**2020 Online KT Conference:**

**Social Media Strategies for Knowledge Translation**

*Making Your Messages Stick: Thinking Differently About Communication Online*

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>> HEATHER MANNIX: Alright perfect. Thanks so much everybody and thank you so much for joining me for the session Making Your Messages Stick. Thinking Differently About Communication Online.

So, as Joann said I am Heather Mannix. I am the Assistant Director of Policy Engagement at COMPASS. I’ve been with COMPASS for about six years and I am based in Washington DC. We work at the interface of compliance and policy. We are a non-profit. We support diverse science leaders to improve the well-being of people and nature. We work with the scientific community to help them share their messages and share their work in an effective and interesting way to try to get that out there into the public policy dialogue. That’s my background as Joann said. I have spent a long time working in policy world kind of straddling the worlds of science and policy together and thinking about how scientists can reach decision makers.

So, our work takes many forms. We have been training folks at short workshops, we do longer deeper dive workshops and communications trainings that span multiple days to the other half of our work which is actually bringing together scientists with journalists or scientists with policy makers kind of putting together events that bring everyone together to talk about important issues.

Scientific issues. COMPASS was founded on the premise that science needs to have a seat at the decision making table. Science and scientists themselves have the ability to transform critical dialogue. As articulated here by one of our co-founders Dr. Jane Lubchenco, a key part of science plays instrumental role in decision making is effective communication. We help scientists become effective communicators and we forge those connections between sciences and other audiences.

This is all in the name of policy resource management the broader public discourse being better informed by science. Our work at COMPASS focuses heavily on the environment so a lot of my examples pull from that work, but I think you'll find relevance and resonance in your own work. At COMPASS we have a saying, “begin with the end in mind”. Think about what you want to accomplish and who you want to communicate with and why. To our end today is we are going to start by thinking about what is the science of science communication? What is the foundation of good communication? There is a really growing body of literature around there that lays the groundwork for successful engagement.

Next, we think about how to develop an effective message from your work. How you can take your information and put it into the eyes of your audience. Thinking about who your audience is and why that matters and what they want to learn from you. I'm going so introduce one of the tools that you can use download off our website and helpfully find people.

We are going to talk about social media as a channel to share those messages that you develop. It's a three-step process here today.

So, I'll just take a minute to address the elephant in the room that is Covid‑19. Rather than being together engaging with and networking with friends and colleagues you are likely watching this talk from home and figuring out ways to engage with the wider world. We have all experienced various levels of being home and being in social lock down and it's hard. You may be thinking about when anything other than Covid or the election may get some airtime on the news. It seems like everything else has taken a backseat.

We recently held a workshop with scientists focused on climate adaptation and in a follow up conversation with them we posed some of these questions for discussion. How should we be communicating about climate change in the time of Covid? When? And as a group we concluded we can't really afford to not be communicating our work during this time. But we need do it with humility and nuance, in a Covid sensitive way. I would put that out there for those of you who may be thinking about this, too.

So, we will start with the science of science communication foundation. To kick us off, I'm going to start with a bit of a fairy tale. Once upon a time there was a public beset with the ills of our modern era lost, confused and frustrated. Along came a researcher who dropped science and facts and they lived happily ever after. I would like to ask all of you how many of you experienced this. You drop a few facts; you share some of your well‑researched information with a group and kind of the problems are solved and we go from there?

So, I think what I get when I ask this question to my researchers that I work with is even though logically you think this is how it can work, we can put our information out there and people will take it up and solve problems with it, it's actually a fantasy. This is kind of more of what we see. You say science, facts, information they say hmm. With concern you say science with a little more pizazz. Then you say science, information, this is important, please pay attention. Only to discover that now some of the frustration and resentment is directed at you. Where does this leave us?

This reaction that we tend to get as scientists and it's familiar to us is encapsulated by this quote by Kevin Finneran, who is the Editor in Chief of Issues in Science Technology. He says sometimes we’re like tourists we think if we just speak loudly enough people will understand.

We call that shouting information into the void. And in science communication, in this field it's called the deficit model. It's proven really ineffective by cognitive researchers.

