Recipes for a Healthy Information Diet
2022 Year-In-Review

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with

- **Anne Kitson, Elsevier**
- **Sowmya Swaminathan, Springer Nature**
- **Laura Cox, CCC**
- **Jill Hurst-Wahl, Widerstand Consulting**
- **Dr. Jessica Wade, Imperial College, London**

KENNEALLY: Welcome to Copyright Clearance Center's podcast series. I'm Christopher Kenneally.

In the final weeks of 2022, Velocity of Content is looking back at the past twelve months of programs.

The COVID-19 pandemic has brought intense public interest to research and science and great expectations for answers and for certainty. Yet science advances ploddingly, through trial and error. The result is a conflict over confidence.

In July, Elsevier launched a global collaboration to understand the impact of the pandemic on confidence in research and to learn how researchers may better maneuver in a rapidly changing scientific landscape. At Elsevier, Anne Kitson is senior vice president and managing director of The Lancet and Cell Press. She leads the Confidence in Research project.

KENNEALLY: You represent two of the world's most important and widely respected scientific journals. How serious is this crisis of confidence in scholarly publishing and research generally?

KITSON: The main opportunity here is that the pandemic and our experiences of the last two years are a chance to reinvigorate discussions, how the various players associated with the research environment can really drive confidence in research, and what, of course, those drivers are, or indeed reaffirming them.

But to your question, I believe labeling it as a crisis is overstating this, but there are some growing strong challenges it's incumbent on all of us to address together. We collaborate

already, but we need to continue to do so and even more now in this very rapidly evolving landscape.

So what happened in the past two years is firstly the speed of scientific endeavor and progress, if you will, increased tremendously as policymakers, scientists, and the industry collaborated on a scale like never before. That led to very effective treatments being developed and regulated for use in a fraction of the time. However, that said, we've also seen an exacerbation and an acceleration of trends that have been known for many years. The pandemic very much shone a spotlight on science and its practice, and public engagement is now higher than ever before, and some concerns were raised.

Why are we doing this? I think it's fair to say Elsevier has got quite a long history, actually, of working with researchers, and our aspiration and our hope is basically that we can put forward meaningful actual commitments and recommendations to support researchers. Of course, we have to do this with our stakeholders. We can't do this alone.

KENNEALLY: So what kinds of pressures are researchers feeling today to be more responsive to the public?

KITSON: I think one of the things that they are talking about is that while researchers seem to feel confident in talking about the design of their experiments and the methodology, the challenge some of them are mentioning – it's not just how to communicate about the science itself, but how to position their research, so reporting in context to help understanding the nature of the work being done – for instance, where they place their level of confidence, especially when we're seeing research reported at very early stages. Why are they confident? How do they explain preliminary findings? How do they fit with the bigger picture and about the future research directions? So researchers are asking for more help on this. It seems like it's not about dialing up the communication but getting support with explaining the complexity through to the public, doing that engagement.

I just want to share one very small example, if I may, which is about STAR methods, something that is close to my heart. We developed it at Cell Press some years ago. This is about supporting authors to produce structured, transparent, accessible reporting, with the intention to promote rigor and robustness with an intuitive and consistent methodological framework that integrates with the scientific workflow.

KENNEALLY: So in what way, Anne Kitson, do you think all this attention, public and professional, on research and researchers may change the conduct of science?

KITSON: I think it's transparency, transparency, transparency. I do think we have a moment, an opportunity, as I said at the start to really garner all the players involved to double down on this.

I think there's a real hunger and will that we can harness there. What we need to do is we need to aim for consistency and cooperation across the board. What we saw in the pandemic, of course, was that the virus does not respect country boundaries.

I also think there's a point about research culture and incentivizing the communities, particularly early-career researchers, to adopt best practice, to make their research reporting transparent and as accessible as possible. There's an educative part, if you will, to this, too, with publishers and funders, who should and do play a part. So it basically boils down again to having a renewed collective commitment to focus, to work on this together.

KENNEALLY: Important, groundbreaking research frequently happens across Africa. Yet African scientists and institutions rarely see credit in the world's most recognized scholarly journals. African researchers are not the only ones whose careers are affected by so-called parachute research. Such practices occur around the globe when researchers from high-income and privileged settings interact with groups who are historically marginalized.

In May, an editorial from Nature, one of the world's most highly regarded scientific publications, announced a new approach to improving inclusion and ethics in all Nature portfolio journals. Sowmya Swaminathan is head of collaborations, Springer Nature.

