Episode 35: Julie Risien

# KL: Katie Linder

# JR: Julie RisienKL: You’re listening to *Research in Action*: episode thirty-five.

# [intro music]

# Segment 1:

# KL: Welcome to *Research in Action*, a weekly podcast where you can hear about topics and issues related to research in higher education from experts across a range of disciplines. I’m your host, Dr. Katie Linder, director of research at Oregon State University Ecampus.

On this episode, I am joined by Julie Risien, who manages operations and programs at the Center for Lifelong STEM Learning at Oregon State University. Her work focuses on campus-wide initiatives including building a network to improve research impacts and managing transdisciplinary STEM research programs. She serves as an advisor to the OSU office of research development and the NSF-funded Center for Advancement of Informal Science Education; Julie is also a steering committee member on the NSF-funded National Alliance for Broader Impacts. Julie's background in research planning and administration includes 10 years at OSU with Oregon Sea Grant and the Institute for Natural Resources. Her background also includes many years working for non-profit organizations including the Environment Now Foundation and as a U.S. Peace Corps Volunteer in the Pacific Islands. Julie has a Master’s of Science in Marine Resource Management from the College of Earth, Ocean and Atmospheric Sciences at OSU and is currently working on her PhD in Environmental Sciences.

Thanks for joining me, Julie.

**JR:** Thanks, I’m really glad to be here.

**KL:** So Julie, we met early on in my time here at OSU, and one of the things that you focused on is broader impacts, and this is something that I find fascinating about your work, because I think a lot of people are confused [laughs] about what broader impacts are. They think they’re very abstract, and we’re seeing them more and more, so thought it would be a great episode for the podcast. So why don’t we start out first with: What are broader impacts? Where are we starting to see them becoming a thing in terms of research?

**JR:** Well I think it is really confusing, and I think a lot of the confusion actually just stems from the vernaculars and how they’re different between the different agencies that are trying to connect research to society in some meaningful way. So, the term “broader impacts” is really a National Science Foundation term, and it really does apply across agencies, but a lot of the energy around broader impacts and a lot of the external funding that comes into universities is from the National Science Foundation, so that’s where a lot of the tension is brewing around the concept of broader impacts. So in terms of what are they, you can think of it in a couple different ways. You can think of it as the public’s return on investment, for publicly-funded research. But that’s a really tactical way to think about it. It really also is ways to meaningfully connect research to the public. So that might be research that has some benefit and improves our way of life, or it might be some way to engage the public in the process of doing science and the research itself. Now, I think one of the benefits of doing that, engaging the public in science, is having a public that’s able to include science and discern science in their everyday decision-making.

**KL:** So, can you locate or point out for us when broader impacts really became a thing, because I feel like this is a more recent development for people and I think this is also something—why it’s more of a concern for researchers is because it’s become more of a request that we’re seeing on some of our grant proposals. Can you talk a little about how it came to be?

**JR:** Sure. Well, with the National Science Foundation, it’s always had a mission of research serving society. So, you can say broader impacts has been there all along. But our practice and our norms have been to really focus on building disciplines, and that has started to change—I think really the last 15 years, and especially since 2012, there’s been really increased emphasis. This has to do with that trend of transparency in government funding and government spending, I think, and there’s congressional scrutiny on research spending, and sort of an increasing divide, I think sometimes, between a community of researchers and the general public. NSF in particular has sort of doubled down, and they’ve continued to show the public their commitment to broader impacts, and that has affected the policies and practices of the agency and the way that they make funding decisions. So, big changes happened in late 2012 that changed the grant proposal guidelines at NSF, and that was a substantial change that looked at, equally, broader impacts and what we call intellectual merit. And so, there became a flurry of activity at universities to try to address this need. There was a feeling that there wasn’t the capacity to attach our funding to some sort of broader impact, to have the kind of outreach and engagement activities associated with research that might be necessary to demonstrate broader impact. And that’s really where they are. I think that a lot of researchers maybe felt that this was something that would ebb and flow, and it would just sort of go away, and it certainly hasn’t, and there’s no indication that it is going to go away.

