

Decolonizing Medical Knowledge and Advancing Open Science in Global Health Education and Practice

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Opening Remarks (Moderator: Dr. Ronald Young)

Good morning or good day depending on where you are and welcome all to the UNESCO webinar on open science and the decolonization of knowledge soliciting thoughts for the UNESCO recommendation on open science and focusing here particularly on the English-speaking Caribbean. We must first thank UNESCO for its strong promotion of finding ways through open access to redress sustainably the inequities of access to published scientific literature that primarily affect the poorer countries of the world we welcome the extension of the concept of open science to include consideration of the broader hegemonies which have marginalized or excluded from serious consideration by the mainstream scientific establishment of the above knowledge systems of many Indigenous societies and we look forward to the exposure of a greater involvement of communities in determining the focal of national scientific research agendas and here we must particularly thank Budhall and Regesh Tandon, the UNESCO co-chairs at the University of Victoria in community-based research and social responsibility in higher education we thank them and their co-authors, Leslie Chan, Florence Piron and Lorna Williams for their thoughtful paper on “Open science beyond open access for and with communities a step towards the decolonization of knowledge.” This, I expect will provide a firm basis for our discussions today which will certainly include the lessons learned from the Covid-19 pandemic thanks and welcome also to Dr. Liette Vasseur, president of the Canadian national commission for UNESCO and the UNESCO chair at Brock university for being here to offer introductory comments on the UNESCO open science declaration banks are also due to Suryani University of Victoria for sharing us through some of the organizational details to the UNESCO national commission for hosting the webinar and also to Everton Hanam, secretary general of the UNESCO Jamaica national commission for organizing the Caribbean side of the event welcome also and thank for agreeing to share their perspectives Dr. Brian Cockburn dean of the faculty of science and technology at the University of the West Indies St. Augustine campus in Trinidad and Tobago and Dr. Colin Depradine of the corresponding faculty at the cave hill campus in Barbados.

I must say that it is quite ironical that interest in open science has surged at the same time as developing countries are moving to become knowledge-based economies and are seeking to protect their intellectual property and ring fence their local knowledge and innovations as a means of generating gravely needed income through patenting and conversion to competitive marketable products. This at least to some degree conflicts with the philosophy of openness and begs for a happy resolution. I note that there are initiatives such as the Canada-based OCAP (ownership, control, access and possession) which address some of these issues. A major problem I suggest is that the well-established inherently colonial structure of

PULMONOLOGY

our economic and trading systems will continue to be a St. bling block knowledge, or at least information, is I propose a raw material and not a finished product so without the most careful management the unsustainable but ingrained paradigm whereby colonies provide raw materials at vanishingly low costs and purchase finished products at enormous markups will inevitably supervene, enriching the metropole and impoverishing the colonies lack of infrastructure and investment capital will still hamper the realization of significant returns and foster vulnerability to well-resourced competitors. This is clearly oversimplified; I suggest that the problem may not be primarily in the commoditization of knowledge but in the way in which our economic systems trade in commodities enlightened partnerships and collaborations across the North-South divide will undoubtedly be essential to resolution. Finally, in closing, I will share with you the fact that in reviewing our recently revamped Jamaican science policy, I could not help but note its wholehearted embrace of science as a commodity and the pursuit of patenting and innovation in the cause of generating income this I suggest should be interrogated but may not be entirely unsupportable certainly not confined to Jamaica. I was also struck by the nearly complete absence of any tangible policies aimed at involving our communities more integrally in formulating scientific approaches to their local problems, scientific literacy and engagement of the population as a whole. I hope that this will change, and I believe that discussions of this sort will help to move us toward a new sustainable and broadly enriching engagement of science in our global, global village. Welcome again to all and my best wishes for a productive for we will now hear from Dr. Liette Vasseur after which we will have responses from Dr. Brian Cockburn and then from Dr. Colin Depradine. We will then invite comments from a few participants. Please welcome Dr.

Dr. Liette Vasseur:

Thank you very much and I will share my screen doctor I can see you good...good and can you see my screen?

Moderator:

Yes.

Dr. Liette Vasseur:

I can so thank you again for this introduction and it's very appropriate in fact what you said as you mentioned I'm a UNESCO chair on community sustainability from local to global at Brock university as well as the president of the Canadian commission for UNESCO. I would like first to provide some acknowledgement first to the land of the indigenous people where we are privileged to live and work. In my case I live in St. Catherine's and I am on the territory of the Anishinaabe traditional territory which is covered by the upper Canada treaties. I would like to also acknowledge the Canadian commission for UNESCO for providing a lot of support for this project and this is highly appreciated. I would like also to acknowledge all the universities and organizations that have been working on this as well as all the people who are sharing knowledge for a better world and this is including all the people who are on this webinar today. And we have to also acknowledge the authors of this brief on the colonizing knowledge, it's a great collaboration and I should say that this is something that I was really concerned and I'm glad that we have these kinds of documents that can help enhance the discussion and making

sure that it's as inclusive as possible. Now what are we talking when we talk about "open" - open to what? Open science? Open access? I just want to give first a little history in 2017 the UNESCO, all the countries, unanimously approved the 2017 Recommendation on the definition of science and scientific researchers and this document is very important to understand where we're coming and, in this document, it's very clearly written that science, all the type of research that we're doing, should be for the well-being of humanity and it should be available to all but available to all means what? It means that it's possible for any researcher across the world to have access to appropriate infrastructure, appropriate publication...to be able to enhance the...the research and ensure that we're going further but it also mentioned very well that it should be available to all: all means also communities and social movements that really need to have to read real data, not fake news and other things like that. The problem however it's that we're still excluding some knowledges when we talk about the definition of science and researchers because researchers are not only in academia or in government or industry, but they are also in the communities, especially when we think about indigenous communities. The Covid-19 pandemic right now is also underlying even more the importance of open science. It's challenging really the conventional research that is in closed door in the lab and nobody knows what's happening in its publication are only in very prestigious journals that are not accessible for most people even sometime for even for ourselves as researchers. So that has brought a big debate on these critical issues, the need to have transparency, the need to have access to the right material. It has a big impact on public welfare, and this is something that is very important especially when we are in the in the moment of crisis like that. What is interesting also is that what emerged are hybrid knowledge structures and these structures are a little bit different than what we used to in terms of enhancing collaboration and trying to move faster and faster in terms of research and knowledge. However, unfortunately, we recognize that it's still exclude knowledge some very specific knowledges especially in the indigenous knowledge that is here in Canada or in Africa or anywhere else in the world. Often their voice is not heard and in addition, in many cases, they may have some solution that we even don't know but we discard them because they are not from the normal western mentality or the neoliberal system, so we have to be very careful about that.

So, what we see in fact when we look at open science is that we have the center section of dimension of openness. Openness to text and data so more the ecologies if you want of knowledge. We have openness to society, and this is part of this definition of science the place-based knowledge and finally we have the openness that we have to push for to excluded knowledge a system. So, there is a need to look at knowledge equity as well. So, this really balance of these dimensions that the recommendation will have to make to make sure that it's all there if not we're missing pieces. So, the brief talked about several actions for open science and this these are important to...to get through in the recommendation that will be pushed forward gradually at UNESCO. The first is to support co-construction of knowledge with the community, in my own case I work with communities and always say that it's important to work not only for the community but also with the community and by the communities because the... it's important to have this integration. I always say that if I don't live in that community, I'm not the one that will have the consequences of the decisions - they are and then they have to be

able to have their own right for decision with the right data, with the right research. That's the important part.

