

Where Publishing & The Pandemic Meet

with

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KENNEALLY: Welcome to a special program from Copyright Clearance Center. I'm Christopher Kenneally.

From smallpox to Ebola, vaccines for preventing diseases as well as treatments for ending infections can shift the courses of millions of lives. In 2020, we await the outcome of painstaking work underway in laboratories around the world to defeat the global pandemic of COVID-19. Clinical research of this kind matters more than ever before, given the enormous impact on national economies and the education of young people.

While market disruptions, expected and unexpected, are always a factor, the COVID-19 pandemic quickly became a once-in-a-century catalyst to advance the speed of science and accelerate the digital transformation of scientific publishing. In this last quarter of 2020, we are operating in a scientific publishing ecosystem that is more open, more immediate, and more accessible than only a few months ago.

In October 2019, CCC invited senior policymakers, scholarly and society publishers, private and government funders, institutions, and researchers to meet in London. Those experts explored how best to advance scholarly research and to improve the scientific publishing ecosystem.



To promote transparency and collaboration, CCC and Outsell, Inc. created a map of the scientific publishing ecosystem reflecting the perspectives of key stakeholders. Each node, available for exploration on copyright.com, examines the actions, investments, and rewards for researchers, institutions, funders, and publishers. A year after its publication, CCC offers the ecosystem map as a basis to advance further understanding and dialogue.

In the hour ahead, our guests will share real-time data about the coronavirus correlation on disruption in scientific publishing across key points on that map, how it drives their investments and shapes the innovations they hope to bring to market.

Research Square Company helps make research communication faster, fairer, and more useful. Through an industry-leading preprint platform, research promotion tools, and a suite of manuscript preparation services, the company helps researchers communicate their work more effectively, accelerating the pace of global discovery. Rachel Burley is president of Research Square Company. She joins me now. Welcome to the program, Rachel.

- BURLEY: Hi, Chris. Thank you for inviting me.
- KENNEALLY: We're looking forward to you joining our discussion. Over the years, Research Square has assisted more than 670,000 researchers to publish in top journals. What are the key trends you've seen emerge in publishing during COVID-19?
- BURLEY: So I think a lot has changed and a lot has accelerated, Chris, over the last six or seven months. And I think one of the key things that we've seen, obviously, from our perspective at Research Square is that there's been a huge increase in the volume of research that's posted on preprint servers. I think there's other key factors that we've seen – a drive towards more open research publishing. I think a lot of publishers have opened content up that's related to COVID so that it can be shared more quickly. And just a general spike, I think, in public interest in science as a result of COVID, so the general public wanting to know what the developments are as well.

One of the biggest changes I think we've all seen is the rapid growth in preprints across all preprint servers. I'm showing some statistics here from the volume of preprints that have been posted since February, when COVID research really started ramping up. And I think what's interesting here is we're looking at a sort of cohort of about 19,000 manuscripts on preprint servers between February and



September, and it's grown from about 500 in February up to about 1,800 in September. There was a peak around May time, when many of the preprint servers were posting everything that was submitted. But around May, there was a revised policy on some preprint servers for the types of content that was being posted, so it's starting to level out slightly around 1,800 a month.

I wanted to just look at sort of what we've seen on Research Square. Interestingly, we were a relatively unknown preprint server when we launched in October 2018, and we hadn't been receiving that many direct submissions. Most of our submissions were coming via the journal-integrated preprinting route that we offer. But with COVID research, we're now receiving a lot of direct submissions, and about 50% of those are COVID-related research. So it's been a big part of our own growth.

One of the things I think we're all noticing is that social media is driving a lot of attention on scientific publications. This altmetric score here relates to a manuscript we published in June, which we figured out has reached approximately 13 million followers on Twitter alone. So I think the sort of accessibility of preprints linked with the way that social media is driving access to those is a big factor in how research communication has changed during the pandemic.

Just wanted to show the popularity of content on the platform – so readership and article views of COVID-related preprints is almost seven times the number of views that we get on preprints related to other types of research. And I think that is just to be expected. It's not surprising. People are really looking for results and sharing their research quickly. So that's showing up in the readership statistics as well as the posting statistics.