**KL:** That’s such a great point. I’m wondering if we can talk a little bit about why you think people might find this concept of broader impacts so challenging, because I know this is an area where I see institutions hosting workshops on this, and we actually have an organization here on campus that you work with—and we’ll talk about this a little later in the episode—but it’s really just focused on broader impacts and research impacts, and this seems to be an area that’s just really challenging for people to think about it in concrete ways. Why do you think that is?

**JR:** Well, I think, first, it’s important to say there’s a huge spectrum of investigators out there, and there are some that feel like the whole reason they do research is to benefit society, and I think almost all investigators start that way. They get into science, they’re really compelled by wanting to change the world in some really special way, something that’s really meaningful to them. Now, of course the process of becoming a scientist sometimes robs you of the luxury of connecting yourself to that societal relevance that I think instigates all of our interest. So, I think that there are people who are able to maintain that, and then there are people who dig so into their discipline and their whole identity is around producing in their discipline that they find it hard to find the time and space for this. Another major problem with why it’s so challenging is that we do not train our scientists to do any of this work. That is not part of my graduate education, I don’t know that it was part of yours—

**KL:** —it was not—

**JR:** —it’s not part of most graduate education, and that’s something that is really [inaudible] now, so we’re sort of changing the game. If you’re an externally-funded researcher 12, 15 years ago, you didn’t need to do this work, this outreach and engagement kind of work, finding the right partners to maybe connect with schools or involve citizens in your science, or to train your students to be anything more than reflections of yourself, and people who succeed in their own discipline. So I think that that’s really part of the challenge. Now, I would say over the last five years, I feel like I’ve seen a huge change in perceptions about broader impacts. I think initially, when a federal agency makes a practice of policy change, there’s a lot of pushback, and I think we saw that, and I think we saw that for a decade or more, and now I think that there’s a lot of people who are saying, “Okay, this could actually be good for me, this could actually be a way for me to be professionally more engaged, to see the impact of my work, to have different aspects of my life integrated into my professional life, too.” So I think the primary challenge is time and capacity, and then the training and skills. We just don’t really set up investigators to be successful in that area.

**KL:** One of the things you raised as part of this challenge is kind of, there are logistics involved with the broader impacts. There is partnerships that need to be found, there are relationships that need to be set up, and as many of us who work in higher education know, that’s not always an easy thing to do. And again, as you say, something that faculty may just not be trained to do. They may not have those relationships in place, and it seems kind of like one more thing to set up in the midst of trying to write out these grant applications.

**JR:** Just to kind of pick up on your point of investigators feeling like, “I don’t really have time for this, I don’t know how to do this,” a professor here at OSU that I respect a lot said to me once, “You know, at this point in my career, I can write a proposal in my sleep, but building the partnerships I need to do the broader impacts takes me months, and I just don’t really know where to start and how to go about doing that.” And I thought that that was really telling, because this is somebody whose work is highly relevant to the public and who’s very interested in making that connection, but that’s certainly not his training and his practice. So, I think that part of it is cultivating people who can broker those situations, who can broker those relationships, who have the skills and expertise to do the broader impacts, and universities cultivating kind of a community of those people.

**KL:** Julie, can you share some specific examples of broader impacts that you’ve seen?

**JR:** Sure. So, there’s a variety of things that can be broader impacts. Certainly, broader impacts can be just integrated into the nature of the research question. Is it a question that the public really needs an answer to? Is it something that is going to help us respond to a public health crisis, for example? But it can also be integrated into the process of research. Who are you involving in your research and what is their role, and what might they be learning along the way? So those people could be graduate students—that’s a very normal way we do work here at the university—but they could also be citizens engaged in volunteer science. Citizen science is also a really great way to integrate people into the process of science. So, this is when volunteers are involved in sometimes designing research, but also in collecting data, analyzing data, telling the story that data can provide for us. There’s great programs all up and down the west coast where citizens are collecting everything from water quality data to beach erosion data, and that’s a really powerful way for people to learn about science. So another example would be working with women in computer science. That’s an area where there are very few women. Computer scientists are going to rule the world one day soon, and if we don’t have gender equity and balance in that, I think it’s going to be really problematic. And so, there are people all over the country, and certainly Margaret Burnett on campus here, who are really working with young women in computer sciences. So, that would be a way to achieve a broader impact. You know, in terms of training graduate students, it’s not just about training them to be scientists, it’s about training them to be culturally competent, to be good collaborators and to be good communicators. So extending the type of mentorship and training available for graduate students is a really good broader impact as well.

