Dead Ideas in Teaching and Learning Podcast Series

Season 6, Episode 1: Why Are Dead Ideas So Persistent? A Conversation with John Mahoney

Center for Teaching and Learning, Columbia University

[00:00:00] **Catherine Ross:** Hello and welcome to Dead Ideas in Teaching and Learning, a higher education podcast from the Center for Teaching and Learning at Columbia. I'm Catherine Ross, the center's executive director. As a quick reminder for our listeners in this podcast series, we are exploring dead ideas in teaching and learning. In other words, ideas that are widely believed, though not true and that drive many systems and behaviors in connection to teaching, exercising what Diane Pike called "The Tyranny of Dead Ideas."

I am speaking today with Dr. John Mahoney, senior lecturer at Australian Catholic University, and John is joining us this morning from Brisbane, Australia. John is a senior lecturer at Australian Catholic University. He is the university's academic lead for HELTA, the Higher Education Learning and Teaching Academy, which seeks to ensure that people are informed when making decisions in higher education from presidents to teaching assistants. HELTA and John's work centers around using best available empirical evidence, waited alongside expert judgment, student preferences, and contextual factors when making decisions.

[00:01:22] John is also one of the founders of Inspire an evidence center designed to curate and summarize best available empirical evidence in higher education in ways that make it easy for people to make decisions and take informed action. John is a psychologist by training with a background in sport, exercise, and health. But now he uses his training as a psychologist and a researcher and his experiences as an educator to ultimately answer two questions in higher education. How did we make that decision and what's the impact of the decision we made? Welcome to our Dead Ideas podcast, John. I'm so delighted to be talking with you today across this vast distance.

[00:02:08] **John Mahoney:** Thanks, Catherine. It's wonderful to be here.

[00:02:10] **Catherine Ross:** John and I have been corresponding for several months about his work at his institution and how he is centering the use of research to make decisions about teaching. Ever since I read the *Chronicle of Higher Education* article, "Why the Science of Teaching is Often Ignored" last

January, I have been curious about how those of us who work in teaching centers in higher ed can tackle this complex issue, and John has some really good ideas about that. So I'm going to jump right into the first question. John, you wrote to me that you are, and this is a quote, "wrestling with the idea of why people ignore best available evidence," and that is part of your current role. You are trying to help people become more informed decision makers. I had shared with you that one reason I thought dead ideas are so frustratingly durable is that legacy practices are deeply embedded into the culture of higher ed, and so people just don't, like ask themselves, hey, what's the research on learning saying that might, you know, be useful in my teaching? And that, and then the other factor is that teaching is often undervalued in research universities. And you know, many people are like, hey if it's not broken, don't fix it. But you have some more scientific space I think, ideas about why people ignore research. So I'd love if you could share some of your thoughts on this conundrum that we face.

[00:03:51] **John Mahoney:** Yeah. Sure, there's nothing like research to answer the question why people don't do research, right? There's an irony to that. I have this mindset that's this kind of, this researcher that produce some really meaningful and impactful research and then found out that nobody was using it. So thought, let's do some research on why no one's using my research.

[00:04:10] Right. Look, I think that you, you raised a lot good ideas here, Catherine, and it's a really big question to answer. But I'm going to tackle maybe the one part of what you said, which was you know why do people ignore evidence? And so to maybe tackle that question, we have to make the assumption that people knew the evidence in the first place, right. There is another question that we need to answer, which is you know why didn't people get to the evidence in the first place? And we can kind of talk about that as well. But let's start with the first one. So let's assume that we knew, know the evidence, but let's put it in context. Maybe one of the simplest, but also most robust pieces in evidence that I think cuts across a lot of higher education is how to put together presentation slides, so PowerPoint slides or Prezi or Keynote or whatever, whatever people are using. And there's really good evidence about the best way to design those slides for learning purposes to reduce cognitive load and things like that. So maybe one example of that is to reduce the amount of text that you have on a slide, and if you can, it's even better if you can use relatable images and really cut down your text.

