

Veronica Stanich: This is our very first Vibrant Ecologies of Research Ask them anything. Webinar, "Vibrant Ecologies of Research" is our first special collection on Ground Works. Ground Works is a2ru's online peer-reviewed platform forrts integrated research. And I am Veronica Stanich. I am the managing editor of Ground Works. I'm super happy to have with us today some key Vibrant Ecologies personnel, including Aaron Knochel, who is the editor and mastermind behind the collection, Genevieve Tremblay, who has a co-authored project in the in the collection, Mary Beth Leigh, also has a co-authored project, and Eric Benson is here with us also. It would be great if you could drop an introduction into the chat. I'm super happy to welcome all of you who are attending this Webinar. I'm. Extending a special welcome to attendees who are part of a Vibrant Ecologies Reading Club. If you don't know what I'm talking about, there are reading clubs forming to read in groups Vibrant Ecologies of Research. There are some meeting guides for those who want to meet. If you're in a Reading Club. Everyone on the panel today is part of the suggested reading for meeting number one, so everybody's right on track.

Veronica Stanich: The format of today's Webinar is kind of the flip of what you usually expect to see in a Webinar. Normally, when we do these presentations of some existing scholarship or work, we spend a lot of time talking, and we present, and we present, and we have slides. And then there's a little bit of time left at the end for Q and A and we're flipping that today. The content of this Webinar is your questions. So we're really hoping that you have at least had a chance to look at Vibrant Ecologies of Research, and that you have a lot of questions to ask these authors and editors who are here with us today. I have asked each of our panelists ,the editor and the three authors, not to prepare a presentation, not to bring any slides, but to please, if they could just give a plain language summary of-- in Aaron's case, the whole edition, good luck with that--and in each of the author's cases their projects. And just as though they were speaking to someone they just met at a picnic. So here we are at the at the Webinar picnic, and I have a timer prepped here for two minutes, just to make sure that we keep this in the very digestible size range for presentations, and there's no pressure to expound, and so on. But just to give us a refresh, in case you haven't read the edition, or haven't read it recently. What are these projects we're talking about? So, Aaron, Are you ready? Could I ask you to kick it off?

Aaron Knochel: Thank you, Veronica. I want to just open by expressing my deep gratitude for the collaborative nature that was the collection, and the team at Ground Works, Daragh Byrne and Neha Kumari and Veronica as well, really created a really tight-knit team. It was a team effort, I'm the guest editor. But I really was just a part of a group really trying to put together a new issue for a collection for the 21st century. I'm worried about the future, and I want the arts to play a role in the kinds of tactical responses that we have in light of the many challenges that we face, whether that be climate change, the degradation of our environment, race, and ethical considerations around how we treat one another, honoring the land that we live on, and those who lived on it before us. All of these are really big challenges in front of us, really wicked problems, and I wanted to try to come to understand just a little bit better how artists have a vital role to play. So the idea of a vibrant ecology is really about forming those kinds of

assemblage relationships that create vital types of research that can possibly offer a way for us to move forward with hope and a way for us to move forward, thinking about how aesthetic and cultural experiences are just as important and central to how we navigate the future. Is that pretty straightforward?

Veronica Stanich: It's super straightforward and read on the money for time, and I want to encourage everyone as you listen, start dropping questions in the chat while it's fresh in your mind as each of them speak. Don't hesitate. We'll start to gather our collection of questions for the editor and authors. I am going to go in the order that these things appear in the table of contents, which means that Genevieve Tremblay is up next. She is the co-author of ASKXXII: Ecologies of Interdisciplinary Research and Practice in Art and Science and Technology.

Genevieve Tremblay: Ok, Here we go. Thanks so much for inviting me to this. It was really a pleasure to have the opportunity to share out more of what we've been doing. So ASKXXII is an experimental pilot that I launched with three colleagues in Chile, we started 2017, launched in 2018, and it was aimed at interdisciplinary professionals in Chile, who operated at the intersection of art and science. The aim was to foster inquiry and collaboration at the intersection of art, emerging technologies and ecology, and to really address some of the pressing environmental challenge in both regions. The US, in the Pacific Northwest specifically and on central and Southern Chile. The program itself provided access to frontier researchers, technologists, and contemporary artists who are also working at that intersection in both regions. It was a year-long program. It was funded through an US Embassy public diplomacy Grant, and the program rested on a platform of academic and industry partners in both regions. So it was a new model, it was more of a hovercraft where it kind of did not necessarily get rooted or anchored in any one institution, and the net was that it activated a really vibrant ecology or a vibrant, thriving ecosystem of practitioners and researchers in in both regions who are still now connected through collaborative work, and many, many of whom are working and really activated from that network. So that's that's ASK in a nutshell.

Veronica Stanich: The next project is Eric Benson's fresh Press Agri-fiber Paper lab. So, Eric i'm going to ask you to step up to the mic.

Eric Benson: Thank you. It's it's nice to be here, and if I was at a picnic, this is how I would try to pitch it. First of all, what Aaron said is what I also feel, my concern about our species in our planet. But then, after that, I'll say that the way that I want to go forward from that concern is to think about how artists and designers can be involved in climate action. The work that they make, the work that they teach others. And so that was the main inspiration for starting Fresh Press. I live in Champaign, Illinois, which is two hours south of Chicago, and I am in a very flat part of the country, surrounded on one side by corn and the other side by soy, and then, if you drive anywhere, there's prairie grass. So my partner and I at Fresh Press were inspired by the land to look at agricultural fibers as a better substitute for the paper that we use, whether it be in art, whether it be in the office. That was where we started ten years ago, and as we started to collaborate with scientists, architects, and farmers, and there's a very long list of people that have come and worked with us. In the paper on Vibrant Ecologies, I described our research as

kind of an amoeba. It grows and morphs when more people become involved. And currently, the University library is working with us on creating what would be their case, paper or book conservation. So that's not something I set out to do, but I'm very happy with it, and I think my time is up.