**KL:** One of the things I’ve heard as kind of a challenge of broader impacts—and I think that what you’ve raised is such a good point about kind of extending that mentorship—is that faculty who maybe have not done broader impacts before in the way that NSF is now expecting will say, “Well, I’m training graduate students, and that’s my broader impact. Period.” You know, they just leave it at that and think that that will be sufficient, and it really isn’t at this point sufficient. But extending mentorship and really outlining the ways that graduate students will be trained and impacted and mentored could potentially work, you just have to go into some detail.

**JR:** Yeah, you do, and the thing about practice and policy is that those two things don’t always match, and often with a big organization like a university, and a bigger organization like the National Science Foundation, it takes a long time for a policy to start to shift into practice where it’s a really predictable kind of practice. And so it may be true that in some cases, in some programs, just saying you’re going to train graduate students is a sufficient broader impact. I think those times are changing, and the number of programs where that’s sufficient are dramatically reduced over the last five to ten years. I do think, though, if you’re able to do something in a creative way that better matches the needs of students today and the types of jobs they’re likely to get tomorrow, that you can make the case for broader impacts. Another really important area—and this is specifically with NSF, but also with other agencies—is broadening participation in the sciences. So that’s participation in terms of equity: people from very diverse circumstances, diverse points of view, being involved in science. So, this is based on lots of things. One is the need for us to have a more equitable society, but one is the creativity and innovation that come from bringing people who are different from each other into a room to try to solve problems. So that’s a real richness that I think the National Science Foundation and other agencies are trying to cultivate. So there’s an area that you can’t just bring people into a room that were working across difference and expect that to work really well. There’s some intervention there, there’s some activity there, sometimes there’s social connection-building that needs to happen very intentionally to be successful in those types of situations. But I think that’s a really important way to tackle broader impacts.

**KL:** These are great, concrete examples. We’re going to take a brief break, and when we come back, we’ll hear a little bit more from Julie about some of the work she’s been doing at Oregon State University to create community about broader impacts. Back in a moment.

# Segment 2:

**KL:** Julie, one of the things that you have helped to build here at OSU, which I think is a really interesting community for people who are interested in research impacts, is ORIN, the OSU Research Impacts Network. And this is actually something that’s been mentioned on some other podcast episodes because of people that we’ve interviewed and people that I’ve met at ORIN that have come onto the podcast. But I’m wondering if you can share a little bit about what is ORIN, and why did you decide it was needed at OSU?

**JR:** So, as NSF and other agencies have really extended their commitment and shown their commitment to broader impacts, it became clear to a lot of universities that there were some systemic approaches that were needed. We needed to come up with institutional-scale solutions to these problems. We needed to understand how to scale up, how to capture capacity, and those kinds of things. So, around the country, lots of universities are creating offices of broader impacts or offices of research impacts, and sometimes these sit within research offices, or within a college of science or a college of engineering. And there weren’t any plans at OSU to have an institutional office. And I actually thought the lighter, looser structure of distributed leadership around improving our OSU collective research impacts better suits our cultural personality at OSU. And so, we worked with the research office here and our division of outreach and engagement, and thought about different ways that we could do this. And ORIN has been sort of my baby, and something that we started with a workshop to try to understand what investigators need in terms of capacity and planning around research impacts. And this has to do with John Falk, who is also associated with the Center for Advancement of Informal Science Education—his idea really to get that going, and I have been able to run with it.