[00:05:15] So let's use that as context. And so we know that, we know that evidence, you and I, and we choose to ignore that evidence. So the question is, well, why did we do that? And I think one of the things that you touched on,

which is really important, is this idea of what you called legacy or what we might call, you know, following tradition. And so it's that experience of my professors did it when I was a student, or my colleagues are doing it so now I it. Now that idea of ignoring evidence there actually speaks to two kind of ideas. The idea of doing something cause my professors do it, is something that a psychologist might call a mere exposure effect or familiarity principle. Which kind of works on the idea of we tend to ignore other bits of information, including evidence if something else is more familiar to us. Right. It feels comfortable, it feels easier to do. Right. So that's the path of least resistance. We can get to that pathway a lot easier. The idea of our colleagues doing it and us kind of following suit is really appropriately titled the bandwagon effect. Right. And as the title kind of suggests is that if there's enough kind of social momentum for something, we tend to join along with that again, even though we know that there's evidence to the contrary of, of whatever it is that people are pushing. So these two things, this bandwagon effect and this mirror exposure effect are just like two things in a long list of what are referred to as cognitive biases, right? And there's like over a hundred different cognitive biases. So these are just two ways that we make errors and judgment in the face of, you know, quite compelling evidence. And this is a bountiful amount of research that's gone into cognitive biases. It's, it's across pretty much any domain that you want to look at. And the two guys who came up with it, one of them unfortunately passed away before he could get a Nobel Prize, but the other one got a Nobel Prize for this work. That's a really important and impressive piece of work.

[00:07:09] Now in higher education, we, I guess get stuck with this idea. We're not different to any other human right. We make decisions in the same way as any other person in any other context. Our cognitive biases serve a particular purpose, right? And a lot of that is to make quick decisions for things like survival. So you could imagine in kind of prehistoric times and you round a corner and you encounter a sabertooth tiger, you can't try to weigh up all the information that's in front of you and then make a decision on what you should do, right. So if you kind of sat there and you went, oh, really razor sharp teeth and you know, large claws and menacing, look, you'd be dead, right. So you really needed fast ways of processing information. And so that's really the kind of context of our cognitive biases or why we think really quickly and can make really quick decisions. It's really facilitative for human beings generally, but then we've put ourselves into more and more complex situations over time, right. We've evolved and now we have situations where the outcome is really unpredictable, and this is where we see errors in judgment, is when we can't really do a good job of predicting what the outcome will be. And higher education is one of those settings. It's really hard to determine or predict what we do as educators, what impact that will have on our students right. So this is

kind of the science that's kind of fueling a lot of the ideas that I have in this space is why do we ignore evidence? We're engineered to ignore evidence, to actually spend time taking in not just empirical evidence, but all the information that's available. That's a deliberate process. That's tricky. It's uncomfortable for a lot of people. It can be quite confronting, particularly if you are trying to combine empirical evidence with say, your evaluations from students. A lot of that can kind of be confronting information for us.

[00:09:03] It's a lot easier and simpler and probably more pleasant just to do the legacy practices, right-- the things that are easy and quick and short and sharp. Um, yeah, I think that that's kind of an important thing to keep in mind. This is a fairly, there are systematic ways that we make errors in judgment. It's easy and quick to make those decisions, but there are ways to maybe work around it, and I can talk about those if you kind of want to kind of, you know, take the other angle about--what about those that didn't know the evidence in the first place?

[00:09:33] **Catherine Ross:** Well, we're going to assume that we're all doing a really good job in teaching centers and we're getting that evidence out there. So we'll say that they know there's evidence. They may not know what it is, but they know there's evidence. But I think you know your point it makes me wonder how we ever make any good decisions, with these strong biases that our brains have really does take some effort, I guess.

[00:10:02] **John Mahoney:** Yeah. I think that this is another thing that you and I have spoken about previously is that there's also another enormous body of research that's kind of popped up over the last 20 years looking at how we adopt behaviors, right. So using evidence is another example of behavior adoption. It's kind of like healthy eating or stopping smoking or going exercising, right? There's a certain amount of processing that needs to go on to that, to commit to that kind of behavior. So you can either eat healthy or you can kind of eat a mountain of chocolate every day. So I think the same is somewhat true for using evidence in higher education. We need to kind of make a commitment to that. But the body of research around this is more, well, what can we do, for example, as centers in higher education to support people adopting evidence-based practices? So the kind of research that I'm thinking about is around behavior change. A lot of it's come out of the UK and the NHS. And if your listeners are interested, they should look up Susan Mitchie's work, which is really kind of grounded in health. But it's now kind of started to spread into a number of other areas and it's principally interested in, yeah, we know that this thing works. We know that exercise is good for people. We know that healthy eating is good for people. That public messaging has been kind of thrown at people for so long, but yet we have people who don't do those kinds of

behaviors. And the same kind of story is somewhat true for higher education. We know certainly some things that are better than others in higher education, and we've pushed that message over and over again.

