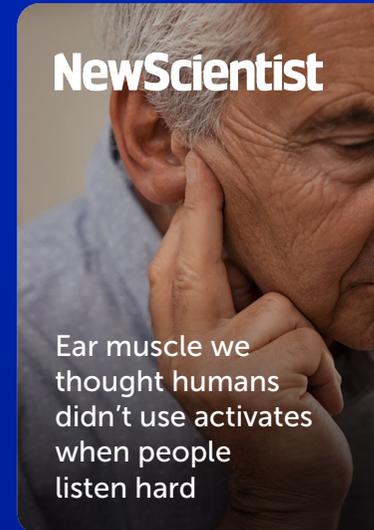


Newsweek



**theguardian**

Street smarts: how a hawk learned to use traffic signals to hunt more successfully



**NewScientist**

Ear muscle we thought humans didn't use activates when people listen hard



**SCIENTIFIC AMERICAN**

Orcas seen killing young great white sharks by flipping them upside-down



**NBC NEWS**

Cheese may really be giving you nightmares, scientists find



**The Washington Post**

Some of your AI prompts could cause 50 times more CO2 emissions than others



**THE TIMES**

'Molecular shield' placed in the nose may soon treat common hay fever trigger

In 2025, articles published in Frontiers' journals were mentioned more than 241,000 times across all social media channels.

**241,000**  
social media mentions in 2025 (Altmetric)

**3.6M**  
total social media mentions (Altmetric)

**facebook**

**Frontiers**

Regenerative farming practices, from cover cropping to no-till, effectively increase soil carbon. This review suggests combining practices may enhance long-term benefits.

Read the article in Frontiers in Sustainable Food Systems (Impact Factor 3.1, CiteScore 6.2)

**Read now: Quantifying soil carbon sequestration from regenerative agricultural practices in crops and vineyards**

### Regenerative farming practices increase soil carbon

Regenerative farming practices, from cover cropping to no-till, effectively increase soil carbon. This review in Frontiers in Sustainable Food Systems suggests combining practices may enhance long-term benefits.

47k impressions

**in**

**Frontiers**

The poles are warming at record speed, but are drastic technological "fixes" the answer?

Authors of a new article argue that the fastest, most effective safeguard against the effects of climate change remains immediate and deep decarbonization.

Read more in the article in Frontiers in Science <https://lnkd.in/gq1W8F2M>

**Safeguarding the polar regions from dangerous geoengineering: a critical assessment of proposed concepts and future prospects**

### The poles are warming at record speed but are drastic technological 'fixes' the answer?

Authors of a new article in Frontiers in Science argue that the fastest, most effective safeguard against the effects of climate change remains immediate and deep decarbonization.

6k impressions

**X**

**Frontiers**

New Research: The heart's eye: how mental imagery influences romantic emotion <https://frontiersin.org/articles/10.33...> #Frontiersin #Psychology

**Frontiers | The heart's eye: how mental imagery influences romantic emotion**

### The heart's eye

New research from Frontiers in Psychology explores how mental imagery influences romantic emotions and their physiological underpinnings.

15k impressions

“Frontiers’ open access model lets cutting-edge researchers, especially newer voices, reach a much wider audience. That visibility is incredibly important, both for their careers and for accelerating progress in the field.”



**Professor Andrew Lee**

Houston Methodist Hospital  
Field Chief Editor, Frontiers in Ophthalmology

# Influential journals, defining their fields

Following the 2025 release of the Web of Science Group's Journal Citation Report (JCR 2024), 121 of the journals published by Frontiers have a Journal Impact Factor.

This year, 90 of Frontiers' journals increased their Journal Impact Factor or were new entrants.

According to Scopus' CiteScore release in 2025, 133 Frontiers' journals have a CiteScore, with 97 achieving a higher CiteScore than last year.



See more about our impact

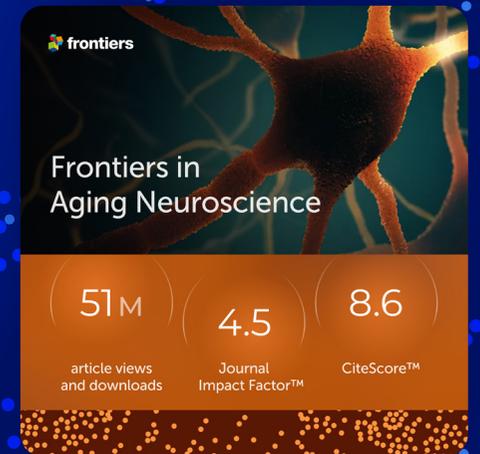
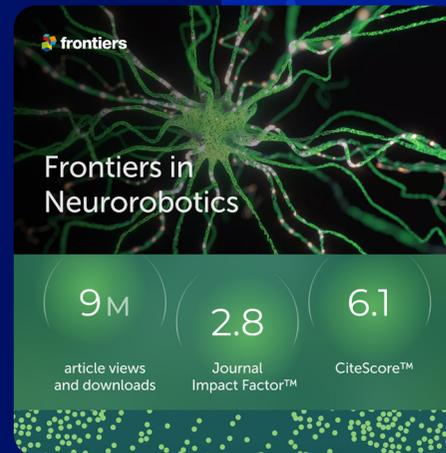
## Our journals are listed in trusted indexes and databases

All Frontiers journals are indexed in COPE

In 2025, an additional 25 journals were indexed in Web of Science, bringing the total to 145

All Frontiers journals are indexed in the Directory of Open Access Journals (DOAJ)

An additional 29 journals were indexed in Scopus, bringing the total to 159



## Journal Impact Factors and Citescores

Journal	Journal Impact Factor	CiteScore	JIF rank quartile	CiteScore rank quartile	Total citations
Frontiers in Aging	4.3	5.1	Q1	Q2	5,341
Frontiers in Aging Neuroscience	4.5	8.6	Q1	Q1	205,828
Frontiers in Agronomy	4.1	6.8	Q1	Q1	7,425
Frontiers in Allergy	3.1	4.6	Q2	Q2	5,213
Frontiers in Analytical Science	1.9	-	Q3	-	615
Frontiers in Animal Science	2.4	4.0	Q1	Q1	3,931
Frontiers in Antibiotics	-	2.0	-	Q3	488
Frontiers in Applied Mathematics and Statistics	1.5	2.8	Q3	Q2	5,676
Frontiers in Artificial Intelligence	4.7	7.3	Q1	Q2	24,502
Frontiers in Astronomy and Space Sciences	2.6	4.7	Q2	Q2	18,381
Frontiers in Behavioral Neuroscience	2.9	5.7	Q1	Q1	123,040
Frontiers in Big Data	2.3	6.1	Q2	Q1	8,507
Frontiers in Bioengineering and Biotechnology	4.8	8.8	Q1	Q1	227,104
Frontiers in Bioinformatics	3.9	4.9	Q1	Q1	4,742
Frontiers in Blockchain	2.4	5.6	Q3	Q1	4,786
Frontiers in Built Environment	2.7	4.6	Q2	Q1	20,145
Frontiers in Cardiovascular Medicine	2.9	5.5	Q2	Q1	133,883
Frontiers in Cell and Developmental Biology	4.3	11.4	Q1	Q1	275,354
Frontiers in Cellular and Infection Microbiology	4.8	9.0	Q1	Q1	251,043
Frontiers in Cellular Neuroscience	4.0	8.3	Q2	Q1	210,453
Frontiers in Chemical Engineering	2.6	5.5	Q3	Q2	4,083
Frontiers in Chemistry	4.2	8.4	Q2	Q1	184,388
Frontiers in Climate	4.1	6.8	Q2	Q1	12,680
Frontiers in Clinical Diabetes and Healthcare	2.2	2.3	Q3	Q3	1,468
Frontiers in Communication	1.6	3.0	Q2	Q2	14,185
Frontiers in Communications and Networks	2.4	6.9	Q3	Q1	1,784
Frontiers in Computational Neuroscience	2.3	5.0	Q2	Q2	52,964
Frontiers in Computer Science	2.7	5.3	Q3	Q2	9,140
Frontiers in Conservation Science	1.8	3.4	Q2	Q2	3,976
Frontiers in Dental Medicine	1.8	2.9	Q3	Q1	2,217
Frontiers in Digital Health	3.8	6.3	Q1	Q1	16,464
Frontiers in Drug Safety and Regulation	-	2.1	-	Q2	455
Frontiers in Earth Science	2.0	4.3	Q3	Q2	86,600
Frontiers in Ecology and Evolution	2.6	5.5	Q2	Q1	91,070
Frontiers in Education	1.9	3.7	Q2	Q2	49,218