**KL:** Well, I think this is just such a wonderful network that you’ve created. For people who just may not be familiar with it at all, can you share a little bit about the kinds of things that ORIN is hosting for people at OSU, the kinds of events and things that are happening?

**JR:** Sure. So, it is a network of people, so the capacity and the expertise is distributed among the membership. That’s about 50 people, and I would say about 25 quite active. We have at least quarterly events here. They are everything from social gatherings where we’re really trying to get to know each other and each other’s work, so we can help connect investigators with the right partners when they’re planning their research impacts. Sometimes there are direct trainings and capacity-building events. In fact, yesterday, we had one that was applying design thinking approaches to outreach and engagement activities, which was a pretty fun event. So we try to have those events every quarter, and we’re only a year old, so we’re only four quarters into the process right now.

**KL:** One of the events that I went to is actually where I met two guests that will be coming onto the podcast, and it was just a really interesting way to hear about research that’s going on at the university, and specifically how people are integrating broader impacts that you just may not have heard about otherwise. I think sometimes we get kind of siloed into our disciplines and don’t have all of these opportunities to hear what’s going on. So, it was a really wonderful example of how to build a larger research community that crosses through disciplines that may not otherwise talk to each other.

**JR:** Yeah, I think one of the issues with broader impacts being a confusing thing and it’s part of a vernacular of agencies is that we forget that it’s happening all around us, we’re just not calling it broader impacts. You know, extension is an original broader impact at universities, at land-grant universities in particular. Engaged scholarship is all about broader impact. In fact, it takes it to a whole other level where the subject of your research is also your collaborator in research. And so we don’t identify those things as broader impacts, so one of the benefits of having this really loose structure around ORIN is that we can bring those things in, and we can start to recognize them for the value that they offer in terms of impacts associated with research at OSU.

**KL:** Mm-hmm. Well, I also think that one of the things I’ve found helpful as a researcher, and I know other people I’ve talked to find helpful, is just seeing examples of what other people do. What are the kinds of things that have been funded? What are the kinds of broader impacts projects that people are putting together? Especially if you’re starting from scratch and you just really have no sense of what this means or what it could be for your research, that’s such a valuable resource, to have colleagues, to be able to identify them and even follow up with a coffee or a conversation to say, “Tell me how this worked for you. How did you figure out the logistics of this?”

**JR:** Well, that’s great to hear, because we really are trying to build a community of practice. So, people who either deliver broader impacts, study broader impacts, or just broker relationships, to help investigators find the right broader impact or connect with the school or a group of volunteers that can conduct citizen science with them. So that practice is kind of where we try to focus our quarterly events, what are the practices? We do sometimes talk about what’s happening at NSF or what’s happening at OSU, but we really try to anchor it in our shared practices.

**KL:** Absolutely. So tell us a little bit about your future plans for ORIN. What are some of the things that you’re hoping will come out of this community or future events?

**JR:** Well, building capacity is something that we really want to do on a few different levels. That’s an area of focus in this first year or two. So it’s building capacity of the people who design and deliver and research broader impacts, but it’s also building capacity of our investigators to understand how they integrate that with their own work, and how they add this sometimes new piece to their realm of responsibilities. So we’ll continue to focus on that. A couple other areas of interest is understanding what capacities we have at OSU so we can assess what capacities might be missing. I think we have a lot of capacity at OSU. I think very little is missing. I think a lot of it’s hidden. Like I said, it’s broader impacts happening all the time and we just don’t see it as that. Another area is improving opportunities to build capacities around equity in science, and that is everything from filling the STEM gap and recruiting students that are going to bring different points of view into our disciplines. Also to access [for] the public. You know, a lot of science learning that is broader impacts-associated is happening in museums or at science pubs, but it’s a very self-selecting group, and there’s a whole lot of people who maybe we would consider from the academy point of view inattentive to science, but it really has more to do with access. And so, being able to provide training and capacity-building to cross those barriers of access I think would really important as well.

**KL:** So, for listeners who maybe want to learn more about broader impacts, what kind of resources would you point them to?