[00:11:30] The fact that you know it in the US and I know it in Australia is kind of testament to that idea, right? It's fairly universal, and so the question becomes, well, why don't we do it then? And so Susan Mitchie's work and this idea around behavior change really speaks to that. And maybe to go into the devil in the detail, some ways that, you know, certainly I've been thinking about or trying to apply it to the work that I've been doing is to apply this framework, this behavior change wheel framework, which talks about three things.

[00:12:00] If you can do these three things, the chances of changing behavior becomes much higher, right. And so with the things that you're trying to do are build capability, you're trying to build opportunity, and you're trying to build motivation. So capability means your skillset and your knowledge about particular things. So your knowledge about evidence, your ability to identify good evidence 'cause it's not all good. Your ability to interpret it, and the really tricky one often, which is the ability to take it from the empirical land and apply it into the real world, right into your context with your students and and your institution. Then opportunity is probably the number one thing that is the battle at the moment in higher ed. So opportunity for one of a, better way of putting it speaks to things like time. Academics will always tell you that they don't have time to look at this evidence, or they don't have time to engage in the scholarship of learning and teaching, at least to the degree maybe that they need to really, you know, change a lot of practice or reflect on a lot of their practices. And then motivation speaks to kind of two things and motivation's my passion from, you know, all the way back when I was a psychologist and a PhD student. But it talks to both the internal drives that we have. So our passion to be a good teacher, which most of us have, but sometimes that passion can be kind of ill directed. And then the other things, which is the external drives. The external pushes and pulls. And I think that this is the clincher, right? Because there's not always obvious ways to get recognition or the goalposts aren't always clear in teaching in higher ed. Particularly, if I compare it at least in my country to say the research area, the goalposts are really well defined. How you kick towards those goalposts is made very clear, and there's a lot of support around how to do that. And there's recognition, right. So if the teaching world was a little bit similar to the research world, I think the external push and pull to use evidence-based practices in teaching would be a little bit different, but it's certainly, you know, like that idea. This is called the COM-B model. So capability, opportunity, motivation is the COM, and if you can do all those things, you get the B, which is the behavior. And that's what we've laid into this Inspire project, which you mentioned at the top of the program, which is really about building

academic's abilities to use evidence, giving them opportunity by creating a toolkit so that they don't have to go and final this literature. They don't have to read, you know, a 20-page journal article that, you know, we've curated the best available research in higher education, learning and teaching. We've summarized it in concise ways. We've flipped a journal article around really, and started with the application and finished with the theory so that people can kind of come in and get that information quickly, that they can draw confidence on the idea that someone has done their heavy lifting for them. And then we are slowly building this idea of, you know, the external pushes and pulls. Certainly at my university, I feel very lucky that, you know, there's a lot of momentum behind this initiative. So our higher ups are really supportive of it. They're highlighting it and encouraging people to engage in best available evidence and then recognizing when people do that.

[00:14:59] **Catherine Ross:** Right. It strikes me, you know that as you're speaking, that when people say they have no time, what that mean is the time they have is going to be put somewhere else because teaching isn't valued in the ways it should be in higher ed, which is part of motivation, right. They're sort of inextricably linked, I guess.

[00:15:23] **John Mahoney:** Yeah, definitely. And then there's a flow onto capability, right? If I had more time, the other thing that I would probably do is try to enhance my capabilities, if there was a motivation to do that. Right.

[00:15:32] **Catherine Ross:** Right. So you mentioned your work with Inspire and uh, I want to dig a little deeper into that to ask um, you have these online modules and people can just look on under different topics, different pedagogical topics to see what the research says. I'm wondering what you've learned, any lessons you've learned. Um, as you've applied this, what you know and your team knows about why people ignore the science, um, what lessons have you learned with this inspire project about people taking up this research?