Veronica Stanich: Thank you, Eric. Again, for those of you who are joining us a little bit late, Some of the authors from Vibrant Ecologies of Research, as well as its editor, Aaron Knochel, are here giving the briefest of presentations on their work in Vibrant Ecologies, and they're here mostly to answer your questions on their projects. So finally, we're going to hear from Mary Beth Leigh, who is the co-author of "In a Time of Change: a Nested Ecosystem of Environmental Arts, Humanities, and Science Collaboration."

Mary Beth Leigh: All right. Thank you all for the invitation to talk today. My name is Mary Beth Leigh. I'm a professor at the University of Alaska Fairbanks in environmental microbiology. But I also have a background in the arts and dance and music. And I'm also very concerned about major social ecological issues, like climate change, for example, and I recognize, as do many of my colleagues increasingly, that these are problems that science alone can't solve, that we need the arts and humanities, things like ethics, aesthetics, emotions combined with the facts that that we gain from a scientific approach to actually take on major environmental problem solving. So I've started a program called In a Time of Change. It's a place-based Arts/Humanities/Science program here in Alaska, where we work with community and professional artists and performers and educators as well. And we've had six major projects on different themes, and we get the artists and humanities scholars together with scientists and help facilitate their interactions through things like labs and lectures and field trips to remote Alaska field stations, and then we help to produce their work. So they create original work, we produce exhibits and sometimes live performances that go on tour to help engage the audience in these issues, and my collaborator, who couldn't be here today, She's teaching a class that studies the impacts of these experiences on the artists, the participants involved, as well as the audiences who attend those things. She's a professor at Michigan State University in community sustainability. And so we're a collaborative team investigating this, And we're very interested in using place as a mediator for building these kinds of collaborative relationships that can not only engage the public on these issues, and we've found it increases their knowledge and can change attitudes and spark curiosity, but also to build collaborative capacity across the disciplines that we hope can help again with environmental problem solving in the longer run.

Veronica Stanich: Before I ask a question of you, Aaron, I do want to encourage you if you have a question for any of the panelists, drop it in the chat. That's one way to do it. also feel free to raise a physical hand or an emoji hand, and just unmute and ask.

While we are waiting for you to compose your questions after listening to these three particular authors talk, Aaron, It reminds me when we first we're talking about the title of the collection,

and we had some concern. It's even too strong a word for it, but some conversation about the word ecology, and how you said It's going to have this resonance about environment in ecology,

and that's one valence or one meaning of the word. But do you want to talk a little more about ecology of research, just because all the authors here today are also concerned about the environment.

Aaron Knochel: Yeah, thanks for that, Veronica. I think it's a really central metaphor that drives much of my thinking around how research comes together, and that's not necessarily something you see, when you look at publication records, I mean you could extrapolate from looking at citation lists and author lists, and you know how people come together. But when you're at a major research institution like I am, and many of the institutions that make up a2ru, you see the kind of human constellations that come together around inquiry, and while there's lots of history and disciplinarity in those formations, one of the central things that I wanted to explore was thinking about how the more transdisciplinary kinds of formations, people working in very different fields, make conscious efforts to overlap and begin working together. And in my own experiences trying to do that, one of the issues was, "How do you sustain it?" Right? And to me that goes back to the ecology metaphor, right? I mean ecologies need nutrients. They need resources to thrive. And so I think we can take that metaphor from human relationships to also, you know, having a natural sort of progression to thinking about the environmental challenges that are kind of in the back of every issue, if we really begin to think about it right? I mean environmental justice can be something that could undergird all of our thinking. But I think to get back to the main question, the notion of ecology for me really goes to that idea of thinking about formations of coming together and then feeding those formations so it actually sustains in some way, and then to also consider its life cycle. With each of the authors in the way that they talk about their projects what's really fascinating to me, and what I feel very lucky, being a part of, is that I'm just dipping my toe, the collection really just dips a toe into what are, you know, decade-long projects for each of these folks. You know, long, long-term relationships and projects that have had different instances over time and different folks coming in and out. And so just to grab a snapshot of these impressive works as ecologies, it's really one of the things I'm most proud of when it comes to the collection.

Veronica Stanich: Thank you. And other panelists, do you want to jump in on either concept of ecology? Aaron just raised this really great metaphor of the feeding and care of a system. Before we move on to other questions, do any of you three want to jump in on that?

Eric Benson: Well, I can just real quick, from the standpoint of leading and caring, I think about the ten year history I've been working on this project, and the feeding and caring for me resonates on the perspective of two ways. One is student involvement in the research, and also what they propose as new opportunities in the lab, and then, second of all funding and support. And I know for all of us like having support, whether it be financial or from other people, and especially like higher ups at the University, really do mean a lot, and successes and opportunities are increased when that happened. And so I feel like at times, my particular project at Fresh Press has been starving. They've been very hungry. It's kind of a little hungry right now for students and funding. A couple of years ago it was really full, and so it seems to me kind of like this for me. I don't know what it's been like for the rest of you, but it's it's been a challenge, but it's been fun at the same time.

