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## I Hear the Train a Comin'

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## I Hear the Train a Comin'

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*The following is a transcription of a live presentation at the 2013 Charleston Conference. Slides and video are available online at <http://sched.co/1dM9x72>.*

**Greg Tananbaum:** Good afternoon; thank you for being here. We appreciate you spending your lunch hour with us, and we hopefully will give you an interesting and informative conversation and will certainly have time left over at the end for any questions you may have. I am not going to give a long background or preamble here, I just want to dig in and get to the conversation. The way that this is structured is that, traditionally, we bring two interesting thought leaders from the scholarly communication scene together and we have a dialog about topics of the day and where we think the industry is going. As I said, our hope is that there will be questions from the audience when we conclude and people can participate in the discussion.

So with that said, I am really pleased to have two voices from the community here with us today. Lorraine Haricombe is the Dean of the University of Kansas Libraries, and member of the ARL, and they serve more than 25,000 students and 1,300 faculty. She is one of the founding members of the Coalition of Open Access Policy Institutions, and she serves as the Provost's Designate for Open Access Implementation at the University of Kansas. She has done a number of very interesting things in this space; she is Chair of the SPARC Steering Committee, she is a member of the ARL AAU Task Force on Scholarly Communication, and she serves on PubMed Central's advisory committee. Before she came to KU, which was in 2006, she was the Dean of Libraries at Bowling Green, and she holds doctoral and master's degrees in Library and Information Science from the University of Illinois at Urbana-Champaign.

To my right is William Gunn. William is Head of Academic Outreach for Mendeley, which is, as you know, a leading research management tool for

collaboration and discovery. He received his PhD in Biomedical Science from the Center for Gene Therapy at Tulane University in 2008. He subsequently left academia and established a biology program at Genalyte, which was a novel diagnostics start-up, and from there he moved to Mendeley to pursue, as he puts it, pursue his mission of bringing modern network efficiencies to academic research.

So these are our speakers, and we are just going to dig in. I have given them a few questions to think about, but this is an unscripted conversation, and we will see where it goes.

Lorraine, I will start with you, and we will talk about first, what do you think are the biggest issues facing the scholarly communications space in the next coming 2 to 5 years.

**Lorraine Haricombe:** Thank you, first of all, and thank you all for coming and spending your lunchtime with us. Having walked this walk and in this space, I think the issue of education and outreach, especially to our faculty, will continue to be a major issue and perhaps a challenge in that way. I think we have come a long way in the development and the maturation of open access, but there is still a lot of work to do. Ten years into this space, we have seen a lot of progress in terms of open access development policies. We have seen a lot of open access journals. We have seen infrastructure put into place. But not everybody is embracing open access fully yet; and, especially, and I come from a campus environment where we have walked the walk, and even at a place like University of Kansas, considered in many places a leader in this space, we still have some challenges. So I think the education, the outreach, and engagement of faculty in this conversation will remain a challenge probably for a long time despite the progress that we have seen over the last ten years. I think there is also an issue of embracing it at the university level. Most of these

policies that we have seen have been developed by faculty, but it is important for universities to embrace this. I think the importance of open access policies is what will drive a maturation of the issues towards the endgame here, and I don't think we have seen enough administrations, university administrations, in particular, really embrace open access here. We all know that universities have budget issues. We all know that universities are held more accountable by the legislatures and by funders, and I think that is going to be a challenge for us to make sure that they understand the benefits of open access in that budget constraint and especially in the accountability to the very people who pay, especially at public universities, the tax dollars that fund the research that is going on at those institutions. Society depends on universities. Societies need to be informed of the research and the scholarship that happens at the institutions where they pay for that research to happen.

**Greg Tananbaum:** And, William, the same question to you: over the next 2 to 5 years, the biggest issues facing scholarly communication?