The other thing that we need to think is really funding indigenous and global soft knowledge sharing, this is still missing today. We have to diversify publication board membership and this is something that I should say has editor-in-chief of Botany, a journal from the Canadian science publishing this is something that we are really conscious now we have an iniquity diversity and inclusion policy and my role right now is to try to find new associate editors who are not only men, white from western countries but they are coming from the South, they are from different races the earth, from different genders and this is very important. Diversity brings a lot more openness and transparent process of addition of papers as well. We have to decolonize research and teaching in higher education we have to start really moving ahead and bring...especially for Canada we're talking about reconciliation with indigenous people and, but we have to also think about the other races and religions that often are also marginalized and that need also to be included in all these discussions.

And finally we need to share knowledge using creative approaches and this is something I was talking to Budd yesterday that I told him that the only little weakness that I have with the brief is the following: is to recognize the barriers for people as researchers we use scientific jargon, we use a scientific jargon that most people don't understand if you talk to anybody a resident in the street that doesn't have a university degree most of the work that we're doing it's almost incomprehensible for them so we need to find accessibility and this means knowledge translation. This is a something that I take personally at heart with one of my projects with the community of Lincoln we write weekly blogs, very short blogs to explain the terminology to explain what we're doing and it's amazing how many residents since I've been connecting with us because we're publishing that in the local newspaper and that helps really to bring to another level their understanding. So, the open science recommendation timeline is as follow it's a very tight one, they have now the first draft of the recommendation that is available and I believe everybody has received the link for it. So right now, there are this open science webinar series the deaf will be discussed at the UNESCO executive committee in March of UNESCO. In November 2021, there is a hope for the adoption of the Recommendation, so that means that we have to really involve everyone as much as possible right now to put comments during the consultation process.

So, what can you do? What can we do all? First share this brief and the recommendation the draft for accommodation. Ask your UNESCO national commissions to support these reconsiderations that we have in this brief, but you can go further there are probably other things that we have not all thought about that other people would have probably good ideas and we have to continue to organize these kinds of discussions with the universities, with the communities and you have the link here for the consultation. So just make sure that you can connect with as many of your colleagues or friends that can bring more and more information and support to work further on this recommendation. So, I thank you, merci beaucoup, gracias chimigosh. And just to finish I'm leaving you with a little thing about that is for me a big reflection: I am, I am a woman, I am a woman of a generation, I am a woman from a generation

of poverty, I am a woman from a poverty class heritage, I am a woman. And it's representing it in myself in some way, thank you.

Moderator

Thank you ever so much, I think that's that places are a sort of good footing to go on with our discussions and so I will just go on, I think we can just leave questions until afterwards. I will just go on and ask Dr. Brian Cockburn to respond.

Dr. Brian Cockburn:

Thank you chair and good day to everyone. First of all, thank you for the envy the invitation to take part in this exercise and thanks also to Chan and hall et al., for that very interesting and thought-provoking paper that's forming the base of some of these discussions here today. I want to say though that because of the breadth of discussion here that perhaps we needed to invite some local historians and social scientists to help frame some of the issues because some of them are outside the realm of pure science, much in fact right. Now we are talking mainly here about decolonization of science, but the pandemic is raising a very real possibility as well of recolonization with the move to online classes for example there are risks and opportunities, we've already been approached for example by at least one North American tertiary institution asking us to serve as an outpost to run practical exercises while residents here in the Caribbean enroll in programs in that institution. So, recolonization or an entrenchment of colonization is also a danger that's accelerating because of the pandemic situations.

Okay moving now to the whole idea of decolonization it looks like there are there...I would phrase it as two main pillars: one being the establishment of partnerships, so this for me is really clear if we want to decolonize science. North-south partnerships but also in-country partnerships that really need a robust and practical framework in order to permit us, that's the scientists, and everyone else, to walk in each other's worlds, this is an absolute requirement. For this partnership, for decolonization of science to really take root, these partnerships need to be established so that they can grow organically and serve as a conduit for two-way communication. I'm talking of course partnerships with the public and private sector, schools, communities and now and just to be clear it's happening in in different ways, in small ways. But what's needed is a concerted mechanism to bring all these bits and pieces together. I'm talking here for example about internships for college students these are very useful for bridging the world of work with academia. But it happens on a pretty much an ad hoc manner, but if we're interested in in bringing more science to bear on what's happening in communities, bring feedback from communities to academia, the relationships perhaps need a more solid framework a more extensive framework so that it happens in a structured manner.

The other thing, I have to say coming out of the recommendations as well the attention to funding and Dr. Vasseur mentioned in fact well she spoke about publication board membership and this is absolutely vital publication board membership. The challenge also if you're talking about membership of funding agencies is to find individuals who would be able again to walk in more than one world it's the it would probably be really destructive if or counterproductive if you had participants who were seen as being token members of either an editorial board or a

funding agency...and there again lies a particular challenge in identifying individuals who can straddle both worlds and maintain respect for both worlds entirely possible but quite a challenge. Right access to data and the ability to contribute to that data we there are some talk in the channel and...document about publishing and the extent to which open source has made publishing for some communities a bit easier but we again run the risk of developing new cliques wherein individuals who may have been traditionally shut out from publishing in certain journals on certain subjects may create their own cliques in the in the in this new dispensation and actually not solve the problem.

Okay there are maybe just one or two more items that I wanted to mention from the Chan et al document. Consideration number two really caught my eye it concerned initiatives that can build communication capacities or university libraries that decide to become publishers. What a lovely notion...I haven't actually heard this idea articulated before and there are probably some financial reasons why it hasn't taken off in some jurisdictions, I know that locally there has been a lot of discussion about having the university libraries serve as repositories of local research and knowledge and in particular ownership of that knowledge but the idea of serving as publishing houses. I haven't heard that articulated before, so I really like that. And one more thing higher education institution is consideration governments should abolish university rankings and evaluation based on criteria is by powerful institutions in the global North. This interesting we've been doing a lot of work on assessment instruments for promotion of academic staff and the idea of impact factors is proving really difficult to hurdle and one of the suggested mechanisms was to look at the impact of the work of colleagues as opposed to the impact factors. And as with anything the impact factor, which is getting back in different quarters, nevertheless, continues to be really difficult to dislodge but the idea of measuring impact is perhaps why it's so difficult to bringing different metrics to replace what is already there and really democratize the whole process more.

Chair, I'm going leave in time I guess for questions so I'm going to stop at that point, and we can re-engage as necessary. Ron?

Moderator:

Sorry I muted... well thank you very much Dr. Cockburn some very interesting points and insofar as you have left some time for questions. Does anyone have any questions that they wish to pose at this point? If there if there is none then we can put those on hold and work, it in the general comment and question section and just go on to hear from Dr. Depradine. Are there... are there...yeah right are there any issues that anyone would like to raise and if not then Colin can you go ahead and Dr. Deb.