Mary Beth Leigh: I really enjoyed the metaphor of the ecosystem being an ecologist myself. It really worked for me, and one of the big lessons of ecology is that everything is interconnected, as I think Aaron mentioned. And you know, if you think about the complexity of food webs in the environment, you know how plants photosynthesize and generate leaves that fall on the ground and something eats those, and something eats those things. They're very complicated relationships, and I think, thinking about the care and feeding of those, thinking about providing ample resources is important because it's all about energy transfer. But also, I think, one of the things we've been working on over time is how to strengthen the relationships between the different members of the ecosystem. The artists, the humanities scholars and scientists, trying to learn about how to provide opportunities that help them have actually more equitable relationships. So, striving more towards symbiosis and away from parasitism or anything like that, you know, I'm trying to destabilize knowledge hierarchies, for example, where maybe science is regarded as more valuable, and the artist is some kind of vehicle for communicating that, or something like that. So we really strive and are experimenting with ways to equalize the footing. Everyone having a common boundary object to come around like place or environment, or any particular theme you might choose, can be a way, we think, to help destabilize that. So it's a work in progress, you know, for us to learn how to do that better. But that's one of the values of doing research on the ecosystem. Then, learning from that, and experimenting with something different in the future.

Genevieve Tremblay: I was just going to say a little bit about the place that I ended up working after the ASK program is SECOS. I'll drop it in the chat here. It's the Coastal Sociological Millennium Institute in Chile, which is essentially a very multi-disciplinary team that's focused on coastal ecology of the fishing villages along the coast of Chile. And what's interesting about their approach, not only am I a part of the research team, but three other members of ASK are working there, either as associate researchers in the communications aspect, or one is pursuing their Ph. D. But in any event, the approach that's so unique that the scientists have there is around the co-creation of knowledge, and this idea that their research, their scientific research, is very intertwined with communities and the knowledge, indigenous knowledge, the cultural knowledge, the traditional knowledge of these fishing communities together. It makes up the knowledge system that's going to move everything forward, so creating ways that create a platform for artistic practice and research as a platform and a bridge for that knowledge to be transferred is really-- It's almost like I'm learning from scientific ecologists who are really creating these new models for how the knowledge can flow in all different kinds of directions, which I think is to your point, Aaron, actually to all of our points, is this new way that we can set up these new models for the way that our work can have an impact and find a place. And the idea of embedding artists and embedding new ways of creating opportunities for the knowledge to grow and be activated.

Aaron Knochel: So Veronica's prompt, It's got me thinking about a phenomenon in the process of going through this and talking with people about the collection, and that one of the central terms that doesn't get brought up a lot to me, people don't ask a lot about. What does Vibrance mean? What do you all think? What is that vibrance for you? What does it mean to have

vibrance in an ecology? You know especially a kind of mycology that that has this kind of mixture of people, institutions, objects, and environments. What is that vibrance for you all?

Genevieve Tremblay: Even if it's not always vibrant. So even to identify a non-vibrance, we don't assume that everything is great right, because that was also about when things are not working right, and you all were very generous, I think, in offering both sides of that coin.

Mary Beth, you look like you're almost ready to speak.

Mary Beth Leigh: It's a great question. I think signs of vibrance in our program are that more and more people want to be involved, and that artists are telling these stories to Lucy, our evaluator, about how it's been transformative for them. It's really helped them push the boundary of their creative practice. Sometimes people have also formed a surprising new collaborative relationship with others they might never have met. And so I think that's a fun example of, you know, creating an ecosystem where people can kind of bounce off each other, and sometimes really have these unexpected breakthroughs through relationships with others, or just through relationships with new information and access to things they didn't have the chance of experiencing before that have caused them to push the boundaries of their artwork. One example I really enjoy is that we have a fabulous textile artist named Dreen Mancarrow, who makes these beautiful art belts that are very intricate with their own hand-dyed fabrics, and they depict different ecosystem processes like for example, wildfire and the recovery of vegetation after wildfire and she's been doing this, for you know, fifty or more years, and, you know, has wonderful pieces in museums, but she said one of the breakthroughs she had was by talking to a scientist who looked at the forest. They were looking at the forest together one day, and he saw it in terms of timescale, and say, Oh, I see obviously this stand burned one hundred years ago, and now we have a mix of birch and spruce, and we can tell by how big the screws are, and all these things, and it shifted something in her brain where now she can see things in terms of timescale, and she started to introduce little tie and windows into her artwork. So they actually have multiple time facets to them that they wouldn't have had before, like a little window of a burn. And then, you know, you've seen the present time, it's sort of informed by that. She also, much to my delight, includes the underground portion, the roots and the microbes, and mycorrhizal fungi there that are supporting the growth of the new vegetation and post-fire, so all these dimensions that she just never had thought of to include that really brings richness to her artwork. And so that's just one of many vibrant stories. I feel like that's a vibrant artist, you know, late in life, making amazing work, thankfully, just getting the chance to interact with these other people,

Genevieve Tremblay: Mary Beth. I want to know more about that project because that sounds amazing. I just was grabbing some words after that prompt that I think really were threaded through our entire process from beginning to end with regard to how we approach things, and they were very unconventional. The idea of creating the flexible program, that of something dynamic, something iterative. The idea that we really wanted the interactions as well as the opportunities to be responsive. And if you're going to be responsive, there is that tolerance for, you have to sort of a tolerance for both positive things that that kind of approach brings as well as the negative. You know one example, even the panel that we did in Venice, the first panel

that was orchestrated because it was a hybrid event. They were asking for everything to be kind of chunked out, and the responses kind of queued up, and they gave us the questions, and we just couldn't work with it. This wasn't, necessarily the Ask group. This was a SECOS group around another project, but the idea that you give space to the relational aspects. What's happening in the moment? I just feel like there's some magic, and you know to connect to the word vibrancy, almost like an improvisational quality to some of the things that get discovered that would never get discovered if you didn't create an atmosphere for that kind of interaction. So yeah, that's that. And it's risky, too, you know. And people are less comfortable with those kinds of formats for things. But it does lead to some really unexpected outcomes and activations.