**William Gunn:** Well, I would have to agree that open access is a big issue. If I were to put out a couple of issues on a timeline of "already full blown and on their way" and, "just starting to get a toe hold," and "things that are not yet there, but maybe will be there," it would be getting the manifestation of these mandates put into practical terms; getting the communications out, ideally through the scholarly societies, to all of the researchers so that they understand what they need to do, why they need to do it, how to do it, all these kinds of things. Then, what comes up after that, and it is already starting to take hold a little bit, is this concept of having all of this material out there now, but who is using it and what are they doing with it? This whole field of altmetrics is something that is near term, and libraries are going to have to think about what they are going to do with it, how they can use it to understand their patrons, understand what is happening with their content, understand their constituencies. Publishers, I think, already very much understand the need for this, and they are putting things into place to provide that as a

service for authors. And I think when we have this idea of what sort of attention is being paid to all of the content that is out there, the question is if we have a measure of attention that is being paid to a document, what is that reflective of? Is it reflective of just the article being of broad popular interest? Of being very controversial? Or is it actually a finding that represents a very, very important bit of scholarly work that can be used to come up with a transformative discovery to move the field forward? The buzzword around that essentially is reproducibility. People have known for a long time that reuse is a very, very important definition for how open a bit of content is, and reproducibility, I think, fits right along with that. So to me, all these things are kind of in a continuum.

**Greg Tananbaum:** So as we have more content that is available and we have more ways to measure how that content is used, understanding what that means, understanding what that use and reuse means, and measuring what is good about that reuse or what is valuable about that reuse.

**William Gunn:** Right, and there have been several projects to look at the qualitative side of this. Understanding if somebody has tweeted about your paper is great, but who was it? Was it a Nobel Prize winner, or was it a grad student in your lab? Where does that fit, bringing that reputation layer into things? There has been some work, a draft of an altmetrics standard along the lines of COUNTER, and we are working with Todd Carpenter at NISO and some of those people on putting that together. Maybe it is early days for that yet. Then another bit of work that recently just started is working with the Center for Open Science on a reproducibility project. We recently got funding to actually replicate the findings of the 50 most high-impact cancer biology papers that have come out in the past 3 years, so it will be interesting to see which of these attention metrics correlate positively or negatively with the actual reproducibility of the finding. I think there are a lot of neat layers that are coming into this.

**Greg Tananbaum:** So both of you have touched specifically on open access, the notion of access

generally. What is the state of open access today? Where is it and where is it headed?

**Lorraine Haricombe:** I will jump in here. I think we are at a healthy place. At the beginning of open access, the seed was planted when we tried to reshape scholarly communication because of the serials crisis many, many years ago, and that was really the genesis that started this whole conversation. Now, it has moved to open access where we have an ideal endgame of free, immediate access to everybody, to anybody; not just access, but also reuse. We have come a long way since then, so I think we are in a very healthy space. If we take a look ten years ago when the Budapest Open Access Initiative was started in 2002, that was the first global definition of what open access is. We have since seen the Directory of Open Access Journals with more than 10,000 open access journals now. We have both infrastructure and institutional repositories abound around the globe. We have seen more and more open access policies, not just in this country but all around the world, growth and maturation of open access, and a lot of work ahead of us still, but I believe that we are in a good spot. This conversation at this conference here, where we are talking and interweaving open access as part of the conversation, to me is another great indicator of how far we have come, in libraries in particular because we are representing libraries here mainly, but my view would be that we are in a very healthy spot with more advocacy work to do. SPARK is in a great spot to do that for us with help from others. We have seen now at the national level the White House directive which was issued in February as an executive order, and we are seeing the FASTR legislation that was also introduced in the House and in the Senate in February as indicators of moving the conversation to the national level away from the individual institutions, at least in this country. So, I think, as we move forward, it is important for us to make sure that we get to FASTR legislation fast before the Obama administration leaves the House, because I think that is where we can make sure there is legislation to protect what we are trying to do today.

**Greg Tananbaum:** And I will give the same question to you, William, which is the state of open access today and where it is headed?