Dr. Colin Depradine:

Sure, thank you chair. I'll attempt to share my just a few slides...I want to share okay I'm assuming everyone can see that essentially what I decided to do is very quickly and very briefly go through some of the experiences I've had trying to implement a few of the open science principles. Not nothing as extensive as what was given the brief, I think the brief I should say was very well written very expensive and something that we in this side of the world need to

embrace. So, this slide here essentially shows some of the comments I've gotten over the years from persons various people in Barbados when I became dean. This includes staff, inventors, teachers, you name it those in the public sector with regards to the state of science in Barbados and perhaps eastern Caribbean nothing here is new. But one of the things that they obviously talk about is the lack of funding and one of the points they do point out was when you get the funding for example you are always your hands are always tied in such that you always have to bring in consultants from outside of the region and very little comes to the region and therefore the experience never stays. The other point that they come they say is that science is generally in the region is treated as an add-on. Until recently Barbados did not have a ministry of science. Science was always tapped on to the end of some other ministry and pretty much ignored many of the solutions to resolve that were based on I suppose the word is colonialized models and models that simply don't work for the region and we've tried them and they have never worked but I think the most...oh and I should also say that because of these different issues the enrollment in our faculty was declining rather but one of the things I think stood out most is the definition of a scientist and what we portray or understood to be. I think the best example I could give of that is that when I had an outreach session in a primary school with my deputy outreach a young black female the one of the students said to me he didn't realize we had black women in our faculty who were scientists and I think and when you spoke to them their view of science is what is dictated by the media and by the television programs of being male from certain countries and restricted to certain places and certain types of schools and so on.

So, essentially as dean what we decided to do as a faculty is to adopt a different philosophy from what I was told I became when I say told retired scientists and whatnot. We decided that was science for all philosophy which and many aspects matches what is in the open science and essentially what we want to do here is get across the public of Barbados the private and public sectors, the science is not restricted to our faculty. There is a belief...it is interesting...there is a belief that our understanding that the university of the West Indies is founded with the idea that anyone could come to the university, there's no discrimination there there's no bias, whichever background you come from you can come to the University of West Indies and our purpose is to support a region. But for some reason people didn't see that from my faculty and that was based on that image where you...you look a certain way, you come from a certain rest of us are not included so we want to change that image, but we also want to get across the public that you can participate in science at different levels, you don't necessarily have to be researchers like those in the faculty, but you definitely can dabble as an inventor, a maker, a teacher or whatever aspect you want to be in and we the faculty will support you. The other thing that we decided is that we needed to have accessibility for all I wanted notions we wanted to dispel many but the two primary notions we want to dispel is that there are only men in the faculty which is not true and the other one is that if you're disabled you can't become part of the faculty which obviously is not a nonsense, but it was a belief that's permeating the population. And we also wanted to do things like increased sharing and collaboration with the government the private sector as well as the public and so on that latter thing at the bottom of the slide "embrace your inner nerd" was our marketing campaign so to speak where we were telling persons to embrace the science within themselves and work with the faculty to make science more open and more transparent and so on.

PULMONOLOGY

Now here are some of the benefits that came out of that our exercise and it's an ongoing exercise, its over years things don't change overnight. As a result of that, we had a growing awareness of science and a growing awareness of the true image of what the scientist is, and I have to say I think the open science concept pushes us back to what I believe is the and it says in the document the original belief of science which is for the benefit of all, and all can protect participate. So, we've seen since then a dramatic increase in our student enrollment and now we've reached the point where we have the largest enrollment, we've ever had in the history of the faculty according to the numbers that I have, subject to correction, but if it's not the highest it's the second highest.

But one of the things that we are very proud of is that we created something called the "Science and technology festival," which some people might call it science fair. It started two years ago we had it this year as well just before the lockdown as a result of the pandemic we clearly may not have it next year but the point is...what the reason we created that was to introduce the public that science is not just in our faculty but it occurs in business, it occurs in the military, it occurs in the banks - science and technology is used by all and we want to get that message across and it was a great success. The reason I say that is that we had in the first instance 1600 plus students, plus the public come to the first instance of this the first time. We had students from the nursery, the tertiary level. We had all races, all religions students with and without disabilities, you name it everybody turned up by the bus loads. The reason I'm bringing this up is that this to me indicates there is a desire and a willingness within the Caribbean population to be participants in science and I think that the open science concept will, well in my opinion, drive that desire to be involved. We also had since then increasing the requests for access to publication data...of our students have started decided to start their own businesses based on their knowledge sorry gained from their various courses in the in the faculty.

This is the last slide here, but these are generally some of the steps that people have been asking not just the faculty asking but the general population and those who came to the festival want to see now that they've had a taste, now that they have a belief in in the possibilities. These steps don't have to occur in a certain this order, this is just an example of what people are asking but obviously it's much more much wider here. More transparency in the data collected and accessed to it and they want the buyers removed and that that's not necessarily as easy as it sounds because I think one of our biggest problems in this side of the world is that we don't actually have the software tools available and the database systems available to make it possible and I think the open science concept speaks to that not things it does speak to that and I think we should follow through on that but they do say so. The other thing they point out is that when we have research projects involving the community and we take, we do our surveys and collect the data, the data then disappears within our repositories and they never see it. So, more and more they're saying well if you're coming into our community to do whatever research, we expect to have access to that data and we have we expect to be participants in the analysis of the data after you've done whatever you want to do with it. The other thing is that they're asking their leaders to listen to them, to faculty to trust in us. In other

words, start always automatically assuming that whenever you have a problem in science and technology resolved that you can't come to the faculty or you can't come to the to the population and automatically go somewhere outside of the region and I think that stems from the image that I was talking about at the start, where we believe that true scientists don't even evolve out of our developing countries and of course and another point that they point out is that we have a tendency in Barbados to create no end of science policies but we never implement them. They're asking you know can you please create one and stick to the plan and I tend to support that, and I will also go one step further and say that we should really send the open science policy to the leaders of the region and say "look, you don't need to reinvent the wheel, it is here written down and this can help you move your science your STEM policies and wishes forward." I know that's very brief, but I would just end by saying that my experience in all of this has been one where there is a desire for by the population and the faculty to work together public included as well. There is a desire to see that knowledge shared and if you do that you will create the innovation and entrepreneurship and all the other things that the region desires from science and technology. So, I will end at this point.

Moderator

Thank you very much Dr. Depradine. That was very interesting, and I am particularly encouraged by the results... that you are... in terms of enrollment and so on as a result of your inclusive community science types of activities. [Music] That community involvement is something that I think we really do need to accelerate and promote in the region and [Music] it is good to see that there seems at least in Barbados to be a receptive audience. I think a very good paradigm that I've certainly seen in Jamaica is the involvement of the University in the Augustine community and the Augustine film festival that has come out of the of the engagement of the University with the community in terms of the Caribbean mass communication [Music] department and the teaching and activities there. This has been tremendously successful, but I certainly don't see here an equivalent in the area of science, and I would certainly love to see developments on that. Any further comments on this?