One thing I think we're looking out for is misinterpretation of content that's posted as a preprint – obviously, hasn't undergone the peer review process, and people can use preprinted content for their own sort of ends to misinterpret the results in a way that suits them. So we're trying to solve for that by helping with lay summaries, video abstracts, and helping to sort of explain what the preprint science means to make it more accessible to a bigger audience.

And then finally, just to my sort of assessment of what this means for publishing is I think there's no going back, to a certain extent. Before the pandemic, preprinting was really in the minority for research that was in biology and medicine. I suspect that post-pandemic, we'll find that the push for sort of rapid open publishing is here to stay and that we won't go back to how it was before.



- KENNEALLY: Well, thank you, Rachel Burley, president of Research Square Company. I want to just follow up and ask about the impact on researchers themselves. This accelerated publishing process that begins with preprints – how do researchers respond? They must be very excited to see their work appear so quickly.
- BURLEY: I think there's a mixed reaction to that, Chris. I think there are a lot of researchers who recognize that sharing their research early, getting a DOI for it, being able to cite it, being able to sort of tweet it puts a timestamp on their research, and they are excited about that. I think there's another set of researchers who are just still quite confused about what preprints are and may not actually know that this becomes a permanent part of the scholarly record. And I think that's something that we need to do more education and do some more sort of ambassadoring or what preprints are and the benefits of it. I think researchers in the physical sciences have been used to this form of publishing or communication for quite a long time, but it is still relatively new in biology and medicine publishing.
- KENNEALLY: Thank you, Rachel Burley, president of Research Square Company, for the view from a leading preprint platform.

Innovative workflow solutions from Aries Systems manage the complexities of scientific publishing from submission to editorial management and peer review to production tracking and publishing channel distribution. Tony Alves is director of product management at Aries. He is recognized in STM publishing circles for his efforts promoting industry standardization on systems and system communications protocols and other industry shared services. He joins me from Massachusetts, where Aries is based. Welcome to the program, Tony.

- ALVES: Thank you, Chris.
- KENNEALLY: We appreciate your joining us today, Tony Alves. Tell us about the investments that Aries Systems is making to accommodate and respond to researcher and journal demands during the pandemic.
- ALVES: Sure. I'd like to talk about two specific types of investments made by Aries Systems that are proving to be quite useful as we accommodate and respond to researcher and journal demands during the pandemic. There's been a strong focus on building APIs, so that we can integrate with various industry initiatives and technology innovations that are being developed by our business partners and our



customers. We have also developed an XML-first workflow process that simplifies researcher effort and accelerates peer review and reduces time to publication.

As mentioned by Rachel and what we had all seen recently – and at Aries, we've recognized it for quite some time – preprint servers are playing a bigger and bigger role, especially during the COVID crisis. Early investment in our in Ingest API meant that there is an easy and automated way for authors to push their research from preprint servers to journals as well as an easy and automated way for journals to push new submissions to preprint servers as an author service. That helps get important research out more quickly.

Just as a way of explanation, the Ingest API mirrors the standard process that a researcher goes through when submitting a manuscript to a journal, except that it is done in an automated way, eliminating the need for researchers to perform file upload and data entry.

Aries has also developed an API going to beta later this month that allows repositories to integrate with Editorial Manager. It simplifies the submission process by embedding the interaction with repositories into the submission workflow. This helps researchers more easily comply with data deposit and disclosure mandates, and it promotes open data. In addition, it facilitates the adoption of fair data principles of making data findable, accessible, interoperable, and reusable. This is, of course, particularly important in COVID-19 research.

A third API in beta later this month provides a standard methodology for integrating third-party tools that use artificial intelligence and machine learning to perform various types of evaluation on submitted manuscripts. We've been working with multiple organizations which allow our customers to try new and innovative tools, essentially creating a marketplace where these services could be tested and integrated into workflow. These tools are speeding up the peer-review process, giving authors, editors, and reviewers useful reports and analytics that in the past might have taken days to produce or might require specialized skills that were often hard to find.