Because your audiences and people you are trying to reach have a lifetime of experiences that shape how they understand the world around them. We have to take that into consideration to make sure our conversations reflect that. We want people to engage in what we are sharing and be interested and excited about it and think about how to apply it, not just listen to it. We find communication is most effective with a conversation, not a lecture.

How do we get past this idea of dumping our information on someone and instead really engage them? So, interestingly, one of the most important ways that we can engage people in our work is by listening to them. So regardless of how familiar you are or think you are with your audience, listening to them and engaging in a two‑way conversation is an important way to show them you want to understand them and know where they are coming from. You are not there to lecture or talk down to them, you are here to work for a common purpose.

Humans interact and agree or disagree mode. When you hear something when you are listening to me speak right now you are probably thinking do I agree or disagree with this? We are communicating across differences of perspective value point experiences which make this is an easy crutch to fall back on.

But real listening is a willingness to let the other person change you and to step back from the agree or disagree mode to hear what you are saying and think about am I willing to have my mind sort of changed on that.

Next, be willing to understand the values that people hold when we are communicating with them. At their core, values are what we hold important and dear in our life. They vary from person to person and how we influence the world and behave.

Finding that common ground and speaking to that common ground. Sometimes to me, this might feel a little weird. I'm just telling them what they want to hear. And certainly there are some who would approach it like that. But it doesn't need to be like that. You can do this in an authentic way. Especially to take the research and work that you do which is about people ultimately. You can find things you have in common and the themes you have in common and the things that you hope for what you are looking for.

As we continue along with this theme, in addition to value, trust matters, too. The way people process information is strongly tied to their values and their cultural identities and the context they bring to the conversation.

So, when we think about that, there is some research by Dr. Susan Fiske at Princeton University. She found when we looked at different occupations and the trust they ‑‑ trust worthiness is a combination of perceived warmth and competence. In this sense it's not friendliness, but how do we understand people's motives. Do we think their motives are good or not good?

In her work she found that scientists are seen very competent, but they are seen as cold when they communicate. As scientists, we lack that warmth when trying to reach out to people. So, trust in the messenger and who we are is important.

People really want to know that the person talking to them is a human being with their own values and point of view, and that the message reflects some of their values.

The way I weigh this out it is sounds like belonging. Belonging is a universal human desire to be part of something larger than ourselves and have a shared purpose. This doesn't have to come at a cost of closing yourself off or a retreat to sameness.

Ultimately, what we find with the science of communication is positive beliefs about scientist and science are more likely to stem from high quality interactions with likeable and engaging scientists who are willing to listen. We can say this about a lot of things. It's not just science and scientists. It's people. People who are willing to be likeable and engaging.

If I was to boil all of this down into a cartoon, this is what I would say. So, when you are speaking about your audience, you want to think about where that is that overlap? Where is that bubble of what you care about and what I care about and how can I further direct our conversation and what I'm talking about to find those places of mutual interest.

So, the key really is to think about who our audience is. I talked a lot about audience. I probably said is 15 times already. The more specific you identify the easier it is to tailor that message to your audience.

So, some questions that you can ask yourself. Who is my audience? Who are these people that I want to work with? So these are some questions that you can ask. Who benefits from your work? Who cares about it? Who needs to hear about it? Who funds your work? To Whom are you ultimately accountable? Who are the people you want to communicate and target with your messages?

I want to mention one of the audiences that I hear a lot is they say I want to reach everyone. I want to talk to the general public. I think my research is important for everyone. So, I understand that. You feel like your research has a lot of meaning for many different folks kind of across the spectrum. But what I will say is that is the hardest kind of audience to develop a message for.

So, you really want to try to be more specific. The more specific you can be when developing a message for the audience, the easier it's going to be and more effective the message is going to be. You can have multiple messages for multiple audiences. But you want to try to avoid creating a message for everyone.

So, when they are thinking about this and we are thinking about our audience, this is, I think probably the most important two words I'll say to you today. So what? Every person wants to know why this matters to them. Why does your work matter to them? You need to show that to your audience when you talk to them and start to get at these values. Why should they care about what you have to say?