**William Gunn:** Well, I would have to agree that it certainly seems like, with the mandates and things that are working on it all around the world, it really is quite the state of rude health. I think you correctly note that the serials crisis was the seed for all of this. It was where a lot of the library-motivated push for open access came from. For me, it is interesting. I did not come out of the library world. The way I got interested in open access was wanting to be able to do the kinds of things with scholarly content that I could do with blog posts, or music, or whatever else. Now, working in a technology company, I think there is an equal drive towards open access so that products can work well together so you can build value-added services on top of the content layer. In the session we were in earlier today, Jeffrey Lancaster was talking about the service “if than, then that.” That if something happens on this one service over here, you can pipe it into this other service and cause something else to happen. All of these things can only happen because all of those services have API’s that can talk to one another, and I would love to have the same kind of thing happen in the scholarly literature: if somebody publishes on this given topic, then alert me and my colleagues, or automatically add this document to this group. I think there was a financial drive originally, and now that more and more communication is becoming digital and becoming on the web, now there is a technological imperative to make the stuff open so we can actually do the real value added stuff on top of what is being done.

**Greg Tananbaum:** So not just open access a sense of free to read, but actually free to build on top of, free to use, free to mine, and so forth.

**William Gunn:** Absolutely. True open access.

**Greg Tananbaum:** Lorraine, back over to you. This question is: to what extent is it the library’s role to advance a greater embrace of openness among the research community versus letting that demand build up organically? In other words, on

campus, how proactive should the library be in promoting these issues?

**Lorraine Haricombe:** I personally think the libraries are in a great position to advance conversation, engagement, and education of open access. I will be the first to say that libraries perhaps are not in the best position to initiate open access on campus in the way that we see the policies developed by faculty-led committees, but that we certainly have a role in that, and I say that for a couple of reasons. I believe libraries have trust capital. I think we can all agree that faculty love libraries and librarians. They do not believe a librarian can give them a wrong answer. They love them, so we should leverage that. We do this already in our liaison structures that we have around campuses when we work, whether it is acquiring content, whether it is instruction, whether it is in embedded librarianship, we have great relationships with perhaps not all of the faculty but with many of them. So we have infrastructure in place for that.

Many of us have distinctive competencies that nobody else on campus has. We know how to organize information. We know how to build discovery layers. We understand how to organize and process and access and make information discoverable, so it is another good reason that I think libraries should be involved.

A third is that for many of the campuses where we have IR's, they are mostly run in or by the libraries. Many of us are scholarly communication librarians, a new or relatively new position. It is not a decade old. So there is an expertise there that I think we should leverage. We understand policy. We work with copyright regularly. We understand those issues. So infrastructure, expertise, understanding policy, and engagement in education I believe are distinct competencies that libraries bring to this space that are very helpful to support faculty who may be interested in developing those open access policies. On our own campus, just to mention KU, per se, the policy was not advanced by the libraries, but the libraries had the IR in place. We were fortunate that we had a Provost at the time by the name of David Shulenburg who was very active in this space, so we come from a long history, a 20-year

history almost, of building where we are today. We still are standing on the shoulders of those who have gone before us, but it was the faculty in 2008–2009 who led this and, in particular, two or three disciples, strong disciples of open access, who got it and who had the good sense to adopt and co-op to librarians into that committee to help them because librarians could talk and knew how to discuss this also with faculty. So I would say that, perhaps, not to initiate it but certainly play a critical role in advancing it and continuing to sustain this conversation on campuses.

**Greg Tananbaum:** What would you say to the perspective that taking on more of an advocacy role with respect to open access, or just openness in general, amounts to another unfunded mandates for libraries, another thing we have to do?

**Lorraine Haricombe:** It certainly is for me, but, like everything else, we are expected to do more with less. It meant taking a very close look at what the priorities are, what the trends are, where the puck is going to go, and making sure that we position for that. So it meant taking a position and recrafting, redrafting, and repositioning a librarian to now be a full-time scholarly communications librarian, for example, and finding other resources within my organization to support that work because it is important work. It is a priority, it is national, it is global. So, to me, there is no “maybe” as to what we should be doing; it is a matter of reviewing organizationally where we are going to invest our resources as priorities.