Dr. Brian Cockburn:

Yeah, Ron so let me just back in there. So, I was very happy to hear Colin there and it seems to be part of the Caribbean zeitgeist at the moment...the idea of democratizing science as it were. For example, the math department at the faculty of science and technology in Trinidad, they partnered with some secondary schools to host a math fair of all things. You would imagine that... well other people thought well I'm not fair that's quite a leap who is going to attend such a thing, the answer surprises a lot of young people who seem to really enjoy the exercise to the extent that it has twice outgrown the larger venues that we provided for it. The old question...yes there's something called a bio blitz showing citizen science they recently were able to identify a new species of snake. We held a science week last year, a full five days, under the theme science and communities. So, it appears to be part of the zeitgeist that this idea of bringing science to the people and bringing the people to science and really having an appreciation as Colin had indicated the question of who is a scientist? And what is science? Those questions seem to be in the air right now. On the on the subject also of democratization of science is both democratic and very non-democratic. It listens to all manner

of voices and yet it's deaf to some voices lots of challenges here with respect to how you ensure that people are heard without giving a platform to bogus science as we see as we're struggling with right now all around the planet. Okay those were some of my thoughts after hearing Colin thank you

Moderator:

Thanks very much for those comments Brian. I think you raise a very interesting point in terms of the issue of the distinction between valid and non-valid data and an input into the scientific discourse. Of course, one of the things that is offered by your mainstream journals is the peer review process and the ratings of journals will often be related to the reliance that you can give that the things that do appear are valid and reliable pieces of work. It's not always the case mind you but, certainly it is one of the things that you look to when you go to the more established higher impact journals. As we as we seek to find new ways of publishing material and vetting material to remove some of the exclusionary barriers, we certainly are going to be faced with those issues of ensuring that non verifiable information may get lodged and could introduce and could raise the noise level of the discourse. This is a distinct danger that that needs to be, I think, guarded against and I would love to hear some comments along this line as to how...what the dangers are likely to be that we will face as we open up our sands? I mean we have seen on the open discourse media in the rise of so-called fake news and the tendency to have conspiracy theories spread on all this kind of business. How do we move away from the hegemony of the established journals but at the same time help to protect the readership ultimately from the noise level being raised by the introduction on verifiable and on improperly arrived at conclusions? Can we open up the discussion on that? Hello anybody there?

Dr. Liette Vasseur:

This is Liette here... I can probably start the discussion and I think you're right that you know opening the data what does it mean especially for probably some groups that would like to exploit and this is where it's so important to have very, very clear standards on how we communicate the data especially when we talk with the general public because this is where it can become a danger. It's question also that unfortunately most media now do not have specialists in science just because we did some work here in the region with the media. Most of them now do not have the... even the capacity to write their own their own papers their own articles so they will rely on others and this is where the danger can come: it all depends on their interpretation of the data. So this is why I think at one point it's a question also of putting principle or standards on how we communicate with the public but also how to make sure that on the media side or on the social media side as well there is some standards for them as well because this is where you're right, the fake news is a danger and I've seen that in some places where especially during the pandemic people are taking seriously certain things that are not that are wrong in fact.

[Music]

Moderator:

Thanks for and one of the one of the ideas that I saw floating was the moving away from impact factors. One of the things that was suggested was looking as an alternative way of coming at

that, but you know I put people down...Brian in fact who suggested that impact of the work rather than the impact of the journal is the thing that should be assessed but the question of the, as you recognize, is how do you then go about assessing that? Because that's not a trivial matter to...but one of the things that I thought floated was the idea of using some kind of quality measure which I think that's the same thing and I'm not entirely sure how that would work with the Chan et al paper and if there's anybody who might wish to comment on that?

Angela Allen:

So, this is Angela Allen here, a faculty member at the Cave Hill Campus in Barbados under the deputy dean –

Moderator:

Angela Allen...Hello Angela!

Angela Allen:

Hi and so I found the discussion so far very robust and very interesting, and I am proud to be part of this discussion and hear the views of our needs both Colin and Brian. I just wanted to comment on two things: your last comment about the fact that... I think it was the vet who mentioned...the fact that many media houses are unable to even write science articles properly within the region and I believe fundamentally we need to open up our science students at the tertiary level to other forms of communicating their science. In other words, we need to ensure that when our students are within our faculties that they understand that just studying the science and writing a scientific article is not enough, there are other ways in which you can produce knowledge products. I think engaging students in these other ways to communicate science maybe through cross-disciplinary studies and so forth or even specifically associated with science writing etc., will add to this current discourse and as Brian said the current zeitgeist about science and community. For me for example, listening to the whole Covid discourse it's quite interesting to hear the ordinary man in the street talk about the PCR test and know what that means, talk about the antibody test and be able to distinguish the difference and so for me that tells us that there is a yearning or an ability by the ordinary Caribbean citizen to understand the signs when it's communicated properly and when it means something to them. So that's basically my two comments...my main comment on what I've heard so far. Thank you again for listening.

Moderator:

Thank you very much Angela. That that was actually very...the business of writing of course is a...it's a major thing and as an editor for our local science journal, I can tell you that we we get many, many articles that essentially you virtually have to rewrite, and my co-workers tell me that I am very bad because I'm helping these people to rewrite their articles and then they will take them go away refashion them and submit them to a high impact journal and then we won't get any articles. One of the problems that we face in this part of the world, when you try to promote local journals which is one of the things that we're trying to do in the proposals here...the proposal to encourage the development of local journals that that can be more inclusive of local concerns and considerations. But the business of actually writing proper...

properly clear and communicative scientific documents at different levels becomes very important and how we set about trying to get our populace to embrace this and to learn how to become more involved in clear writing and making observations and so on. I think this is important the way we try to train our populace to make be careful in recording these things and to make the observations in a way that can lead to verifiable conclusion. Is there somebody with a hand up? I see Marcia Creary.

Marcia Creary:

Hi prof, how are you?

Moderator:

How do you do?

Marcia Creary:

I am good...I am very good. This has been a really interesting discussion because one of my...I wouldn't say pet peeves, one of the things that I recognize is that our science writing...we don't really put much emphasis on science writing and helping each other and helping the students to write for journals and sometimes you kind of suffer from this imposter syndrome where you feel - well your work is not good for... your writing is not good enough and especially when you submit it to a journal and they reject it. You feel okay you know why maybe what we are doing we're a third world country we're developing our research is not good enough and I think that makes people a little reluctant to just keep going at the writing and the submitting to journals and also, we have suffered over decades from this, I think you're calling it colonialization of Research, where the people come from abroad, they do the research they take the data back you help them with the research, you give them the information, you know...maybe you are a co-author maybe you are a...knowledge, but we don't always see ourselves as the primary investigator, the primary researcher and the person who is you know pushing the research and the publication. So, I think maybe it's a confidential thing maybe it's and I speak somewhat personally maybe it's this impostor syndrome thing but I think it's something that's worth looking at as you say particularly with the Covid situation here where many researchers are unable to come to their you know outposts to do their research and yet they have not set up the system in those places for the research to continue so they're going to have data gaps because they didn't really think it necessary to train somebody on the ground to continue doing what they have been doing so these are some of my thoughts on the subject matter.