SWAMINATHAN: We see many, many examples of how the production of knowledge is very skewed across many different disciplines. For example, a systematic review of authorship for infectious disease research conducted in Africa in the last 30 years or so that was published in BMJ Global Health found that less than half of these studies had an African first or last author, and there are examples like this not only in Africa, but in other parts of the world, where the production of knowledge – there's a very significant underrepresentation from the global south even in areas that are of direct relevance to the global south.

But helicopter research, or as it's called, parachute research or colonial research, is not only limited to authorship. It can extend to other types of unethical methods – for example, sample collection of fossils and archaeological material and their export from one jurisdiction or country or territory or community to another without the appropriate approvals and permissions for collection and analysis. So those are a couple of different ways in which this practice is characterized.

Ethics dumping refers to the export of unethical research practices to low- and middle- income countries that are typically not permissible in high-income countries, but that can intentionally or inadvertently exploit vulnerabilities in these other settings. Examples could include animal research – use of nonhuman primates in research, which is very highly regulated in the EU and the US, for example, but perhaps is less regulated in other parts of the world. But it can also occur in contexts beyond biomedical, clinical, health research – for example, in development

economics, where there can be little local involvement of local ethics committees, a study design can result in either exposing participants to risk or in exacerbating local inequities. Those are a couple of different ways in which we come across these two issues in the practice of research today.

KENNEALLY: Tell me about the global code of conduct for researchers. How was that developed?

SWAMINATHAN: The global code of conduct – it's a code of ethics for equitable research partnerships, and it was developed by TRUST, which is an EU-funded project on research ethics. And it was developed by a global group of authors who undertook a very broad, consultative approach, engaging with stakeholders across the ecosystem, going from research funders to vulnerable populations who are actually impacted by some of these practices – that, of course, makes the code an incredibly kind of robust foundation to have that perspective integrated into the way the code was developed – but also policymakers, ethics committees, and industry.

It's a framework that's based on four values of fairness, respect, care, and honesty. It's a very comprehensive framework with about 23 articles. But at the same time, it's also designed in a way so as to make it relevant across multiple disciplines. So these are actually the elements that drew us to the code – the fact that they took such a broad, consultative approach, that they integrated the perspective of vulnerable populations, and that it is designed to be relevant across multiple disciplines.

KENNEALLY: With the adoption of this policy, Dr. Swaminathan, what is Nature going to expect from authors? What will they need to do?

SWAMINATHAN: So we've used the global code of conduct as an orienting framework to develop our approach, and we'd like to take action in four ways.

One, we want to raise awareness of these issues. As I've said, there is a growing awareness in many communities, but we work across a global footprint, a global landscape of authors, and across many different disciplines. So we want to raise awareness in this broad way. We are encouraging authors to consider the global code when developing, conducting, and communicating their study.

Second, we really want to create a mechanism for transparency. So we've used the code to develop a set of about nine questions, and we're encouraging authors to provide a disclosure statement using these questions to guide the development of that disclosure statement that we will make available through the peer review process to reviewers as well as publish in the paper. And we are encouraging authors to take the code and to consider these questions during the editorial process so that it's integrated in the course of their usual publishing workflow.

We're very optimistic, in fact, and hopeful that by doing this, it'll build awareness – that's one thing – but it'll actually cause authors to think about authorship, to think about the contributions that local researchers have already made, and to think about whether those contributions warrant authorship. In fact, we're already starting to see some of those changes.

The other two aspects where we are hoping also to push for change is to improve citation diversity. We're also asking authors to consider whether they've taken local and regional research relevant to their study into account in the citations. And finally, we're also setting a standard for ourselves for inclusive peer review to work in a consistent and deliberate way to involving local and regional experts in peer review. Those are the changes that we are looking to make with this new guidance and using the global code as a framework.

KENNEALLY: It really is important for our listeners to understand why you think these practices of inclusion and equity are not only a moral imperative – that's the obvious part – but they really are vital to producing reliable, trusted research, aren't they?

SWAMINATHAN: Yeah, that's a really good question. You can imagine many ways in which the expertise and perspective of local researchers could be valuable to add cultural context, understand local impacts of research, interpret data, have knowledge of field study sites. But I'll give you an example that's very relevant to many of us today where there's a growing recognition of the absolutely vital contributions of indigenous knowledge and indigenous practices and collaborations, and that has to do with managing wildfire risk.

As you know, 2020 was a record-breaking year for us in the US, with almost double the acreage in wildfire burns across the country. What researchers as well as policymakers as well as practitioners are understanding and calling for more is understanding fire and land use and really incorporating indigenous practices into better ways of managing land. Researchers have used indigenous oral accounts and worked with Native American communities to help reconstruct history of fire-prone forests in California. That's a growing effort to really combine indigenous knowledge to help understand ecosystems.