**Greg Tananbaum:** William, just to shift gears here, Mendeley has, I believe, a community of around 2.7 million researchers. What have you learned from working with such a large user base?

**William Gunn:** Well, I think the main thing that we have learned from having such a rapid adoption from such a large group of people in Mendeley was the power of really useful, easy to use, drop-dead simple user interfaces. To put this in the context of institutional repositories, we have somewhere between 500,000 or 700,000 documents uploaded on a given day to Mendeley. Not unique, many of these are copies of one another, but compare that to the amount of

submissions that even a large centralized repository gets and it is pretty big. One way that we did that was by figuring out where there was a pain point in a research workflow, smoothing that over, and getting out of their way, so to speak. We solved the problem and did not get too much in their way; so we have all of these things that we want to know about our audience and that altmetrics researchers want to know about our audience, but at the same time, our whole thing has been, “Let us not get too much in their way. Let us solve their problems for them, and let them get back to doing their research which is what they are there for.”

So thinking back to when you (Lorraine) were answering the library question, one of the really interesting things that librarians do is they understand the policies. Researchers, they could not care less about what the policy is or what the mandate is, they just want someone to tell them what to do, ideally do it for them, and for them not to have to worry about it. So you guys are really well positioned for that, and I think if we could leverage somehow the engagement that we have on our platform to repositories, to mandate compliance, it would be great. I think, fundamentally, what we have learned is that with 2.7 million people, even if you get a small fraction of them doing something, you get a whole lot more than if you have to go individually, manually, one by one to try to build that support.

**Greg Tananbaum:** You have had the opportunity, in a sense, to observe the researcher in his or her natural habitat from “behind the bluff.” Have you found anything interesting about the way that they virtually congregate, that they virtually collaborate? Has any of that interaction been unexpected from what your original thinking was?

**William Gunn:** You know, there has not been very much that has happened that really has been entirely expected, Greg. We had this idea, initially, that we would have these social groups, then people would join the groups, and they would add papers relative to what their group was studying, these kinds of things. But we have seen such a broad, diverse use of the infrastructure and the platform to do all these kinds of things that we really had not expected. There are people that are

using the groups as kind of like their own little proto-journal. They put things in there that they think are interesting, that they want people to read; using us as a publication dissemination platform for some of the content that they have. So that was totally unexpected. We did not see that sort of thing coming.

We have not seen as much uptake as we would really like of people posting their papers on their profiles and disseminating that way. I would have thought that would have been one of the obvious things to do. We have seen a lot of recreational use, people making groups that are solely of papers with amusing funny titles. There is one that is “The Randomized Double-Blind Placebo-Controlled Study of Parachute Effectiveness” and all of these other funny papers. So we have really seen that there is a huge, unrealized, unmet, untapped demand for interaction with the scholarly literature, but is not on the level of what you would expect from a journal club or normal scholarly discussion where you have a paper and then a bunch of people are talking about the merits of this paper. We are seeing it become a place where a document exists on the web, and here are all these other things pointing at it, and here is this point going out into this other conversation somewhere else on the web; and it has really been kind of inspiring to see that happen, but it was totally not on our radar from the beginning.

**Greg Tananbaum:** Lorraine, back to you and digging deep into your CV: in 1998, you coedited a book that was entitled *Creating the Agile Library*, and the book argued that libraries have to grow ever more agile in adapting technologies to serve their users. So that was 15 years ago, and with this remove how do you think libraries could more efficiently use technology today to facilitate research and discovery among their patrons?