So, we can pass your message through a so what prism. You have a message that you want to share. You have work information. You can pass it through this prism of why should someone care about this? Some examples of this. Policy makers. Why should they care about my work? When they are listening to you talk about your work or reading something you put together, they are asking does this support or refute my agenda? Do my constituents care about this? Physicians and counselors may be another audience you all have. What are they thinking about when they are reading your work or coming across it? They are thinking, will this help me treat my patients? Scientists, your colleagues. What are they thinking about? What are you thinking about when someone talks about their work? Is this person a competitor? Maybe a collaborator? The media if media is an audience you are interested in. You know, they will be thinking about is this new? Will it sell? Communities often times people work with communities. They are thinking, is there risk in my community? Is there benefit? Does this work talk about any of that? Health organizations. How does this help serve our membership? And funders. Is this a fit for our strategies?

This is not an exhaustive list of the questions, but it helps people get into the minds and think about how to parse out some of this. Your message itself doesn't change the information you want to share, but it's sort of how you connect with the people and what aspects of your message that you want to share.

Okay. So now I'm going to transition into thinking about that message. How you develop a really good message and share our tool that we use called the message box. You can see it here. It's available to download on your website for free. I encourage you to check it out if you think it could be helpful to your work. The message box takes that mountain of information you might have in your head. As researchers, I think we spend a lot of time focused on our specific topic. We know a lot about it, and it gets really hard when we are asked a question to just to distill it down. When I was getting my master’s degree I was graduating, and my family came to visit. We all went out to lunch. It was really nice. We are sitting around the table and I just handed in my master's thesis. My mom says, what you have been working on? I said, let me tell you all about it. I probably went on for five to ten minutes about international and environmental organizations and a lot of the nuance behind why some things are carried and some science and why not. I finally stepped back and took a breath and my mom looked at me and said, well, that sounds just great. And you know, everybody went onto order their lunch and that was that.

So, this is my family and so for better or worse I have another chance of giving them that information. But if you are talking with a policy maker or you are meeting with a physician or reaching out to someone who only has a few minutes of their time, you may not get that second chance. You really want to think about how do I develop a message that opens the door and starts a conversation and gets people interested in what I have to say? Hopefully this tool can help you think about how to do that.

You may have seen image and diagram before. As scientists and researchers we share our work by building on a foundation of information and tools and methodology before sharing a final result. That is how we are trained to share our information. That is how the rest of the scientist community judges its effectiveness and how good it is. But most people outside of that community, they don't really care that much about the background. They want to know what the result is. They want to put that right up front. So if you want to hold attention and get a productive dialogue, you need to lead with what you know and why it matters to them and then you can add some of that supportive information.

Natasha Loder is a journalist who we work with, with The Economist. Very often when scientists complain about the way their stories were covered it's because they have not delivered any message and left the journalists to think up one for themselves. Certainly, there are bad journalists out there that will sensationalize your work and take it and not do you justice. I don't want to downplay that aspect of it.

But I think what she is getting at is if you do this work up front, if you create a good message and take that time to think about what you want to share and who you are trying to reach with that message, it's a lot more likely you are going to see that reflected in what comes out of it. Not letting people think up the message for themselves. That you are the one kind of controlling that.

So, what is a message? Messages are really ‑‑ there are three main things. Their take‑home ideas for your audience. Cognitive research says we can only hold three to five pieces of information in our head at one time. When you think about what you want to say and what you want to communicate you really need to think carefully and say what are the top three to five pieces of information you want your audience to walk away with? You want to be simple, but not simplistic. What do I mean by that? We are not dumbing things, we want them to be understandable, but I hate that phrase, dumbing down, because your audience isn’t dumb. They just don't have as much background in the topic as you do. And finally, you want to make it memorable and make it stick. We are going to go through some techniques about how to make messages stick.

Like I said, to communicate, this is how our papers are laid out and posters at scientific conferences are laid out, too. What this message box does is takes it through the filter of your audience to think about it in a little bit of a different way.

So, I'm going to walk you through this tool really quickly just so you have an idea of how it works, and I'll show you an example and they we will go onto talk about a little bit more about how you can make these messages stick, like I said.

So, first thing you want to do is as always identify your audience when coming up with a message. Who is it that you want to talk about? Think about the questions I told you earlier. Then you want to go and think about what is the big picture? What is the issue you are trying to convey? If you can think about it if you are going to type it into Google, what are a few key words you would type into Google to get to the issue that you want to talk about?