Finally, I want to discuss our XML-first workflow tool called Liquid Manuscript. Liquid is intended to reduce researcher frustration and speed up the publishing process. First, we take the manuscript and other materials submitted by the researcher. We extract the essential metadata and populate the database, reducing effort and fat-fingered mistakes. We then allow the full text of the manuscript to be converted to XML, which can then be used by analytics and content-enhancement tools.



The entire manuscript, including figures and tables, can be edited onscreen using a word processor-like editor. This editor also maintains the integrity of the XML behind the scenes. The peer review process can take place using the editor and other tools, which means commentary and reviews can be captured for publication purposes, enabling open and transparent peer review. Meanwhile, production tasks like copy edit, page layout, and other article preparation processes can take place as desired, even during the peer review. The intended result is to allow more of the scholarly assessment of the research article to be captured as data to reduce errors by centralizing interactions with the content and, ultimately, to shorten the time to publication by converging peer review and the production process.

- KENNEALLY: Well, Tony Alves, director of product management at Aries, let me just ask you about the way that your work is continuing on the drive to accelerating the publishing process that Rachel Burley started our conversation about. That last slide was speaking to XML and the way that it accelerates the manuscript delivery and throughout the whole workflow as well as capturing data. That really seems critical, particularly right now, when there's no time to waste.
- ALVES: Right. When you are able to capture a lot of this information up front and have it in a database, make it something that is indexed and easily transferred to other systems, that's really, really useful. So when you're able to take that manuscript – whether it's the metadata or other information, other entities that are in the manuscript that will help you do the evaluation as well as not just evaluate the manuscript, but be able take some of that information and push it out of the system during the peer review process, there's a lot of possibilities at that point for helping spread the research and spread the knowledge.
- KENNEALLY: Right. So it's not just accelerating but opening things up to more possibilities, as you put it.
- ALVES: That's right. Getting the article processed faster so that it can be assessed and published quickly, but also be able to get that data and information out into the community and into the research field.
- KENNEALLY: Tony Alves, director of product management at Aries, thanks so much for joining us.

IEEE is the trusted global voice for engineering, computing, and technology information, with its many highly cited publications, conferences, technology standards, and professional and educational activities. IEEE's operations center is



in Piscataway, New Jersey, with offices around the world. Andrew Popper is senior director of global products and marketing, where he manages R&D, discovery, and design of new products as well as product planning and execution, lifecycle product management, and product marketing. Welcome to the program, Andrew.

POPPER: Thanks very much for having me.

- KENNEALLY: Well, we appreciate your joining us, because as a member-led nonprofit organization, IEEE is at the forefront of handling engineering research, and your communications program has had to react and shift as a result of the pandemic. We look forward to hearing about just exactly how.
- POPPER: So IEEE, for those who are less familiar with it, is a nonprofit with 420,000 members covering 160 countries. We are very much focused on advancing the profession of the electrical and computer science engineer and technologist overall, and we look to foster the technological innovation and excellence for the benefit of humanity. We are comprised of 46 technology-related societies and councils. Specifically, each one covers a different area field of interest. And we do this by organizing conferences, by developing standards in each particular area that are used across the globe. We publish magazines and journals. We publish e-books. We develop e-learning courses. And we serve our members across the board as well as institutions outside of membership as well.

We deliver our content through a platform called IEEE Explorer. Basically, about 5 million documents – peer-reviewed documents – come through IEEE Explorer, going to about 5 million unique users every month and 12 million downloads per month as well.

We've been dealing with COVID-19 in two different particular ways – one in serving the technology community as a whole, and then also for the research community. So looking at the technology community, we have a long-standing product that's very highly used in engineering called IEEE Spectrum, and we've developed a COVID-19 Spectrum hub, which delivers on editorial reporting, covering COVID-19 as it affects electrical engineers and technologists. Also, we provide information on how best to manage through COVID-19, whether it's for academics and how to teach virtually, but also engaging with critical news, whether you're in a corporate atmosphere, government atmosphere, or academic.