Journal	Journal Impact Factor	CiteScore	JIF rank quartile	CiteScore rank quartile	Total citations
Frontiers in Electronics	2.1	-	Q3	-	1,150
Frontiers in Endocrinology	4.6	7.4	Q1	Q1	352,301
Frontiers in Energy Research	2.4	5.0	Q3	Q1	72,714
Frontiers in Environmental Archaeology	-	0.9	-	Q2	196
Frontiers in Environmental Chemistry	1.9	3.8	Q3	Q2	1060
Frontiers in Environmental Science	3.7	7.0	Q2	Q1	117,015
Frontiers in Epidemiology	-	1.8	-	Q3	1,165
Frontiers in Food Science and Technology	-	2.5	-	Q2	965
Frontiers in Forests and Global Change	3.2	5.2	Q1	Q1	18,835
Frontiers in Fungal Biology	3.8	4.8	Q2	Q1	2,532
Frontiers in Future Transportation	1.5	4.2	Q3	Q1	865
Frontiers in Gastroenterology	-	0.9	-	Q4	331
Frontiers in Genetics	2.8	6.2	Q2	Q2	308,946
Frontiers in Genome Editing	4.4	9.5	Q1	Q1	4,525
Frontiers in Global Women's Health	2.4	3.3	Q1	Q1	6,750
Frontiers in Health Services	2.7	2.5	Q2	Q2	3,198
Frontiers in Hematology	-	0.6	-	Q4	236
Frontiers in Horticulture	-	1.6	-	Q3	406
Frontiers in Human Dynamics	1.3	4.0	Q3	Q1	2,235
Frontiers in Human Neuroscience	2.7	5.5	Q2	Q1	340,011
Frontiers in Immunology	5.9	10.8	Q1	Q1	1.3 million
Frontiers in Insect Science	3.0	3.8	Q1	Q1	1,829
Frontiers in Integrative Neuroscience	2.9	5.2	Q1	Q2	41,587
Frontiers in Marine Science	3.0	5.8	Q1	Q1	223,468
Frontiers in Materials	2.9	5.6	Q3	Q2	51,893
Frontiers in Mechanical Engineering	3.0	4.3	Q2	Q2	9,051
Frontiers in Medical Technology	3.8	5.5	Q2	Q1	4,506
Frontiers in Medicine	3.0	6.0	Q1	Q1	213,549
Frontiers in Microbiology	4.5	8.5	Q1	Q1	1.2 million
Frontiers in Molecular Biosciences	4.0	8.8	Q2	Q1	100,803
Frontiers in Molecular Neuroscience	3.8	6.8	Q2	Q2	125,396
Frontiers in Nanotechnology	3.8	9.2	Q2	Q1	6,856
Frontiers in Nephrology	-	1.4	-	Q3	828
Frontiers in Network Physiology	3.0	4.4	Q2	Q2	1,773
Frontiers in Neural Circuits	3.0	7.8	Q2	Q1	60,032

Journal	Journal Impact Factor	CiteScore	JIF rank quartile	CiteScore rank quartile	Total citations
Frontiers in Neuroanatomy	2.3	4.3	Q1	Q2	56,245
Frontiers in Neuroergonomics	1.9	3.8	Q3	Q2	1,299
Frontiers in Neuroinformatics	2.5	5.5	Q2	Q1	53,682
Frontiers in Neurology	2.8	5.2	Q2	Q2	311,603
Frontiers in Neurorobotics	2.8	6.1	Q3	Q2	28,597
Frontiers in Neuroscience	3.2	6.6	Q2	Q2	423,978
Frontiers in Nuclear Engineering	-	1.4	-	Q3	442
Frontiers in Nuclear Medicine	1.4	1.8	Q3	Q3	679
Frontiers in Nutrition	5.1	7.9	Q1	Q1	168,226
Frontiers in Oncology	3.3	6.9	Q2	Q1	532,656
Frontiers in Ophthalmology	0.9	1.2	Q4	Q3	1,159
Frontiers in Oral Health	3.1	4.6	Q1	Q1	5,811
Frontiers in Pain Research	2.7	3.9	Q2	Q1	6,090
Frontiers in Pediatrics	2.0	4.3	Q2	Q1	123,633
Frontiers in Pharmacology	4.8	8.9	Q1	Q1	614,358
Frontiers in Photonics	-	3.7	-	Q3	677
Frontiers in Physics	2.1	4.6	Q2	Q1	62,777
Frontiers in Physiology	3.4	7.3	Q1	Q1	467,530
Frontiers in Plant Science	4.8	8.8	Q1	Q1	1 million
Frontiers in Political Science	1.9	3.8	Q2	Q1	5,125
Frontiers in Psychiatry	3.2	6.2	Q2	Q1	306,090
Frontiers in Psychology	2.9	6.3	Q1	Q1	1 million
Frontiers in Public Health	3.4	5.5	Q1	Q1	305,462
Frontiers in Radiology	2.3	3.0	Q2	Q2	1,247
Frontiers in Rehabilitation Sciences	1.9	2.4	Q2	Q2	4,723
Frontiers in Remote Sensing	3.7	6.4	Q2	Q1	4,115
Frontiers in Reproductive Health	2.9	3.7	Q2	Q1	4,399
Frontiers in Research Metrics and Analytics	1.6	4.2	Q2	Q1	4,892
Frontiers in Robotics and AI	3.0	7.3	Q2	Q1	43,692
Frontiers in Sensors	-	6.6	-	Q1	1,229
Frontiers in Signal Processing	2.6	4.7	Q2	Q2	1,314
Frontiers in Sleep	-	0.8	-	Q3	473
Frontiers in Sociology	2.2	3.8	Q1	Q1	14,153
Frontiers in Soil Science	3.7	5.2	Q2	Q2	2,229
Frontiers in Space Technologies	1.3	-	Q3	-	588

Journal	Journal Impact Factor	CiteScore	JIF rank quartile	CiteScore rank quartile	Total citations
Frontiers in Sports and Active Living	2.6	3.8	Q2	Q1	21,084
Frontiers in Surgery	1.8	3.3	Q2	Q2	41,784
Frontiers in Sustainability	2.9	4.8	Q3	Q1	6,278
Frontiers in Sustainable Cities	2.1	5.7	Q2	Q1	8,142
Frontiers in Sustainable Food Systems	3.1	6.2	Q2	Q1	60,776
Frontiers in Synaptic Neuroscience	4.1	8.0	Q1	Q2	17,128
Frontiers in Systems Biology	2.3	2.4	Q2	Q2	885
Frontiers in Systems Neuroscience	3.5	8.3	Q2	Q1	84,557
Frontiers in Toxicology	4.6	6.2	Q1	Q1	6,048
Frontiers in Transplantation	-	0.7	-	Q3	653
Frontiers in Tropical Diseases	-	2.7	-	Q3	2,429
Frontiers in Urology	1.1	1.3	Q3	Q3	445
Frontiers in Veterinary Science	2.9	5.1	Q1	Q1	129,357
Frontiers in Virology	1.6	3.3	Q4	Q3	1,529
Frontiers in Virtual Reality	3.6	8.5	Q1	Q1	11,148
Frontiers in Water	2.8	5.5	Q2	Q2	9,548

#### Partner journals

Acta Biochimica Polonica	1.7	3.4	Q4	Q2	65,666
Acta Virologica	0.8	2.0	Q4	Q3	28,288
Advanced Optical Technologies	3.0	5.4	Q2	Q1	5,138
British Journal of Biomedical Science	4.6	5.8	Q1	Q2	22,887
Eur. Journal of Cultural Management and Policy	0.3	-	-	-	383
Experimental Biology and Medicine	2.7	6.5	Q3	Q1	806,096
International Journal of Public Health	2.4	3.9	Q2	Q2	73,709
Journal of Abdominal Wall Surgery	-	1.3	-	Q3	507
Journal of Cutaneous Immunology and Allergy	0.9	0.8	Q4	Q3	619
Journal of Pharmacy and Pharmaceutical Sciences	4.3	6.5	Q1	Q2	38,931
Oncology Reviews	5.2	3.8	Q1	Q3	6,898
Pastoralism: Research, Policy and Practice	2.9	4.1	Q3	Q1	6,805
Pathology and Oncology Research	2.3	4.6	Q2	Q2	49,573
Public Health Reviews	4.1	5.2	Q1	Q1	18,304
Spanish Journal of Soil Science	2.0	2.9	Q3	Q2	1,324
Transplant International	3.0	4.9	Q1	Q2	123,138



## Frontiers' journals rank most cited in 16 Journal Citation Reports categories

Many of our journals rank among the most influential in their fields. The graphs on this page show ranking of the top five most cited journals in their categories as released by the Web of Science Group in 2025. The bars represent the total number of citations received in 2024 for articles published in 2022 and 2023, with Frontiers' journals in blue.

### Clinical Neurology

1st	Frontiers in Neurology	14,908
2nd	Journal of Affective Disorder...	12,821
3rd	Neurology	9,038
4th	Brain	8,464
5th	Alzheimers & Dementia	8,291

### Developmental Biology

1st	Frontiers in Cell and Develo...	15,796
2nd	Developmental Cell	3,176
3rd	Development	2,611
4th	Seminars in Cell & Develop...	2,456
5th	Placenta	1,001

### Endocrinology & Metabolism

1st	Frontiers in Endocrinology	29,283
2nd	Diabetes Care	10,943
3rd	Cell Metabolism	7,813
4th	Journal of Clinical Endocrin...	6,974
5th	Cardiovascular Diabetology	6,571

### Engineering, Biomedical

1st	Frontiers in Bioengineering...	18,894
2nd	Bioactive Materials	17,032
3rd	Computers in Biology and...	15,090
4th	Advanced Healthcare Mater...	14,617
5th	Acta Biomaterialia	13,203

### Genetics & Heredity

1st	Frontiers in Genetics	14,689
2nd	Genes	12,975
3rd	Nature Genetics	10,629
4th	bmc Genomics	5,978
5th	Molecular Therapy	5,492

### Geriatrics & Gerontology

1st	Frontiers in Aging Neurosci...	10,384
2nd	bmc Geriatrics	6,908
3rd	Ageing Research Reviews	5,969
4th	Journal of Cachexia Sarcop...	4,171
5th	Nature Aging	3,549

### Immunology

1st	Frontiers in Immunology	81,785
2nd	Frontiers in Cellular and Inf...	15,685
3rd	Vaccines	13,406
4th	International Immunophar...	12,607
5th	Journal for Immunotherapy...	9,896

### Marine & Freshwater Biology

1st	Frontiers in Marine Science	14,243
2nd	Marine Pollution Bulletin	11,848
3rd	Aquaculture	9,396
4th	Fish & Shellfish Immunology	5,685
5th	Aquatic Toxicology	2,393

### Microbiology

1st	Frontiers in Microbiology	41,351
2nd	Microorganisms	22,241
3rd	Frontiers in Cellular and Inf...	15,685
4th	Microbiology Spectrum	15,426
5th	Nature Reviews Microbiology	10,018