**Lorraine Haricombe:** Okay, 15 years ago, I cannot even remember what I said then. It sounds like a whole lifetime away. One of the things that comes to mind as I think of us in our profession as librarians is the notion to support faculty researchers to enhance their research, to enrich their teaching, those are all very mission-driven types of activities that we do in libraries. So for

researchers, I think, with the advancement of technology and with the availability of different tools and with saving time, you know, helping them be more productive so that they can generate the research and the discoveries that we all rely on; and key in my mind, with so much more technology available, is developing the tools and providing education and support in how to use those things. A very basic one that comes to mind is EndNote: we provide classes and we provide deskside coaching to people for EndNote. Ref Works. Mendeley is another example. There is a host of technologies that will just make it easier for them not to have to leave their laboratory to go to the library to do something, but to have it all together either on their screen, or at least close by, if not the librarians doing it for them.

We talked earlier about having open access grow organically versus the library advancing the sort of ties to this. When we first started engaging our faculty, we tried to teach them how to upload their works into our IR. Wrong idea. Totally wrong idea, and I think I see heads shaking. We adapted and mediated a suite of services where you can just send your CV to us, and we will just check the policies, analyze it on the web site, and we will upload it immediately and directly for you so you do not have to worry to do one more thing. We will do it for you, and if there is a policy issue, we will come back to you and ask you for a manuscript of something. So there is LibGuides, there is just a host of technology now that we can employ and help them understand how to use it to be much more productive than they might otherwise be.

**Greg Tananbaum:** So there is, as you said, a proliferation of these tools. There is new technologies, new collaboration tools, new productivity tools, new networking tools, how does the library stay abreast of, or ahead of, these new technologies that researchers either are using or should be using? How do you drink from that fire hose?

**Lorraine Haricombe:** Tough question. There is so much out there; if you have a top notch IT team, perhaps, in your library and who is ready and go out, it is a different role and a different responsibility, obviously. If you do not have a top-

notch IT team, you would hope that it is not just the IT people; I think librarians, there are probably some new roles and responsibilities here to begin to think how you would do different work or do work differently when you engage with researchers., understanding what they need, and engaging with them in terms of their research field. It is always a good thing to have expertise in the field of the research, but understanding what the new research is out there and understanding what their particular needs are is a major benefit, and you get that by getting out of the library, by engaging them in the committees where they are, in the grant application process, etc. These are all new types of roles, perhaps not for everybody, but certainly emerging roles for librarians. The data librarian: working with a researcher to help discuss or develop a data management plan, etc. Metadata librarian: understanding what it is that they need to describe, the deliverable, etc. These are ways that we can stay abreast, maybe not entirely, but the communication needs to be two way and, perhaps, being proactive, not waiting for the researcher to come and ask for the question, but to anticipate the question by reading what is going on in the field, understanding where the research is going. I just attended a very fascinating session by PLoS on ALM's and using that tool to engage with research at a very different level and in a very different way than I had yet to forethought we might do, and I was very excited to see new ways of thinking about engaging and being embedded with researchers or faculty.

**Greg Tananbaum:** So, William, a similar question to you. How do you think scholars could more efficiently use technology to further their research?

**William Gunn:** Well, obviously, I think that there are a lot of things you can do with technology to make your work better. I think it can be hard sometimes, especially if you are a procrastinating grad student, to get away from technology for technology's sake; to use the things that actually make your work better. That is one place where, honestly, I think libraries have a really strong role to play: knowing what the good services are, knowing how they serve your faculty's needs, being able to recommend to them, "Okay, this is a

really good service to use to host an online profile or to do research discovery, but this over here, it has not really got that much traction and maybe you do not need to spend too much time going over in this area,” knowing the discipline-specific needs and all of that. I was struck in the earlier presentation that I was giving that what we have done with Mendeley, if you think about it in terms of having instrumented the research process, we have, in a way, embedded Mendeley in the researcher's workflow so that we are understanding the researchers' needs and so we can provide them better services. I wonder, it had not occurred to me until I heard Jeffrey [Lancaster] talking about how he tries to do that with his faculty, and you hear about embedded librarians, and I thought, “Hmm.” We have a bit of software that is doing a lot of the very similar kinds of functions. How can this serve as a model for improving? How can we bring librarians into Mendeley and have them help us to do a better job at what we are doing?