Then problems. If you are talking about a paper, this can be your research question. It's basically your slice on this issue. What is the problem you are trying to solve? Then, what to do about that problem or what are you doing about that problem? So how do we solve this problem?

Benefits. How will it benefit our audience if we solve the problem? And why should they care? So, there is a lot of ways that you can use this tool. You can use it, you know before you go into a meeting, briefing out to leadership. If you are creating a report. We call it a multi tool. I'll show you an example of how this works. This is Dr. Joe Hoyt. He works at Virginia tech. He is in the biological sciences. So Joe and I had plans to go to Capitol Hill because he worked on white nose syndrome in bats. If you are thinking about who could we speak with about his research and why would they care about it? We came across this representative Dan Newhouse who is a republican in Washington State. The reason we thought he might care about this is because he lives in agricultural district. Joe's research is really on conservation. That is not actually an interest of Representative Newhouse. But because he has an agricultural district and that is important in agriculture, we could pivot that message to talk about something that he cares about. So, for example, Washington State in particular has seen unprecedented outbreaks in white nose syndrome in bats this is summer. That is new and interesting and that matter to him because he is from Washington state. And so, what? Why does this matter to him? Bats are crucial for controlling populations of insects that can disrupt farming by damaging wheat and other crops. The benefits if he listens or does something about this white nose syndrome the healthy bat population will reduce pests and increase agricultural efficiency. The solution, what can we do about this? Currently there wasn't an agency responsible, so he suggested setting up a body to respond to this. So, this is a way we took research and said there is a problem with bats, and this is why you should care about it and this is what you can do about it. So, if you look on our website, there is a lot more examples of this that you can look at, too. From all different fields.

So, if you find that to be an interesting tool to help you think about how to develop a great message, take a look at that.

Once you have the basics in mind of what you want to say and who you want to say it to there are tips and tricks to keep in mind that I'm going to talk about. The first is jargon. If you ever talked about communicating your words you probably heard you need to avoid jargon. It doesn't help your cause and in fact, there is research that says people when exposed to these jargon filled explanations of science, instead of feeling like I'm speaking with an expert or they know what they are talking about. The study shows that people reading all the jargon led them to not believe the science. When you have a difficult time processing the jargon, you counter argue, and you don't like what you are reading. But when it’s easier to read you’re actually more persuaded and more likely to support the technology or work that you read about. I think that is an interesting way to think about it.

Then there is this other kind of jargon. I think jargon are words we don't understand. Words that are not familiar in our everyday language. But then there is this sneaky jargon that can come in that I want you to be aware of. This is when jargon has a different meaning to the public than it might have to scientists. So, this is a paper that was published in 2011 around climate change. So you can hear some of these words that might be a little bit of a red herring. Theory, for example, we understand it as a scientific understanding, but the public sees that as a hunch.

Positive feedback is one that can trip folks up, scientist know this as a self-reinforcement cycle but when you hear the words positive feedback I think a lot of people feel it's a good response. So, you can think about what are the words that don't ‑‑ we might understand but have a different meaning for depending on our background.

So, metaphors are very powerful. So, using these to kind of explain what you are talking about can be really helpful. It's worth taking the time to really think about and even to brainstorm with others about metaphors that work. They are so powerful in getting people to understand what you are talking about. So, this is an example from Joe Palca at NPR talking about viruses. Very relevant and in the current Covid‑19 landscape. He says, a vaccine says to person say this is what the virus looks like, but I'm not showing you the virus, I'm showing you something that looks like the virus. Showing someone a picture and saying if this person shows up at your door, don't let them in.

Vaccine manufacturers have to do the equivalent of saying, do we go door to door showing people the picture? Put them on highway billboards? Can use them as pop up ads on a computer. So the designers have a lot of choices about which picture to use and how to best present it to the immune system.

This is a nice way of understanding how vaccines work and why they can be hard to manufacturer.

