

Making Research Count! The Transition to Open Science



TRUST



1. intransitive. To have faith or confidence in a person, quality, or thing; to rely on.

2. transitive. To believe (a statement, story, etc.); to rely on the truthfulness or evidence of (a person, his or her senses, etc.).

3. transitive. To commit the safety or safekeeping of (a person or thing) *with* a person or *to* (also †*till*) a person, thing, place, etc.; to entrust.

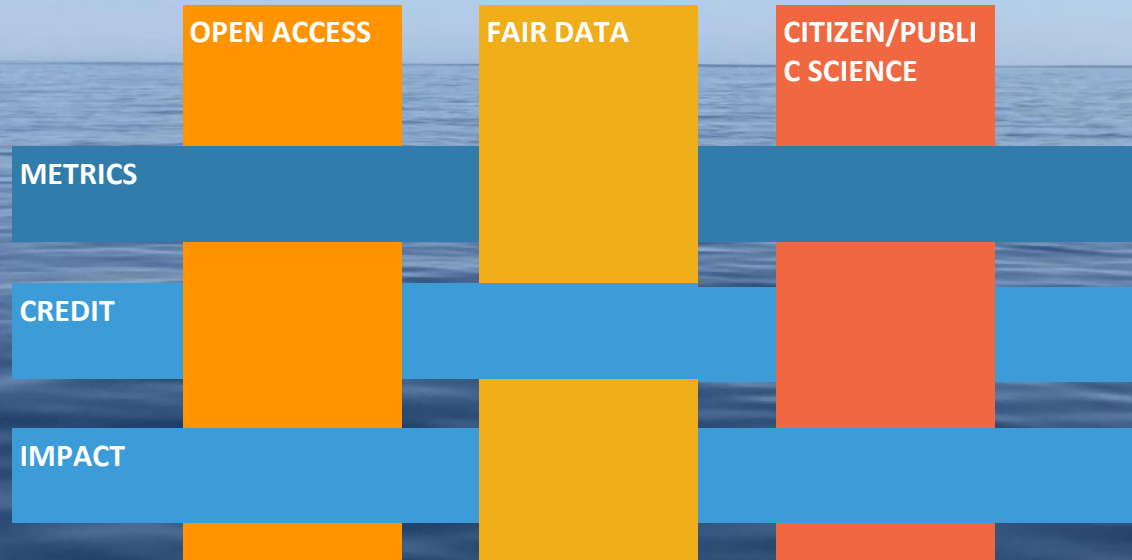
4. transitive. To have faith or confidence in (a person or thing); to rely or depend on.

Source: Oxford English Dictionary



**1. Why Open
Access Matters**

THE OPEN SCIENCE CONVERSATION



OPEN RESEARCH IS THE WAY FORWARD.



Public Access to data and published research allows more voices to join the scientific conversation.


SHARING PROTOCOLS

COMMUNICATING POSITIVE + NEGATIVE RESULTS

MAKING UNDERLYING DATA AVAILABLE + REUSABLE

GLOBAL RESEARCH COMMUNITIES ARE BECOMING INCREASINGLY OPEN

- **Organizations:** a milestone event has been the **UNESCO Recommendation draft on Open Science**
- **Governments and regions:** such as European Commission launched **European Open Science Cloud** for hosting and processing research data to support EU science, aiming to facilitate higher research productivity, new insights and innovations, as well as improved reproducibility and trust in science; another example would be Germany and 10+ other nations signed Transformative Agreements with Springer Nature to fund their country's researchers to publish in Gold Open Access (OA)
- **Italy published the National Plan for Open Science in September 2022**
- **Funders:** such as cOAlition S (an international consortium of research funders and performing orgs), launched **Plan S** that mandate their funded research publications to be made full and immediate OA
- **United States:** OSTP Issues Guidance to make federally funded research freely available without delay (**<https://www.whitehouse.gov/ostp/news-updates/2022/08/25/ostp-issues-guidance-to-make-federally-funded-research-freely-available-without-delay/>**)
- **Universities:** such as University of California (UC) and Springer Nature **signed** a MoU for a transformative agreement to fund their researchers to publish in Gold OA
- **Publishers:** the majority of publishers and journals in the world are dedicated to provide OPEN choice for author



2. Opening the Black Box: Understanding the Publishing Process

WHY PUBLISHERS MATTER AND WHAT THEY DO FOR YOU

Journals connect your research into the global research environment, advancing discovery

