Your research can do so much more!

Writing for non-academic audiences to achieve progress towards the SDGs

May 17, 2023

HESI SDG Publishers Compact Fellows
Open Climate Campaign
Open Pharma
Outline

● Welcome and overview - Gerald Beasley, Independent Consultant and former Carl A. Kroch University Librarian, Cornell University

● Why should we write for non-academic audiences? Shane Rydquist, Cactus and Monica Granados, Open Climate Campaign

● How can we write for non-academic audiences? Sally Wilson, Emerald; Tim Koder and Joana Osório, Open Pharma

● Guided participant activity - write your own bullets or summary - Jo Wixon, Wiley and Rebecca Kirk, PLoS

● Resources: including Top Tips from the SDG Publishers Compact Fellows - Vicky Gardner, Taylor & Francis

● Q&A and networking
Format of the event

- Interactive and participatory - please share your ideas, inputs, and experience. We are keen to learn from you!
- We agree to treat each other with respect and courtesy
- The event will be recorded and shared with registrants and others
Learning outcomes from this workshop

• Understand the benefits of writing for non-academic audiences
• Hear how our view of impact is widening
• Learn how to identify your audience and frame your research
• Access tips and resources to write for non-academics and share your key points
DORA is 10!

#DORAat10: DORA’s 10th Anniversary Celebration!

- May 15-19: Decentralized program of local events
- May 16: Two Plenary Sessions *DORA at 10: A look at our history and the bright future of responsible research assessment*

- Registration and local event schedule can be found at https://sfdora.org/dora-10th-anniversary-events/
Helping your work do more and drive progress towards the SDGs

1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals
Introducing the convenors

HESI SDG Publishers Compact Fellows, Open Climate Campaign, Open Pharma
HESI SDG Publishers Compact Fellows

Working collaboratively to support progress towards the SDGs

• Publishers
• Academic Societies
• Faculty
• PhD Students
• Librarians
• Sustainability Experts
Open Climate Campaign

IF WE ARE GOING TO SOLVE THE WORLD’S BIGGEST PROBLEMS, THEN THE KNOWLEDGE ABOUT THEM MUST BE OPEN
Open Pharma

Driving positive change in the communication of pharma-sponsored research

- A collaborative, multi-sponsor, non-profit-seeking project at Oxford PharmaGenesis
- 16 Member and Supporter organizations across pharma and publishing

Transparency (includes open access, trial transparency and data sharing)

Accountability (includes authorship tools and DOIs for data, organizations and funders)

Accessibility (includes preprints, PLS and publication enhancements)

Discoverability (includes metadata, information standardization and green open access)

Website: openpharma.blog
Who can your work benefit?

- General public
- Decision makers in government
- Industry and practitioners (inc healthcare professionals and clinicians)
- Non Governmental Organisations (NGOs), advocacy bodies
- Study participants
- Patients, caregivers, family members patient advocates
- Another group - please note in chat
Why write for non-academics?

Shane Rydquist, Cactus

Monica Granados, Open Climate Campaign
Widens your impact

- Public engagement in science:
  *Inspire and engage new audiences*
- Influence policy makers:
  *Research that drives national and international policy.*
- Media attention:
  *Interest from a community beyond active scientists.*
- 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......
Paves the way for discoverability

Academic Search Engine Optimization (ASEO)

The creation, publication, and modification of scholarly literature in a way that makes it easier for academic search engines to both crawl it and index it.

https://insights.uksg.org/articles/10.1629/uksg.534/
1. Articles are **ranked by relevance** to the terms being searched - In other words, the more search terms for a given topic appear organically in an article, the better its chances of ranking.

2. A **search term used in the title** is weighted more heavily than a search term that appears in the abstract.

3. Unfortunately, search **engines prefer shorter titles** preferred over longer ones.

4. The **specific citations** the author uses in the paper play a large role in and article’s ranking. Citing articles that have high rank will give your article a higher rank.

5. Keep in mind that **author and publication names** in citations matter.

6. Google Scholar favors “**big names**” in its searching system. “Big names” are people and publications that possess extensive expertise in a certain area.