And we've continued to do the same types of things that we constantly do, which is enhance our overall portfolio of information. So we've developed in this last year



an ethics certification program through our standards organization. We've developed information through a new journal and through new conferences in quantum engineering through our Future Directions group. And we continue to do that to really expand the horizon of technologists and engineers.

So we've also worked on the research community, which of course is a huge part of our market and our overall community. We made our peer-reviewed content available – any content that is relevant to the pandemic or potentially relevant to the pandemic. So that would be things that deal with ventilator engineering and design, dealing with imaging, dealing with modeling and simulation for engineers – and we make that content available automatically. And we do this on a weekly basis. We select articles that fit. We don't try to throw a lot of noise in there, but we do try to make sure that anything that is really relevant is made available directly to the market and to the public.

We've also taken a set of content from the Engineering in Medicine and Biology Society, which is the most specifically focused in areas that may be of big consequence to COVID-19, and we've created a fast-track peer review process for that. It's different from a preprint server that Rachel and Tony spoke about – it still goes through the peer review – but it goes through a special queue to make sure that it gets out there really fast. And that's been very successful. We can't do it for all of our content, but we can do it for this select content by identifying very quickly and driving it through the peer review queue.

Also, like all other information publishers in the STM market, we're very focused on – how is this going to change the way things have been working in publishing overall and in terms of research content? There had been a big question early on, with the closings of so many – or lockdowns of so many universities and so many research labs whether we're going to be getting the same type of article production that we used to. And I think this is probably true of most publishers, but we have continued to have tremendous publication of content. We've had a lot of submissions, about a 20% – actually, more than 20% – increase in our journal submissions. At this point, so far this year, by the end of September, we already exceeded the number of articles that we had published last year.

In terms of our technology conferences, IEEE is a little bit different from most publishers. We have a huge amount of content from our technology conferences. We have about 1,900 conferences that we do each year. And as you could see from this small chart, you could see that we had very few that were virtual before the pandemic, but it has completely evolved. So we moved to some hybrid



conferences, and then we've done a lot of virtual conferences. And we have been generating just as much content as we always had, and really good content.

As an example, we have a conference in lasers and electro-optics called CLEO, and that was held in May. And we had nearly 20,000 registrants from 75 countries. One of the things about making these virtual at this point is it globalizes the whole situation, and a lot of people who were not going to be able to participate can participate now. We were able to develop 1,800 scientific papers, and that was also a 20% increase over last year. That's been terrific.

So we're really seeing – how is this going to change for the long run? We think that, much similar as in other areas, a lot of things are changing for the better and changing for the long run. So we're looking at what we can keep in this new mode and what we might want to start to revert a little back. The conferences are very important from a networking standpoint as well, and we want to maximize that capability as well. So with that, we find that the research opportunities are very promising for the long run, but we expect things to continue to evolve.

- KENNEALLY: Andrew Popper with IEEE, senior director of global products and marketing there, thank you so much. You know, it strikes me that as a membership organization, this greater reach and this increased participation this increased global participation that's really reaching some objectives that go beyond the journal program.
- POPPER: Sure. We think everything's evolving. We're looking at our e-learning program. We've dramatically increased the e-learning that we're doing, because there's been such a need for remote learning at this point and providing the services not only to our members, but to other organizations outside of IEEE and in the academic and also corporate and government markets. We also looked towards our standards, and really, everything that we do has had some change in there, and we look forward to the evolution.

KENNEALLY: Andrew Popper with IEEE, thank you so much again for joining us.

With open access models, Plan S, and Projekt Deal initiatives, the scientific publishing process was undergoing fundamental realignment. Jennifer Goodrich, my colleague at CCC, together with Jim Haydock of Outsell, Inc., led development in 2019 of the map for the scientific publishing ecosystem. As director of product management at CCC, Jen Goodrich today leads the development and evolution of CCC's transactional licensing services as well as the RightsLink for Scientific Communications platform. Her current focus includes helping publishers codify



and implement their transformative agreements with institutions and funders. Welcome to the program, Jen Goodrich.

