Episode 142: Guy Lotrecchiano

# KL: Katie Linder

# GL: Guy Lotrecchiano

# KL: You’re listening to “Research in Action”: episode one hundred and forty-two.

# [intro music]

# Segment 1:

# KL: Welcome to “Research in Action,” a weekly podcast about topics and issues related to research in higher education featuring experts across a range of disciplines. I’m your host, Dr. Katie Linder, research director at Oregon State University Ecampus, a national leader in online education. Along with every episode, we post show notes with links to resources mentioned in the episode, a full transcript, and an instructor guide for incorporating the episode into your courses. Visit our website at ecampus.oregonstate.edu/podcast to find all of these resources.

On this episode, I’m joined by Dr. Guy Lotrecchiano, an associate professor in the department of clinical research and leadership in the school of medicine and health sciences. He is also the associate dean of collaboration and academic innovation at the George Washington University. Dr. Lotrecchiano’s work is dedicated to team and collaboration science. He is also the president elect of the International Network for the Science of Team Science.

Thanks so much for joining me on the show today, Guy!

**GL:** Uh thank you, Katie, for having me. I’m looking forward to our conversation.

**KL:** so I’m really excited to talk with you about this concept of creating effective teams. I know this is something that you have spent a lot of time thinking about and practicing. What lead to your interest in creating effective teams?

**GL:** Um I have a little bit of an interesting history. I actually originally came from the humanities, and um as I was finishing up one Ph.D. in music – actually, ethnomusicology to be specific – I took a position at a hospital with a research institute basically to pay my way through writing my dissertation. And um I landed in a research laboratory, and I learned a lot about the harder sciences, specifically, microbiology from then my mentor and supervisor. And um – that was really my crash course in what went on in the scientific world versus the humanities, which is as we know quite different - at least back then it was in the late 90’s -, and I observed as a musician, because I am a musician – I observed that really good teams have the same characteristics as really good musicians, and they really understood what it meant to collaborate and to communicate in a way that lead to an ultimate goal or product. Um and um – for a lot of reasons, I ended up staying within that context for a little while ultimately leading me to complete another doctorate, but this time it was in human and organizational learning and I focused in on teams – specifically how teams, especially networks of teams, communicate in and what it was that we could identify was the differences in the roles of team members and the different disciplines that they represent. Ultimately that lead me to work, and teach, and research in the field that I do called team science. Um so now lot of my research and also my teaching is dedicated to either helping students understand what are effective science teams, or better help them understand why teaming in science is so important – especially now in this particular scientific context we live in. Not just in bio-medicine and health, where I basically work out of, but also in a lot of other sectors including, you know, astrophysics – if we want to go to Mars we have to be very interdisciplinary in our approach, we need to be innovative if we want to solve climate change problems and be more sustainable we need to work in teams and understand the contributions of sciences that work in multiple fields. So – and those are just to name a few of the big world problems we’re having today or at least the problems that we want to solve, and that is really where my contribution lays in trying to help people understand that effective teaming isn’t just a desirable state to be in, but it’s actually necessary to do contemporary science.

**KL:** Okay so I’m really curious about this concept. You mentioned networks of teams and working not just with one team, but with a network. Can you give an example? I mean – is this kind of interdisciplinary work kind of what you mean by that?

**GL:** Sure. So, more and more we’re seeing funding that is coming out of national agencies, but also foundations and other types of uhm funders that want to see scientist working with each other. Now of course, on the university level or even an industry, sometimes that includes a set of faculty, or a set of uh – um scientists or even an industry or another sector – a government sector, working together within their institution, but more often than not, partially because we have greater ease these days in communicating across institutions. We often have awards and research networks set up where you have people in different institutions either comprising of one team, or they’re each doing a little bit of the work at their own institution. My own experience in my research includes an award that was given to um – a research network where they’re aware the emphasis was on rare diseases, well the diseases are so rare that there’s very few cases of the diseases that they study. So it’s necessary for scientist and clinicians from one institution to rely on work that people are doing in another institution, and at the time when I did that research, we were talking about a network of about twelve different institutions – Most in the United States, but some in Canada and Switzerland. Well that sort of communication – the communication necessary to do that sort of work, is so important that it’s really imperative that those clustering of teams all working toward the same goal, are all able to do it in a way that’s effective so that they can capitalize on the science they’re each doing, instead of being in competition with each other, which is another major trend in this 21st century science era that we are in. Where complementarity and collaboration are not necessarily in contrast, or challenge competition. In fact, more and more we rely on collaboration and complementarity than we do on competition to get certain research goals and scientific goals accomplished. So in dealing with those sorts of teams, it’s really important that we rely on the human sciences – including psychology, social psychology, what we know from cognition, management, leadership, anthropology, etcetera to understand how humans behave and how they behave in groups, so that we can apply that knowledge to ensure that scientific teams are making the most out of their collaborations.