### Neurosciences - Series Grouped

1st	Frontiers in Neuroscience J...	44,691
2nd	Frontiers in Neurology	14,908
3rd	Brain Sciences	9,452
4th	Brain	8,464
5th	Molecular Psychiatry	8,452

### Neurosciences

1st	Frontiers in Neurology	14,908
2nd	Frontiers in Neuroscience	13,285
3rd	Frontiers in Aging Neurosci...	10,384
4th	Brain Sciences	9,452
5th	Brain	8,464

### Pharmacology & Pharmacy

1st	Frontiers in Pharmacology	40,327
2nd	Pharmaceutics	30,361
3rd	Biomedicines	25,526
4th	Biomedicine & Pharmacoth...	24,325
5th	Antibiotics-Basel	16,168

### Physiology

1st	Frontiers in Physiology	14,422
2nd	Journal of Physiology-Lond...	2,519
3rd	Physiological Reviews	2,466
4th	Pesticide Biochemistry and...	2,399
5th	American Journal of Physiol...	2,273

### Plant Sciences

1st	Frontiers in Plant Science	44,049
2nd	Plants-Basel	31,480
3rd	Agronomy-Basel	20,991
4th	Journal of Ethnopharmacol...	12,804
5th	Phytomedicine	11,199

### Psychiatry

1st	Frontiers in Psychiatry	16,106
2nd	Journal of Affective Disorder...	12,821
3rd	Molecular Psychiatry	8,452
4th	bmc Psychiatry	6,308
5th	Translational Psychiatry	5,451

### Psychology, Multidisciplinary

1st	Frontiers in Psychology	36,346
2nd	Current Psychology	7,729
3rd	Computers in Human Beha...	6,510
4th	Behavioral Sciences	3,834
5th	Current Opinion in Psychol...	2,662



## Frontiers' journals rank most cited in 21 CiteScore categories

The graphs on this page show ranking of the top five most cited journals in their CiteScore categories, as released by Scopus, Elsevier, in 2025. The bars represent the number of citations received from 2021 to 2024 for articles published in the same four years, with Frontiers' journals in blue.

### Dental Assisting

1st	Frontiers in Dental Medicine	752
2nd	European Endodontic Jour...	517
3rd	West China Journal of Stom...	339
4th	Annals of Dental Specialty	301
5th	Stomatological Bulletin	45

### Dental Hygiene

1st	Frontiers in Dental Medicine	752
2nd	Oral Health and Preventive...	740
3rd	European Endodontic Jour...	517
4th	Journal of Dental Hygiene	325
5th	Annals of Dental Specialty	301

### Developmental Biology

1st	Frontiers in Cell and Develo...	92,581
2nd	International Journal of Biol...	20,915
3rd	Developmental Cell	14,472
4th	Development (Cambridge)	9,607
5th	Seminars in Cell and Develo...	9,075

### Endocrinology, Diabetes and Metabolism

1st	Frontiers in Endocrinology	77,097
2nd	Frontiers in Nutrition	62,365
3rd	Diabetes Care	40,683
4th	Journal of Clinical Endocrin...	28,337
5th	Metabolites	27,940

### Genetics (Clinical)

1st	Frontiers in Genetics	55,811
2nd	Genes	45,323
3rd	Nature Reviews Genetics	16,673
4th	Plos Genetics	13,721
5th	Genetics in Medicine	11,053

### Global and Planetary Change

1st	Frontiers in Marine Science	48,982
2nd	Land	47,519
3rd	Global Change Biology	40,400
4th	International Journal of Ap...	26,791
5th	Nature Sustainability	25,190

### Histology

1st	Frontiers in Bioengineering...	57,091
2nd	Journal of Extracellular Vesic...	11,281
3rd	Bone	8,696
4th	Microscopy Research and T...	5,892
5th	Histopathology	5,486

### Immunology and Allergy

1st	Frontiers in Immunology	268,044
2nd	International Immunophar...	40,864
3rd	Pathogens	38,534
4th	Journal for Immunotherapy...	34,264
5th	Immunity	29,731

### Immunology

1st	Frontiers in Immunology	268,044
2nd	Vaccines	67,553
3rd	Cell Death and Disease	57,507
4th	Frontiers in Cellular and Inf...	52,177
5th	Blood	46,444

### Microbiology (Medical)

1st	Frontiers in Microbiology	137,906
2nd	Microorganisms	80,965
3rd	Clinical Infectious Diseases	71,223
4th	Antibiotics	54,827
5th	Frontiers in Cellular and Inf...	52,177

### Microbiology

1st	Frontiers in Microbiology	137,906
2nd	Foods	136,377
3rd	Microorganisms	80,965
4th	Antibiotics	54,827
5th	Frontiers in Cellular and Inf...	52,177

### Neurology (Clinical)

1st	Frontiers in Neurology	51,430
2nd	Neurology	32,575
3rd	Brain	27,746
4th	Stroke	24,932
5th	Alzheimer'S and Dementia	24,470

### Neurology

1st	Frontiers in Neurology	51,430
2nd	Neuroimage	32,008
3rd	Journal of Neurology	21,212
4th	Ageing Research Reviews	20,834
5th	Journal of Neuroinflammati...	19,372

### Neuroscience (All)

1st	Frontiers in Neuroscience	46,052
2nd	Peerj	35,134
3rd	Brain Sciences	34,754
4th	Neuron	25,478
5th	Nature Neuroscience	25,282

### Neuroscience Subject Area

1st	Frontiers in Neuroscience J...	146,261
2nd	Neurocomputing	69,797
3rd	Cell Death and Disease	57,507
4th	Frontiers in Neurology	51,430
5th	Molecular Psychiatry	39,594

### Oceanography

1st	Frontiers in Marine Science	48,982
2nd	Marine Pollution Bulletin	47,366
3rd	Ocean and Coastal Manage...	15,291
4th	Marine and Petroleum Geol...	15,174
5th	Journal of Geophysical Res...	11,121

### Pediatrics, Perinatology and Child Health

1st	Frontiers in Pediatrics	28,446
2nd	Children	24,721
3rd	Pediatrics	24,580
4th	Jama Pediatrics	15,075
5th	Pediatric Research	12,230

### Pharmacology (Medical)

1st	Frontiers in Pharmacology	138,968
2nd	Vaccines	67,553
3rd	Antibiotics	54,827
4th	Cochrane Database of Syst...	24,459
5th	Rheumatology	22,032

### Pharmacology

1st	Frontiers in Pharmacology	138,968
2nd	Biomedicine and Pharmaco...	80,505
3rd	Vaccines	67,553
4th	Journal of Ethnopharmacol...	48,869
5th	International Immunophar...	40,864

### Psychiatry and Mental Health

1st	Frontiers in Psychiatry	59,327
2nd	Journal of Affective Disorde...	52,616
3rd	Molecular Psychiatry	39,594
4th	Alzheimer'S and Dementia	24,470
5th	Translational Psychiatry	22,784

### Psychology (All)

1st	Frontiers in Psychology	137,677
2nd	Current Psychology	34,036
3rd	Computers in Human Beha...	31,058
4th	Personality and Individual D...	18,360
5th	Appetite	15,614

# Our commitment to quality and research integrity

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Quality and integrity are built  
by design into everything we do  
to safeguard academic research.



# Rigorous and transparent peer review – our three-pronged approach

When research undergoes rigorous expert review, it builds a foundation of trust in the scientific record that accelerates scientific progress and societal impact.

Our distinctive approach to research integrity and quality is three-pronged: we combine human expertise on our editorial boards and our in-house teams

with cutting-edge AI and technology, enabling us to publish at scale while continually raising standards. This approach has created the most advanced peer review and research integrity process in the publishing industry, with measurable quality outcomes.



Editorial boards

Our editorial boards are made up of leading researchers who bring deep expertise to the peer review process, ensuring rigorous assessment of each article.



Our research integrity and review teams

Our research integrity team, one of the largest in the industry, has more than a decade of experience in assessing the quality and integrity of manuscripts before, during, and after peer review, safeguarding the credibility of published work. Simultaneously, our peer review team supports handling editors, reviewers, and authors at every stage of the review process.



AI and technology

Our advanced artificial intelligence technology performs a total of 44 quality checks on each submitted manuscript, all of which would be impossible at scale through human effort alone. AI is a partner in the process, not a replacement, and always works in conjunction with human validation.

“Research integrity is in our DNA, it’s embedded in everything we do, in every stage of the process. It’s not just a tick-box exercise – we’re here to define and defend the pillars of scientific integrity.”