Validation & Verification



- Have research independently evaluated by specialists
- Claim and record your results and connect to others

Filtering & Selection



- We read the submissions and manage peer review
- We select relevant and scientifically sound papers
- Journal signals relevance to the reader

Distribution & Amplification



- Get research read, noted and distributed globally
- Find out what others are doing and stay on top of developments

Curation, preservation



- Maintain and defend the version of record
- Ensure high levels of research integrity



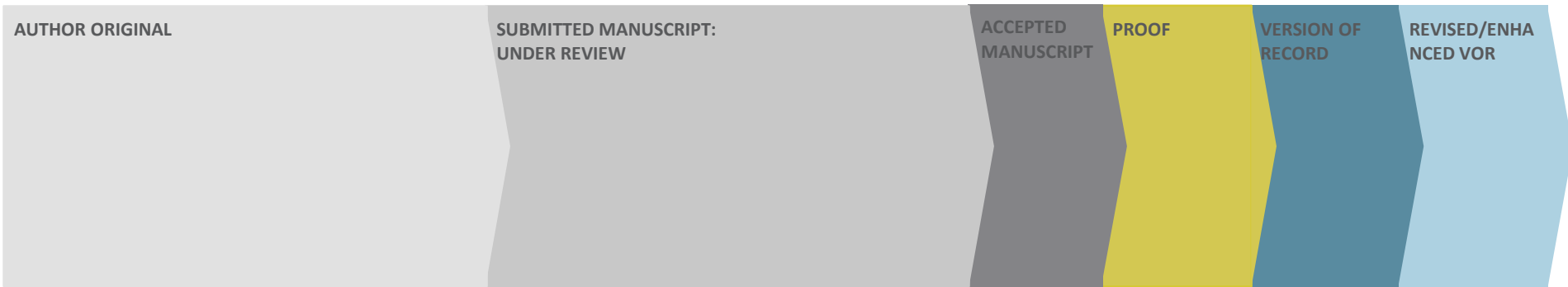


1.5 million-
Submissions

VALUES ADDED DURING PUBLISHING PROCESS - OA and Non-OA

Publishing is more than producing pdf:

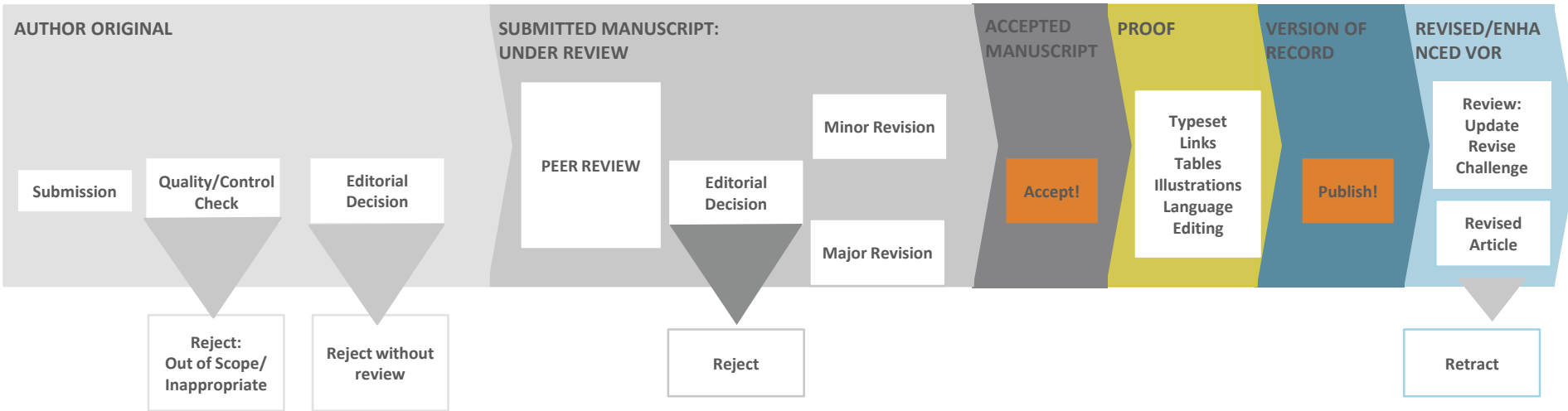
Publishers filter, curate, certify, amplify and distribute reliable research



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MANY RESOURCES (= PEOPLE) INVOLVED IN THE PUBLICATION

Different roles are working hand in hand to produce a Version of Record that can be trusted