GOODRICH: Thank you very much, Chris. I'm happy to be here.

- KENNEALLY: Well, I appreciate your joining us, because you were so heavily involved with the development of the publishing ecosystem map. At the time, one of the conclusions was that major change in the system was needed, and that if the industry couldn't make these changes from within, then it was likely an outside disruptor would force the changes. Well, it looks like we've got our disruptor.
- GOODRICH: We do. We really expected it to be an outside organization, a Google or an Amazon or some other new entry, but it has ended up being the pandemic.

So, Chris, I'll look at the impact of the pandemic on the scholarly publishing lifecycle, and we'll look at both trends – broad trends and trends that we're seeing through the lens of CCC's own platform and data. In the first node, research and discovery, we're seeing some significant disruption, especially in the area of funding and library budgets. While many funders, like Wellcome, are publicly stating that their research support will remain in place for now, many others are struggling and announcing deep cuts to their budgets and programs.

Here are two pretty dramatic examples. Cancer Research UK, the charity that funds about half of all UK cancer research, announced that due to the unprecedented financial effect of COVID-19, it will cut its research budgets by up to 10%, alongside a cut of 20% or more to infrastructure spending. Similarly, the Canadian Cancer Society forecasts a drop in donations of up to \$100 million in the year ahead, or about half of its budget. Both are really setting unprecedented times.

In parallel, we're seeing disruption in libraries' acquisition and APC open access budgets. There have been many stories in the UK about universities expecting their funding to be affected for the near to long term. A great example of this was seen when JISC, who's a not-for-profit service provider in the UK, advised academic publishers back in June to discount their publishing and OA programs by 25% to avoid cancellations. Publishers are watching the space closely. And like publishers, we're watching this space closely, both to track the disruption and to see where innovation is and needs to occur.

As an intermediary on the RightsLink platform, we work with hundreds of institutions and funders worldwide, and we recently surveyed this group to gain some insights. The results are still coming in, but interestingly, we're seeing a mix



of institutions worldwide saying their budgets are OK, their budgets are under severe pressure, and that in some cases, that funding needs to be allocated elsewhere. For those who are expecting cuts, they are expecting cuts of upward of 10%. So there's some variation from the JISC projections, but these numbers were global, as opposed to UK-focused.

In parallel, we conducted a recent poll with our RightsLink publishers about their top concerns approaching 2021. 48% said they were concerned about subscription cancellations due to COVID and its impact on institutions, and thus researchers.

When we look at the second and third nodes of the map, authoring and research output and peer review, we are seeing disruption, innovation, and investment. From a disruptive perspective, the sheer volume of submissions in many COVIDrelated fields is causing publishers to deal with double-digit growth in submissions, and some are saying their submission rates are five times higher than the period last year.

CCC's own data through its RightsLink platform that facilitates APC management and the management of transformative agreements is showing similar data. In aggregate, total submissions are up by 25%. This correlates to Andrew's earlier comments that IEEE submissions are up around 20% or so. In aggregate, we're seeing total acceptances also up by about 25%.

As a result of this increase in submissions, there's a bit of a mad scramble to find researchers who are qualified and able to quickly review new articles. This problem is causing some interesting innovation. For example, a number of OASPA publishers took the pragmatic step of collaborating on the creation of a shared peer review database. In this shared database, researchers submit a profile of their COVID-related expertise and agree to complete rapid reviews. Within days of launch, researchers are signing up from all over the world. This also goes to Andrew's comment about accelerating rapid review for a number of their areas of focus.

Let's take a look at some stats from a recent American Chemical Society, or ACS, case study. You can see that ACS had 300% growth in transformative agreements and 70% growth in transactions between 2018 and 2019. How was ACS able to manage this growth? They invested in automation. They used the RightsLink platform to codify and implement their transformative agreements. And they worked closely with their institutions and funding partners to model agreements and workflows that removed the complexity and overhead of supporting open access agreements. This means their researchers are published faster, they are



better supported through the APC workflow, and they know when their research institutions can fund their open access articles. This is the kind of innovation that is more important than ever, with the convergence of the pandemic with Plan S and other new funding mandates in Europe and elsewhere, which demand new ways for stakeholders to support researchers and do business together.