**Elena Vicario**

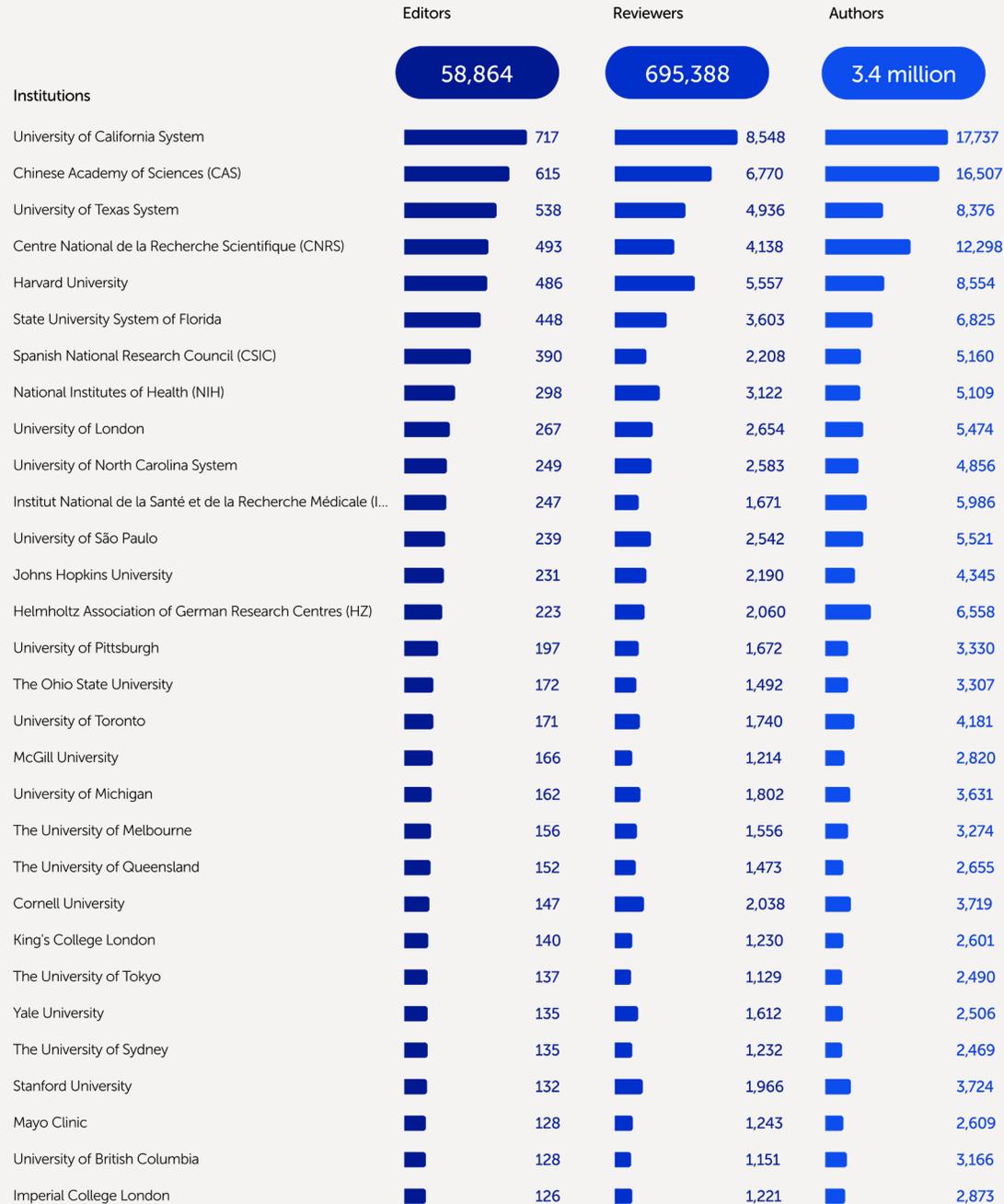
Director of Research Integrity

# Our expert editorial boards

The first aspect in our three-pronged quality approach is our expert editorial boards. Comprised of leading researchers from the world's top institutions, they bring a depth of expertise to the peer review process.

Our journals' Field Chief Editors are renowned scientists, empowered to drive progress and shape the future of their fields. They are joined by active researchers as Editors and Reviewers, safeguarding quality and integrity in their journals and sections.

In 2025 our global research community reached 58,864 Editors, 695,388 Reviewers, and 3.4 million Authors across 164 countries.



“The offer that we make to authors is that your manuscript will be scrutinized at the highest possible standard when you submit to Frontiers. And it’s up to me and senior people in the editorial team to make a judgement on whether each manuscript is high enough quality for publication.”



**Martin Siegert**

University of Exeter  
Field Chief Editor, Frontiers in Environmental Science

# Our research integrity and review teams

The second aspect of our approach to scientific excellence at scale is the work of our expert in-house teams.

At the core of this system is our research integrity team, one of the largest and most experienced in publishing. Established in 2016, this team safeguards the integrity of the Frontiers scientific record with quality checks conducted before, during, and after peer review.

Our handling editors, reviewers, and authors are supported during peer review by our dedicated review professionals. Through their role they improve the quality standards of each manuscript that goes through peer review. They also ensure high quality standards for the review process itself, promoting a constructive discussion between reviewers and authors.



## Guardians of quality and integrity

As global research output grows, so does the scale and sophistication of misconduct affecting the publishing industry, including organized fraud networks and paper mills. For this reason, we created an auditing division in 2022.

It proactively analyses patterns across submissions, authors, and publications, uncovering systematic manipulation and networks of large-scale fraud across the full scientific record. We now have the most advanced detection process for fraudulent manuscripts in the publishing industry.

In 2025, this work led the team to uncover an organized network of researchers engaging in citation manipulation. The investigation

identified more than 4,000 papers published by the group across multiple publishers, and resulted in the retraction of 122 articles by Frontiers. It prompted collaboration with other affected publishers to help safeguard the integrity of the scientific record at large.



“Research integrity and quality is a continuous thread. It’s not something that only happens at the beginning of our peer review process. It’s a priority as we move papers through all those steps, right through to post-publication vigilance.”



**Renee Devonish**

Peer Review Portfolio Manager

# Our collaboration in industry-wide research integrity

Our research integrity team takes an active role in the publishing landscape, sharing knowledge and contributing to cross-publisher initiatives.

Through our COPE membership, Frontiers actively contributes to the advocacy and promotion of ethical publishing practices. Joining our existing representatives Marie Souliere (an elected COPE council member) and Simone Ragavooloo (COPE advisor), our Director of Research Integrity Elena Vicario was appointed as a COPE advisor in 2025.

We're also active members of the International Association of Scientific, Technical & Medical Publishers (STM). This collaborative group brings together publishing leaders to set

higher standards for research ethics and safeguard the academic record. In 2025 Marie Souliere, our Head of Editorial Ethics and Quality Assurance, joined STM's Research Integrity committee and Anna Rabitti, Research Integrity Portfolio Manager, joined STM's Standards & Technology Committee.

## Raising the bar through our policy work

Frontiers' policies continue to set the standard for responsible and ethical publishing.

In 2025 we published an industry first policy to counteract [fast-churn science](#) and new [guidelines for reviewers and editors](#) in their use of AI during the peer review process.

## ACROSS 2025 OUR RESEARCH INTEGRITY TEAM PARTICIPATED IN HIGH-PROFILE EVENTS, INCLUDING

- Japan Open Science Summit
- Asian Council of Science Editors (ACSE)
- ENRIO conference
- COPE integrity week
- International Research Integrity conference in Sydney



“We were the first publisher to say it’s not enough to look at the individual manuscript in the current research integrity climate – you have to look at the bigger picture and the patterns across all submissions and all journals. And it’s great that we now connect with other research integrity professionals, tell people what we do, and share knowledge with other publishers.”



**Catriona Leslie**

Research Integrity Auditing Manager

“What I really love is that Frontiers has implemented a set of automatic quality checks. So a paper submitted undergoes more than 40 mainly AI-based checks before it’s actually on the desk of any editor.”



**Thomas Hartung**

Bloomberg School of Public Health, Johns Hopkins University  
Field Chief Editor, Frontiers in Artificial Intelligence

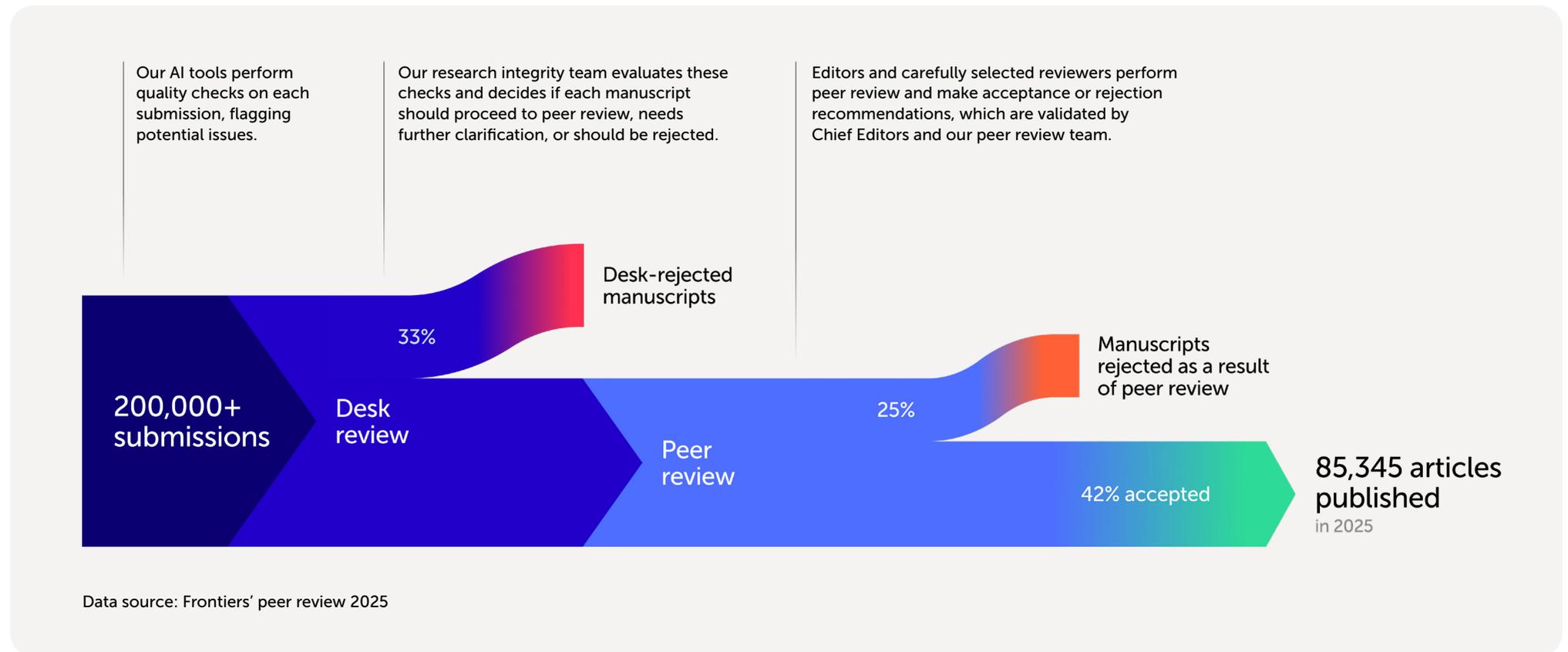
# Our research integrity team's unique support

Each year, our in-house research integrity team prevents thousands of manuscripts that do not meet Frontiers' quality standards from entering peer review. This early-stage intervention allows editors and reviewers to focus their time on strengthening high-quality research and represents the most advanced detection process for sub-standard and fraudulent manuscripts in the industry.