So speaking with my researcher hat on, what I really wanted out of all of this was to spend less time writing and more time doing research. Less time looking for papers, more time reading them and thinking about the next experiments. Leveraging that collective power is a really powerful concept. If you think about it, there has got to be 100, or 200, or maybe a thousand people out there in the world that are interested in the similar topic as you and have collected a collection of papers on a similar topic to yours. Would it not be nice if you could say, “Okay, I am interested in this topic and have got this paper and this paper and this paper on it. Show me some other papers that I should probably have.” So we have built a tool to start doing that for people, and I think that is taking the time and especially the repeated effort, in a lot of cases, out of all of this and moving it to where there is more time spent publishing papers, less time spent writing them. There is more time doing research, less time out there looking for it and trying to stay on top of the literature, which is just impossible these days. We have now reached this critical tipping point where nobody can keep on top of all the literature in all of their fields. I do not care how niche your field is, there is going to

be more out there than you can keep in touch with, and so you have to depend on what we are starting to call social filters.

**Greg Tananbaum:** So, this is a similar follow up question to what I asked Lorraine: is there this secondary thread where you have all of this content, and it is hard to keep track of it, and it is a bit overwhelming, but the number of tools and resources that you could choose from to help with that filtering, there are an overwhelming number of those as well. Is that a concern?

**William Gunn:** I do not think it is necessarily a concern right now. In any field where there is a lot of interest, where there are a lot of unsolved problems, where there is a lot of work that can be done on behalf of someone and value to be added, there are going to be a lot of people trying to solve that problem if it is valuable enough. And I think that is where we are right now. Right now, we have a whole bunch of different services to do specific bits of things, but eventually, those are all going to converge into certain activities that people want done. Discovery is a service, commenting review is a service, and we are seeing Rubric and these types of things as services. I think they are all going to converge, and there is going to be a shakeout. Quite honestly, I would be concerned if there was not a whole lot of people that are out there.

**Greg Tananbaum:** Doubling back into your biography a little bit, William, you studied gene therapy at Tulane, and you earned your PhD there, so you are a recovering bench scientist at this point. What do you see as the ideal relationship between the librarian and an individual researcher?

**William Gunn:** From my point of view, I almost never went into the library. I used library services all the time, of course, but going there was not something that I thought about. It was not necessarily on my radar. I directed a lot of my frustrations about the scholarly communications process to the library because they were my first point of contact, so I would really like to see a lot more of a two-way street go on there. Because you were right earlier, Lorraine: librarians really picked up the open access ball and ran with it for



a long, long time and dragged the faculty along with them for most of the way down the field. And now when you get up almost to the end zone, the faculty want to pick up the ball and cross the end zone. That is great as long as we get to where we are going, but I think librarians could be more embedded into the process of researchers understanding more of what they need, become more specialized, as well as researchers should get out and understand more of what the library has to offer. Certainly relative to the question you asked just before, libraries are a place where they can go and find out how to use all of these different dizzying arrays of technologies more to their benefit. "I have got these mandates, there is all these confusing and conflicting rules and regulations, what do I need to do? Can you figure this out for me?" I think there is definitely a lot of value to be had from researchers talking to librarians and librarians talking to researchers.

**Greg Tananbaum:** Same question to you, Lorraine. What is the ideal relationship between the librarian and the individual researcher?

**Lorraine Haricombe:** I do not know how to define ideal. If I asked each one of you, you would probably have a very different opinion of what is ideal. For me, it is on a continuum. For some people, it will be what they get today. It may be just the book that they want or get an answer to the reference question, and if that is good or right or help advance whatever it is that they are doing, that to them is ideal. All the way to, "Wow, I had no idea the library could do this for me," which is more often the case. How many of you have worked with faculty and heard it said, "I had no idea you could do this for me. I wish I had known earlier." There are probably a few of you in the room here. For me, understanding what the need is, that engagement, that two-way communication is critical to understand how you can address the needs for them; whether it is the subject expertise, whether it is being part of that team, whether it is being in the classroom shaping and developing their course or their curriculum so that student learning outcomes could be better measured, whatever it is, it depends on in whose eyes you are ideal, I think.