**KL:** Okay. So we’re drawing from all of these disciplines to try to figure out how to have effective teams in the science context. I’m wondering what you’ve learned so far through your work, helps to make that team be effective.

**GL:** Well, without being too – without being too flippant, I’ve learned that we basically learned all of these skills way back when we were in kindergarten when we – we worked together to clean up the toys, and we worked together, and we were integrated when we took naps and all those sorts of things, but somehow as we grow old and into adulthood, and more importantly as we’re trained in disciplines, some of the core aspects of what it means to be a collaborator break down, and part of it isn’t just because we grow older, but part of it is because we’re trained differently in different disciplines. So in some disciplines we are very much rewarded or being specialist, for being the person who knows everything on a subject. In other disciplines, there’s more recognition and support for people who are able to sort of cross boundaries um in medicine and health for instance we know that nursing, to use one example, is one of those fields where the nursing discipline if we wanted to call that – call it that, is something um that reaches way beyond any one way of looking at health, but looks at it in many different ways. Um other types of specialties within health and medicine don’t necessarily look at it that way, and they look as being highly specialized in only one area of providing care, or only one area of research. So ultimately what I’ve learned is that to be effective in science teams, I needs to be a combination of both. We need to be able to balance this idea of being a specialist - being a discipline providing the knowledge necessary to solve a problem, but also the ability – the skills as it were to be able to speak the language of another discipline. So this is something that we often have to reteach to certain scientist or at least bring to their attention, and we what found is that using the human sciences – sciences that have to do with human performance and sciences that have to do with behavior, are ways in which we can look at what some of the barriers are that stand in the way of disciplinary partners being able to work across boundaries rather than just staying within their own silos. So ultimately, we could talk about teaming from a number of different goals. We could talk about it from, you know, communication, or you know, how people communicate. We look at it from cognition – what people need to learn from each other to accomplish this. We could look at it from the perspective of cooperation, meaning what is the baseline necessary? But what – what we find, and I’m using a framework by one of my colleagues, Eduardo Salas, to explain this – even when we look at those varied different lenses in which we can think of how teams work and work effectively, it really boils down to two. I have found from both experience and also the literature, is that communication is a major aspect in being an effective team, and that context or if you want to call it the culture, is also a major aspect of creating an effective team. So what I’m trying to mean by that is, uhm, there are a lot of um ways you can try to measure if a team is being effective – are they sharing, you know, a cognitive – a shared cognition? You know, do they have a shared mental model? Um but ultimately it seems to be boiled down to do they have means in which to communicate with each other that are fluid, allow them to exchange ideas freely, and allow them to exchange ideas in a way that allows those who might not usually wok with each other, to begin and to sustain their ability to work with each other, because ultimately that’s what it’s about. If we only have the same sorts of people who speak the same langue and look at the problem in a specific way, working with each other will never be innovative and we’ll never break free of some of those confines. Culturally, or contextually – whichever way you want to look at it, that also is another important aspect that I think bubbles to the top - that we all work in contextually specific situations that sort of affect or dictate even, if you want to go that far, our ability to work beyond these boundaries. So even though Dr. Salas, who has suggested this framework which he calls, ‘the seven seas of teaming’ it seems that more and more from my teaching experience and also my research experience – communication and the culture in which teams work in, bubbles to the top as really the most important aspects that we as team scientist needs to constantly be returning to when we try to measure the effectiveness of teams.

**KL:** Okay, so I would imagine, Guy that some people are listening to this and thinking, “I’m leading a team…or I want to be good team leader, what are some ways that I can build or nurture successful teams?” I’m wondering if you have a couple of strategies for people who are listening to this and thinking, “Yes. I want more of that. I want to build stronger teams.” What are some things they can do to kind of kick off getting started?