As shown in the graph below, of the manuscripts submitted in 2025, a total of 42% were accepted

across all Frontiers' journals, while 58% were rejected. In 2025 more than half of those rejections were carried out by our research integrity team before the manuscript reached the peer review stage.

Rejection rates across Frontiers' journals vary depending on field and maturity of journals and can reach up to 75% in some fields.



# AI that protects the quality of science

At Frontiers, we approach artificial intelligence with a clear principle: innovation must strengthen research quality.

Forming the third prong in our approach to quality, our AI systems are designed to support and enhance human judgement, not replace it.

AIRA, our Artificial Intelligence Review Assistant built in-house, continues to evolve as an integral part of our quality assurance operations.

Working alongside editors, reviewers, and research integrity specialists, AIRA helps identify risks, surface patterns, and apply consistent checks at scale, enabling human experts to focus on evaluation, decision-making, and improvement of high-quality research.



## Responsible AI governance

In 2025 we launched our framework for responsible AI governance.

Shaped by our hands-on experience developing AI tools and aligned with leading international standards, including those set by the OECD, UNESCO, NIST, ISO, and the EU, the framework is built around six core pillars.

- Transparency and accountability
- AI literacy and capacity building in research
- Ethics and integrity guardrails
- Equity and access governance

- Community engagement and researcher feedback
- Advocacy and policy leadership

By translating global AI standards into a research and publishing context, these six pillars make responsible AI principles practical, actionable, and relevant for stakeholders across the research ecosystem.

Every AI tool we build and use at Frontiers is governed by this framework, ensuring transparency, ethical use, and clear human oversight at every stage.



## A roadmap for responsible innovation with AI

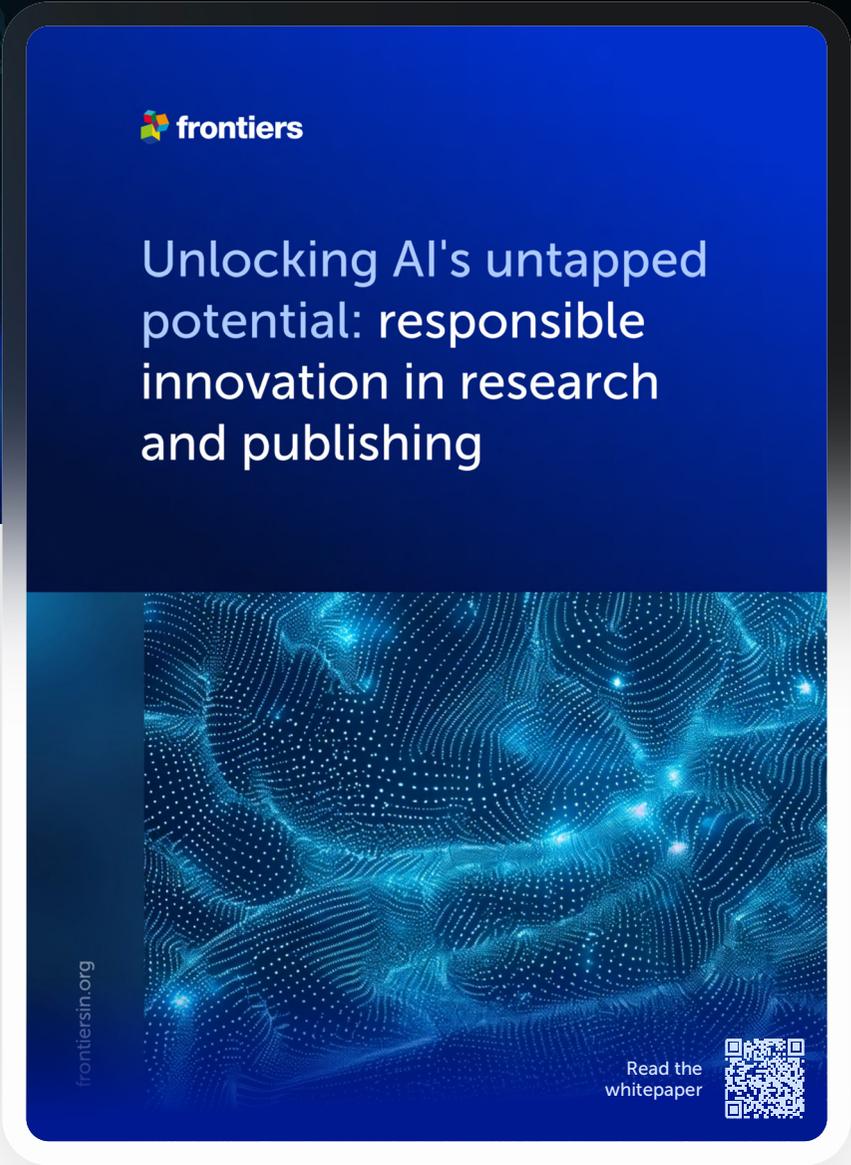
Frontiers set out a clear position on the role of artificial intelligence in research and publishing with the publication of a whitepaper, [Unlocking AI's untapped potential: responsible innovation in research and publishing](#).

Informed by a global survey of the research community, the whitepaper examined how AI is being adopted across disciplines and what this means for research quality, integrity, and trust.

We addressed both the promise and the responsibility that comes with AI.

The report reinforces the importance of shared standards, oversight, transparency, and accountability as AI becomes embedded across the research lifecycle.

Beyond identifying trends, the paper translated insight into action, setting out practical recommendations for researchers, publishers, institutions, funders, and policymakers.



## Strengthening our quality defenses

AIRA already performs more than 40 quality checks as standard on each submitted manuscript – on authors, manuscript content, and the review process. These checks are being refined all the time, fed by knowledge from our research integrity and auditing teams.

In 2025 we further strengthened the industry-leading research integrity system that AIRA supports. Building on our established

papermill detection capabilities, we integrated new industry standards this year, including Cactus Communications' Paperpal Preflight and Clear Skies' Papermill Alarm and Oversight.

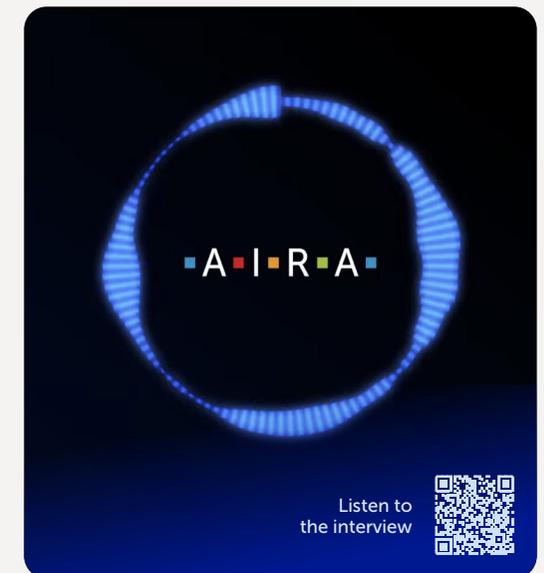
These enhancements significantly reinforce our multilayered defenses and position Frontiers' platform as the strongest in papermill detection across the publishing industry.

## Getting to know our digital teammate

At a time when many question AI's role in science, we continue to lead responsibly by treating AI as a partner, not a replacement.

For Peer Review Week 2025, we hosted a virtual conversation with our AI Review Assistant, AIRA. Part of the team since 2018, AIRA supports and builds upon the work of our in-house teams and continues to evolve as a responsible partner in quality assurance.

In this one-of-a-kind interview, AIRA reflects on how humans and AI can work side by side to strengthen quality, integrity, and trust in publishing.



# An efficient process, delivering quality at scale

By combining the speed and power of AI with human expertise and a rigorous expert review, we provide a process that safeguards the quality of published articles while remaining efficient.

Thanks to this, our average acceptance time is 96 days.

96 days

2025 average acceptance time



# Our commitment to quality is measurable

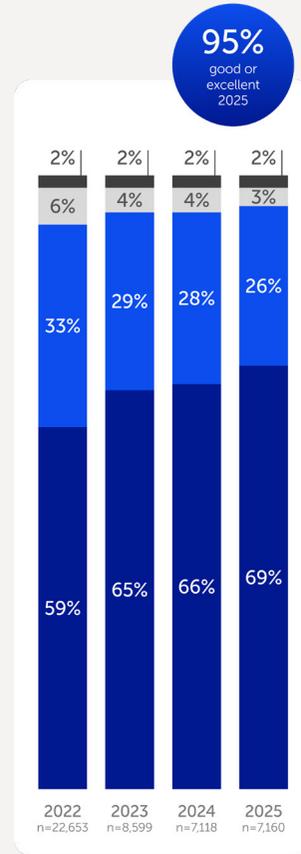
Our dedication to quality and rigor delivers measurable results. We ask our editors, reviewers, authors, and readers to hold us accountable, and in 2025 this commitment translated into strong community validation alongside sustained citation performance.

Each year we ask thousands of researchers using our website to rate the quality of our articles, peer review, and editorial boards. More than 95% rate our services as good or excellent.