[00:16:09] **John Mahoney:** Sure. A lot of the framework that, and, and this is potentially a cognitive bias in my own, it might be a confirmation, what's called a confirmation bias. It's me looking for information that just supports my own ideas. So let's roll with that. I'm fallible, right? But I think a lot of it does fit very nicely with that COM-B framework. We've noticed a lot of the time that, you know, definitely in the last few years across the pandemic, our academic group has been stretched. And so opportunity to do these kinds of initiatives or to engage in best practice and reflect on practice is is one of those things that seem to get cut a fair bit. I guess the other thing that I've really noticed, and this is not to say that it was the right approach, but again, for confirmation bias, I

feel like we can pull out some data that suggests it is, is that I think we had the mentality that we are basically going to have two people in front of us. We're either going to have really hungry people, people who really want best available evidence, and they want to know how do I apply this and how do I use them. That, you know, that group in any university who's highly energetic and just wants to go out and do things. Um, and then we were going to have a group that were really threatened, and that might have been people who have been in the game for a long time. They've got really established practices, not necessarily evidence-based ones. And if we came to them with this kind of information and in kind of some way say, hey, everything you're doing is wrong, here's the right way of doing it. And I don't want to make it as reductive as that, but for a good story, let's go with it. So we kind of felt like we started seeing these two groups growing up and initially we tried to feed everybody, the hungry and the threatened. And what we found was that we were really slow to make any change and we were getting bogged down trying to support all of those people that felt threatened. Right. Trying to, you know, have really meaningful conversations with them and make sure that, you know, we reached out and we concierge that experience. And then we made a decision. We said, hey what if we don't try and feed threatened people. What if we just feed hungry people? We're not going to ignore, threatened people. We're going to do something else. So let's build things for threatened people. Let's make sure that the structure is there, that the opportunity is there, that invitations are always present for those people. So we don't want to turn our backs on them. We just don't want to kind of get in their face all the time. And so that served really well because there was a couple of things that happened. One was that we, I think we built some reasonably good structures that when threatened people kind of wanted an answer for themselves, they would come to it. So kind of a just in time approach for the threatened people. But there was something else that happened was this idea of the social norming of the experience of using evidence-based practice, which was the more hungry people we fed. The more satisfied that group was, and then they would kind of go out almost like a Yelp review, right? And tell these threatened people, you should go and eat at this evidence center. It's really delicious. And it's, it's free, right? Like you don't even have to pay to go to it. And so we didn't have to get in front of the threatened people anymore. Their colleagues were getting in front of them that, you know, and colleagues who had much better currency with these people, right? People who they connected on, not just professional levels, but probably personal levels too. And so that's what we're starting to find now, is that there are some really interesting people coming to the dinner table. People who maybe 6, 12, 18 months ago, really turned their nose up at, at what we were doing. So it's, it's fun, and that, and that part is the most revealing, right. It's, it's the fact that people do want to get better, but sometimes they just want to come to in their own time and in their own way.

[00:19:38] **Catherine Ross:** I would say I, I feel like there's a third group that's lurking somewhere in the background. They're not threatened because in fact, they're pretty sure everything's fine. And that's what they're told in their reviews because there really isn't any kind of substantive teaching review. And so they're just okay with where they are and they don't see the need.

[00:20:03] **John Mahoney:** Yeah. And look, yeah, I'm really kind of reducing it to two things by just saying like, hungry…And there's, there's probably even more than three, right? There's probably hundreds of different ones. I think you're right. And that, and even that makes me think, well, if I had really good reviews of my teaching from students. There is to a degree a threat of changing my practices, right? Because what will it do to my evaluations? One part, you know, like to get a bit meta on it, we've kind of resisted to some extent putting this in just yet cause it, it does throw up a lot of debate, but there is really quite substantial research around teaching evaluations not being at all related to student learning, right?

[00:20:41] That that seems fairly well established in the field. It doesn't mean we ignore student voices. Student voices is part of the information we need to make decisions. We don't need just evidence. We need kind of a whole catalog of information, and so student voices fit into that. What I think. We get to in the teaching space in higher ed is that we don't have a good way of determining whether or not we're being effective as educators. So we look at trying to answer simpler questions, right? We answer the questions well, did students like the education? And you know, like I always guess that, well, if we put a jumping castle out in the quad and we give everybody lollipops and candy canes, they're probably going to love their experience here.

[00:21:20] Doesn't mean we taught them anything or that they learn anything. And you know, there's some. Compelling evidence that's coming out now that says that learning is challenging. It's hard. It's uncomfortable. So it's not to say that this is a a universal statement, but sometimes when students aren't satisfied with their learning and teaching, it might reflect that they were actually challenged and that they had to go deeper into the experience and that they had to push themselves. That was uncomfortable, and that does somewhat contrast satisfaction. So that. You're right. Like it's hard to break away from that mold because that's the mold that we've, that's the legacy that I think needs breaking in in our space for sure.