Moderator:

Okay, thank you very much Marcia. I think in that last comment that you made where you were referring to the inability of collaborators who are coming from outside of the country to conduct research that they were doing in collaboration with local persons.

Marcia Creary:

Right.

Moderator:

Yes because of the Covid issues and not having anyone trained to continue. That of course is an important part of the world business that whenever we have collaborations, we do have to try to ensure that there is a very strong element of capacity building that is that is engaged there and not just a question of you know someone coming in getting involved doing something and gaining the benefits and gaining the information and taking off with it and doing their own thing. You know immediately the thing that comes to mind is one of the cases that was cited in the in the paper that where that we're considering of a Nigerian author who found it impossible to get a piece of work published until he included a known male researcher from the metropole as a co-author. Once that happened, the paper suddenly became a paper of quality that was worth being accepted. I have often thought that... I often ask myself the question why is it that when we review papers, we do the review blind so that the authors don't know who the reviewer is? It really should be done the other way around as well. The reviewers should not know the authors or the institutions from which they come because I can assure you that even in the most prestigious journals and possibly especially in the most prestigious journals, one of the most important factors in determining the acceptability of your article is the institution that you're coming from and the names of the authors who are on the paper and that makes all the difference in the world. It is not merely the consideration of the quality of the research, and this is unfortunate but so it is and while we're trying to patch and re-reinvent these processes, this is certainly one of the things that I believe we ought to be taking into consideration. Any other comments? I don't see any hands...

Sandra Richards:

Professor Young, this is Sandra Richards.

Moderator:

Yes, Sandra.

Sandra Richards:

Hi...I just wanted to register my appreciation of this discussion it's very encouraging and necessary and I was prompted to raise my hand because of Marcia's contribution I think that the impostor syndrome is very real, I think that many... in my experience, my own personal experience but also my experience with colleagues maybe because of where I sit as well...the impact of submitting papers to journals and so forth is very challenging and as an academic one expects but I think with that whole colonial aspect it has a particular impact on those of us in and from the region because, and you alluded to it in your contribution just now in that, if you add a particular author recognize as being of the standard all of a sudden your work is viewed very differently and so the position of primary researcher or you know the originator of any research is impacted by how you are viewed depending on where you are from. And so I think it's really important that we do have our local journals and we do have our local publications but just following up on the piece about people writing properly or being viewed as writing properly I'll be interested to hear your thoughts vis-a-vis the whole conversation about colloquial, so-called colloquial nation language, you know we're now legitimizing a different

way of speaking, a different way of being, but yet the standard by which you are judged when you submit may not take into account unless it's a literary piece those dynamics so the perspective that is outside of the historical perspective kind of relegates your contribution to the margins, if you like. So, I just wondered what thoughts were around that and before I close I was very I guess I'm very encouraged by the idea of disseminating knowledge in different, more creative ways. I think is it Liette Vasseur was talking about the blogs, the short weekly blogs and so forth and being a researcher that is actually going into communities. I think also Professor Coburn talks about having integrity straddling, but still being seen as being legitimate in both worlds. I think this is very encouraging for me especially for a University of the West Indies that really speaks to the diaspora in a particular way.

Moderator:

Thank you very much Sandra I would like to hear some feedback on this area from Liette. I hope I'm pronouncing that correct Dr. Vasseur?

Dr. Liette Vasseur:

Yes, you're okay. No I think it's I would say that, this is the important part is that we have to be careful when we talk to communities and it goes back a little bit to when I talked about the media and the standards that we have to probably define at one point is that to be able to have you know... to reduce the issues of deniers, to reduce the issues of fake news and all these things we need to make sure that we are accessible as people you know sometimes unfortunately, I know even some of my own colleagues tend to be thinking that they are at a higher level than the rest of the population because they are at the university and that they don't feel that they need to talk to the communities and I think they are missing the point. It goes back to what was said a bit earlier by some of our colleagues in terms of the impact of the people instead of the impact factors. I think it's the same thing, it's really the importance of bringing together the a way that everybody can understand and it's only that way that you can start having implementation of solution and it's often the best way also for them to connect and see that yes I probably have some other ideas as well and this is what you want to bring as you know... it's this possibility of the dialogue that can probably be more positive at the end than just trying to be too scientific and that nobody can understand us.

Moderator:

Well, it seems to me you know that this is something that is recognized right across the board. I am thinking in particular of the fact that the magazine the journal science clearly divides itself into two parts: it divides itself into a more popular section that discusses and talks about the scientific articles that are appearing in the journal in a you know more so in a more social and interprets these articles in the first part. And then the more detailed articles with the scientific data and analyses and all that comes afterwards, and I think that this is a very useful way of presenting your scientific data in fact it's one of the things I try to do with our journal here is to encourage both proper scientific articles and interpretive articles that place the findings in the social context and interpret the findings you know in a way that the layman can understand and appreciate.

Dr. Liette Vasseur:

Interestingly enough either I should say nature and science are very inaccessible and accessible to most people.

Moderator:

That's true!

Dr. Liette Vasseur:

And interestingly enough when we did the research on knowledge mobilization with the media in this region one thing that the many journalists were saying is that scientists tend to try to think that they can write for layman people and in most cases it's has not been. I should say for me the best example is we had for a while an insert in newspapers about the one-ton challenge to reduce the climate...the issue of greenhouse gas emission and I asked my husband who is not in science, he's not a scientist, not a researcher to read it to see if he understood. He didn't understand most of it and that was for the lay people, but it didn't work, and this is why at one point people don't act because they cannot understand really what is there. Again, it was written by government people who had a high degree of education and probably didn't really connect correctly with communication agents that understand what's happening in the media. So, we have to always be careful with that, I think.

Moderator:

So, not only do we to try to produce materials that are accessible to the local population and to a more general audience but, we also need to have good communicators who are involved in the process because we might otherwise fail to meet our target altogether. Brian?

Dr. Brian Cockburn:

Yeah, thanks Ron I couldn't agree more with Leah and earlier on Angela.

Popular...popularization of science often is rarely seen as science lite and so scientists tend not to take it particularly seriously and perhaps even, as Leah suggested, overestimate their ability to communicate complex and even not so complex science issues to lay persons including and even intellectual lay persons where a particular discipline of science is concerned. I just wanted to add as well, this is some of what I was referring to earlier when I mentioned the need for robust frameworks to facilitate this two-way communication between communities and the science community. That need for it to happen on an organized and regular basis, as opposed to happening on the odd occasion or with no real regularity or no meaningful exchange taking place. There is one other thing I wanted to mention something in the document, the Chan et al., document about the entrepreneurial university. Given the often-difficult task for regional governments to fund research and tertiary education, it's inevitable that we pivot towards a more entrepreneurial focus that in turn would seem to quite naturally reduce the emphasis on publication and move towards innovation and entrepreneurship. I got the general impression from the document that this was seen as not something so desirable, and I was hoping that we could have some more discussion on that aspect because certainly from our perspective, it appears to be certainly very desirable if we wish to continue functioning. Thanks.