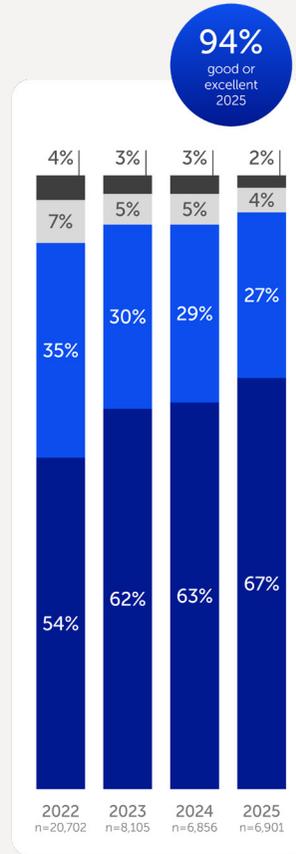


Please rate Frontiers on the quality of our:

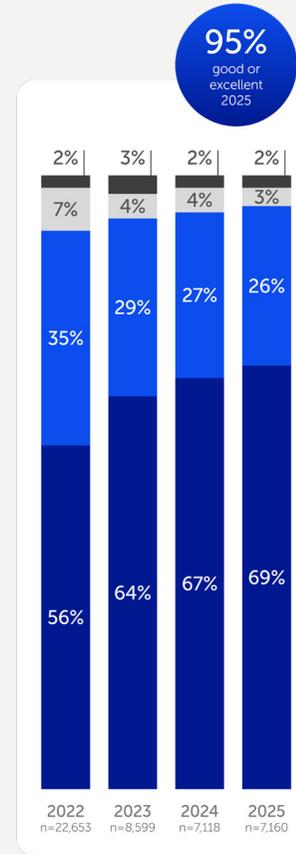
Articles



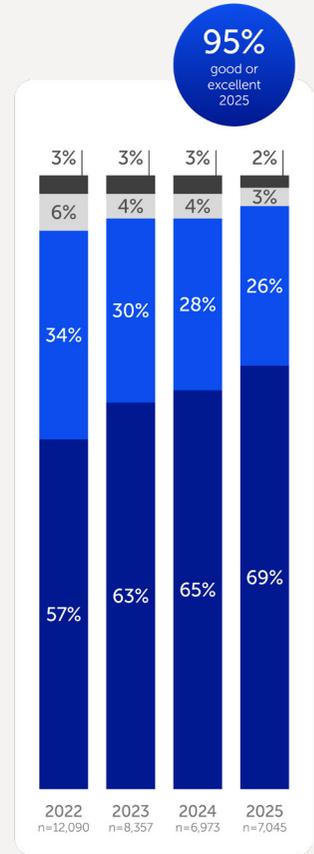
Peer review



Editorial boards



Overall



● Excellent ● Good ● Average ● Poor

Data source: Frontiers' surveys



## You rated our peer review as excellent

Our unique approach provides a peer review process that not only safeguards the quality of published articles but delivers a high-quality publishing experience for our research community.

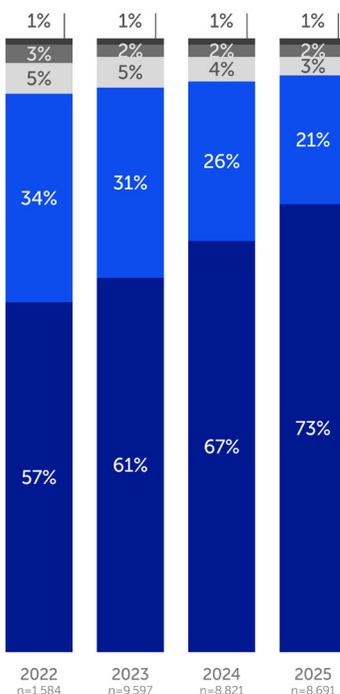
In 2025 we asked more than 100,000 accepted Authors, Handling Editors, and Reviewers how they would rate their recent experience of the process. Over the past four years, more and more have rated the experience as excellent, now reaching 73% of authors.

### Published author

How would you rate your overall experience from submission to publication of your article?

94%

good or excellent 2025

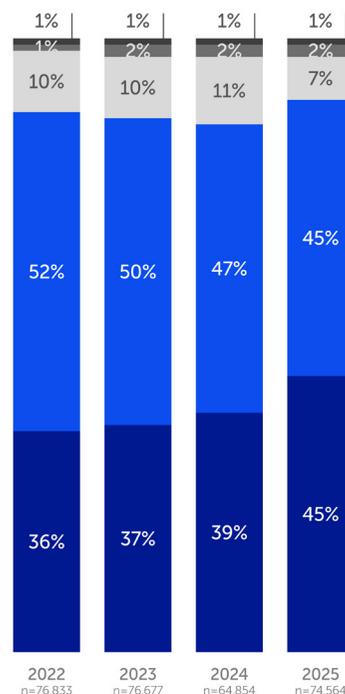


### Reviewer

How would you rate your experience of being a reviewer on this manuscript?

90%

good or excellent 2025

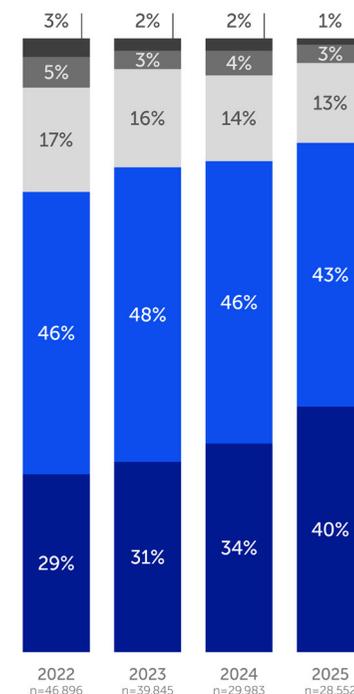


### Handling editor

How would you rate your experience of being an editor on this manuscript?

83%

good or excellent 2025



● Excellent ● Good ● Average ● Below average ● Poor

Data source: Frontiers' surveys, January to December 2025

# We're champions for open science

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We actively create strong links, partnerships,  
and high profile events to bring the benefits  
of open science to more people



## Science unlocked: why open science is essential for our future

Science shapes every part of our lives, from the medicines we rely on to the food we eat and the health of our planet. But for too long, much of that knowledge has been locked behind barriers.

Hosted by global news network CNBC, Science Unlocked is a new docufilm by Frontiers, which explores why open science matters, how it accelerated life-saving breakthroughs during COVID-19, and why making research openly accessible is essential to solve today's biggest global challenges, from climate change to human health.

The film traces the story of how and why Frontiers was founded and the mission that drives its work, exploring

how removing barriers to knowledge transforms what scientific research can achieve.

By highlighting both the challenges created by paywalls and the opportunities unlocked through open access, Science Unlocked shows how openness is not only expanding who can participate in research, but also accelerating discovery, strengthening decision-making, and turning scientific potential into progress at global scale.

Science Unlocked is hosted and distributed on CNBC, content produced by Acumen Media

[Watch the full video >](#)



Kamila Markram explains how her own frustrating experiences with paywalls as a researcher informed Frontiers' business model.



Idan Segev, Field Chief Editor of Frontiers in Neuroscience, reflects on the speed at which research was shared to find solutions during the COVID-19 pandemic, and what this demonstrates about the power of many minds building on each other's knowledge.



Frontiers' co-founder, Henry Markram, talks about the company's commitment to innovating in every aspect of how research is published and shared, from article level metrics to integrating AI into our quality processes.



Martin Siegert, Field Chief Editor of Frontiers in Environmental Science, discusses the importance of a dialogue between policymakers and scientists to tackle the world's great challenges.

"In order to accelerate innovation and fuel our knowledge economy, we need to make this science openly accessible so we can find solutions and people can live better lives. Healthier lives, more prosperous lives."



**Kamila Markram**

CEO and Co-founder, Frontiers

"People's lives depend on science. Open access publishing is critical in science but it's also fundamental to the future of our planet."



**Martin Siegert**

Field Chief Editor, Frontiers in Environmental Science



**frontiers**  
Planet Prize

## Three prizes of \$1 million for healthy lives on a healthy planet

Maintaining planetary health and mitigating the outcomes of climate change are the biggest challenges humanity faces. We founded Frontiers Planet Prize in 2022 to accelerate understanding of planetary boundaries and scientific solutions to planetary health. In just four years, the prize has become the world's largest scientific competition dedicated to advancing solutions that enable humanity to operate within the nine planetary boundaries. It awards **three prizes of 1 million USD each year** to accelerate and scale up breakthrough research in planetary health.

Each year, nominations are made by the world's foremost universities and institutions. A distinguished jury of 100 climate and earth science experts chaired by Prof Johan Rockström selects champions whose research has the potential for real-world impact.

Now into its fourth edition, Frontiers Planet Prize has awarded \$9.6 million

in prize money to support breakthrough science. Our key scientific partners include the International Science Council, Villars Institute, and Potsdam Institute for Climate Impact Research.

Since launch, the prize has more than tripled its institutional network, expanding from 233 institutions across 27 countries to 735 institutions across 69 countries. The strength of the network is reflected in the participation of 80 institutions from the Times Higher Education World University Rankings Top 100, including all eight Ivy League universities in the United States.

### Making an impact

Frontiers Planet Prize was featured in the media in 26 countries in 2025, including by Thomson Reuters, The Associated Press and the New Yorker, and has been seen by more than 5 million people.

44 winning articles have been cited in more than 400 policy documents, including citations from World Bank, OECD and UN agencies.

The work of International Champions has subsequently been featured at prestigious events including World Economic Forum, COP30, Falling Walls Science Summit, and Science Forum South Africa. It has unlocked millions of dollars in additional funding, directly benefiting hundreds of thousands of people globally.