**JR:** Well, I think for listeners nationally there’s the National Alliance for Broader Impacts. And the National Alliance for Broader Impacts is also a relatively young organization, and it’s also a network that’s kind of loose and light in its structure, and there’s lots of innovation and driving of practice around broader impacts that’s happening at—NABI, it’s called, for short. And that is accessible at broaderimpacts.net. They’ve got a great set of guiding principles that can be used for folks that are planning broader impacts and research proposals or looking to evaluate broader impacts. And that’s the NABI guidelines—are pretty easy to find at broaderimpacts.net. It’s a great resource for individuals also to plug into the community, if they wanted to get deeper in. And in fact, in April 2017, we’ll be hosting an annual summit up in Stevenson, WA, which I’m organizing here in collaboration with the National Alliance for Broader Impacts steering committee. So we’re really looking forward to that. So there’s lots of ways to plug in through NABI.

**KL:** Great. Well, we will definitely link to that in the show notes for listeners who might be interested. I’m wondering, we might also have some listeners who are thinking, “I don’t have this on my campus, I don’t have something like an ORIN on my campus that is kind of connecting people and helping them to do this work.” Let’s say we want to start something like that. Can you talk a little bit about, in more logistical detail, the origins of this project, and what would be some initial steps for someone who wants to do something like this on their campus?

**JR:** So the origins of this for me really do go back to the National Alliance for Broader Impacts. In fact, that’s very much their focus, is building capacity for folks to do the work of institutionalizing broader impacts and finding these kinds of institutional-scale solutions. So that’s certainly a community to plug into right away. And you don’t have to wait for a summit to plug into that community. It’s a very open community. You can join and ask questions of practice to the listserv and get very quick and thoughtful responses. That’s a really good way. There’s a few decisions in terms of doing this work on an individual campus or at a research organization, and that is do you want something that’s centralized out of an administrative office like a research office or a college of science dean’s office, or something that’s more distributed, that works across units, may be a little bit easier, something that you want. There are advantages and disadvantages to both. There are issues of funding. A distributed model is a much harder model to fund. Everybody likes to recognize it when it’s doing well, but when it’s struggling or needs something nobody’s willing to take responsibility. [Laughs] There are issues of the relationship that maybe already exists between investigators and administrators when you’re housed in an administrative unit. So that can be a barrier. So I think it really depends on the organizational culture, what’s really appropriate. Also, I would say recognizing (like we talked about before) that broader impacts are happening all over the place, and to come on the scene as if you’re inventing something new or creating something that didn’t exist before is probably going to mean that you’re really trying to reinvent a wheel that’s been rolling for a long time, so I would avoid that.

**KL:** Well, I love this idea too of looking at your campus as it is right now, to see where can you locate what would fall under the definition of broader impacts, and maybe just creating some documentation of that to share with other people. Starting out a conversation on your campus about, “This is where we’re already doing this, and how can scale it, and how can we grow it?”

**JR:** Yeah, and there are a lot of units that might operate on campuses as broader impacts coordinators. Sometimes they’re sitting within extension or outreach and engagement offices. Sometimes they’re in EPSCoR offices. Sometimes organizations like sea-grant or space-grant might have a lot of those kinds of duties, at least within their disciplinary domain. So some of that work might already be happening.

**KL:** Well, I have to say, broader impacts has been something that has seemed very abstract to me, and you have clarified it a ton, so this has been really helpful to hear about these concrete examples.

**JR:** I’m glad to hear it.

**KL:** Yeah. Thanks you so much, Julie, for sharing your expertise with us and for taking the time to come on this show.

**JR:** Great. Thank you.

**KL:** And thanks so much to our listeners for joining us for this week’s episode of Research in Action. I’m Katie Linder, and we’ll be back next week with a new episode.

Show notes with information regarding topics discussed in each episode, as well as the transcript for each episode, can be found at the *Research in Action* website at [ecampus.oregonstate.edu/podcast](http://www.ecampus.oregonstate.edu/podcast).