But, I do believe that, as librarians, we need to make more concerted efforts to promote and identify and articulate very clearly what we can do. We are so much more than books. I wish every time somebody pulled up a database it said, "Brought to you by your library," because I think sometimes the students just do not get it. And they do not think, as you said, you did not think it came from the library. You use the library. Nobody graduates from the library, but you use the library all the time, right? So I think making sure that they know is important, and the responsibility rests with us to make sure that we are proactive in that space to let them know what it is we can do, whether that is on our web site, whether that is through the embeddedness, whether that is through the liaison structures that we have. However we do this, and maybe do it and show it to them so that they understand that they can come to us for this. Libraries are such cultural icons, and I think the romantic notion of what a library and the librarian can do for you is something of a challenge for us. People tend to not think of all of the other exciting things that we can do, and it behooves us to very quickly get on board to show successful case studies of things that we had done and the impact of that on their teaching or on their researcher or on the student learning outcome. Those are the points where we can really make a difference in showing how ideal we can be for them. We hear this from students also. "I had no idea until I was in my senior year," one student or several tell us, "that you did all of this for me, and I wish I had had that in my first and second year."

**William Gunn:** I can definitely say, as a researcher, I would not have minded more contact from librarians. I think maybe the idea was to not get in their way, let us focus on what we are good at. You start class, you get kind of trotted through the library, and you get this sort of orientation, and that was it. But I really would not have minded a lot more contact if it was, "Hey, I know you are dealing with this particular issue. Here is how we can help you with it." I would not have minded that at all.

**Lorraine Haricombe:** I think we are going to probably see more of that with the White House

directive, certainly with grants and researchers who are now going to have to comply. I think there is a very distinct role for librarians there, and we had better get on board with what that role will be, the workflow, etc. Increasingly, librarians and library deans are calling on each other and saying, “What are you guys doing about share and quotas and this whole White House directive,” and there is an undertone here of “Let us see who is going to start and what they are going to do first.”

**Greg Tananbaum:** Right. So there is a component of, on one end of the spectrum, being an information valet: popping up when needed to provide whatever resource is necessary, and then going back to wherever you came from until they need you again. On the other hand is the information tax accountant where there are all these crazy rules and regulations, all these forms to fill out, and how do I do that? I need a professional to help me. Obviously there are areas in between, but that is sort of the possible spectrum.

**Lorraine Haricombe:** I do not know if marketing is the answer to it all. We have marketed, we have got a great marketing communications program, and many other schools do. People see what they see, but it is at the point of need when they really appreciate more what you do, so it is that one on one, and it is, unfortunately, a very challenging model because we do not have enough librarians who have the research, obviously, but it seems to me that is the best way to get out there, and if we have that structure in place, you know, is to prepare and equip our librarians to be more active and more confident in those roles.

**Greg Tananbaum:** My last question for each of you, before we see if folks in the audience have areas that they want to talk about, is: what is one potential game changer in the scholarly communication space that we should be thinking about. Lorraine, I will start with you.

**Lorraine Haricombe:** Well, I keep on thinking back to this ALM session that I attended earlier. Article Level Metrics, to me, comes to mind as the one area where we are going to get through to faculty who are really the people that we rely on to

advance this open access because they are the researchers making the discovery. So the impact of their work, a better understanding of the impact of their work, through all of these different tools, article level metrics in all of its manifestations, I think, may be the game changer because every researcher wants to see the impact of their work. Right now, they look at it in the best journal; it is by journal. It is not by the real impact of their particular work. Citations matter to researchers, and to the extent that we can provide rich depth to their impact, I think it is going to be a game changer. The sooner we can get that, and the sooner we can get librarians to help in that space, to help highlight and show the impact of that work, I think, the sooner we will get them to come on board in this endgame of immediate open access to all.

**Greg Tananbaum:** And you feel like that is a game changer in part because it will incentivize authors to think differently about where they choose to publish and how they choose to publish?