2025 International Champions Prof Arunima Malik, Prof Zahra Kalantari, and Dr Zia Mehrabi, pictured with prize director Prof Jean-Claude Burgelman, Frontiers CEO and co-founder Dr Kamila Markram, and Chair of Jury of 100 Prof Johan Rockström

### Frontiers Planet Prize: impact to date

**10,000+**  
participating scientists

**735**  
participating universities

**23**  
participating national academies

**62**  
national champions

**10**  
international champions

**\$9.6 million**  
to support their research

“The creation of a world-leading prize that supports science taking a truly holistic view, integrating people and Earth systems at the planetary scale, is unique. Awarding three million-dollar prizes represents a major commitment and offers critical support for our ability to navigate the future, at a moment when caring for the planet in its entirety is essential. The Frontiers Planet Prize is a pioneer in terms of being at the frontier of the science that the world needs right now.”



**Prof Johan Rockström**

Potsdam Institute for Climate Impact Research  
Chairman of the Frontiers Planet Prize Jury of 100



# From breakthrough to impact: **International Champions for 2025**

Our 2025 award ceremony in Villars-sur-Ollon as part of the Villars Symposium recognized 19 National Champions. The three International Champions were awarded USD 3 million collectively to accelerate the real-world impact of their work.

The event brought together leading academics, policymakers, and philanthropists to connect and amplify the transformative impact of the champions' work.



**Prof Arunima Malik**  
The University of Sydney

Recognized for her groundbreaking work in sustainability economics, uncovering the hidden global supply-chain impacts driving carbon emissions, biodiversity loss, and social inequality.



**Prof Zahra Kalantari**  
KTH Royal Institute  
of Technology

Celebrated for her work on integrating nature-based solutions in urban sectors, which explores how cities can reduce emissions through urban greening, reduced energy demands, and promoting sustainable behavior.



**Dr Zia Mehrabi**  
University of  
Colorado Boulder

Honored for his pioneering work on transforming global food systems to restore biodiversity, strengthen resilience, and secure sustainable nutrition for a growing population.

“Winning the prize means a lot to me. First of all, it shows strong recognition that our work can help address climate change. Second, it helps us reach out to more people, not just other scientists but also governments and businesses. Third, it helps us connect with other researchers and experts from diverse backgrounds, sharing the same interests, so that we can turn our solutions into real action.”



**Dr Kok Sin Woon**

Xiamen University Malaysia  
3rd edition National Champion, Malaysia

“The prize is about more than recognition. It’s about connecting science to action, amplifying impact, and joining a network of inspiring researchers tackling planetary boundary challenges worldwide.”



**Prof Peter Macreadie**

RMIT University  
1st edition National Champion, Australia

“Winning the prize is a validation of the hard work that my team and I have done. It will give us the visibility, credibility, and support to do more transformative science to address the critical planetary crisis and the societal challenges we are facing.”



**Prof Zahra Kalantari**

KTH Royal Institute of Technology  
3rd edition International Champion, Sweden

# Frontiers at COP30: where open science accelerates climate action

Each year, the world's leaders meet at the Conference of the Parties (COP) to negotiate policy to address the threat of climate change, with the objective of defining realistic and effective action. COP30 took place in Brazil, on the edge of the Amazon rainforest, at a time when global climate targets were under significant strain.

Frontiers was in attendance and led three panel sessions which highlighted

breakthrough technologies for planetary health and shared real climate solutions from researchers working hands-on with our changing environment.

The sessions featured Frontiers Planet Prize champions from across Latin America, including Prof. Carlos Peres, International Champion in 2023, who shared the significant impact his work has achieved since receiving the prestigious award.



COP30  
**Science driving Amazonian restoration**

Watch the video

## From breakthrough to impact: science driving Amazonian restoration

This session showcased how prize-winning research helped restore 15 million hectares of floodplain ecosystems, revive endangered species, and strengthen livelihoods across 140 communities.

- Dr João Vitor Campos-Silva, Instituto Jurua
- Prof Carlos Peres, University of East Anglia
- Prof Mercedes Bustamante, Universidade de Brasilia
- Dr Mariana Napolitano Ferreira, WWF Brasil
- Prof Andy Purvis, Natural History Museum UK



### Mobilizing science for planetary impact: from breakthroughs to transformations

Science doesn't change the world until people use it. This panel brought together leading researchers to show how open, actionable science can transform entire regions, from the Amazon to fast-growing cities facing climate stress.

- Dr Fabiola S. Rodríguez, Autonomous Metropolitan University.
- Dr João Vitor Campos -Silva, Instituto Juruá
- Dr Ane Alencar, IPAM Amazonia



### Emerging technology solutions for planetary health

This panel explored the emerging technologies featured in the Planetary Health Technologies Report (co-published with the World Economic Forum), that will help restore Earth's stability and speed up global warming solutions.

- Kirsten Dunlop, Climate KIC
- Tonika Sealy-Thompson, Barbados ambassador to Brazil
- Helen Elizabeth Burdett, World Economic Forum
- Prof Johan Rockström, Potsdam Institute for Climate Impact Research, Germany

# Influencing global thinking on open science



Frontiers is a Center Partner with the World Economic Forum, associated to their Center for Frontiers Technologies. As partners, we collaborate on the co-publication of scientific reports, working with chief editors from our global editorial boards for their expertise and insight.



## Emerging Technologies for Planetary Health

Pinpoints solutions positioned to lead nature and climate net-zero resilience strategies, highlights breakthrough science to address nature and climate challenges, and presents deployment strategies with a focus on the planetary boundaries.



## Top 10 Emerging Technologies

Highlights innovations still in their early stages, anticipating emerging technologies that have the potential to reshape industries and societies.

Frontiers Forum virtual events

# Where scientists discuss science-led solutions for humanity's greatest challenges

## Frontiers in Science Deep Dives

This year the Frontiers Forum hosted 11 Frontiers in Science Deep Dive webinars. Modeled on scientific symposia, these events bring researchers, policy experts, and innovators together from around the world to discuss a specific area of transformational science published in our flagship journal, Frontiers in Science, and explore next steps for the field.

In 2025

57 speakers and panelists

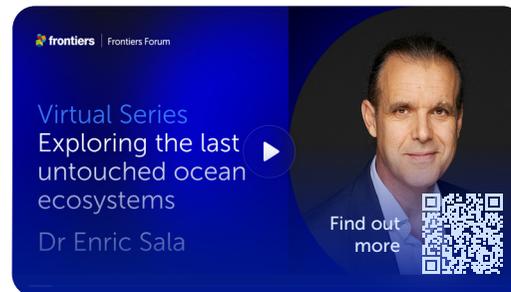
22,583 attendees

118 countries represented

1.8 million video views

## Frontiers Forum virtual keynote

Dr Enric Sala inspired us with a clear call-to-action in his keynote and Q&A session with science presenter Greg Foot: 'If we give the ocean space, it bounces back to life spectacularly faster than we ever imagined.'



The National Geographic Explorer in Residence took us on a journey into the wonders of pristine oceans and discussed his pioneering global conservation efforts to regenerate degraded marine ecosystems. He also highlighted the practical changes we can all make to preserve and protect our oceans.

19.7 million total video views for the Frontiers Forum series

"I was impressed that so many attendees from more than 80 countries participated in our deep dive webinar. It was a true honor to share the floor with such outstanding scientists."



**Dr Rosa Rivero**

Spanish National Research Council (CSIC),  
Frontiers in Science author

"It's a tremendous service to the scientific community to be promoting these panel discussions. They reach hundreds with the event and thousands more with the videos globally."



**Harris Lewin**

Arizona State University  
Frontiers in Science author

# Engaging the next generation of curious minds

Frontiers for Young Minds is our scientific journal for young people.

Reviewers aged 8 to 15 review scientific articles to ensure that they are readable and suitable for their peers around the world. Articles are submitted by some of the world's most recognized scientists, including Nobel Prize Laureates.

Frontiers for Young Minds is free for all to access and read, and the articles have been read by tens of millions of children and their families internationally.

The journal is published in English, Hebrew, Arabic, Chinese, and French.

**10,500+**  
young reviewers

**785**  
science mentors and editors in 65 countries

**1,830**  
total published articles

**60+ million**  
total views and downloads

**62+ million**  
social media impressions in 2025

## Awards and recognition for Frontiers for Young Minds in 2025



**ALPSP Impact Award 2025**, celebrating significant initiatives or projects within scholarly communication and academic research that are making a positive difference.



**2025 EPIC Awards silver prize** for Excellence in Magazines, from the Society of Scholarly Publishing.



**Special mention in the Digital Reading Experience Award 2025** from Bologna Children's Book Fair: "a groundbreaking science engagement platform that redefines academic publishing."





### Young minds exploring emerging technologies

In 2025 we launched a new collection in partnership with the World Economic Forum focused on their Top 10 Emerging Technologies of 2024 report.

“These emerging technologies are going to be part of the future, but that future will be shaped by people. This collection has been crafted with and for the leaders of tomorrow and we hope that it sparks curiosity – for younger minds to ask questions, to think critically, and to imagine the possibilities the future holds.”



**Ruth Morgan**

World Economic Forum  
Frontiers for Young Minds collection editor

# Our environmental impact

Sustainability is a key focus of everything we do, from providing a digital-first path for researchers to publish, to global initiatives like Frontiers Planet Prize. It's how we'll play our own part toward achieving healthy lives on a healthy planet.

As part of this, we're exploring new ways we can integrate sustainability into our products, daily operations, and communities.

Knowing our carbon footprint is a prerequisite to our sustainability commitment because it provides a clear and measurable starting point: by understanding the specific sources and amounts of greenhouse gas emissions we produce, we can identify key areas for improvement and set realistic targets for reduction. We partner with Plan A to collect, measure, and consolidate our emissions data.

For 2025, our overall carbon footprint measured 12,056 metric tons of carbon dioxide equivalent (tCO<sub>2</sub>e).

## Our carbon footprint

We partner with [Plan A](#) to collect, measure, and consolidate our emissions data. Plan A is certified by TÜV Rheinland and is [Green House Gas Protocol](#) compliant.