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# Bonus clip:

[intro music]

In this bonus clip for episode 35 of the Research in Action podcast, Julie Risien shares about her research on networks. Take a listen.

**KL:** Julie, one of the areas I know you’re interested in for your own research is research on networks. Can you tell me a little bit more about that? What does that mean, research on networks?

**JR:** Well, I think when you say that, a lot of people assume, when I tell people I study networks and I’m interested in studying networks, they assume, “Oh, you’re doing social network analysis, and you’re making those beautiful maps”—

**KL:** —oh, okay!—

**JR:** —and that’s not what I’m doing. While that is very interesting and useful work, I’m looking at the deeper depths of networks and what happens socially, what happens in terms of learning, what happens in terms of an individual changing the way they identify with their profession or their community, and the way that they conduct their practice professionally, and also looking, hopefully, across networks, and what the network’s roles are in changing institutions.

**KL:** So when you’re thinking about networks, can you give us some examples? Like, how do you define that? Like, what would constitute a network in this research?

**JR:** Well, I focus specifically on transformational or transformative learning networks. And so these are networks that share certain characteristics. They’re distributed geographically, the membership tends to be voluntary. While it’s a professional activity, it’s not something that’s required in their job or that they’re necessarily assigned to do. They also tend to be in the networks I’m interested in—are really looking at higher education. They tend to be people we would call boundary professionals—

**KL:** —hmm—

**JR:** —so, people who broker information, build bridges, help people work across difference. And then the other characteristic of networks is people tend to have this very loose and light structure, and so it makes crossing boundaries a little bit easier. And what I mean by that is it makes boundaries turn from something that can be a barrier into something that is an opportunity for innovation, for learning, for changing our perception or our practice, and eventually, hopefully, changing the way we do things in areas that are important to create change.

**KL:** Hmm. So when you’re talking about creating change and you’re defining networks in this way, one of the things it makes me think about immediately is what would be the different between a network and a coalition? Because it sounds like—coalition, I think, sometimes has a little bit more of a political component to it—but are those things that could be aligned, or are they pretty different in what you’re looking at?

**JR:** I think the differences between the type of networks I’m talking about, transformative learning networks and other types of networks, are actually quite subtle for people who aren’t like me, digging into the depths of these things. So I think there’s certainly a collective action component, and most of these types of networks have a collective action goal, so that is to move policy or public perception in a certain direction over time. And with that, they share with a coalition. But they have a lot of other goals, too, and those are often learning, innovating, creating a social and professional community of practice in a place where one might not have existed before, and also dealing with problems that hierarchical institutions haven’t been able to deal with. So, problems that are really ill-defined, they’re large in scope, there’s no existing, identifiable solutions to such problems. So, they also share a lot of traits with professional learning communities or professional societies and organizations. But those organizations tend to be more about the flow of information and less about innovation, learning, and emergent properties that can be seen in these transformative learning networks.

**KL:** So the research as you describe it sounds incredibly messy, which makes me love it [both laugh], just in terms of what you’re going to have to dig into to answer some of these questions that you’re looking at. But one of the messy components that you’ve mentioned is this idea of change, and how these networks are somehow impacting various things—the people inside, or policy, or other kinds of issues. Can you talk a little bit about that component of it, the change component, but also just your strategy of dealing with some of this messiness as you delve into your research questions?

**JR:** So, yeah, we’ll talk about change in terms of memberships, and then I would love to talk about change more theoretically, too. So, in terms of the membership, in higher education, a lot of these networks emerge because there’s growing populations within the institution that see that a certain type of change is necessary. And sometimes those people have positional authority, often they aren’t necessarily people with positional authority, but one thing that is common is that universities are big beasts of machines, and they’re very slow, and to tack, and to change at the pace that maybe the public or the students or the faculty might want to see them change. And so part of these networks is providing community and connection for people who want to create that change from the middle. So sometimes that’s without any kind of budgetary or positional authority. And there are lots of networks like this, and there’s a researcher down in California, Adriana Kezar, who talks about communities of transformation and how they can move universities in different directions, and she’s definitely a big influencer in the way that I way to like to look at networks.