Moderator: [inaudible]

Dr. Colin Depradine:

Yes...I think that this is a very important question and I have never seen a disconnect between having publications and so on versus entrepreneurship. I have always had the view that one leads to the other, the danger is in other words the research leads to someone commercializing the aspect...the danger there I think is ending up back in the position where we want to go away from, where you commercialize something and then you keep all that information to yourself in order to maximize your profits but so it goes back to the balance that we need to find but I've always thought that one would lead to the other and Brian is correct in this side of the world we're not going to get... it is impossible for us given our population size and so on to generate the certain monies necessary for pure research at some point we're going to have to go up the value chain and commercialize. What we as a population need to be careful of is not enough in the predicament that other countries have found where you have large corporations dominating certain aspects of research and dominating the market and then no other person can get it and so on so I just thought it would make that contribution. Professor young you're muted if you're... if you're speaking.

Moderator:

Yeah, thank you very much Colin for that and I was just saying that I am very happy that you raised it because it is something that I think we need to address head-on. More and more universities are finding themselves, and certainly particularly in the developing countries, finding themselves strapped for support from governmental funds. It is quite clear that the trend has been reducing support from government and increasing placing of virulence for funding on the universities as entrepreneurial institutions. So, there is no doubt that we...that universities are going to have to address this issue and come to grips with it. Whether or not this, I suppose you could call commoditization of knowledge, is a good thing or a bad thing... I think very much depends on how it's done. The patenting process inherently tries to address this issue in a kind of way because of the limitation on patenting and all of that so that after you're allowed to exploit your discovery or your invention for a period of time only after which the patent expires and having had to write down the process. The process then becomes available as a as a common good and accessible to all. Whether this is sufficient it clearly is something that one might need to address and in any event the position that many developing countries find themselves in is that they simply don't have the capital, the resources, or the infrastructure to quickly convert inventions, discoveries, innovation... well innovations and discoveries into products and the consequence is often that that these can be hijacked and exploited by the well-heeled...you know...competitors. So, it is something that is a concern and again it is something that we need to bring into a comfortable, philosophical space where we feel that we are...where we're going with it and that we're dealing with it in a progressive and sustainable fashion. Any comments on that? Hello?

Dr. Colin Depradine:

It is interesting because but definitely in the software world, I'm not sure about the other aspects, the system is broken because large corporations just generate large numbers of patent

spotted submissions and then what you find out in this side of the world is that every time you attempt to do something unique, somebody has already submitted something that they have no real intention of using but they want to make sure that that particular software aspect or electronic aspect cannot be taken up by us on this side of the world without paying off some money. So, I think the intention was good but from my experience it has been abused and then the cost of getting the patent is so ridiculously high for us on this side where that it's rather pointless. So, I just thought that's my opinion on it I think it's highly broken and needs some serious repair...

Moderator:

But there is no doubt that you're right here Colin that the process really does need revisiting and revision and of course the question really becomes revision how? And revision to what? How do we reconcile these impulses? Is there anyone who would like to comment on that? Hello... soliciting responses... again.

Angela:

I would just like to add to the last discuss piece of information discussion by revision, by whom because we have to remember who set the whole system up in the first place and I think as we're talking about open science and democratization of science, the whole patent system is not very democratic at all or very open. That's just my contribution.

Moderator:

But the question really is how do you build a cat?

Angela:

That I can't say...I think...it will require as brain was saying earlier on, new frameworks for not just south-south but south-north partnerships and recognizing that there are fundamental aspects to science that need to be opened up, basically.

Moderator:

I don't think that Budd Hall or any of those other persons are present. So, is Liette still here? And can we call upon you as the...

Dr. Liette Vasseur:

Yeah...what I can say is that I understand what the Angela is trying to say and it's interesting because I've been doing international work for quite a long time and for me, I always take my colleague from China, Ecuador or Africa the same way than a colleague from Canada because I believe that if you have a degree, a degree from one place or another, you know you had the degree and that's it. And for me it's more question at that point to understand I have heard the culture and the tradition of the country as well because it's not the same everywhere and I should say I in fact interestingly enough the project in Ecuador, the university and colleagues that I'm working with have developed a model which they are patenting themselves and supporting them only I'm not even a co-author or anything because I think...you know when I said at one point it's important that it it's the decisions are made by the people who will have

the consequence I think this is something that is important and all that so when we collaborate I'm trying to make sure that there is this relationship that is open but it has to be established. I think there's question unfortunately and I agree I at one point...someone mentioned the universities and our companies in the U.S trying to get into the university and tell almost what to do. This is a very big danger that we see in many places and I'm always trying to find a way to make sure that we're all equal by the end and for example I'm just starting a new project in Africa and my first reaction was to ask, "are you okay that we use open science in terms of system?" And at that point instead of buying very expensive software that needs to be renewed every year and at one point you know during the project it's great with the money, no problem but that's once we finish the project it doesn't work. So, what we have been doing is making sure that we're using open systems so open science framework that are giving us the possibility at that point to continue the work even after the project is finished. So, it becomes a real collaboration, a transparent collaboration where everybody is equal and I think this is what when I look at open science and the open infrastructure, this is a big part of it...is to make sure that...you know and I just I think about like in statistics for example... I do a lot of biostatistics and for a long time we were with you know SAS or SPSS or these big companies that are very expensive and most universities have to buy licenses if they want to be able to have access. Now most researchers are moving to R because R is free and we can change the scripts as we want, so it becomes a common language for everyone and I think this is part of the process that will need to be done gradually is trying to find a process that allows everybody to have a common language in terms of science even if we are going to write you know either in English, in French, in Spanish in Chinese etc... so this is the thing it will be the balance there's a fine balance I think between the two in this case [Music].

Moderator:

Thank you, thank you so much for that. It's a difficult question... let me try to raise another issue that I think came up at some point is it still in my head. The problem with current...well I guess I could say high impact journals... is of course that publication costs. There are costs related to publication. I edit a Jamaica journal science and technology; it is not a for-profit journal in fact it's you could almost characterize it as being a for-loss journal I mean we know we know that it's going to continue to cost us but it's republic good, so we expend the capital on it. But the whole business of how you finance the publication of materials and all the process that goes with it... the vetting, the quality assurance and all these things...somebody has to pay, and the question is how do we arrange that? It was raised that university libraries and could take up the issue of not only being repositories but being publishing houses. I mean of course we see that done in places like Harvard press, Cambridge university press which do that kind of thing, but I think those are very much for-profit organizations as we speak. Now how we organize that in a you know in the face of universities that are receiving less and less support from the public purse and which are being asked to be more and more entrepreneurial is a difficult question... the difficult question. Although the idea is an appealing one and I think it was Colin who found that a very attractive idea, so I would want to possibly fall upon him and ask him to see if he could flesh out for us how he would see that working in terms of the models that we have in the region for university libraries becoming publishing houses.