KENNEALLY: In publishing, open access is transforming the scholarly journal. In the laboratory and at the university, open science is remaking research. For this new open environment, best practices with data are those that strive to be efficient, transparent, and FAIR – that is, findable, accessible, interoperable, and reusable.

CCC has a longstanding interest in quality data for our rights licensing programs as well as for RightsLink, our open access solution. At Frankfurt Book Fair, I asked my colleague Laura Cox whether the CCC acquisition in May of Ringgold, a leading provider of persistent organization identifiers, signals that the issue of data quality is even more important than ever.

COX: Absolutely. We're moving into a much more complex environment as we gradually transition to open access and open science. So the issues around data – the quality of the data, the accuracy of the data, the ability to link data – become more and more important. We're tying all of that information together to produce the transformative deals that further this effort to move to open access, which everyone is behind.

But we also need some of the data to start being less burden on the researcher, because they're still having to input a lot of this information, and it's still difficult. And it really needs to start earlier in the process – in the funding process, in the grant application process – and for persistent IDs particularly to flow with that downstream and throughout the cycle, and then you can pull that to analytics.

KENNEALLY: And publishers with these various agreements, they're under pressure, because the funders are expecting compliance. They're expecting compliance from the authors, from the researchers. But that responsibility does sort of bleed into the publishing world.

COX: It does, and it's complicated, because funders have a variety of mandates, and they use different terminology and language to mean similar things in their mandates. We haven't got any standards set around how we communicate that through into systems to enable authors to make the right choices about the journal that they're selecting. Or in the cases where they have multiple funding sources, those funding mandates can actually be quite different and occasionally conflict.

KENNEALLY: Tell us a little bit more about the role that quality data plays in this ambition to have organizations be data-driven and to be making decisions around data.

COX: You've described to me, anyway, Chris, in the past as data is being a bit blurry, so we add metadata to it so we have descriptions of that data. And then when we add persistent IDs, we bring it into focus. Those persistent IDs are interoperable. That's the key word is that we're creating something that is a permanent piece of information that can be linked from one thing to another. So we can look at collaborations. How often does Author A collaborate with Author B? Which institutions are that, what are they working on, and who's funding them? This is all information that plays back into the system and drives – it enables decision-making.

We have methodology where we're generating preprints. Then there's submission processes. There's access to those articles. There's usage. There's citation. And ultimately, analytics that help us understand impact and whether we're meeting diversity and inclusion goals or Sustainable Development Goals that genuinely benefit society throughout the system.

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KENNEALLY: The university library holds a central role as a study space. With enrollment increasingly diverse, librarians and administrators see responsibility for making that study space into a welcoming place, too. Yet the values and assumptions many have about libraries and librarians can become obstacles. Cherished ideals of neutrality and impartiality have traditionally ignored systemic racism in libraries and the exclusion of people of color in those spaces.

Jill Hurst-Wahl is an antiracism auditor with Widerstand Consulting. She is professor emerita at Syracuse University, where she most recently was director of the iSchool Public Libraries Institute.

In your 20 years at Syracuse University, what changes did you witness in the library space or in libraries' training that began to address the legacy of systemic racism?

HURST-WAHL: That's a really good question, and I think the answer's different in different types of libraries. There's been a lot of work in academic and public libraries. Who should come into the library? And how can that space be better for them?

In terms of space, it's not just the physical space, but the online space. People need to see themselves there. One of my biggest criticisms of all types of marketing – library marketing, school marketing, marketing marketing, it doesn't matter – is that they will use pictures and videos that the person doing the video was able to take and thought were great, but not images, not videos that really represent who uses that space or who should use that space.

So making libraries welcoming through visuals, through content, through whatever else is really important. We see libraries increasing the types of content they have, being more mindful of having content that represents everyone on campus, maybe having content in multiple languages, not just scholarly content, but other content for people. Having staff members who represent everyone on campus. And just overall trying to make it a space that people want to be in, that they feel welcome – they feel accepted in.

We know that libraries historically were exclusionary. There's a lot of people who could not go into a public library. If you're training people to go into that space as librarians, how do you help them understand what that space has been? Because they need to understand that history in order to understand what it should be now and should be in the future.

KENNEALLY: Jill Hurst-Wahl, you're talking about making a library a welcoming space. Clearly, this is not just about hanging a welcome sign on the door. There's a lot of work involved. It must be daunting for many librarians who have been in the profession a long time and think of themselves as good librarians.