Eric Benson: I just wanted to say one quick thing about vibrancy, and that is that I agree with what was said, and especially what Mary Beth started with, just about who's interested in it. And a couple years ago, I was already sort of thinking about walking away from the project. I've been working on it for eight years. I was pretty exhausted. And then, you know, there was the stay at home orders, and I didn't go in there for basically a year. And so I felt like, Hey, this is a sign. I did it for a period of time, and time to go. And then I discovered this call that was put out for this Vibrant Ecologies, and I started to think about what I was doing again, and that also felt like a sign to me, too, and I started to plug away at some writing, you know. Eventually, you know, I did the writing, but when I got back in 2021 started to head back into the studio space, there was interest again, right? People came back out of where they were in the dark, so to speak, and they saw this project is an opportunity to do something from their perspective in terms of, around my mission. And so it started to be more vibrant again, and I just totally agree that it's about the people who are there and want to be there. Yeah, that's Aaron. You saved me, Aaron, so.

Aaron Knochel: But you know it sort of highlights, too, and we do have a question in the chat. I don't want to take away from that, and we will address that. But I just want to say, too, I think from all of you, we created an ecology, and that's what a2ru Ground Works, I think, is unique in my experience of publication, in that one, it was a long, we had a long time together, which was our investment in getting it right. But two, there was just a really dialogic nature to all of this, that the authors themselves formed these groups and we presented in different ways throughout the journey, and we had rounds and rounds of feedback and discussion. It really, my deep felt, thanks were in gratitude to be a part of that, because it makes my heart really warmer to hear you say, yeah, the actual collection itself had an impact and became a part of that ecology for you. This is exactly what I think we need to be thinking about and trying to think and reflect on. How do we cultivate that kind of interaction, especially in academic environments, which are becoming, really, in my mind, debased capitalist exchanges of value, right. Where it's about getting something for your tuition dollars. And I respect that you should get something. But I also think those relationships are really important as well. But we do have a question. There is a question in here from Eleni.

Veronica Stanich: That's right, and it's funny because she asks about obstacles. And when I look at my notes when you were talking about the ecology, it was all about basically support,

funding, support from higher ups, sometimes we're starving but yes, we require care and feeding, building relationships, co-creation of knowledge---all these positive aspects of the ecology. And to me Eleni, you're asking, can we pinpoint the parts of the ecology that don't support us? What doesn't work? So I'm paraphrasing. Your question is: as we discuss the need to integrate arts, science and technology or engineering, I wonder how we can identify the practical obstacles in academia and other key settings that impede this effort. I welcome all panelists input on this one. And, Eleni, could you just clarify? Would you like them to talk about some of those obstacles. Or are you really interested in *how* do we identify? You know what I'm saying?

Eleni Gourgou: Yeah, thank you for putting forward the question. And yes, I thank you for asking. Eleni is my name. I appreciate your asking. Basically I'm interested in both. So I'm trying to identify the obstacles that I can see around me here at the University of Michigan or other institutions. And I wonder whether other people have put their finger on specific processes that don't work, or on specific infrastructure that does not help with this effort, or whether they they know, or whether they can suggest a process that I can follow in order to identify the obstacles. So maybe it's both. I don't know if that made any sense.

Veronica Stanich: Panelists put your hand in the air. If you want to start jumping in on a Eleni's question. Go, Mary Beth.

Mary Beth Leigh: I just want to promote a2ru's work on this front, and maybe I should just turn it over to Maryrose or Veronica, or Shannon to do that. One wonderful resource they generated was the Case for Arts Integration in higher education. There's two book about that. One is kind of case making for, let's say administrators, and one is actually a workbook where you can go through with your colleagues and identify obstacles and think about ways to overcome them. But maybe I'll turn it over to the experts who were more involved. I was a little involved in the development of that. But a2ru's got this great resource.

Veronica Stanich: I am grateful to you, Mary Beth, for referring us, or turning it over to me. I'm reluctant to take a bunch of time when this is such a nice opportunity to have you here. I will answer for sure, but I hope this won't take the place of your personal answers. We do have a resource that Mary Beth described, and I'm getting a link here. I'm putting this one in first. Eleni, this is the research that my colleague Gabe and I did on interdisciplinary collaboration and some of the challenges that turn up. We did it at two elevations, the individual, like, What do groups of interdisciplinary researchers run into? Well, we have a language difficulty. We can't communicate that well. We have a hierarchy problem; they think their way is better, and they're not listening. And then challenges at the institutional level. They expect to fund this per department. But we're across departments. So where's the money going to come from? So we looked at those two elevations, And so maybe that's an interesting read for you, and I'm happy to show the data behind that if you want. And Shannon's quick on the draw the other resources that Mary Beth mentioned that Shannon is putting in there are really about case making for why it's important and how to do it. And Mary Rose has chimed in on the chat. So that's some of the stuff that a2ru has to offer. Oh, and I guess that that first resource I put in the chat, the

collaboration research, it's if to your question of how, how do I identify it, maybe, rather than having an open question is, Are we experiencing any of these other challenges that seem to be so common? So there's a bit of a checklist. Many people encounter it. Is this happening to us? And then the case book has some ideas for how you can move forward through that. Other answers about challenges? Or maybe just examples, some of the ways that your research ecology really threw roadblocks in your way, where the system was not supporting and feeding you, and that might be about scarcity of resources or just structures that you had to fight against, because they weren't supporting what you were doing.