Next. We want to think about using local examples. So this is particularly effective because people, like I said, they want to see themselves sort of in their research. They want to understand what you are saying really connects to them and their life. So this is an example from Tracy Holloway at the University of Wisconsin. In the Midwest it's 7‑degrees warmer in the winter since 1974. And that the difference between wearing and not wearing long underwear. That is something that people who live in Wisconsin would appreciate. It's nice, because it gets that one piece of information, that one fact that can stick in your mind, too.

Story telling is another way to help your information stick with folks. And stories are remembered up to 22 times alone ‑‑ 22 times more than facts alone. We are hard wired to appreciate stories to remember them. And so, you know, the studies show if we share stories we are often more likely to be persuaded. If you compare them with text, which is basic facts and figures and explanations, narrative facts were read faster and remembered better regardless of the content.

When facts and figures are woven into the story, it can pull the audience intellectually and emotionally. They can be long or short stories. This isn't something that has to be a drawn out thing. Anecdotes help, too. Stories are becoming popular in science communication. There are a lot of workshops on story telling. I run a two-day workshop on storytelling. It's not easy, especially if your natural tendency is around technical writing, for example. Story telling may not come naturally to us. It's something you can get better at and if you practice and think about you can really ‑‑ it can be an effective tool in your toolbox when you are communicating. Finally, be human. It connects back to what I was talking about with the values. If we are trying to share information with people and hope they will act or do something differently, people fail to act not because they don't have enough information, it's because they don't care and they don't know what to do. By finding ways to connect with both, we can really make our information more usable, which I think is ultimately the reason that we do the work that we do. We don't just want to put it on the shelf. We want people to do something with it.

So, we have talked about the basics, the foundations of science communication. We talked about what a message is and how to create a good message. Now I want to talk about social media as a channel, as an outlet as a place to share that and think about how we can do this. That is the theme of this conference. I'm excited to get a chance to talk to you all about this.

So, when we talk about social media we are really talking about internet based applications that allow you to create and exchange content with other people. So some examples, Twitter, Facebook, Instagram, Snap Chat, it seems like there is a new one every week. TikTok. If you are online and communicating with other people odds are it's considered social networking. Social media has fundamentally changed the way people communicate. Even if you are not an active user, it's important to understand there is a larger conversation out there in social media and it's relevant to your work.

Social media can be easy or simple or intuitive. But in reality it's not that way. It can be overwhelming and confused and the perception you have to do all of the social media or somehow you are not doing it right and you'll fail.

The biggest question there is how can we engage in this channel and do it effectively? You want to think about why. Why are we using social media? And you really want to think about how you can get a return on investment so that it's not just one more thing to checkoff your list. It's something that really amplifies your work.

So let's explore how social media can amplify your work and help you build relationships, too, as we find ourselves in increasingly remote virtual world? How do we use social media to take place of some of networking we use to do, the social talks or conversations over drinks late at night? Can social media help with that? I'm going to talk about some of the concerns about using social media and then I'll wrap up this talk by talking about some specific examples of how scientists have effectively used social media to amplify their work and put some things out there.

So the number one thing I think we hear from scientists about this is I simply don't have time. I mean, I get that. There are a lot of pressures growing every day on researchers and what they are really expected to do in their role and work.

But, you know, what you are saying is I really don't have time for this. I simply don't have time for this. Again, thinking about that return on the investment. How can we say that doing this is worthwhile because it will give me the return and the benefits that I want? And so, this research from the CIRRIE research center shows that 90% of the people in the US use the internet. And 72% use social media. Social media is where people are spending their time. This is a place where people are reading and find things out.

So if you choose to engage in social media you are making a strategic choice to be where your audience is. It's a valid communication platform and outlet. You don't have to be there if your audience isn't there if that is not who you are trying to reach when you have done the work to figure that out. You also shouldn't be afraid of it or think that it's like it is a distraction.

It can feel paralyzing when you look at all the different platforms. So you have to put a little bit of work in to think about what platform it is that you want to use. Learn it and find your people on it. Find the people who you want to reach. We hear about concerns can a platform die? What if I put effort into this and nobody is there, nobody is using it? That can happen, but I think what we see is these really big platforms like Facebook and Twitter and Instagram, they are not going anywhere.

they have evolved and will keep evolving and they have large audiences associated with them. But you do want to think about what is unique and special about each of these places and how can they sort of help? Facebook is pretty relationship driven. Twitter is content driven. Instagram is visually driven. If you think about what am I trying to accomplish, you want to keep that in mind.