Supported by Research Integrity and Policies

Editors/Editorial Assistants

Editors, Publishing Assistants: Assign,
Chase, Check
Peer Reviewers

Editor/
EiC

Production
Production
Editors

Editor/EiC

EiC, Legal,
Research
Integrity

AUTHOR ORIGINAL

SUBMITTED MANUSCRIPT:
UNDER REVIEW

ACCEPTED
MANUSCRIPT

PROOF

VERSION OF
RECORD

REVISED/ENHANCED
VOR

Submission

Quality/Control
Check

Editorial
Decision

PEER REVIEW

Editorial
Decision

Minor Revision

Major Revision

Accept!

Typeset
Links
Tables
Illustrations
Language
Editing

Publish!

Review:
Update
Revise
Challenge

Revised
Article

Reject:
Out of Scope/
Inappropriate

Reject without
review

Reject

Retract

THE PUBLISHING PROCESS IS SUPPORTED AND INFORMED BY OTHER FUNCTION

Many resources and people are invested to support the publishing process

Editorial / Publishing

SELECT ARTICLES
MANAGE THE REVIEW PROCESS
COMMISSION ARTICLES
EDIT ARTICLES
CERTIFY RESEARCH
MANAGE THE VERSION OF RECORD

Production

PRODUCE AND ENHANCE

Technology

ACHIEVE GLOBAL DISTRIBUTION AND REACH

Marketing

AMPLIFY RESEARCH

Sales & Support Business Development

ACHIEVE GLOBAL READERSHIP
DEVELOP NEW MODELS

Group/Management Function

FINANCIAL, LEGAL AND HR SUPPORT

HOW LONG DOES THIS TAKE?

- We read and process every submitted article
- We separate commercial and editorial interest.

The Answer is:

**AS FAST AS POSSIBLE BUT WITHOUT RISKING
SCIENTIFIC INTEGRITY AND ROBUST PROCESSES!**



WE ENCOURAGE POSTING ON PREPRINT SERVERS...

and support citation and open licensing on preprints

- Preprints are versions of an article shared prior to peer review and publication review
- They are made available to speed up review, speed up the academic progress
- However, they are NOT version of records and can be withdrawn and adapted
- We expect that authors will respect our policies on **preprints in** communications with the media

A recent study confirmed:

- More than half (59%) of retracted Covid-19 articles (27/46) remained available as original unmarked electronic documents after retraction (33% as full text and 26% as an abstract only).
(<https://dx.plos.org/10.1371/journal.pone.0258935>)



OPEN SCIENCE SUPPORTS RESEARCH INTEGRITY



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

Washington DC, August 2022

G7 Science Ministers' Communiqué Frankfurt am Main, June 2022

1. Promoting and protecting freedom, integrity and security in science and research

...We believe that openness is fundamental, security is essential and freedom and integrity are crucial...

- To support the drive to open science Springer Nature aims to:

- Develop and implement **policies** which promote open science and transparency
- Have the right **processes and products** in place to make implementing open science methods as easy as possible for authors
- Create **partnerships** in the research community to drive forward industry-wide solutions

4. Ensuring Scientific and Research Integrity in Agency Public Access Policies

...Federal agencies should take steps to ensure that public access policies support scientific and research integrity by transparently communicating to the public critical information, including that which is related to the authorship, funding, affiliations, and development status of federally funded research..

PREDATORY JOURNALS ARE EXPLOITING THE RESEARCHERS NEED TO GET PUBLISHED: More content is not necessarily better

Predatory journals exist, because in the short term, they benefit from volume only



Choose the right journal for your research

In the long term, low quality will have negative effects (for every publisher):

- Attractiveness for good authors will be reduced
- Usage, citations will drop
- Good authors will publish with other publishers
- Trust in the publishing system is eroding
- Need for publishers to build trust that they will keep up good quality and resist the temptation to publish everything



A photograph of a wooden staircase with railings, set in a lush, green forest. The stairs are made of light-colored wood and lead upwards. The railings are made of dark wood. The background is filled with various green plants and trees, creating a dense, natural environment. A white, rounded rectangular frame is overlaid on the left side of the image, containing the text.