7. Google Scholar is an “**invitation-based search engine**” since it only indexes articles coming from trusted sources.

8. Even if Google Scholar has received the pdf file of an article, it will still search the web for the **different versions of the same file** and then bundle them together in terms of indexing and ranking.

https://openjournalsystems.com/academic-search-engine-optimization
But, not always practical

https://insights.uksg.org/articles/10.1629/uksg.534
Less intimidating with a PLS

Impact of PLS: Metrics and analysis

We repurposed lengthy AAN articles into 250-300-word short-form articles. Busy journal readers were able to stay up to date with new research content. AAN observed an increase in readership for their articles.

Increase in:

- Citations: 42% with short-form articles
- Downloads: 71% with short-form articles
- Altmetric Score: 144% with short-form articles

Including a PLS in open access articles may contribute to increased readership.

Overall, 62% (31/50) of articles with PLS were accessed significantly more often than those without a PLS.

Winter S. et al. Do plain language summaries encourage readers to download your publication? A pilot study. Poster presentation at ISMPP Europe 2022 (25-26 Jan)
Tools that can help

Google Scholar

Stand on the shoulders of giants

Topics from top 20 search results (SERP)

- **germline mutation**: in 11 results
- genetic variant: in 10 results
- risk of breast cancer: in 9 results
- uncertain significance: in 9 results
- pathogenic variant: in 8 results
- history of cancer: in 7 results
- breast cancer: in 6 results
- ovarian cancer: in 6 results
- ovarian cancer-risk: in 6 results

Sub Topics for selected Topic

- [germline vs somatic mutations](#)
- [germline and somatic mutations](#)
- [where do germline mutations occur](#)
- [what are germline mutations](#)
- [germline mutations cancer](#)
- [examples of germline mutations](#)
- [germline mutations examples](#)
- [germline mutations definition](#)
- [germline mutations in cancer](#)
Support the Sustainable Development Goals

SDG related research makes up 30% of research output: Health is the most prolific SDG while Climate Action is the most cited.
Be rewarded for wider impact

https://sfdora.org/resource/rethinking-research-assessment-building-blocks-for-impact/
Align with change in research assessment

- Guide for funders, institutions and researchers on research evaluation
- Reducing reliance upon shorthand criteria (e.g. Impact Factor)
- Wider, balanced assessment across a range of outputs and outcomes
- Library of good practice examples: https://sfdora.org/resource-library/?_resource_type=good-practices
Counter misinformation: Example: Climate skeptics

Which country has the most climate skeptics? | World Economic Forum (weforum.org)

Which of the following comes closest to your views on climate change? | Daily Question (yougov.com)
IN 1974 MOLINA AND ROWLAND FIRST DESCRIBED THE EFFECTS OF CHLOROFLUOROMETHANES ON THE OZONE

Source: Molina and Rowland, 1974, Nature

Ozone is the earth’s sunscreen

\[ \text{(CFCs)} + \text{(Sun)} + \text{(Ozone)} = \text{Cl} + \text{O}_2 \]

This reaction is particularly effective in

Source: Farman et al., 1985, Nature

UV radiation at Earth’s surface could dramatically increase

THE MONTREAL PROTOCOL IS THE LANDMARK MULTILATERAL ENVIRONMENTAL AGREEMENT THAT REGULATES THE PRODUCTION AND CONSUMPTION OF NEARLY 100 MAN-MADE CHEMICALS REFERRED TO AS OZONE DEPLETING SUBSTANCES

Decrease in the density of \( \text{O}_3 \)
How to write for a non-academic audience

Sally Wilson, Emerald
Tim Koder and Joana Osório, Open Pharma
Writing for a non academic audience

**WHO** you are writing for, **HOW** does your research help them and **WHY** should they keep reading?

Top tips:
- **Understand your audience** - who do you want to engage with and why?
- **Use storytelling** - put your audience at the heart of your work
- **Keep it simple** - plain language (or talking about your work to a member of your family)
Understanding different audiences

Professionals and practitioners
Need to get answers to practical questions and make informed decisions while at their desks, onsite, in the field, or with patients to improve practice

Policymakers, science writers, journalists and the public
Need clear information on the decisions, steps and actions that can be taken, or pitfalls that can be avoided to make positive change
How can your work benefit them?