So this is all part of your research when you think about that. For example, if you are on the ground in a community we just heard about how Facebook groups can be used for research. Facebook is great for that. Policy makers, they tend to spend more time on Twitter, for example.

I don't have time to go into every platform that is out there. I'm going to talk about Twitter for the most part. But a lot of it is translatable across them. I'm choosing Twitter because it's an established platform where you can really connect broadly to a lot of different audiences scientific and otherwise. It also forces you to be concise with your message. Get it down to exactly what you want to say.

With about 100 million daily users it's one of the most used and widely read platforms. It's not necessarily the most used, but the people who use it, they really use it. The they go there 71% of Twitter users that is where they get their news.

So we can see in its work by in Nature, this is about six years old. I'm sure it's changed because the social media world changes so quickly. Not all scholars use social media in the same way. There is commenting on research. So you have thought about why people are there and what they are doing on the platform. It can be very different depending on who is using it. And I think Covid has really changed how we use social media, too. There are light and dark sides to it. The there is this idea of doom scrolling with other people in this pit of despair. But there has also been a rise where people are going to social media to get access to experts.

So figuring out kind of that roll and goal, why people are there and why you are there. If you want to be efficient for their time and energy. Because time is our most precious resource. Another thing have about social media is trolling and backlash. For the most part, I think the fear of this happening is more than the reality of it.

For the most part, most people do not experience extreme kind of trolling and backlash. How important is it to get your information out? Am I willing to take a risk to have potentially negative stuff come back to me to have my information out there? In terms of risk communication, sometimes I feel the perception of this risk of trolling and backlash doesn't align with how often it happens.

This is an article by a professor in North Carolina. He is a political scientist. He made this statement that North Carolina was no longer a fully functioning democracy. Then it went viral. He got a lot of push back. He ended up going on several TV shows and having, I think he said he got 127 responses to the paper he wrote which was way more than he gotten before. Some were negative. Some of them positive. But at the end of this article, what he said kind ‑‑ what you walked away with is he said after the abuse subsided to experience suggests that engaged scholarship moves conversation forward. At the very least a new public conversation can begin, and doors open in some of the most surprising places.

Even though he did experience some temporary pain you might say or backlash coming at him, once that was over it was worth it because this conversation really opened up and he was able to push his work forward and ultimately it reached a lot of people it might not have reached.

Permanent record. I think sometimes people are worried about this going into the permanent record. This will be there forever. Even if I delete my tweet it's still out there and people can access this. It's a little risk reward discussion. I think for the most part if you keep it professional and stick to the things that you know, it's not that much different from speaking at a conference or publishing in some ways. So just be careful of how you use it. Be mindful about when you are using it and I think that this can be less of a concern.

Some folks are worried about it being self‑promotiony. They don't want to be an influencer. But sharing your work with the world is important. If you don't put it out there it's never going to reach the audiences you need to reach. So, thinking about being squirmy about it, I can I understand stand. But I think you need to push past that and start small and put yourself out there.

Preaching to the choir. I think this is interesting, too. People are like I'm not going to reach my audience because I'm just talking to other scientists out there. There was an article in the Facets journal that did look at this. Scientists on Twitter, are they preaching to the choir or singing from the rooftops and reaches other audiences? Scientists followers are about 55% other scientists. But once people got beyond the threshold of about a thousand followers, then it really opened up to include more diverse audience, including educational organizers, media members of the public with no state association and even decision makers.

This varied audience was, in turn, followed by more people and resulted in an exponential increase in reaching academic scientists.

Once you reach this threshold, you can reach a lot more people. Hopefully, this is an encouraging thing saying this isn't just you talking to each other, which in and of itself is a great goal. But you can use it to get to the outside.