Eric Benson: I was gonna say, real quick, That one thing that we recognized right away was, We're in the arts. We're not in the sciences. But yet, if you look at what we're doing there, it is kind of both art and science. And so really quickly when we got in the room, we were part of this NSF cohort, and we realized right away, we weren't necessarily looked at as serious, right, in terms of what we were doing, because my partner was a printmaker, and I'm a designer. And then there's a bunch of scientists. And I'm talking about how we're using scientific method throughout our work and testing our papers and engineering labs. And so it was a big obstacle just to get in the room. But I think since that, I want to say that we proved our sort of research ecology to many parts of campus, and so I would say that a good part of campus does understand what's going on there. And still there are people contacting me about wanting to get involved, whether it be from the humanities or the sciences. So that was a big obstacle, for my project was just coming from the arts.

Eleni Gourgou: Thank you, everybody, Mary Beth, Veronica, Maryrose, and Shannon for all those links there. I just wanted to say that what Eric said about the difficulty that someone encounters when they enter the room, try to convince other people that they are serious. I feel I don't know how people feel about this, but I feel that this points to the direction of undergraduate, or even graduate education, so that people will get used to the idea, or accept early on the idea that art and artists can contribute to problem-solving. So the first time that they have to deal with this will not be when they are administrators or faculty, or whatever. So it will be integrated in the education they receive. Hopefully. This will make people be more open minded towards such a synergy. Thank you.

Genevieve Tremblay: I was gonna just comment a little bit on, at least the example of our project. It was not only ambitious, but the scale of it was almost outside the boundaries of anything that we could tell existed. Which then prompted us to just have to make these audacious assumptions about how we could pull this thing off. So we sort of rocketed through the ozone layer of all traditional packaging for what this thing could be, you know, getting a grant from the US Embassy and framing it in such a way. Putting together an ecosystem of partners that would reflect the kind of validity, and it was across both art, science, and technology. So in that case there was, not something for everyone in the worst of ways, but something for everyone in the way of at least moving it forward with some funding, and having that open doors. So it's almost like you pay Peter to pay, What is it? You borrow from Peter to pay Paul, whatever it is. You bring in those relationships, and then you reflect them to another audience that attracts, It's almost more of an entrepreneurial approach to building a model,

that is a little bit outside the norm. I would say, on the one hand, we got lucky with this grant that has a lot of gravitas to it because all of a sudden everybody wants to pay attention and be involved in something like that. But at the same time, to be perfectly honest, we still just squeaked through. Yes, we had funding, but there were so many aspects of dealing with each of those kind of partners in the microsystems, in each of those environments, that exhausted us. You know, the idea that that we had this fluid, once we got the funding we were off and going, that kind of energy had to be pumped through the program from start to finish. So that's not as replicable, if that's what you have to do from start to finish. But then I would just follow that up with, when you have a2ru, which is essentially creating a platform around the validity and the velocity and the impact of programs like this, then it's like, what an incredible partner in crime to have, where you could be reflecting back: This is what's happening. These are papers being published about this work. It just ends up being a real amplifier for then circling back around and getting the kind of support within your institution, as well as, you know, unexpected bedfellows that you might reach out to to be part of it. So yeah, ours is a little bit more unconventional of a model, but it's still worth looking at.

Aaron Knochel: I'll just offer both my experience with the collection, but also my experience as a principal investigator with funded research from the NSF and different entities which are not for artists, but I managed to sort of get in the room somehow, right? So I think that part of what I've learned in that experience is to acknowledge early on, in assessing the team and the people that are in the room--as we're sort of using this idea of being in the room--that there are inequalities that are built into all of the systems that we participate in. And of course we would acknowledge up front that those have to do with race and class and gender most directly, absolutely, but also disciplinarily. I mean the funding pot for Americans for the Arts is quite a bit less than where we look at different organizations such as the NSF, which really dwarfs any other federal funding for research, in the United States at least. So that needs to be acknowledged in team building, and an honest assessment of those inequalities, and how they shape the outcomes that are a part of what will happen with your grant funding, right? So, knowing from pre-application what those outcomes need to do for you, which part of the grant and which part of the actions and reactions that are part of the funding will feed your research trajectory. Because it might not be the same as your college. There might be an overlap that doesn't allow your full research agenda to be expressed or recognized, and it's no fun to be in a situation where you're involved in a big project, and the outcomes start to move into a space where you're just like, you know what? I'm not interested in this. Or this is not feeding what my research agenda is about, and that's been a hazard that I've tried to be very careful about. I think I just wanted to acknowledge the moment that I feel like we're in, and I want to call attention to one of the commentaries. Roger Malina, who is this scholar who has been a troublemaker his entire life, and sort of rabble-rousing in these spaces, you know, space scientists. He's got the science cred, but he's also got this very interesting history with *Leonardo*, this art-science journal that his father started. So he's just kind of been in the room, in lots of different, really interesting ecosystems that are weird by today's standards. So I think it's people like him, pushing boundaries like that, that that are creating a bit of movement here, and I need to acknowledge that even institutions like the NSF, you see cracks where they're starting to acknowledge. They've got a major funding initiative to run convergence.