**KL:** I love Kezar’s work. We will definitely link to some of it in the show notes, because she does some really impactful work. And particularly, I love her use of case study methodology when she does a lot of this work looking at higher education institutions. It’s fascinating.

**JR:** Right, and I’d like to follow that—and I’ve had the happy chances to meet with her and talk with her about the research, and her recent work on communities of transformation is really one worth linking to.

**KL:** Oh, good.

**JR:** Absolutely. So, one of the things that these networks can do in terms of those individuals, it provides them a community where there not be critical mass at any one institution, but if you look across institution and geographically separated, you can pull enough people together that they feel at home. They can build something. And they tend to be people who can move quickly themselves, and they have a sort of nimbleness to the way that they move through their profession, and when you pull a lot of people like that together, lots of things can happen. It’s easy to shake things up, and everyone almost feels comfortable in a situation where they’re shaking things up and thinking outside of the box. It’s one of the reasons I’m really attracted to participate in these networks, and one of the reasons I like to study them from a participatory point of view, as well.

**KL:** So, back to this messiness. Because I’m hearing it even in how you’re describing it. How are you finding these networks? Because it sounds like they can be relatively informal, maybe they don’t have names or maybe they do have names. They’re cross-institutional. Depending on the work they’re doing, if it’s not necessarily people who have authoritative power within the institution, it might be kind of grass-roots of what’s going on. So how are you locating these and identifying them for your research?

**JR:** Well, most of these networks, in order to exist, have some level of support, either from a foundation or an agency like the National Science Foundation. It’s definitely a shoestring of what you’d consider necessary to run a national organization. And the ones that I’m interested in are ones that connect to me professionally, so the National Alliance for Broader Impacts is one that I’m really interested in, the network of STEM education centers, which is an APLU—Association of Public and Land-Grant Universities-run network, that tries to bring STEM center directors together to advance their practice. So they’re really highly connected to my own professional practice.

**KL:** That’s fascinating. So one of the things you mentioned was looking at change from a theoretical point of view, and I think whenever we get into theory, it becomes even more messy with our research and trying to dig around and see what’s there and mash things up. Is there a particular kind of foundation you’re starting from as you start to look into that?

**JR:** Well, given the messiness of the networks and of theory itself, there’s a lot of theory that applies, but one that really been interesting to me and has helped me think about organizational change as an oxymoron is Chia’s theory of change. So this is a “rhizomic” theory, so anybody familiar with biology or plant biology in particular will understand. A rhizome is a relentless plant. It grows, and any piece can create a new plant, and at any junction it can shoot off in another direction, and if you tear it out of the ground, it will just create more of itself. So, Japanese knotweed is one of these. Another common backyard week is horsetail. If any one’s dealt with those, they’ll kind of understand the relentlessness of rhizomes. So if we think about change as a rhizome, and change as this relentless constant, it is actually so fast. So we often then talk about organizations or initiatives as instigating, or creating change, or managing change. And Chia looks at that as, this is a complete oxymoron. Change is happening. Organization, or like a network, a transformative learning network, or an initiative, is actually a way to arrest the change, to slow the pace of it enough that we can see it clearly and we can act thoughtfully to go in a direction that we want to go in.

**KL:** I love that idea.

**JR:** I really love it too, and it really helps me center myself in thinking about, “How can I make change?” Well, I actually can’t make change. All I can do is try to see it clearly and slow it down enough that I can be thoughtful, and I can try to bring other people along with me. So that’s something that I really like to ground my thinking in, and I think—recently, when I get wrapped in theories that stop making sense because they’re all overlapping in messy, messy ways—that’s one that I can kind of come back to and re-center with.

**KL:** Well, the work sounds fascinating. I can’t wait to see what comes out of it. Thanks so much for sharing your expertise and more about your research, Julie.

**JR:** Great.

[end music]

**KL:** You just heard a bonus clip from episode 35 of the Research in Action podcast, with Julie Risien sharing about her research on networks. Thanks for listening!