Dr. Colin Depradine:

Okay I'll take a stab at it. If you consider, I don't know if this will make any sense, but I will say if one considers the concept of open software. Here is a case where you put the software out in the open so that everyone can modify and benefit but the services that you build around it belong to you and that way you profit. In other words you know... so the library may have to operate in a similar way it may have to offer services beyond just publishing in order to make any money... so in other words you this may I don't know if this would make any sense... but I would suggest if you go along that rope perhaps you put the publications out there at no cost but if you want to access certain types of services that go around, and I remember I'm not a librarian so I'm not entirely sure, go around the existence of those journals then you pay a cost. So, if I want to have a copy then I would pay some money to get a copy and things like that so maybe along the lines because at the end of the day I can't see how we can avoid having to pay something you know we can't really avoid costs. Even if the journal articles, the journals are put there for free you still need to pay someone to manage the server or to put the books on the shelves or whatever it is you can't avoid costs. I think the issue really is what is reasonable cost versus being exploiting? So, even if you look at apps for example mobile apps you put the app out there for free but if you want the services that come behind it, the extra services then you have to be willing to pay and so on, so on. But you still get some of the benefits from having it existing on your mobile device. So perhaps that is the sort of model that one has to look at, but I would definitely say I can't see as a dean I have never been able to figure out a to avoid cost entirely because something has to be paid for and I don't know if that suggestion makes sense but that's one of the suggestions that I have come up with...I doubt that helps.

Moderator:

Thanks for that Colin, that is rope isn't it? Somebody has to pay you know not only for managing the service but the production of these things. I mean it has always been, so I mean from the from the days of the invention of the printing press to now it has always been a question of who pays and where does the money come from to pay for it. It's in the very earliest days it come from some rich benefactor or some patriarch or king or something in order to enhance their reputation who would spend the money to make the publication happen but...and then of course the big for-profit journals found that there was much to be gained in it. In fact, it's such a such a remarkable paradigm that they have they have evolved where people do the work at often at public expense, they write up the work and submit the work for publishing. The publishers then get persons to review and do the quality assurance free of cost and then they make the profits off it all and gain copyright to the whole kitan kabula. It's the most remarkable model that I can think of, but it seems to have obviously worked wonderfully for the big publishing houses and it really is past time that we seek to get around this somehow and to find some other ways of organizing these things. Liette is that your...Brian?

Dr. Brian Cockburn:

Yeah, thank you Ron. Well, my idea I guess would be particularly popular I mean where are scientists can demonstrate the utility of their particular discipline, that might be an easy sell so that you can say, for example, that as happens in developing nations a certain percentage of GDP is devoted to research on, I guess on research and publication. It's perhaps a tougher cell if

you're talking about blue sky research in the developing world and yet there are arguments to be made in favor of paying, I guess in a form whether you call it a tax and I know tax it's only a three-letter word, but it carries all of the weight of something more. I think that there is or there ought to be an appreciation, and it's the scientists who will have to work to building that appreciation, that there is value in science even if you can't immediately identify some concrete gain that you can get from a certain pursuit and yes, I know right after saying it I know that there's going to raise some flags of who should be paying for this? Why should we pay for it? And yet the pursuit of science carries with it some intangible benefits that we need to do a better job of communicating to all and sundry. Thanks.

Moderator:

Thanks very much Brian. I'm not sure I see Liette at the top here...does that mean that you're waiting to make a comment yet?

Dr. Liette Vasseur:

I was not but I can. I just put in fact in the chat an idea that there are some journals in fact that are free for publishing, they are peer-reviewed and are run at universities and I just put one example of the Journal of Community Engagement and Scholarships because this one is also accessible for lay language people in fact they ask usually people from the community to also, as well as students, to write their own perspective and blogs and different things like that so there's a way to make it. In fact, this is the thing... it all depends how complicated the big thing with the large publisher...

Moderator:

Please, Liette...pretty please pardon my really bad manners here. It's fascinating could you help us understand the funding for this particular example that you've given us?

Dr. Liette Vasseur:

Yeah, in fact in this case it's run with volunteers...an editorial board that is all volunteers and I should say we're preparing a special issue for this journal right now and what is interesting is that the university there is, I believe the University of Arizona, is supporting it through pretty much the platform of the library and so all the rest is done through volunteers. So, there's somebody who is the editor, but you have also people who are doing more the technical component and it's interesting because it has worked quite well and it seems in a way that they started in 2008 and it's been a good way to ensure that these publications are accessible again without cost for people, to publish into it but also to receive papers. So, this is quite amazing I know a few other places that have done a bit the same way and what is necessary is, as you can imagine, is to make sure that the library is willing, but also that the university is open to this that. I think these are the type of factors that are quite important and it's true that in some way the process can be a little bit slower because you don't have a full army of people who can just punch the paper and put it to another person. But at least it's done, and I should say the peer review is double blind so it's you don't know the reviewer, but you don't even know the authors. So, it's really strengthening for me in a way, the way that it's done, and I think it's a good example

Moderator:

Thanks very, very, very good example but here's the rope - who's going to publish in it? And if you publish in it, how does that affect your curricula vitae? And how does that affect you when you go up for promotion and you have your publications in this journal rather than in one of the high impact journals?

Dr. Liette Vasseur:

Probably because I'm already full professor I don't worry too much anymore about promotion so that's a bit easier. But I should say that this is where we really need to start rethinking how we promote this type of journal and how we...you know one thing that a colleague said to me at one point, if you publish a paper and then you make it as a small article either for twitter, for Facebook or for LinkedIn or even for like here we have what we call the conversation, it's amazing but usually your paper is read five times more than if you just publish period even if it's in nature or nature communication or something like that I have some there and they are not more read necessarily than some of the papers and I remember the best example for me is one that a chapter that that we...that I wrote with a colleague that was published in a sustainable dialogue with another UNESCO chair in Canada and this is on the web period publication basic peer review in this case, not a lot of you know publicity but still just probably enough that this paper was picked up by a professional in Florida who contacted me to go to send Barthelemy with her as a person to help on sustainable development for the island. This paper got picked up gradually by Harper university in the professional leadership program as a discussion paper. So, the impact of this paper, even if it was not in the nature or anything like that, still has a huge impact. So, I think we have to really rethink about that, and I like some like Cambridge university in UK for example, when you ask for 10-year-old promotion now you have a new category, and I should say that I just reviewed for another university in Canada that is doing the same. You have your publication, you have what you have done in teaching, you have done in services, but you have to demonstrate all what you did - what is the impact on the community? So, it goes back to what Brian I believe said it's the impact of, not the factors of the journal, but the impact of the work. And that's something that I know it's difficult. Here in Canada, we're trying to change the model we are signatory of the DORA declaration but it's still you know, we have to push, and we have to make sure that the next generation of students are getting this message as well.

Moderator:

I think this is of great importance. If we if we cannot get our institutions to change the way in which the young academics move up through the system, then we're going to be faced with this problem for a very long time. So, clearly is one of the important pressure points that that attention has to be paid to. Colin?

Dr. Colin Depradine:

Yes, I just wanted to fully support what was just said. It is one of the most disheartening thing as a dean that I have to do is when I know that a particular staff member's work has impacted heavily but it hasn't gotten all these citations, you then fight this battle to convince persons that this is worthy of whatever it is that that goes ahead and I want to support that if we don't

change, if don't if we...I try to catch my breath... if we don't change and go down this route of removing impact factors and so on, we in the region are going to suffer, continue to suffer under and we... in our journals... our local journals as well regional journals will suffer as well even though those journals consist of quality work and so I just wanted to not add anything more just fully support that that belief. I think the example given was a good one, where it was picked up...the paper was picked up elsewhere and it demonstrates the impact that it means and so I agree for our younger academics and so on coming up otherwise it's going to get progressively worse, so I just wanted to support.