Convergence is that space where artists and designers need to fill in, right. I kind of see this as sort of like, Richard Florida's book about the creative class in 2000 really changed our thinking about what the arts and creative practices do in the economy, because they were always seen as these things that are fanciful, and don't make an impact. And it's like no, wait a minute. Let's look at the creative economy and how that really impacts our communities. And I hope that we're in that kind of serious assessment, now about what creative practice as research can do for institutions of higher learning. And how do we make honest assessment about those impacts. There are lots of big organizations that are really truly hungry for that kind of information right now. So we're in a good moment to maybe change the public perception, and that's a big, evolutionary movement in higher education. I think we're in the midst of it. I feel hopeful about that. Of course, things like war and economic downturns have a way of squeezing a bit of that vibrancy out of the situation. We're in a tenuous moment. We'll see?

Veronica Stanich: Well, thank you for that. We're gonna wrap up that little chunk, and I want to call on Donna Chen, who has a question for you all. Donna, please go ahead and unmute.

Donna Chen: Yeah, thank you. This actually follows on what Aaron was just talking about. I was curious, with your different collaborations and partnerships, did they start from kind of ground up, with people just collaborating? Or was it a bigger initiative that the institutions started? Or maybe both? I'm sure they happen both ways. But I have an opportunity now, I'm in a medical school. I'm at the University of Virginia, and we are trying to use our center for health humanities and ethics to really reach out across the sciences, to try and start to cultivate very slowly different kinds of partnerships. And one of the things that we were kind of thinking about--we're going to work through the workbook, but the idea of, are there, for example, some of these big CTSA collaboratives, or the big research collaboratives that are accepting artists as equal partners? I mean, do we know of any around the country? Sounds like at Michigan State you guys have something like that, but I'm just curious what people's experiences have been, and if you have any lessons learned or suggestions for someone who's really starting from scratch. We are starting from scratch, and would love to hear any advice anyone has.

Genevieve Tremblay: I am going to jump in, just because as ambitious as our project was, it started with a tiny mustard seed of one relationship. And the power of one relationship is really extraordinary. I was doing an art residency at a marine lab here at Friday Harbor Labs, part of the University of Washington, and they accept artists in that environment. And when I was finishing up, the people that I had been working with, one was a fish morphologist who had known of a former PhD student who was an artist and a scientist in Chile, and said, you two have to meet. And that one suggestion turned into a Zoom call, that turned into a couple of months worth of Zoom calls, that then turned into us building a team. And I really think there's a way to go the other route, which is look at what's been anchored and embedded and recognized. But the other route around finding, and magnetizing to people that are doing incredible work, and that align with the work you're doing. And sometimes the benefit of doing that is, you shape something from the ground up into being something very unique, as opposed to sort of sliding into an agenda and a framework that that already exists. So the power of relational things can really activate some special kinds of unique things.

Donna Chen: I just was curious. You were saying that you did an arts residency at a marine biology job. Have institutions been giving, for example, pilot grant seed money specifically for scientists and artists to come together, to apply for that? Do we know? I'm sure there are. but I just don't know of them. And would that be a way to maybe start creating little things?

Genevieve Tremblay: Definitely. I mean, if I were starting from Scratch, the idea of, and Aaron and I have talked about this a lot and this is in some of the research in the paper--in the past ten years, especially the past five years, the idea of art residencies have been transformed, but the ideas of art and science residencies have just sort of exploded. Even in the time that we started our art residency, there was a significant one in Chile that was in the same process that we were, and we ended up sort of bonding and communicating together, because, as Aaron said, I think we're sort of at this moment. But the idea of mapping, and the concept map that that went along with the publication, I'm so excited about that concept map, because that's such a great way to start with any process. You just start mapping things. You just start: what's going on here? What's going on there? And then you drill down. You go to the next onion skin layer deeper, and you find out who's doing what in each of those instances, and before long you've rendered lots of things bubbling up, and that's when you can start to draw your lines to the ones that are aligned with the work that you're doing, or the scientists and artists that you're working with. But I do think it is somewhat of a mapping process. At the end of our publication I was just so thankful that that piece was done because that's the next level that gives you the bird's eye view of what's actually happening.

Mary Beth Leigh: Yeah, with respect to funding, I dropped a few links in the chat there. But this is something I've also been thinking a lot about and struggling a little bit with. And I have access to NSF funding frequently as a scientist, and they've been really supportive about incorporating arts and humanities particularly, and the way they contextualize it as broader impacts. But what we're talking about is the primary research, and we're trying to kind of move it into that component of the research, and that kind of waxes and wanes with who's a program officer at and NSF at any one time. But I think they have in general an increasing interest in that. One of the things I've started to suspect is that private foundations might be a more fruitful place to look, because they're at liberty to think more broadly. NSF, just like NEA and NEH, had been established with boundaries around them. Your job is to fund science; your job is to fund art; your job is to fund the humanities. And sometimes they do hit those walls, and they've told me we wanted to fund this, but it was just a struggle because of that. It was a little too far outside of science, or included too much outside of science. So I'm not saying it's not possible, and they do fund the Polar STEAM program, which is in the chat now. They've revived that for Polar Arctic and Antarctic artists and residencies, and then for teachers to go to the Arctic and often they use art-science approaches, but I brought up the Mellon Foundation in the chat. I know they've funded a big initiative at University of Virginia, for some great teams of musicians, eco-acoustic artists, with environmental scientists. So you might think about somebody like the Mellon Foundation, who would be interested in that. In my experience, NEH hasn't shown a lot of interest in it yet but I think they might, depending on the approaches taken.