**Putting your audience at the centre** - what is their need and how does your work help them?

- Does your work relate to a policy issue they’re working on?
- Does it have relevance to your local community?
- Could it positively impact them? How?
- Will it change best practice or help professionals re-assess how a job is done?
- Will it aid decision-making on the job?
- Could it answer a practical question for someone working in the field?

[https://www.sdgcompactfellows.org/communicating-implications](https://www.sdgcompactfellows.org/communicating-implications)
How to share practical implications

Sharing practical implications with professionals:

• specialist audience with some understanding of terminology
• limited time to make decisions and take action on the job
• add practical implications bullet points to your abstracts

Sharing policy implications and findings the public can apply:

• non-specialist audience, need plain language and clear take homes
• add to your abstracts / article highlights:
  • policy/practical bullet points
  • plain language summaries
• support these with video, infographics, social media posts

https://www.sdgcompactfellows.org/communicating-implications
What are plain language summaries (PLS)?

A concise summary of a scientific publication that is written in jargon-free, non-technical language for a broad, non-expert audience.

- Written in a way that is accessible and understandable
- Reflective of the same scientific messages and conclusions as the scientific content
- Typically peer-reviewed
- Non-promotional

- Patients agree that health-related information should be more accessible and easy to understand and look for information online using:
  - General internet searches, patient-specific websites, and articles in scientific journals
- PLS can empower patients and facilitate conversations between patients and healthcare providers

PLS have a broad audience of readers

- Time-poor healthcare professionals and researchers
- Non-specialist professionals and researchers or those from a different specialty
- Professionals and researchers whose native language may be different
- Patients, support networks and organizations
- The media and science communicators
- Policymakers
- The public
PLS have value for healthcare professionals

- "Physicians noted the value of PLS in generating dialogue, saving time and streamlining communication with patients" (N = 90 US-based neurologists)
- "Acceptability and perceived usefulness... among healthcare professionals were high" (N = 58 oncologists and genetic counsellors)

3. van der Giessen JAM et al. *Support Care Cancer*. 2021:29(6);2895-2905
PLS have value to patients

Likely to be especially important to rare disease communities, where there is little information available, and where patients often need to become experts in their own disease.

"Generally, respondents were familiar with lay summaries and felt positively about the role these can play in empowering patients."

https://doi.org/https://doi.org/10.1080/03007995.2019.1583496
Recommendations for PLS

Lack of guidance was limiting use of PLS by journals and authors

Open Pharma ran a roundtable of experts and a public consultation to develop a recommendations article and graphical abstract

Outcomes

• Our article has had over 9400 views and six citations
• PLS guidance consensus is emerging among key publishers
• Pharma companies are adopting mandatory PLS policies
• Guideline updates (GPP 2022) advised PLS for clinical publications

The recommendations encourage development of other accessible content alongside text-based PLS, such as infographics, video, slides or podcast
Journals are increasingly offering PLS in different formats

Plain Language Summary

Multiple sclerosis (MS) usually worsens over time, with many patients transitioning from “relapsing–remitting” MS (RRMS) to “secondary progressive” MS (SPMS). Categorizing MS in this way may be useful for healthcare professionals (HCPs) because it can help to guide treatment decisions. However, these medical definitions of MS may be ambiguous to patients. Additionally, HCPs themselves do not always agree on the definition of SPMS.

Interviews with four MS patients and one physician who specializes in MS were conducted to understand the patients’ perspectives of how their disease worsens over time, and to assess how useful patients find the medical definitions used to describe different forms of MS.

From the interviews, it was clear that patients find it hard to come to terms with their diagnosis of MS, especially because they understand their disease will worsen over time. Patients may not fully understand the medical definitions used to describe different forms of MS and may not want to be identified in this way. They do not always think that these medical terms are relevant to them, as they do not reflect the reality of living with MS. In particular, some patients might not want to be identified as having SPMS, because this may limit their access to treatments. When speaking to their patients with MS, rather than using complex medical terms, doctors might want to describe MS as being part of a spectrum of disease.

Did you know? Plain language summaries in this format can be indexed on PubMed?
“Articles published with an accompanying video abstract had the highest average accesses per year (3111 accesses), followed by graphical PLS (1564 accesses).”