In the fourth and fifth nodes of the map, publish and distribute and postpublication, we are seeing again a combination of disruption and innovation and investment. In response to the fact that during the pandemic, researchers needed and still need to collaborate faster and more effectively than ever, many publishers have opened up paywalled content and data. Rachel mentioned this earlier, too, in her discussion.

Publishers realize that paywalls for COVID-related content could be a blocker to global collaboration. And in our intermediary role, CCC helped make this happen by collating and hosting multiple COVID-19 resource centers for researchers, so that they could discover and read articles, news, and datasets as they needed to. We've actually opened up content for over 200 publishers and opened datasets from over 48 publishers. These sites are not fully polished products, but rather dynamic centralized resources that show collaboration that is fueling important research and discovery.

At the same time, researchers from pharma and life sciences came to us and asked for COVID information to be more readily available in their daily research and content collaboration tools. Part of CCC's pragmatic response to this request was to rapidly introduce an extensive COVID collection into its RightFind enterprise platform. This has allowed research and development communities to immediately access over 99,000 COVID-related articles, enhanced semantic search, and related visualizations of COVID collections and data.

So really, in reflecting on all of this and every stage of the scholarly publishing lifecycle, as a result of the pandemic, we are seeing significant change and evolution that's really far surpassing any expectations of so many of us who attended the Outsell and CCC Future of Science events and who collaborated on the map.

KENNEALLY: And the point of collaboration is one we want to continue to stress in our program today. We are going to move to a roundtable discussion with our panelists, and I want to welcome as our special guest analyst Tatiana Khayrullina. She is director and lead analyst, scientific and technical solutions, at Outsell. She



covers scholarly publishing as well as standards development, medical and health information, data and analytics markets. Welcome to the program, Tatiana.

KHAYRULLINA: Thank you, Chris. Happy to be here.

- KENNEALLY: Well, we appreciate your joining us, because over a year ago, you attended the Future of Science discussion in London, where CCC and Outsell presented our map for the scientific publishing ecosystem. At the time, open access business models really led the list of concerns. But today, the discussion over open has obviously widened considerably. 2020 is all about open science, right?
- KHAYRULLINA: Correct. And everything that our panelists have touched upon in their presentations so far are actually baby steps towards open science, which is a wider topic than open access. Open science is about accelerating discovery and making the results universally available. So the publishing process, everything that happens in the editorial workflow, are components of it, but not all of it. And open access is a component of open science or a path towards open science, but it's not the entire open science conversation.

Speaking about the components of open science, actually, collaboration is a key one. And it's also one of the tougher ones to achieve, obviously, because you need multiple sides and involved and working in unison. That's what I wanted to explore a little deeper with our panelists, going back to their presentations. And my question is really about how the recent developments that they've described have removed the barriers to collaboration, in their opinion.

- KENNEALLY: Welcome back to the show, everyone. Tatiana, you have a question for the panel.
- KHAYRULLINA: I have a question for the panel, yes. So you have described a variety of recent developments in all of your respective subsegments, and I would like to know more about the effect of those developments on the opportunity to collaborate for researchers. In your opinion, how are these recent developments affecting the barriers to collaborate?
- KENNEALLY: Maybe, Tony Alves, you want to take that first?
- ALVES: Oh, sure. A lot of what we've done with our API implementations is all about breaking down those barriers so that we can integrate more with the people that we collaborate with as well as even our competitors. A big part of the API strategy is to be able to communicate and pull information and data from other systems or



push it to other systems. Our Liquid product is very similar in that a big part of the workflow is always working with other systems, other production vendors, and that sort of thing. So that has all been built into the workflow – being able to send information out, receive information back, and work that through the workflow.