**GL:** Yeah. Scientist are asked all of the time for the recipe to an effective team, and um, though we have some frameworks that we provide, some of them completely theoretical, others more evidenced based. Um I think one of the things for anyone who is in a leadership position of teaming, um – excuse me, a leadership position of a science team or maybe even is trying to start a network of people to work with each other – I feel the most important thing to remember is that, in my experience the best teams develop organically and that they change over time. So um – what does that mean? Well, usually, especially in academia but not always in academia, someone has an idea, and then they go to a colleague. Usually a colleague that is going to agree or support their idea and say, “What do you think?” We often don’t go to someone who’s going to shoot it down right away, because our human nature doesn’t lead us to that, however we talk to a friend and say, “I have this idea what do you think?” And you know, they usually go to someone who’s going to agree and say, “Yeah that’s a great idea. Have you thought of this and have you thought of this? I would be interested in working with you on that.” and then ultimately you realize that you’re limited, and somehow you need to bring someone in, or at least another perspective in, and etcetera. That goes on until you have probably what develops into a diverse team, because you’re being true to the problem. As a leader, or even as a participant in that sort of team, it’s important to understand that with each change or with each addition of new insight you have to be agile enough as a scientific team, to reevaluate and to rethink what your core beliefs are about the problems you are trying to solve . So you have to constantly go back to ensuring that the different members of the team continued to have a voice uh when there’s discussions, you need to be able to have strategies in place to deal with conflict. Conflict is an interesting thing, because we often want to reduce conflict, but sometimes conflict is what brings us into a new space of understanding a problem. So we don’t want to always be agreeing with each other – sometimes we want to disagree with each other, but in starting a team we have to be very careful and in a sense forecast what strategies we might need to ensure that the team can flourish over time. Um there are strategies that include creating what we call a welcome letter, it’s sort of like a “welcome to the team” letter. Colleagues of mine, Michelle Bennett and Howard Gadwin, uh and others promote this as an important aspect of that forming of the team, making sure that everyone understands this is sort of our way of going about things, and we are looking forward to working with you, this is how we communicate, we would like you input on how we might change things up. And basically start off in a culture, like I mentioned earlier, of teaming that is constantly evolving based on different people’s perspectives. Then overtime it’s necessary to put into place certain sort of quote on quote protocols or standards, like for instance how you will communicate - not just if you will communicate, but how. Are we going to be the type that lives online, are we going to be the types of team members that need a powwow every week, are we types of team members that do best writing our ideas down? And all of those things are really important. And on top of that, it’s also really important – and this goes to part of my research, it’s also important to understand that people are motivated by different things – uh to collaborate. And I see this all of the time – I work with it all of the time – where you have senior tenured faculty members that really are done sort of uh impressing everyone and often are drawn to certain types of collaborations, because they are really interested in it, or they continue to nurture networks, or they see value in collaboration. This is really different from new scientist who might not have much. They might not have funding, they may not have money, they may need to get some publications, or maybe they’re deficient in a particular methodology or research technique. Um those folks have different motivations to collaborate, and it’s really important that any new team constantly check on the needs of the individuals, because as I always, you know, you’re going to – and the manager literature supports this – you’re always going to get the most out of people if their core motivations become satisfied. That if they want to publish, if they want to learn, if they want to have access you’re going to get a much higher performing individual and one that’s more satisfied in their contributions to the team’s work.

**KL:**  Well Guy, thank you so much for offering such practical suggestions. We’re going to take a brief break, when we come back we’re going to dive a little bit deeper into the concept of collaboration within science. Back in a moment.

# Segment 2:

**KL:** Guy, based on what you described about creating effective teams in segment one, I’m really interested if you could offer some examples of collaborations within science that you’ve seen as being really effective. Are there one or two examples you could think of, and kind of and kind of pull out what are the things that really made those to be particularly successful?