**Video abstracts** - Articles with video abstracts had 82% more full-text downloads (Dickerson, 2014)

**Infographics** - we are likely to remember up to 6.5 times more through learning from an infographic than by reading text alone (Krum R., 2013)

**Visual abstracts** - Articles associated with a visual abstract are three times more likely to be viewed than articles published with text-only abstracts (Ibrahim AM, et al, 2017)

**Plain language summary** - 71% (47/66) of Healthcare Professionals rated PLS as ‘very/extremely useful’ (ISMPP Europe Meeting 2022)

“Overall, 60% (30/50) of articles with PLS were downloaded significantly more often than those without a PLS.”

Guided activity: Write your own bullets

Jo Wixon, Wiley
Rebecca Kirk, PLoS
● Provide **2-5 bullet points** (ideally relating to specific SDGs)
● Always be clear and succinct
● Clearly state the issue you are addressing / helping your reader address
● Make sure that key information comes first
● Share what your findings mean in real terms
● Keep statements factual
● Use the active voice!

https://www.sdgcompactfellows.org/communicating-implications
Group exercise

Summarise as 2-5 bullets:

1. Who is your / the audience?
2. Why was the research done?
3. How can what you learned be applied?
4. What was missing or needs to happen next?
Mount Everest was once a pristine environment. However, due to increased tourism, waste is accumulating on the mountain, with a large proportion being made of plastic. This research aimed to identify and characterize microplastic (MP) pollution near the top of highest mountain on Earth and could illustrate the implications for the environment and the people living below. Stream water and snow were collected from multiple locations leading up to, and including, the Balcony (8,440 m.a.s.l). MPs were detected at an ~30 MP L1 in snow and ~1 MP L1 in stream water, and the majority were fibrous. Therefore, with increased tourism, deposition of MP near Mt. Everest is expected to rise. At a pivotal point in the exploration of remote areas, environmental stewardship should focus on technological and other advances toward minimizing sources of MP pollution.
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https://www.cell.com/one-earth/fulltext/S2590-3322(20)30550-9
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**SCIENCE FOR SOCIETY** Plastic pollution is a key issue of our time, with the environmental impacts of this remarkable material increasingly the focus of interventions ranging from grassroots clean-up initiatives to product re-design and international policies. In this paper, we provide the first documentation of the likely presence of microplastics in snow and stream water on Mt. Everest, including near regions of high human presence, such as near climbing paths. These tiny plastic pieces (<5 mm) were mainly polyester fibers, likely coming from climber’s clothing and equipment. These findings highlight human impacts in Earth’s remotest areas, partly through the act of exploration of extreme environments. This creates a challenge and opportunity for manufacturers of performance clothing and equipment to develop designs that use more sustainable materials that are either natural or minimize shedding of microplastics. Climbers and trekkers should consider the full impact of exploration activities on the environment.

**Highlights**
- Microplastics were found in snow and stream water samples on Mt. Everest.
- The highest microplastics were discovered in a sample from 8,440 m.a.s.l.
- Most microplastics were polyester fibers, likely from clothing and equipment.
- Technological advances could minimize microplastic pollution from exploration.
Group exercise: Reflection

Post exercise reflection (please share your comments in Chat)

- What did you find easy?
- What did you find more challenging?
- Have you done this before?
Next steps: From draft to final version

- Give your draft time - revise next day or later
- Ask a professional / practitioner to check your bullets for clarity
- Check for jargon: is your summary understandable by non-specialists? Ask a family member to read your summary!
- Your readers:
  - should find it interesting and be able to understand the conclusions, and the potential impact of the research.
- Check your word count

Clear writing is not just capable of being understood, it’s incapable of being misunderstood.
Top Action Tips

Download the Tip Sheets

**Academic publishers, editors & reviewers**

The academic publishing community must create the systems through which research and education can drive global achievement of the SDGs.

Find ways to drive organizational change.

[Download PDF]

**Graduate researchers & students**

The new generations of researchers, beginning their careers in a time of change and action, must integrate sustainability into the agenda of future scholarship.

Get tips on building SDGs into your career.