HURST-WAHL: They do think of themselves as good librarians. 'It can't be us. We're not the problem. We're welcoming. We have the best of intentions.' Which means that we're not actually looking at what we're doing as librarians. So we need to learn more about racism and about being antiracist. We need to maybe have someone else look at what we're doing. Having done this work now for a while, I really do advocate for having a third party, no matter who that third party is, look at what you're doing. Because you're going to say we're fine, but maybe you're not fine. And that third party will see where there are some problems in your organization.

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KENNEALLY: Dr. Jessica Wade is a physicist in the Blackett Laboratory at Imperial College London, where she investigates polymer-based organic light-emitting diodes and has published her research in numerous prestigious journals. That's her day job. Dr. Wade also moonlights as a Wikipedia editor writing hundreds of biographies of women scientists. When young girls go looking for role models in science, she says, they should find them easily.

WADE: Our problem in science, as is in much of society, is that our metrics for deciding who's a fantastic scientist are inherently biased. It's who we give awards to. It's who publishes papers that get a high number of citations. It's who makes a patent that gets a high number of access uses. It's who gets in big grant funding. And we know in science that those metrics are fundamentally broken. We know that we disproportionately fund and support and speak about scientists from certain institutions from certain parts of the world, and largely those scientists are men.

So if we are awarding and celebrating and talking about these scientists, it's a lot easier to write a Wikipedia page for them, because they tick all those boxes. They fulfill that notability criteria very quickly. Whereas women scientists can be doing absolutely extraordinary things, often in much more challenging circumstances, because they don't have that funding, they don't have that prestige, and they might have caring responsibilities, and it's therefore harder to prove how brilliant they are. So even if they're doing groundbreaking science, it might just go overlooked by the scientific community because they have a woman's name, because they haven't won that big, shiny prize yet.

KENNEALLY: In a 2018 column for nature.com, you noted that before someone had raised the point, Marie Curie, who won the Nobel twice in two different fields, did not have her own Wikipedia page. Instead, she shared one with her husband, Pierre, whom she outlived by more than 25 years. It's just hard to believe.

WADE: It's remarkable, right? And on the day that Donna Strickland won the Nobel Prize for physics, our most recent woman physicist laureate – our most recent Nobel laureate who is a

woman – she didn't have a Wikipedia page, either. Not because Donna Strickland hasn't done hugely notable and important science, but because the biography that had been tabled about her or had been written about her didn't fulfill Wikipedia's notability criteria. So you have this kind of ongoing battle between you as the editor and the contributor and the advocate and the passionate person and what the editing community at large deem notable enough to remain on the world's most important encyclopedia.

I don't think the majority of Wikipedia editors are misogynistic or racist or things like that. I just think that we've built a system in academia, in theatre, in the arts, you name it, where we really celebrate an incredibly defined view of what's brilliant. It's the same in politics, I suppose. And it's really difficult to change that worldview to say, hey, people may not look like that, and they may not have been trained at Harvard or MIT or Yale or Stanford, but they can still be brilliant researchers. They can still be brilliant scientists. And I think because society has a difficulty reconciling that, so does Wikipedia and the editing community at large.

KENNEALLY: Well, that's critical, isn't it? This is about scientific achievement by women. This is not about women as such. It's about their scientific achievements. That's what you're really stressing.

WADE: Oh, yeah, completely. 110%. And kind of contributions to way we think. I fundamentally believe that diverse teams do better science. You think about a question in a different way. You come up with new ways to investigate and analyze data and interact and collaborate. And there's various studies that show that the more diverse a team is, the more impactful their research is, and the more highly cited it is, and the more broad- reaching societal implications it has. So we definitely know diversity works. And I think that particularly because we've left women's voices out of this conversation about scientific discovery for so long, we've missed out on so many opportunities to do great research and to learn great things. That's what I really strongly believe.

So not only is it important to celebrate the women scientists who have already done brilliant, wonderful things and to make sure everyone knows them and they become household names, but also to support more people from historically marginalized groups to become scientists in the first place, so we can make bolder and bigger discoveries, and I guess ultimately save the planet.

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KENNEALLY: From enumeration of animal species living in every corner of the globe to identification of fossil remains of ancient creatures, scientific inquiry looks from the present day into the very dimmest past. Science can't see into the future – not yet anyway. The responsibility to make the future a place that is welcome, inclusive and full of understanding lies with all of us.

Our co-producer and recording engineer is Jeremy Brieske of Burst Marketing. You can listen to Velocity of Content on demand on YouTube as part of the Copyright Clearance Center channel and subscribe whereever you go for podcasts.

I'm Christopher Kenneally. Thanks for joining me throughout the year on Velocity of Content from CCC. Best wishes for 2023!