**Lorraine Haricombe:** I think if it is published open, yes, because if it is immediately available, they can get more people than the review editors to look at their work. They can get input from even citizen scientists, if you will, ultimately. But hopefully, it will be a game changer in the promotion and tenure issue. For many of them that is a big, big issue on campus, and open access is still not fully embraced, in part, because of myths about peer review and open access. Once we can get to change that perception through impact stories of their research, I think we will get there. It will take a little time, but I think we can get there. We have tools and we have a strategy.

**Greg Tananbaum:** So, William, the same question to you about game changer in this space.

**William Gunn:** I am glad you asked this question, and I will find out 10 years from now whether I was wrong or right, but I definitely have to come down on the side of altmetrics, too. If you think about it this way, open access changed the game, altmetrics is changing the game, and I think what is going to change the game in the future is going to come as the next thing beyond altmetrics bringing in this, again, the concept of more

qualitative dimension to what we currently have, which is mostly quantitative. The interesting thing about the altmetrics right now is that they are very atomic, so it is not like where you had the prestige at the journal level: "I published in this journal," or, "My monograph is published by this university press; therefore, it has the impact imbued to it from that." This impact is a lot more atomic. It is aggregated at the level of the article, and the individual item might not be a published article. It might be "I wrote this bit of code to do this kind of research, and it is on GitHub, and a lot of people have forked it." That is an impact. Or, "I have taught this course via Coursera and 100,000 people signed up." When you start thinking about altmetrics, it really kind of opens things up.

Like you said, it very much does incentivize the practices that we want to see in scholarly communications, like more open peer review. For too long, the peer reviews of articles have been like the scholarly dark matter. It happens, it has some effect on the output, but nobody ever sees that. It is totally lost to the broader community of scholars. I think if someone could get credit for doing their review, if that was open and accessible on the web, like it can be with some of these new altmetrics frameworks, then they will start doing more with that and it really is going to change the game. What I think is neat about it is that we already have metrics. People are already being assessed by their numbers. Chinese researchers are already getting bonuses for publishing in certain impact factor level journals. So we might as well pick a metric that incentivizes the practices that we want to see, that promotes reuse, and that anchors the definition of quality in something that matters to us to what we care about. Whether or not this work can be reproduced, which means that if they publish the paper they have to have included their code, they had to have made their data open, all these practices we want to see, and that is just the prerequisite. You get that as a side effect for saying, we are going to use altmetrics that look at how well this item is reused.

So I think it really has a lot of potential to change the game in so many different ways: itemizing it,

adding layers of value on top of it, so many interesting things. Right now, we are in the qualitative, the descriptive phase to get to where it changes assessment. I think we need to understand more about who is generating these metrics. You know, like I said before, if somebody tweets your paper, that is great; if it is a Nobel Prize winner who works in your field, that is probably even better.

**Greg Tananbaum:** Or if they are theoretically saying this is the worst paper I have ever read there is a...

**William Gunn:** That is another thing about a citation, you do not know if somebody is citing your paper because it is a method or because they did not like it, so bringing that qualitative dimension into things, well it is where we need to get to be able to do the assessment. With altmetrics, we do not have to make mistakes we made in the past with letting the impact, the journal impact factor, which was just intended to be a derived tool, end up driving the process, right?

**Greg Tananbaum:** And of course through the lifecycle, we will have issues to do with gaming the system and jacking up your numbers and finding ways to inflate your value as we do with the other metric now.

**William Gunn:** As we do with the other metric now, yeah, and the neat thing about having more than one metric to look at is you look at the correlations between the metrics; so if somebody has very low numbers of citations, and there are no blog posts written about it, it was not mentioned in any news articles, but for some reason on Mendeley it has been added to thousands of people's libraries, you have to wonder, "Okay, is this something really, really interesting this person is doing, or is there some gaming happening?" and we start to look at those correlations.

**Greg Tananbaum:** That is all I had formally on my list of questions, and I am hoping that people will step forward and ask what might be on their minds. Thank you.