[Download PDF]

**Academic authors**

Authors must actively choose to create the knowledge humankind needs to fuel growth that is sustainable and make change that is positive.

See our recommendations for best practices on bringing SDGs into your research.

[Download PDF]

**Academic librarians**

Libraries must ensure that the knowledge required to achieve the SDGs can be recognized, discovered and made available to those who will build upon it and put it into action.

See tips on how to uncover SDG scholarship.

[Download PDF]

**Connecting researchers & practitioners**

Research alone will not make the SDGs reality. Each member of the scholarly community must work to put research in the hands of practitioners.

See tips on how each group can get research into practice.

[Download PDF]
Top Action Tips
Connecting researchers and practitioners

1: Set the scope
Publishers and editors should include an explicit statement in the journal’s Aims & Scope and Submission Guidelines that indicates the editor not only values and welcomes but actively seeks submissions that align with one or more of the SDGs, in particular, SDG-related research with a specific, actionable connection to challenges and opportunities in practice.

2: Create special collections
Specifically solicit SDG and practitioner-aligned content for these special issues. These may serve as an initial step toward a goal of broad scope change.

3: Seed research ideas
Publishers, academic societies and practitioners should facilitate a collaboration between publishers, academic societies and practitioner networks to create an interdisciplinary shared forum where practitioners can share (and upvote) their urgent SDG-related research questions to help inform academic researchers’ research agendas. Publishers and academic societies create other mechanisms (joint conferences) to foster academic researcher-practitioner communication.

4: Ask for implications
Editors should ask academic researchers to ask themselves - who is this research for? Ask academic researchers specifically to include in their implications section the research outcomes relevant to practitioners. Also consider asking authors to create a separate summary of thesis relevant outcomes for sharing, as appropriate, with practitioners via plain language summaries and infographics in practitioner publications.

5: Insist on impact
Editors should ask reviewers to see if authors included comments on the relevance of the research for practitioners. Add a question about this on reviewer forms or include this guidance in reviewer instructions.

6: Make it visual
Publishers should create and distribute translated research via accessible, easily digestible formats to practitioners, publications, and organizations, including infographics, plain language summaries, and visual abstracts resonate with practitioners in many fields. One possible approach is to encourage journal authors to create these formats for their own research work (which may require support, training, or an optional author service). Another approach is to outsource this work to an organization that provides such services. Possible revenue streams to fund outsourcing could be industry advertising or sponsorship, payment by authors or institutions to have their research included in these efforts to ensure broader dissemination into practice, etc. There is some AI tech to assist with this.

7: Offer support
Publishers and academic societies should offer training, mentoring and support services to create opportunities for editors, researchers, practitioners and other writers to learn how to write for different audiences. Also include opportunities to learn to listen and partner equitably in order to foster research driven by challenges in practice.

8: Include practitioners
Editors should bring diversity to the editorial board by appointing practitioner editors on journal editorial boards to provide practitioner perspectives and connections. Leverage academic, professional, and civil societies that often include practicing scientists and clinicians to help identify an appropriate practitioner editor. This person can: help the journal connect to practitioner organizations to hear from practitioners what are the urgent research questions for the SDG(s); help researchers connect with practitioners for joint research projects; help select content suitable for translation and dissemination to practitioner markets; help the editorial board distribute to the practitioner associations the relevant research outcomes.

9: Reward contributions
Publishers and academic societies should create awards or similar recognitions for outstanding efforts in translating research. Creating award(s) that recognize author, reviewer, and editor efforts to translate research are good incentives to encourage these constituencies to be thinking about the relevance of research in practice when writing, reviewing, and evaluating papers.

10: Make joint sessions
Academic societies should encourage joint researcher and practitioner sessions within research conferences to share how research is being translated into practice, helping those doing this kind of work.
Resources and useful links

- [https://www.sdgcompactfellows.org/communicating-implications](https://www.sdgcompactfellows.org/communicating-implications)
- Communications: How to communicate effectively to policy makers - Bennett Institute for Public Policy (cam.ac.uk)
Thank you! Q&A and discussion

• Share in chat - what is your takeaway from today?
• Do you have any questions?
• Would you like future sessions?
• If so, what would you like to hear / learn about in future sessions?
• OVER TO YOU!
Thank you