[00:22:01] **Catherine Ross:** Definitely. I've seen students write on evaluations, you know, we had to teach ourselves. And that actually leads to the next question, which is about. , maybe not. The next question. I'm going to jump

ahead since it segues into the question about what we should be telling students, because we know that students bring in a lot of dead ideas about learning, and you just gave a really good example of that.

[00:22:28] Things we know are really good for learning like interleaving when you're studying right or um, active learning in large STEM classes. They're confronted with this conundrum that they feel uncomfortable. It doesn't feel like what should be happening. Um, and because they have dead ideas about what learning means and learning often in their brains is sitting and taking notes on a lecturer, watching an expert do this work. So how can instructors help students move past that?

[00:23:02] **John Mahoney:** Yeah. This is not one that I've tried to tackle yet. Right. I will preface it by saying that this will be more opinion than it'll be kind of evidence based, but it's definitely the conversations that we're now starting to have because as more of, at least that my colleagues engage with evidence, they do have those conversations, well what will this do for my teaching evaluations? And then what is this student experience like and how do we, um, talk about expectations and how higher education operates and what their opportunities are. Right? Like I think that there's a real note to be struck here with students that it's, you know, these ideas, and we've talked about this as well. That structure doesn't equal control. That we can, you know, those things are on a separate plane. You can either be, you know, highly structured or you know, really laissez fair, and then on another continuum you can be really controlling or really autonomy supportive, right? So those, those two things aren't the same. And so in higher education, we can provide really, successful, clear structure to students and at the same time help them feel like they're self-directing their experiences well, and, and that's kind of part of the standard and, and what I think contributes to answering this question is that the things that we need to do with students in terms of breaking some of their dead ideas comes down to, again, more what we do in setting some stuff up in the first place. So one thing that I often think about is how we provide choice within structure. So the structure that I'm talking about is that we don't give students the opportunity to engage in those dead ideas, right? We don't, for example, give them the opportunity to come to class and just sit there and take notes. That wasn't even on the table to start off with, but we invite them into, you know, you gave a good example of like active learning in a STEM class. We invite them into that structure, but then we give them choice within that structure. And the parallel that I draw here is thinking about my five year-old son in winter. And I say in the morning, Eddie, you got to put on a jumper. And he says, I don't want to wear a jumper today. And it's like, well, the reason why we need to wear a jumper today is if you don't, you'll freeze to death. But guess what? You get to choose which jumper you wear. You can wear the red one or the blue one. Now,

I don't care what color jumper he wears. At the end of the day, what I understand to be important for him, or let's say my evidence of what's going to be important for him is that he stays warm, right. What's important for Eddie is that he feels autonomous in the choices that he gets to make, to engage in that process. So I think as soon as we offer students the choice of come to class and just take notes or come to class and be active, that's, that's two polar opposites, right? We don't offer that choice. We say, you can come to class. The idea is we're going to be active, but these are the ways that you can choose to be active. So I think that we break dead ideas by never giving students the opportunity to do them. But that takes a, it's not as simple as that. Right? We need to work out what the dead ideas are and what the structures are.

[00:25:54] **Catherine Ross:** Right. Well, I, I want to be mindful of our time here. So I'm going to ask you this question that I'm really excited about. Like, what is your all time worst best dead idea, you know, your sort of pet peeve dead idea that you really would like to put to rest once and for all.

[00:26:15] **John Mahoney:** Oh, I have so many, Catherine. I know this interview's going to go out later, but it's Christmas time and I have a lot of things on my Christmas list for for dead ideas in learning and teaching. I think the debate still surges around the face-to-face lecture. Look, I don't want to, I don't want to be reductive and say that there is only one way to do something in higher ed. I don't want to, you know, get pinned as the person that says you can only do this and there's nothing else. But I shouldn't say but, but sounds like I'm just kind of going back on that. I think we could really challenge the idea, and it's not about lectures. I think it's the residing issue underneath why we want students to come to, to a, to a big lecture room and sit there with, you know, in some cases over here, you know, 800 students in one space. Right. I think really the, some of the underlying ideas there is that educators think that learning happens in the classroom. In this one or two hour space where I'm going to stand up in front of students. That's really where learning, this is the most impactful that I can be as an educator. And, and I know it's happening because all these students are in the room, right? They, they're turning up, they're here and they're present. That means learning is happening and there is so many cognitive biases that are caught up.