3. Key Challenges: Research Assessment and Equity

EQUITY AND INCLUSION: MORE THAN ACCESS TO INFORMATION AND APC FUNDS

Influence policy makers
Media attention
Public engagement in science
Clinical/translational research
Commercial success
Disparities with local research



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Nature announces support for authors from over 70 countries to publish open access

Authors from low income and lower-middle income countries to be able to publish for free in Nature and the Nature research journals

London | Berlin | New York, 9 January 2023
Updated 18th January 2023

From today, primary research from authors from over 70 countries classified by the World Bank as low-income (L3) or lower-middle income economies (L4) will be accepted for publication in either Nature or one of the Nature research journals (e.g. Nature Chemistry, Nature Sustainability) and will be published Gold open access at no cost*. This move recognises that local funding is rarely available for publishing OA in specialist journals like Nature, whose characteristics such as its house editorial teams and low acceptance rates make it difficult for authors from these countries who are less well funded.



nature > nature geoscience > editorials > article

Editorial | Published: 04 August 2022

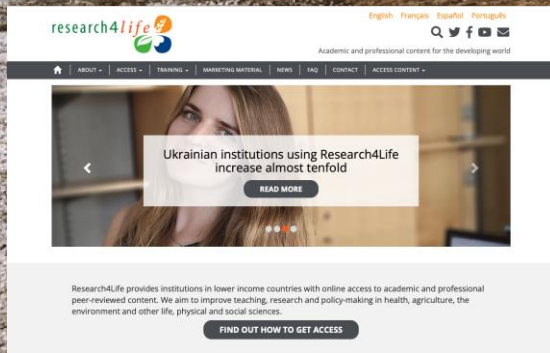
Tackling helicopter research

Nature Geoscience 16, 597 (2022) | Cite this article

2181 Accesses | 67 Altmetric | Metrics

A new ethics framework urges researchers to promote greater equity in global collaborations.

Geoscience is a global exercise, from sampling and fieldwork in remote locations to international collaborations. Helicopter research – also referred to as ‘parachute science’ – is when researchers from higher-income or more privileged settings carry out research in resource-poor settings with limited to no involvement of local communities or researchers. It can occur at any point from the conceptualization of a project to its eventual publication. Such practices perpetuate historical imbalances of power, can be exploitative, and are bad for science.



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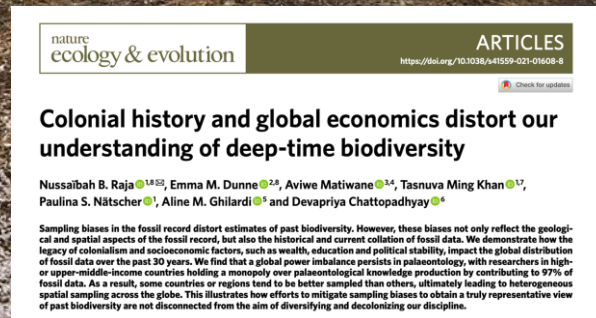
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FIND OUT HOW TO GET ACCESS



nature ecology & evolution

ARTICLES

https://doi.org/10.1038/s41559-021-01608-8

Check for updates

Colonial history and global economics distort our understanding of deep-time biodiversity

Nussaibah B. Raja^{1,8,9†}, Emma M. Dunne^{2,8}, Aviwe Matiwane^{3,4}, Tasnuva Ming Khan^{10,17}, Paulina S. Nätscher¹¹, Aline M. Ghilardi^{12,5} and Devapriya Chattopadhyay¹³

Sampling biases in the fossil record distort estimates of past biodiversity. However, these biases not only reflect the geological and spatial aspects of the fossil record, but also the historical and current collision of fossil data. We demonstrate how the legacy of colonialism and socioeconomic factors, such as wealth, education and political stability, impact the global distribution of fossil data over the past 30 years. We find that a global power imbalance persists in palaeontology, with researchers in high- or upper-middle-income countries holding a monopoly over palaeontological knowledge production by contributing to 97% of fossil data. As a result, some countries or regions tend to be better sampled than others, ultimately leading to heterogeneous spatial sampling across the globe. This illustrates how efforts to mitigate sampling biases to obtain a truly representative view of past biodiversity are not disconnected from the aim of diversifying and decolonizing our discipline.

REDEFINING RESEARCH ASSESSMENT IN AN OPEN SCIENCE CONTEXT

- **Research Articles will continue to play a major role in Research Assessment**, as they verify, validate and disseminate research.
- **Giving credit** to open data, data sharing and peer review requires metrics and metadata, which publishers provide.
- **We support the move away from an assessment of researchers by Impact Factor**
- **We have convened research leaders** from Europe, US and China on roundtables to discuss these issues
- **We discuss this issue** with funders, our Research Advisory Councils and cross stakeholder, **and facilitate global dialogue**



HOW TO DEFINE IMPACT?