Aaron Knochel: I'm going to offer a little synthesis but also offer up some stuff that Penn State's doing as well in this space, especially in the medical humanities. I just want to synthesize what's happening here between how we're addressing Donna's question, and also making me think of Eleni's question about practical things to think about. Sourcing and doing some peer institution evaluation of what's happening over there is an incredibly effective strategy for making your administrators think differently, right? So this is a very real tactic that's been successful, I know in work that I've done, where you say: Well, wait a minute, Illinois's doing this, Ohio State's doing it, especially when it's Ohio state, they're doing stuff like this; we should be thinking about similar kind of movements, right? And this is where again a2ru shines because that membership, the peer institutions, are really a good bunch of folks to be comparing yourself to, right? Rigorous institutions that have big research agendas, and powerful impactful smaller art Institutes. So i just wanted to call attention to that. and then some things at Penn State. We have a couple of initiatives over the years, some of them have a longer life than others, like our Rock Ethics Institute has had a long life and incredible, interdisciplinary status and funding across a range of things. But there's also our School of Medicine--which is in Hershey, it's not in State College--they have a full-on artist residency. I think it's a two-year Residency, and they've developed a real branch of practice, and even a curriculum around the medical humanities that's required for med students. So there's some stuff for Donna, in particular for you, that sound like the things that you're trying to develop there. You might want to look into that a little bit. I also just want a shout out to graphic medicine, one of the coolest things that I think is happening right now in terms of making that connection between the arts, literature, humanities, and medicine. It's a series that's supported by the Penn State Press. My wife is there, just to divulge here. It's just really amazing, you know, comic books and graphic novels that really deal with a range of medical issues. So lots of cool stuff.

Veronica Stanich: Well, to Aaron's point about seeing what other institutions are doing, and because there was a flurry of things dropping in the chat at that moment, Julienne mentioned that at the University of Texas at Arlington there's an interdisciplinary research program that funds you and you have to be coming from different schools and departments. The University of Michigan had something similar. It's evolved, it's become something else. But I think that might be becoming more and more common, that institutions are trying to incentivize it, not at the scale of the NIH or something, but at least with seed money or with some incentive. Does that sound right to you?

Mary Beth Leigh: Yeah, I think that we see this growth of interdisciplinary centers at universities, like the ArtsEngine at the University of Michigan and KU has theirs. I'm starting to research these across the country because we might be starting one here in Alaska. But yeah, it's great to see that they incentivize these collaborations, whether there's small seed grants just to get students matched up with faculty who are interested in this, or larger ones. And I think you do need that foundational work and ultimately preliminary data to go through the big grants to show that you have a consortium that's done some productive work together, and we can grow from that nucleus. Kind of going back to Genevieve's comment, start with a small group, maybe a really effective collaborator. Something and grow it.

Julienne Greer: I was awarded two of those interdisciplinary programs at UTA, and I did find that it was incredibly opening for me to explore how I changed as an artist, but also how I changed with the different disciplines that I worked with. And I think that that's, what I'm feeling like from my very brief connection to the group, is that that's one of the really interesting aspects of this. How we all change, how the engineers change, the nurses, the psychologists, the education, and then how the artist changes as well. Thank you for asking for a few words.

Veronica Stanich: Mary Beth, that sounds very much like where you'd gotten to by the time we saw you in June with Lissy, with your project.

Aaron Knochel: I'm sort of thinking about what Mary Beth was talking about in terms of starting a center. Donna is going through this, and it makes me want to dive into some organizational research literature around Center development with this particular focus, right? I sort of dropped in the chat: a2ru unconference? Because I would love to get a bunch of people in the room who are either running centers or trying to move their institutional ecosystem towards a center that might recognize these intersections of arts, integration, et cetera. I think that'd be a really powerful conversation, one that would be not a presentation, but really a kind of workshopping environment where we, the idea of an unconference where you arrive at the agenda together. What do we want to talk about? What are the things that we want to know about this? And have a range of actors that have both experience, and also might be on the verge of some sort of thing. So I propose. Let it be heard. I don't know, 2024 or something.

Aaron Knochel: This is how I got in trouble doing the special collection. I said, something off-topic in a meeting with Veronica, and she follows with, Would you be interested in proposing that as a special edition? Oh, yeah, sure,

Veronica Stanich: Because the next two years of my life I'm sure I would like to commit to talking about ecologies of research.

Genevieve Tremblay: I think one thing, too, to keep in mind with regard to how these Centers start, they start with something that is unique about what's going on in that place. So if there is an art and science initiative that might happen at the University of Washington in the Genetics department, it ties completely to the research going on there. I did a project several years ago with a genetic counselor there who really believed in the power of art to not just communicate the science--that's very a flat interpretation--but to really engage people in the depth of what happens in that kind of inquiry and what's going on even now with genetic science. And we ended up launching into a project that really was a better part four years. It was like an Art and Science Residency where we brought somebody up who was really working at that molecular kind of nano-gaze with her work around genetics. It's the kind of thing that, once again, it can be seeded from an inspiration from one person's research or from a team of people's research. But then it needs to match up to an artist that's interested in that. And of course, that's not so easy to find, right? It's not like there's a million people working in that specific way. In addition to sort of mapping what's happening, it's interesting to go down to the root systems of why those programs are where they are and where they started from, because it usually has to do

with something that's generated from those places that are very unique. It's almost like a hyperlocal aspect to the way that these things start out.