**GL:** Sure. Let me start offby saying thedefinition of an effectivescience teamis one that has actually I think multiple definitions, and it depends on where the eye focuses. So an effective team is always going to be a team that meets its goals – whatever its goals are. In science teams we often call these are aims or our goals, um and it’s no different when we take the perspective that I’ve been describing. But often times a science team can meet their scientific goals, but in fact they don’t meet goals that are related to actual um - good performance in the process of meeting those goals. And what I mean by that is part of this new goal era of science looks closely at the way we get to our scientific goals as much as it is that we get to our scientific goals. So often – and this is an interesting thing even in my teaching with my doctoral students – keeping a lens that looks at the process of research is just as important as completing research, um and I think that’s what team science offers here. So an effective team is not always going to be only associated with – uh reaching research goals, but one that does it in a way that ensures that individuals that participate in science teams are nurtured to go beyond their potential at any particular point in time, um and also to spin out more new innovative ideas and projects –um and that’s very important today I believe. So, you know, what is an effective team? I think we can look at a couple examples. Um one – one I’m going to use an example from my own research, where teams of – physicians, other types of clinical researchers, nutritionists – uh, patient advocates, parents, etcetera working together in a teaming fashion that is trying to solve, I mentioned this before, a rare disease – or a cluster of rare diseases and the associated problems. Well, when we bring people together around something like a health disorder or a condition, you’re going to have stakeholders that are interested in curing it, because that’s what they do. They cure diseases, while other people are looking at how we’re going to take care of those people with those disorders or diseases while they are living or while we are trying to figure out what the cure is for what that disease is. In developmental disabilities, this is a very big issue. Uh we might not be close to curing autism, but while we’re trying to cure autism, we have a lot of people with autism and we need to understand how their lives are going to be lived – uh fully. So stakeholders are going to have different roles to play in that overall process. And an example – a good example of that is understanding that, and I’m going to use probably two ends of the spectrum here, a parent with a child with autism and a physician trying to solve, you know, autism - meaning ‘curing autism’, um when working together are effective when both ends of that spectrum are dealt with simultaneously. Because what it does is it increases the scientific impact of the team to different aspects of the problem, and not just any one aspect of the problem. What that requires is for people to be able to contribute in the way that they see most appropriate and have most expertise, so that they can help solve a multipronged problem. Case in point, in something like what I just descried, you have people who are very interested in being part of the decision making process about the design of the research, while you have others who are more than happy to just receive their task orders from whoever about providing – developing diets, or possibly advocating – just tell me where I need to go and what I need to do. It’s often the best teams that have the tolerance and the understanding that different stakeholders in a team are going to provide different expertise to the overall problem. In other types of teams – say for instance – and I’m going to draw on the work of people like Kara L. Hall and Amanda Vogel, who have looked at multicenter teams that have tried to solve major pandemic issues like smoking in the United States, and as we all know, smoking, at least cigarette smoking, has diminished dramatically over the past couple decades. Um there are networks of teams that have worked on this problem out of the National Cancer Institute, where um – we need to understand that to provide evidence to reverse the trends of cigarette smoking, we need to be able to put in the time necessary to understand the multifaceted nature of that problem. And in fact, the work that my colleagues I just mentioned have done have been to map how much returned we get on that investment and when do we really get that return? As you know, like I said, we’ve done a great job over the past couple decades to decrease smoking in the United States, but their research as team scientists show that took a pretty good investment in time to allow for scientist to get their teams going and to make sure that could develop and forge relationships, write papers, make sure papers that were written that were informed on the subject were done in a fashion that allowed them to ultimately get more citations. And the research that they chose showed that while they sorts of network teams tend to get a slow start in comparison to individual investigators working on similar problems, it sky rockets after that initial investment. So there’s an example where large national investments into problems associated with, you know – big health problems in the United States, like tobacco smoking, are going to require an investment into allowing teams to get into the work, establish themselves, maybe get a slow start as they work through those issues and those challenges of getting networks to work together, but ultimately those networks are going to pan out. And that’s an example of another network – situation where centers all over the United States contributed to the solving of problem, and team – team science, was really the aspect that allowed them to create an impact socially.

**KL:** So Guy, one of the things you mentioned was this idea of people in teams having different roles, having different preferences for the contribution that want to make. What are some strategies to kind of figure out who wants to do what on a team, or what the strengths are of the different team members that can be drawn out over the course of working in a team?