Folks also feel like it's overwhelming. The text I put up about all the ways we can do social media or Twitter. What I want to do say is there is really almost no wrong way to use Twitter. You can choose your step of engagement how you want to step up or ramp up or ramp down depending on capacity at the moment. So, I'll start walking you through a few options and levels. The egg. This is when you start. This is your picture of the egg. You are just starting out with Twitter. Next is the observer. So maybe you are just kind of taking it all in and you are trying to follow a few people and get a sense of what the research is and who the people are to follow and what is interesting. Next is the curator where you are seeing what is out there and also kind of curating your own. Maybe you are retweeting a lot of things. You are sharing other's work and developing a body of literature that is interesting to you or the work that you do or the field that you are particularly in and what your niche is. People will follow you to see the content that you curate.

The generator when actually starting to put your own original thoughts out there or your own research. The conversationalists. Now you are getting into talking with other people and forming those relationships. The super user is lots of followers and lots of engagements and spending time out there.

So you can go up and down on this ramp depending on where you are in your career or your research cycles. You know, and there is no really bad place to be on it. And we say that when it becomes overwhelming, you can step away. You can figure out what that level of involvement is that works for you. You say there is no such thing as information overload. You can turn it off.

To wrap up, I'm going to talk about how some researchers that we have worked with use social media and Twitter in particular. What we are going to say about this is that sometimes it feels like, Twitter it's not really for scientists. It doesn't work for us. I think this is inspiring these folks went and made Twitter and social media what they wanted it to be. You have to be creative in how you use these platforms and how they can be effective for you. How are scientists and researchers using Twitter? Learn, eavesdrop, crowd‑source, collect data, share, science and debate. You can network. Tracking new science, connect with peers like I said.

So, this is Tessa Hill. She is a biochemist from UC Davis. She has a lot of followers. This is from several years ago so she has even more. What she says is I like using Twitter because I learn about the fascinating science out there. It seems to be one of the best ways to keep on top of the new science coming up. It feels like an opportunity to talk to a community and learn what people are talking about.

Another way to connect with your peers and connect with that conversation. Another way. This is the step up on the ladder that I'm talking about. This is Sarah Myhre. She is a researcher as well. Getting established doesn't mean that a lots of people follow you. Rather it means you are following the nodes of information in your field institutions, colleagues, NGOs. The most direct way to get a rapid diverse census of what is happening in the media and broader conversation. It's like finding and following the right people for you.

Ultimately, it's about growing your network. We like to talk about network in terms of nodes. Twitter is a great way to find them. If you become an active trusted source, think about the curator role. You might find yourself acting as a node to yourself.

You can use it to virtually attend a conference. For me, this was my favorite way to engage on Twitter. There are lots of different ways that people are doing conferencing right now. It's not just limited to Twitter. They are just thinking about and jumping in and trying out some of these new ways that people are having these conversations at conferences.

So, you can talk about the hashtags, following the hashtags and seeing what is going on. Then, getting the attention of a policy maker. So social media can be surprisingly effective for this. This is the area I work in with policy. I have seen this happen. This was a small study, but I found it interesting. It takes about less than ten quotes on an issue for policy makers to pay attention. Policy makers are responsible to constituents. They really want to hear what you have to say. I think that is interesting that it doesn't actually take that much to grab a policy maker's attention when it's about the right thing and when you have a message that is resonating with them and it's something they are working on.

Congressional hearings is another good example. Staffers will be there live tweeting a congressional hearing. If you see them on CSPAN you see the members and the staffers behind them on their phone. Lots of times they are tweeting. If this is a topic you are interested in by following this and then like comments or retreating during these times, it's a great way to grab a staff members attention ‑‑ and anybody else who is following that conversation. If you have clients or information relevant to what is being discussed, putting that out there following the hashtags during the hearing that is an interesting way to become part of that conversation.

You can also pitch the story to a journalist. They use social media and Twitter quite often and track conversations they think is interesting to pitch a story. Also level the playing field which I think this is kind of a cool thing I'm going to leave you with. These interactions lead to these deeper, real life interactions. This is Alex Danco. He is a younger scientist. He says the informality of it makes more real. You can get to know people more easily and relationship building with skipping some of the hierarchy we see. He says if you are a young student you can go hangout in a senior scientists’ mentions on Twitter. And if you are smart and thoughtful you'll get noticed. I'm going to end there.

Again, you can go to our website. We have a blog that touches on a lot of these topics in much more. There is a message box you can download with more information and examples. Thank you very much. I appreciate it. If I have time, I'm happy to answer questions.