- **Influence policy makers:**
research that drives national and international policy.
- **Media attention:**
interest from a community beyond active scientists.
- **Public engagement in science:**
Inspire and engage new audiences
- **Clinical/translational research:**
demonstrate a treatment can be used on humans.
- **Commercial success:**
proving viability of new technologies, spin-off companies, working with industry
- **Discoveries with local impact:**
for example, air pollution, food and water security.
- And many more.....



A close-up photograph of a pomegranate fruit on a branch. The fruit is reddish-brown and has a small hole in its skin. A red arrow with a silver, textured shaft is pointing directly at this hole. To the right of the fruit, a bright red pomegranate flower is in bloom. The background consists of green leaves and branches, slightly out of focus. A white, octagonal frame is overlaid on the left side of the image, containing the title text.

5. Five Misconceptions about Open Access

Misconception 1: OA is just a publishing trend

- **20 years of Open Access** means that the advantages of making research OA are overwhelming
- Springer Nature published now **over 1 million OA articles** - 36% of all articles published in 2021
- In 2020, each OA Springer Nature Article is **cited on average 7.39 times**

However:

- Take up by the research community has been slow: **Researchers are poorly informed** on the benefits of OA and still reliant on IF, despite widespread support of DORA
- **Europe publishes the most OA content (40%)**, while Asia is the biggest user of content (34% of article download)
- Developing **equitable and sustainable open access option remains a major challenge**

Misconception 2: Open Access is expensive and the fees are too high

- The real cost in Open Access in **rejecting articles**: as we have process all submissions, which is timely and staff intensive

For example:

- For Nature Portfolio of journals **we employ 280+ in-house PHD level educated** independent editors
- For other journals peer review is done externally and **managed by degree level educated staff** (eg 70+ for Scientific Reports)
- This is to ensure that our quality is met, and that **we never compromise our editorial/ethical standards**

Misconception 3: Open Access means author pays

- Reputable Open Access publishers ensure **that articles are only accepted on editorial and research merit** according to the aims and scope of the journal.
- Whilst the author is responsible for paying an Article Processing charge, this in most cases is covered and paid by **Open Access Funds set up by the institution - or via transformative agreements**
- In areas with transformative agreements, over 70% of our corresponding authors publish Open Access
- We have **help available** for authors who can't pay and offer waivers to authors from developing countries: €18.4 million+ waived in fees for authors in financial need, including €6.6 million for fully OA articles with corresponding authors based in countries or regions on the World Bank's list of low- and lower middle-income countries.

Misconception 4: Open Access means “free articles”

- **Free to read is not Open Access** - the publishing license (CC-BY) is key to enable widespread sharing and building on the Version of Record
- Open Access Journals have **the same rigorous quality checks** than any other journal
- **Cost of managing the review process**, certifying, enhancing, amplifying research is real
- Evolving **technology and continuous investment**:
we have to work together to maintain high standards in the Open Access Community



Misconception 5: Green open access provides a path to open access

- Researchers **want to access the most reliable and credible final published** version of article (VOR)
- **Green Open Access is not free** - it is financed by the subscription.
- Investigation is needed into the **cost/benefits of the Green OA approach** given the significant investment in institutional repository (IR) infrastructure, the extent to which redundant reproduction and sharing adds value to the research ecosystem as a whole.
- A **lack of standardised metadata and tagging makes Green OA content less findable** and decreases global reach and citation beyond the repository's institution.
- To flip Transformative Journals to full Open Access **75% of the research content needs to be published open access.**
- The Rights Retention Strategy (RRS) by cOAlitionS **slows down this path towards OA without providing a sustainable route for the VOR.**

STAKEHOLDERS ARE MOVING TOWARDS OPEN SCIENCE AND BEYOND THE PAPER

FUNDERS

- Public access provides stakeholder engagement
- Increase impact beyond academy
- Impact locally and globally
- Use the grant agreement to encourage Open Science
- Give credit for openness to increase impact

INSTITUTIONS

- Provide the best research environment to their constituencies
- Education and Research
- Attract talent and partnerships
- Advance research areas
- Comply with funder mandates (Data/OA)