Our overall carbon footprint for 2025 measured **12,056 metric tons** of carbon dioxide equivalent (tCO<sub>2</sub>e).



- **Scope 1** - 2.17 tCO<sub>2</sub>e - This corresponds to direct emissions from sources we control, specifically related to fugitive emissions from refrigerant leakage and other similar sources in our main offices.
- **Scope 2** - 293.58 tCO<sub>2</sub>e - This corresponds to indirect emissions associated with purchased electricity and heating in our main offices.
- **Scope 3** - 11,760.19 tCO<sub>2</sub>e - Includes purchased goods and services, business travel, work from home, and emissions related to employee commuting. Emissions related to purchased goods and services have been calculated via spend-based factors for each supplier.

## Emissions breakdown

By gathering emissions data from all our operations, we've established a comprehensive emissions baseline that enables us to monitor and reduce our carbon footprint.



Read the report





## Key insights from 2025 footprint

- Purchased goods and services remain the largest source of emissions, representing over 80% of our total footprint, highlighting the importance of continuing to work closely with suppliers through our responsible business practices and Supplier Code of Conduct.
- Within the purchased goods and services category, digital infrastructure, software, hosting, and IT services remain key emissions hotspots.
- Emissions vary across our office locations due to differences in national electricity mixes.

# Looking to the future

At Frontiers, we see quality and openness as inseparable. Open science is not only about access to published research, but about transparency across the entire research process – from methods and data to peer review and collaboration.

As new technologies reshape and enhance this process, our responsibility as a publisher is to ensure they are used ethically and purposefully. We'll continue to strengthen the safeguards and standards that build trust in the science we publish.

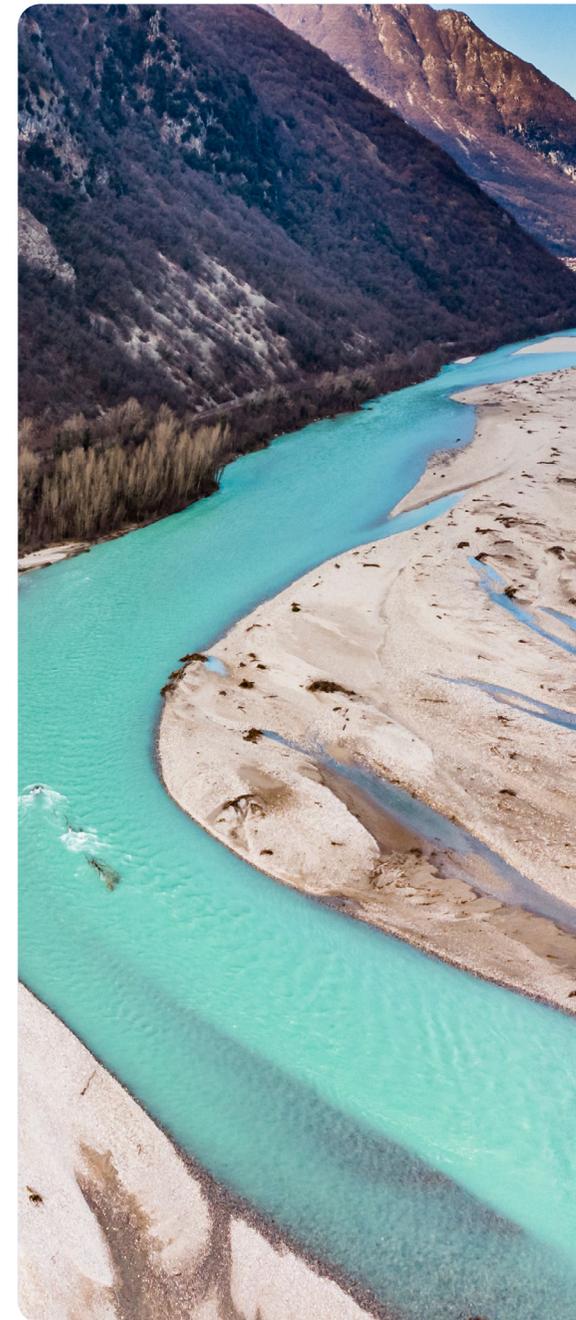
## Innovation and rigor, shaping peer review

We already have the publishing industry's leading, cutting-edge review platform. But for us, innovation and improvement never stand still. In 2026 we're delivering an enhanced experience for our editors, authors, and reviewers.

A new-look platform allows researchers to collaborate like never before during peer review, working together directly on the manuscript. This enables more efficient and more transparent revisions.

We're also enabling reviewers to use our bespoke AI tools within a protected environment to conduct a faster, more complete and high-quality review.

As our own whitepaper set out in 2025, we're committed to offering trusted, secure AI tools and supporting researchers to use them responsibly, unlocking the potential of AI to strengthen the quality and impact of scientific review.



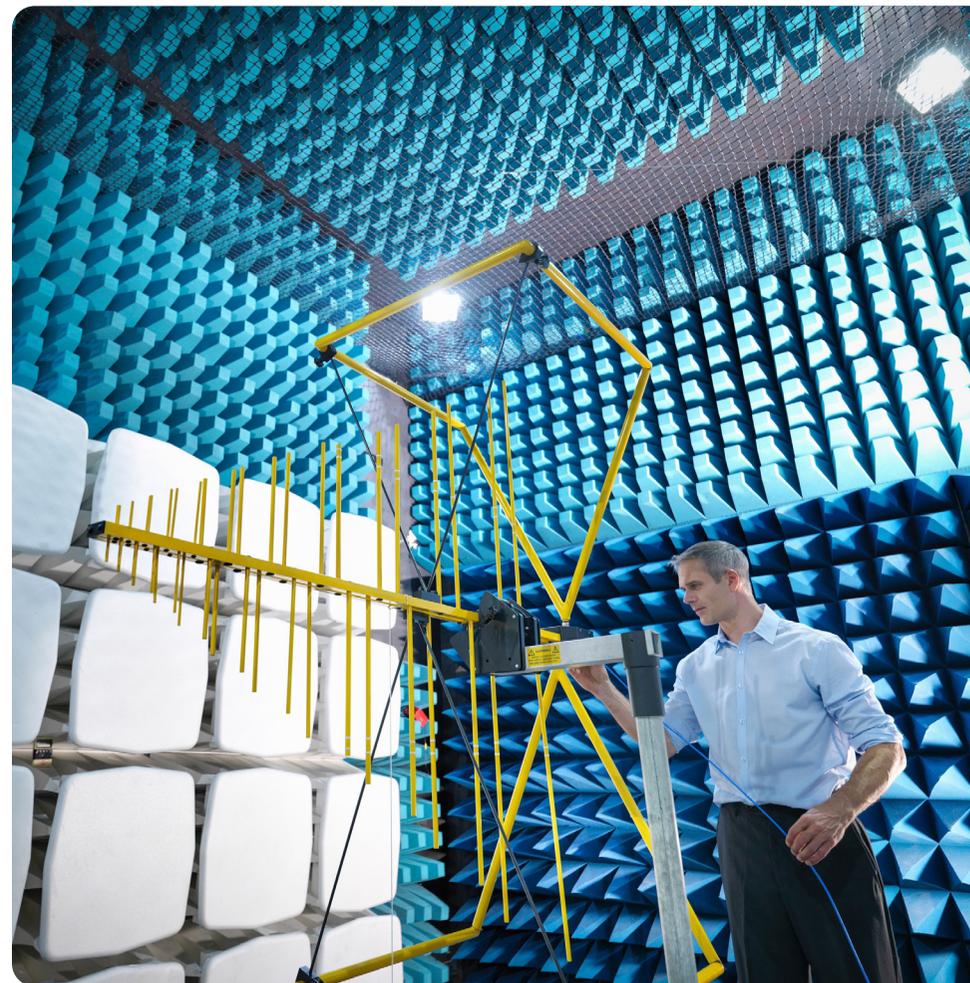


## Putting open science on the global stage

**Frontiers Planet Prize** reaches its fourth edition in 2026 and will award three one-million dollar prizes to a new cohort of International Champions. With 735 institutions taking part, it will be our biggest edition yet and we look forward to recognizing more exceptional planetary science.

**Frontiers Science House** was launched in January 2026 to great acclaim from our partners, participating speakers, and attendees. After an extraordinary week of standing-room-only sessions with speakers from Microsoft, Novartis, CERN, and many other partners across industry, academia, and policy, we have firmly placed transformative science at the heart of the global agenda.

Frontiers Science House will return to Davos in early 2027 to build on this momentum, changing the way science impacts business and society.



## Accelerating science together

We're grateful to our authors, reviewers, editors, and partners for your ongoing trust and collaboration. Together, we are building an open science ecosystem capable of delivering the solutions the world needs, now and in the years ahead.

# About us

Frontiers is one of the world's largest and most impactful research publishers, dedicated to making peer-reviewed, quality-certified science openly accessible. Our mission is to make science open, so that scientists can collaborate and innovate faster to deliver solutions for healthy lives on a healthy planet. With more than three million researchers collaborating across 222 community-led journals covering

1,700 academic disciplines, we provide the scientific community with a trusted, cutting-edge, AI-powered open science platform to rigorously review their work and maximize the dissemination of their discoveries. As an open access pioneer, we actively drive the global transition to open science, working with researchers, universities, educators, policymakers, and businesses. In line with our mission, our initiatives include

Frontiers Science House, an event which puts transformative science at the center of policy discussions at the World Economic Forum Annual Meeting, the Frontiers Planet Prize, which recognizes and rewards breakthrough research that supports efforts to stabilize Earth's ecosystems, and Frontiers for Young Minds, a journal that engages children in the peer review process to inspire the next generation of researchers.

Our employees, known as Frontons, collaborating at two of our offices in Lausanne and London, and at workshops throughout the year.





Where  
scientists  
empower  
society