- KENNEALLY: Rachel Burley, barriers, obstacles to collaboration do you see them coming down?
- BURLEY: I do, actually, Chris. So I think having early sharing being part of how researchers communicated the earlier that you're sharing the content, the more that you can have opportunities to collaborate with others. And I think preprints is enabling people to be able to comment on that research and attract collaboration before submission to a journal, so it's just accelerating the whole process. I think it's just one of many ways that we're increasing collaboration.
- KENNEALLY: Well, thank you, Rachel. Andrew Popper, what's your point that you want to express around collaboration? We were discussing the opening up of conferences. Clearly, collaboration is important to IEEE.
- POPPER: Sure. I think that the points on preprint servers we developed a preprint server that got launched earlier this year, and that's been very successful and brought in a lot of collaboration in just the way that Rachel had said.

And in terms of the conferences, I think that there's both opportunities and there are challenges. When you go outside of an in-person conference, there are less opportunities to very directly network with potential collaborators on your research. So we're constantly trying to find ways to connect people in their conferences with virtual conferences and so forth, and I think that this is going to continue to move along in several ways.

- KENNEALLY: Tatiana, I know you have another question about the perspective of researchers and how well publishing is doing serving researchers in this crisis.
- KHAYRULLINA: I did. As I was listening to our panelists talking about the increased volume of research, I was thinking about the role of the researcher and the situation they find themselves in when they actually have to compete with 20% more submissions and with peer reviewers more overworked and (inaudible) their submissions, which is more and more (inaudible) than previously expected. So I was wondering, in a researcher-centric publishing world that we're in, how are our panelists and their organizations supporting researchers in this unusual situation that they find themselves in?



KENNEALLY: Andrew Popper? Competition - it's increasing.

POPPER: Yeah, we are constantly looking – it's moving from a situation where our efforts are very much towards the reader, and therefore the institutional acquirer of content, against really moving towards a B2C type of experience and going towards the individual researcher. So we're constantly looking at what types of tools can we provide the researcher and the author so that they could be more efficient and more effective in what they do? We're constantly looking at different things, whether it's TechRxiv, our preprint server, or other types of tools that we make available to them.

And we also look to find ways to expedite the peer review process, which is so important when authors are actually paying an APC as part of their publication process. Obviously, we're not a vanity press. Selectivity is a huge part of what are, and we feel that the peer review is extremely important to the quality of the content. But making sure that authors can know as quickly as possible whether their content is going to be published is an essential piece as this evolves from a reader-focused model to a publish-focused model.

- KENNEALLY: Rachel Burley, on that point around competition, you were describing the altmetric scores that are increasingly important to researchers. They have a competition not only among themselves, but a competition for attention. That's really changed in this crisis.
- BURLEY: I think that's right. I think with the vast volumes of research that's now published, how do you differentiate yourself? How do you make your research stand out? How do you make it understandable to a broader audience? So I think altmetric is obviously a measure of social media attention. And I think one way that we can help researchers is by not only helping them to promote their research to the right audiences, but helping to make it more understandable to a broader audience. I think research solutions like video abstracts or lay summaries or infographics or anything that can make that research accessible to a wider audience is a useful set of tools, and I think we'll be seeing more of those in 2021.
- KENNEALLY: All right. Well, accessibility, openness, reaching audiences that are new to the process this is something that we will continue to see, but we have been seeing such an acceleration of under the COVID-19 crisis. It's quite remarkable. And we appreciate our presenters today, who offered us a glimpse of how that is changing their worlds and all of ours.



I want to thank everyone involved. We have heard from Tony Alves, director of product management, Aries Systems, Rachel Burley, president of Research Square, Andrew Popper, global products and marketing at IEEE, Jennifer Goodrich, director of product management at Copyright Clearance Center. Thanks as well to our guest analyst, Tatiana Khayrullina with Outsell. Our show producer is Rob Simon of Burst Marketing.

This has been a special program from Copyright Clearance Center, Where Publishing and the Pandemic Meet. We've been looking at how stakeholders have stepped up to meet the rigorous expectations of scientific researchers worldwide in 2020. I'm Christopher Kenneally with Copyright Clearance Center. Thanks for joining.

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