Moderator:

Thanks Colin I think I saw Brian's hand up too?

Dr. Brian Cockburn:

Oh no, no Ron that was earlier I just took it down, thank you.

Moderator:

Okay, Colin said what you were going to say...

Dr. Brian Cockburn:

He did, he did.

Moderator:

Yeah, it is such a very important thing. You know what I'd like to do now, Liette I would like to ask Liette since you introduced the open declaration yet...are there any other issues that you think that we are we need to focus on that we haven't focused on as yet?

Dr. Liette Vasseur:

Already been a very inclusive discussion which I really enjoy I should say...I think the main thing also is probably how to make sure...changing the mentality...how to ensure that even universities understand better? How to communicate with the media, the government, the industry? Because the industry and this is something that has been avoided in the recommendation and I think it's in big part because of the challenge and the issues are related to IP and all that...and I think something that will take a lot more time. If at least we can start...you know really considering work considering how to better get everybody at the same level? That will already be a big step. Transparency, the sharing, the knowledge, respecting Indigenous traditional knowledge...all these things, that will already be a big step. It will have to be by increment, and I have the feeling that talking...you know at one point I was talking to another VP and we were discussing about the life of all these big publishing companies and all that that are for profit and with the new creation now of these different journals, that are free open access and all that...there will be a point that this journal will not be able to survive anymore. You know you cannot continue to pay six thousand dollars to put an article in nature it's not affordable even for us in Canada we don't have the grants for that so this is the thing is at one point the system will break and this is where I think everybody has a role to play in that and in terms of the perception in terms of changing the mentality, it will probably take more

than one generation of researchers just because you know it's difficult to remove you know, it's a bit trying to change the mentality of those that have been trained by the previous one so that's something. But the discussion is coming, and I think we have to maintain that discussion I think that's the important part so much.

Moderator:

I look forward to seeing a real change in certainly that that kind of paradigm that that has such a strong impact on the careers of scientists and change needs to come and we have to make sure that when that change comes, that that's a change for the for the better and that we're not just shifting one in group to another in group as someone said. I saw Brian's hand up? Still there? Good.

Dr. Brian Cockburn:

Yes, thank you Ron. So, I was I was sort of responding to Amanda, making the point that science communication ought not just to focus on the written word and journals but also needs a presence on social media and not just...well... not just television. Even to say Facebook is to already date oneself because I understand that Facebook is for the older generation so, now we're talking Twitter and Instagram being used as platforms to communicate science. Some of that, I was making a point Amanda in the chat, that some of that has received quite a boost from the pandemic where social media has come to the fore as a mechanism for communicating all manner of things. Some of our staff members here have been having, sometimes twice a month, having sessions with local libraries where they discuss some aspects of the natural world or aspects of astronomy and more planned. We actually have some plan out of the faculty that should have already seen the light of day but conditions being what they are, but they are on the way they're coming. So, like I said it's the site guys, the whole major challenges I see it continues to be building a robust framework to make sure that this is not just going to be personality driven, one and two, that it's robust enough to survive funding challenges personalities and that it's going to happen on an ongoing basis on a regular basis and really stimulate people joining in everyone serving... doing... making our contribution, thanks.

Moderator:

Thank you, Brian. You've made you've made this point several times that you would wish to see a number of changes made but you would wish to see these changes made in a sustainable fashion, supported by very robust structural elements that are not based upon the efforts of one individual, but which have continuity over time. You are clearly advocating for policy changes, policy changes that would be embedded in the behavior of our systems from the governmental levels and clearly this is this is one of the things that that we ought to be aiming for and so you know I think attention to our science policy and not just to have a science policy written down as Colin said, but to have one that is actually honored in the observance and followed. The whole business of community science and how we engage the community in this scientific process is an important one to my mind. How we set about doing it, what our primary goals should be, and how we execute those goals, I think need to be defined very clearly and perhaps at some time not too far in the future we need to have a forum where we sit together in one way or another and try to [Music] work out exactly how we achieve these

things and what our aims ought to be. You know you know what comes to mind is what is going through the papers...for this thing one of the things I came across was in fact that there was someone somewhere using the steel pan as a method of [Music] involving community and science doing community science and investigating the vibration patterns on the surface of the of the steel pan. I wondered whether your namesake Brian Copeland was in any way involved with this although I did not see any mention of him or of the University of the West Indies at St. Augustine... although he as dean of the faculty of engineering was certainly involved in the development of the electronic steel pan and certainly involved in the work that that had to do with trying to define the sound patterns in pan. I don't know if you know anything further about this, but I saw Mr. Adams Everton? Hello, I saw your hand up Everton? Mr. Adams? No? Yes, Brian?

Dr. Brian Cockburn:

I was going to advise that you have me at a disadvantage Ron...I'm not familiar with that that particular study that you mentioned.

Moderator:

okay I...is this Nathan? Nathan are you trying to break in? I see a little caption popping up with your name.

Nathan:

No... just mentioning that we are now officially closing to the end of the webinar.

Closing Remarks (Moderator):

Okay well I just want to thank everybody for their robust participation and for the discussions. I... my only feeling is that there are so many areas that one may want to discuss and which I would really perhaps have liked to have seen but I think that we have covered some ground, we have heard some opinions and we will try and put this together and see what comes out of it. I certainly believe that we will need to continue our discussions and to [Music] and have follow-up meetings...perhaps to deal with more specific items and more specific suggestions in a more focused fashion and to map out some of the roots through which we might be able to convert some of these ideas' thoughts into interaction, which has the possibility of making a difference. So, thank you all very much for your involvement in your time –

Dr. Brian Cockburn:

Before you sign off Ron and Nathan, both Solange and Everton are making a very important point which kind of goes back to what I was saying... structures, mechanisms to forge these links and communication.

Moderator:

I was asking Everton if he wanted to make some comments, but I don't know if he heard me. Is he there?

Dr. Brian Cockburn:

Well, he's put a question in the chat.

Moderator:

I'm actually not seeing the chat.

Dr. Brian Cockburn:

Right so he's asking...he... I don't know if he's having problems with his mic so I'm going to read it for him. He says he's trying to comment that after these discussions, how do we impact the work of UNESCO in science? Which is a bit similar to what Solange was saying, she wants to know what is the best way to contribute ideas or be part of further conversations?

Moderator:

Right well as I was saying, I think we're going to have to try to organize a number of separate forums in which we can have more focused discussions on some of these items and more in-depth discussions which will lead to some form of action and the way in which we would involve those persons who wish to be involved, would be to collect their indications of interest and put them on a list that if and when such discussions take place that they would be invited [Music].

I'm not hearing any responses but...and I hope that it is...it just that we've come to the end... I've been cut. I think we're at one o'clock so perhaps that's our cut off. Hello? Anybody there?

Unknown person:

We're still here.

Moderator:

So...again I thank you all for your involvement and we will have to produce a summary of this discussion and we will see where we take it from there. Thank you again.