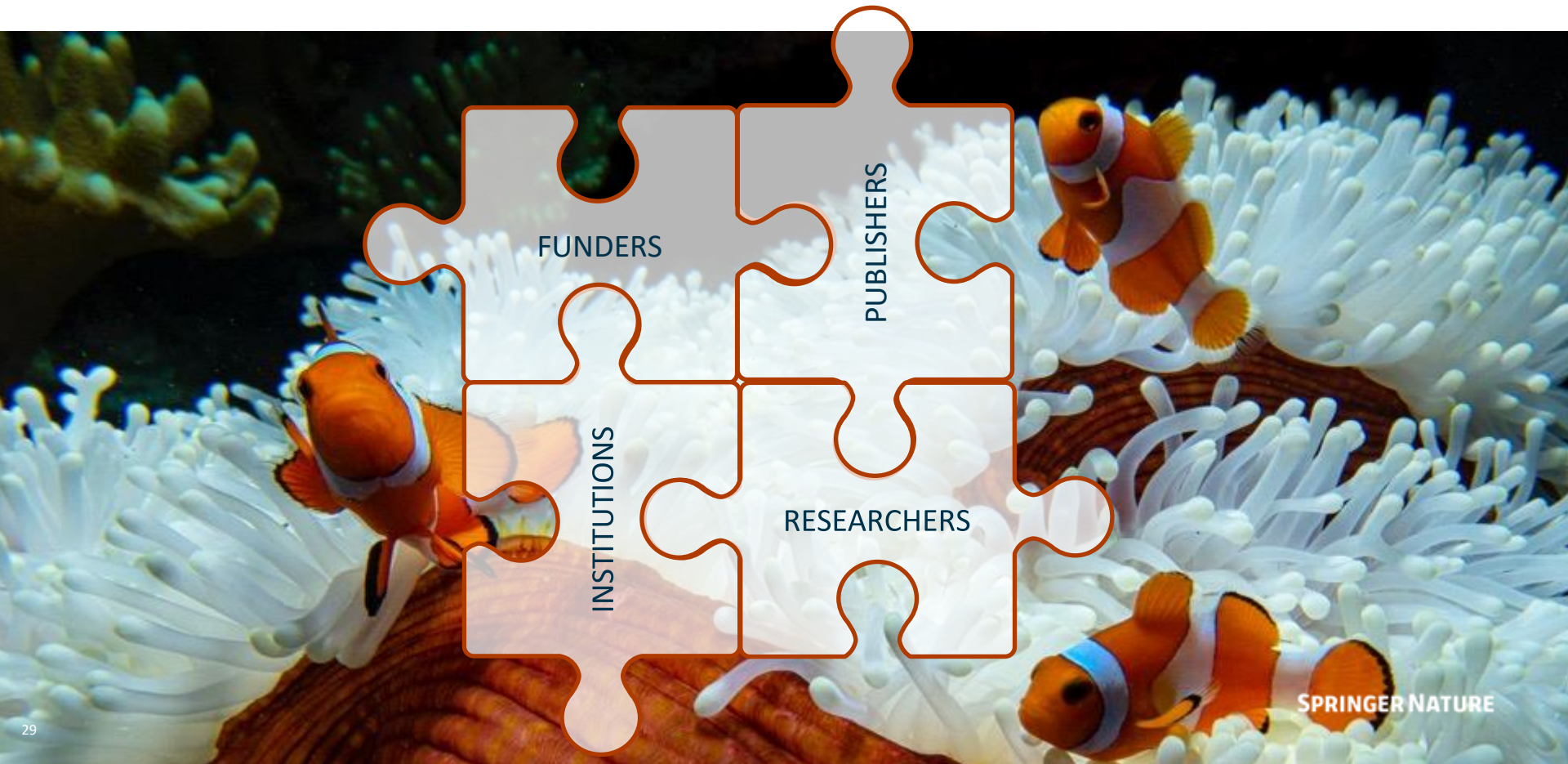
RESEARCHERS

- Research and advance science
- Publish in the journal of the choice
- Get recognition
- Get promotion and increased funding
- Build careers
- Comply with funder mandates (Data/OA)

PUBLISHERS

- Validation and verification
- Select and filter
- Manage and curate Version of Record
- Manage and deliver Peer review
- Integrity and neutrality
- Comply with funder mandates

TO REACH AN OPEN SCIENCE FUTURE, WE NEED COOPERATION BETWEEN ALL STAKEHOLDERS





BY NC

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Thank you

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