[00:27:28] **Catherine Ross:** Right? Learning means content coverage for one.

[00:27:32] **John Mahoney:** Yeah. And being present in a physical space all at the one time, once a week, and then sometime in a few weeks time, will test you in some kind of rudimentary way, and then you would've learned and you can move on with your life, right. So I think that that's probably the number one

thing that we could challenge. And the more and more we have opportunity, particularly in the sense of being international, being able to share practices and, and what works across borders. Technology is the other thing that affords us enormous opportunity. And that's not to say that technology leads our decisions. Technology should always be the thing that sits in the back and supports the decisions that we've made. But I would really love to see people challenge the idea more around where learning occurs when it occurs, and probably most importantly, how it occurs. Um, because then I think we would look at. Modes and approaches and some things that would be really exciting, some things that we are yet to uncover. It's really exciting to think about. In 50 years time, the Inspire Toolkit being completely useless or the things that are in there now are useless because we've evolved to finding new ways of teaching that support learning. That would be my number one. That's top of my Christmas list.

[00:28:47] **Catherine Ross:** You're so enthusiastic and it's so lovely to, to be the beneficiary of that enthusiasm. What is it that keeps you inspired and motivates you to believe that change is possible in higher education teaching.

[00:29:03] **John Mahoney:** There's probably two things. One, and I've heard some of your other guests that you've had on say this, is that there is a genuine sense that we have solvable problems in higher education. You know, if these things we were trying to work on weren't going to actually move or shift, then it seems kind of a bit of a fruitless endeavor, right. It's quite exciting to think that these things we can, we can move towards, we can design something, we can be systematic, we can be strategic, and if we do those kinds of things, we can solve these problems. And to go a little bit further on that one, it's great to solve problems, but I think the next thing to think about is, well, what's the impact of solving that problem? Right. If there was a problem, for example, in medicine, and you could solve that problem, you could probably draw a direct link depending on the problem that you solved, but you could probably draw a direct link to saving people's lives. That sounds like a really cool thing to be able to do, right. I don't think we can say that in a higher education directly, but we can indirectly, right. If we can solve meaningful problems in higher education, in terms of how we teach and how we support learning, that means that we can educate, you know, future doctors, and then they will remember that information better, and then they will understand that information better and come up with new solutions because of what we did in their higher education experience. I think that that's a really exciting world to live in where, you know, we are the catalyst for enormous change, societal change, um, across the world through what we do. You know, like that higher education is such a wonderful and unique experience. I can't think of any other time in your life where you get those four years just to, there is the opportunity to play, to be creative, to really explore your horizons, right? As soon as you kind of get into work, those

opportunities shut down a little bit. So this is, you know, the, the timing is right, the conditions are right, and the problems are there to be solved. And that's one really exciting thing. The other thing that really inspires me is the people I'm surrounded by. I think I'm particularly lucky and maybe part of it's like, maybe part of it is, is the approach that I've had all the people around me have had. But I often talk about, you know, this is going to sound a bit strange coming from a Catholic University, but I talk about my Holy Trinity. I've got a provost, a deputy provost, and my director of the Center of Education Innovation over here who couldn't do enough to make me feel compelled to make a difference. They give me enough space that I can explore ideas, I can test things, I can fail safely. But they also nudge me in the right direction when they see me kind of heading off course. So they're not coercive, they're not strong arming me or anything like that, but they see what I'm doing and I feel like they are enjoying watching, not just what I do, but you know, the group that I'm working with. I enjoy seeing what we are able to do. And I dare say that that's probably the more selfish, but you know, equally important reason why I constantly feel inspired at the moment.

[00:32:07] **Catherine Ross:** Well, thank you so much, John. This has really been amazing and for getting up so early to talk with us to try and help push higher education teaching to a better place. And also thank you for being part of our Spring 2023 podcast season.

[00:32:26] **John Mahoney:** Thank you so much, Catherine. It's been an absolute pleasure.

[00:32:32] **Catherine Ross:** If you've enjoyed this podcast, please visit our website where you can find any resources mentioned in the episode, ctl.columbia.edu/podcast. Please like us, rate us, and review us on Apple Podcasts or wherever you get your podcasts. Dead Ideas is produced by Stephanie Ogden, Laura Nicholas, John Hanford, and Michael Brown. Our theme music is *In the Lab* by Immersive Music.