Mary Beth Leigh: Yeah, that's really well put. One thing we've noticed: I'm part of a network of long-term ecological research sites that do this kind of place-based arts-humanities work, and we often get together and analyze the features of our different sites and art communities, programs that have popped up, and one thing they often have in common is one highly motivated person. Who is some kind of an intersectional person, like a good bridging person who's able to bring people together and make this happen. Each one pops up in a really unique way, and they all take different shapes and forms, sometimes based on that person's skill set or just the interest in the local community. To support what Genevieve said. So you can be that person where you are, and get this new thing that can then grow.

Veronica Stanich: I will say, based on the research that I've had to do with a2ru on art-science, or art-clinical collaborations, this group, the three of you, represents such an interesting cross-section, because the model I encounter the most often is a STEMM research question, either a medical or scientific question, because they have the funding. They say, oh, let's bring in some other people from other disciplines. And it's really sort of a host, or I'm on my home turf and I'm inviting you in as a visitor. And Eric, your project is really quite the opposite of that. You started a design project, and then started inviting some people in who might be interested in researching the science side of it. So that does my heart good because it's not always the artist as guest, as well we hope this is interesting to you, come on in and try it with us. But your project flips that model that is more common, I guess, just because of funding and resources. Yours is based in arts and design, and the science folks can come and they're welcome.

Eric Benson: Right? Yeah, that's exactly what happened. The thing that actually was the tipping point was the concept of fiber. So I was looking at papers, right? But these papers are made of like individual plant fibers, and I wasn't thinking about it that way, because I was thinking about it from like the designing, and I guess, artistic side of things. And there was a mechanical engineering Professor who saw some write up on Fresh Press. His whole research was on carbon nanotubes, which you can't see, they're Nano level. You have to use a microscope. So he was really interested in that idea of fiber, because that's where he working, at a very small scale. So he wanted to come over and figure out how these all these fibers all connect and form paper. He didn't understand it. He, for some reason trusted me because we both went to the University of Michigan. So there you go, Veronica. That's why he actually came over. But it was really wild, he was explaining to me: I just don't understand how physically this is happening. And I was like, yeah, it's just paper. And you know I was blown away by his carbon nanotubes that he could build and had such a small scale. So it was this really cool relationship.

Genevieve Tremblay: What a great flow of the knowledge, back and forth. it's such a great example of scientists are so much like artists. In my mind, anyway, the years that I worked with with the ones that I have. But the idea of the visualization aspect of it that artists can bring to the table. It's not just artists communicate out or capture the science. It truly goes both ways,

especially if you find that just-right chemistry between those two contributors. That's a great story.

Eric Benson: Thanks. And I kind of carried it over into some of the other work that I'm doing outside of Fresh Press, because I do a podcast called Climafy and the whole purpose of it is to invite climate scientists into the design classroom, and what would they tell us, who make a bunch of stuff, to do it correctly or do it better. And so it's been two seasons of that, and it's been pretty fun, and it kind of started with this idea of this engineer coming over and being blown away by what I'm doing. But I'm really excited what he's doing.

Veronica I'm stunned to see that it's twelve minutes after the hour, so we should start to wrap up so that we end on time. Are there any other floating questions or comments that we want to make sure get preserved or heard?

Aaron Knochel: I do want to offer one thing about the conversation we were just having about the sort of character of the arts integration, this idea of the centrality of the arts. Or it's not centrality, it's like the integration of the core of the research inquiry right? Because I think that that I want to give a shout out to the a2ru reviewers, because as a group they were really integrated into the development of the call for papers. Their ideas were really important and substantial in crafting what came together in our in the proposals, so that there was really this kind of sense of what we were looking for. And so I think in one sense, Veronica, the recognition that you see in the folks in this panel and in the entire collection, was really cultivated through, again, this sort of very collaborative effort to try and understand: what is it that we're looking for? Right? How do we identify, what's the essence of this thing we're looking for? And so I just want to give a shout out to the reviewers, who are a big part of that. There's a whole group of them that again didn't just review. They were definitely a part of the call, and generating this whole idea as well.

Genevieve Tremblay: And I was just going to just say one little thing on the tail of that, which is the opportunity to not just be invited to in a part of the publication. But--in my case, and I can't speak to the other contributor--truly mentored in how to translate and package up what we were doing, so that it could be shared and accessible to multiple audiences. That was just a huge gift that I feel like I owe somebody something, because of the care that was taken. I've published papers before, but I think a lot of time the research that I've done hasn't had a place to go. And to all of a sudden feel like there is a platform that's really relevant to the work that I've been doing with all my collaborators, has just been really a remarkable transformation for the work that we're doing. It wouldn't have happened without a2ru, so I'm just so grateful about that.

Veronica Stanich: Well, I'm starting to feel a little sheepish here. I feel like people think we paid you guys to say good stuff about a2ru. But I'm glad that it's been such a positive experience for editors and contributors. It has certainly been long and involved, and I'm glad that that has come out on the positive side and not the marathon endurance side.

Genevieve Tremblay: Well it was that too. But we had a lot of fun. I mean, again, I can only speak for myself and Aaron. But I think we all did enjoy the process, and also getting introduced to each other. We've now been presenting as co-authors, and I've shared the work of everyone with my colleagues as well, so that's been another great aspect.