**GL:** Well, let’s not think that all teams are democracies. All teams do depend on somebody to sort of – or a group of people to sort of steer the ship. You know, uh - the best leaders I find of teams, are those that listen to their teams, that reach out to their teams, that have investments in the ultimate, you know, success of the individuals that are working on our team. However, you know, that depends highly on the context or the cultures I explained - if you have five people, ten people, or twenty-three hundred people. And we do have teams that run that range. So one of the important – one of I think the main aspects of if individuals are going to feel that they can contribute in a way that they can best, is to recognize what their core contribution is. We do that more and more often now, we even do that in publishing. When we have seven people on the – co-authoring a paper, who did what, why were they part of the team? More and more that’s becoming a standard - even if you’re not publishing. It’s important to remind everyone that we have statistician as part of our team, not because they’re involved with every decision being made by the team, but because we need that expertise, and we need to allow that person to work in a way so that they can provide their expertise and also do what they – what else they need to do. So for instance, a PI, or a principal investigator who is completely committed to the project because that’s their interest, and that’s where they’re scholarship lays, and they’re getting funding after all so they have to make it work is in a different space than another team member who may get five percent time or even less to participate in that team. It’s so important to understand those differences and to understand how to manage those different investments, and I see it over and over again where – only the most committed end up being on the decision making side. So for instance, PIs and more specifically PIs that have been doing work for years – you know, a particular grant my only be part of their entire portfolio of research over the years, often times are going to be the ones that are most resistant to change. Why? Simply because they’ve been doing it for so long. So recognizing as a leader that some of our best ideas come from younger folks, or folks that aren’t even part of our inner circle, or even our disciplinary circle is a skill, really, that needs to be managed, nurtured, and developed. And if you’re in a leadership position, you need to understand that sometimes the least likely contributor will be providing the most important contribution, simply because they have a different lens. They’re looking at the problem with a different set of glasses.

**KL:** Well Guy, you have offered so much wisdom in this episode about creating effective teams. I want to thank you so much for taking the time to come on the show, share about your experience and your research. This has been really helpful!

**GL:** Thank you!

**KL:** Thanks also 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.

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# Bonus Clip:

**KL:** In this bonus clip for episode 142 of the Research in Action podcast, Dr. Guy Lotrecchiano shares about some of his current work related to creating effective teams. Take a listen:

Guy, I’m curious if you could talk a little bit about how your current work is contributing to this larger sort of landscape around creating effective teams.

**GL:** Sure, Katie. Thank you for asking about that. Um as I described in another segment of this interview, we really need to be able to use science to help us understand how human behavior affects good teaming and science. So my research team has developed an instrument that – it’s like a metric instrument that measures motivation for collaboration. And we’ve done this successfully - a validated instrument that is called the motivation assessment for team readiness and integration called the MATRICx. Um we use that tool to help people understand what the motivations are across team members, so that they can use that information to have a series of conversations, or to understand better how teams are – how individuals and teams are motivated to work. So it’s similar to something like the Myers-Briggs that people know. Um you know, it’s really of no usefulness to know that you’re an ESFJ for instance, unless you meet up and have to work with someone who’s an INP, INFP. So what we do is we provide teams with profiles, an individual profile with all of the individuals in the team, a team level profile which is sort of snapshot of where the whole team lays and then we compare that also to composite data, which we collect with a lot of different teams. We’ve developed this into an app that you can download from the App Store and also Google, and what you’re able to do is take a 49 item survey, and the survey provides you with a score on the collaborative or cooperative scale. The collaborative scale is the higher of the two scales and assumes that people are working more in an integrated way, and the cooperative scale indicates more so people working in a conjoined way. Um and this really draws on six domains of what we believe are motivation for collaboration drawn from the past 60 years or so from literature dedicated to the study of motivation in teams. We extrapolated that, we came up with our 49 item psychometric instrument, tested it, validated it, and now what we’re doing is we’re creating intervention strategies for teams who want to capitalize on particular motivations that find within their teams. And what we do is we pair up those six domains that are every from advancing science to knowledge transfer, to building relationships, etcetera with Maslow’s Hierarchy of Psychological Need. So what we can do is allow – help teams to have short interventions, sort of activities, with their teams maybe in the laboratory or maybe in the conference room, whatever type of science that they do – that after taking the matrix they can utilize those interventions to do really very short activities that should help teams understand better the motivating factors that are going in – going on within the team, and these learning activities that help understand what you do with that information. We’re very excited about it, we – like I said, the app has been out now for about a year and a half and we also have a website which is www.matricx.net where you can learn more about the matrix, but then also access the learning interventions that we have already developed.

**KL:** That sounds like such an incredible tool, Guy. We will definitely make sure to link to that in the show notes, thanks so much for sharing your work!

**GL:** Thank you! Thank you very much.

**KL:** You’ve just heard a bonus clip from episode 142 of the Research in Action podcast with Dr. Guy Lotrecchiano sharing about some of his current work related to creative effective teams. Thanks for listening!