

Richard Miles 00:00:01 Inventivity, what does it mean? The state of being inventive, creating, or designing new things or thoughts. Hello, I'm Richard Miles. Welcome to the Inventivity Pod. Join us as we speak to inventors, entrepreneurs, and visionaries who are using Inventivity to change the world. They'll bring us alongside their journey as they share their personal stories from start to finish, including the triumphs, the failures, and everything in between.

Richard Miles 00:00:31 I'm Richard Miles and welcome to our Hope For the Future series, an innovative look at sustainability. For this limited series, we're able to talk to inventors who made it to the finals of the Cade Prize for Innovation, which since 2010 has been Florida's Premier Innovation Prize. And this year, 2023 is now a national prize with an overall purse of \$100,000. Today's guest, I'm pleased to welcome Dr. Anthony Engler, who took fifth place in last year's prize competition. Dr. Engler is co-founder and chief Technology Officer for Polymer Solutions Incorporated. He earned his bachelor's of science in chemical engineering from the University of Texas at Austin in 2015. And he went on to complete a PhD in Chemical and Biomolecular Engineering at Georgia Tech in 2020. Dr. Engler will soon be an assistant professor in the Cane Department of Chemical Engineering at Louisiana State University, and his research is focused on polymers for energy and material sustainability. Welcome to the show, Anthony.

Anthony Engler 00:01:27 Thank you very much for having me on, Richard.

Richard Miles 00:01:28 So Anthony, let's, let's start a little bit about yourself, sort of your pre-research for you. Uh, I understand you grew up in Pearland, Texas with NASA practically in your backyard. Can you tell us maybe a little bit how, or if that setting influenced your curiosity in the fields of science?

Anthony Engler 00:01:44 Yeah, I grew up in Pearland, so it's like a southeast suburb of Houston, Texas. Uh, so yeah, it's not too far away from mission control. So in fact, lots of my, uh, school field trips growing up were, we're going to see the Johnson Space Center. Um, and you know, every now and then we would actually get to do some of the tours that would actually take you by the old mission control room where, you know, those, uh, famous words, Houston, we have a problem, we're kind of heard over the intercom. So I think that had a huge impact on my scientific upbringing, you know, being so close and having that available things or museums, things like that. You can go and just tour and learn about a lot of things. It's really inspiring. So yeah, I grew up having a deep appreciation for space and NASA.

Richard Miles 00:02:20 Well, I've always wanted to go to that. I've never had a chance to go to Houston. Have you ever, um, had a chance to meet an astronaut at all?

Anthony Engler 00:02:25 Uh, yeah, in fact I got married last year and my wife's father, so my father-in-law used to be the Chief Technology Officer at Johnson Space Center. So he actually has a band and he is, uh, has some astronauts that he plays quite often with <laugh>.

Richard Miles 00:02:37 Wow, that is really cool. <laugh>. So you were very strategic in your marriage. I see. I mean,

Anthony Engler 00:02:42 <laugh>. Yeah. If only I had, uh, wanted to go work at NASA. I think that that's great. Would of worked out for, well, for me. Yeah.

Richard Miles 00:02:48 So, Anthony, were um, either of your parents or both of them scientists or any siblings at all that are also scientists?

Anthony Engler 00:02:53 Uh, yes. So both my parents have PhDs in biomolecular chemistry, so they kind of got their PhDs at, uh, Oak Ridge National Labs out in Tennessee. And so, you know, they also had a strong reason for why I was so into science and, uh, technology growing up. I'd say another big impact factor was my older sister, so she's quite a few years older than me and she helped me learn a lot when I was a kid and she was always pursuing science and technology STEM fields. And so she also went to go on to get her PhD in biomedical engineering.

Richard Miles 00:03:20 Wow, okay. Impressive. And it runs in the family clearly.

Anthony Engler 00:03:23 Yeah, yeah, kind of. There's two thirds of us have the doctor title now <laugh>

Richard Miles 00:03:27 That Wow. That's, that's impressive. Now, I, I know you also didn't, you have a high school chemistry teacher, right. Who, who you said sort of made chemistry interesting and enjoyable. Can you tell a little little bit about her in that class?

Anthony Engler 00:03:39 Absolutely. So her name is Patricia Bremeyer and she, uh, she taught the, uh, the first introductory chemistry course at Pearland High School when I was still attending there. And she was just a, a very enthusiastic teacher. So the one thing that really stuck with me was when she kind of, you know, the first week, first day of class, she kind of says, you know, some people think chemistry is really hard, but I have the secret to chemistry. And so she kind of goes and writes it up to the board and then she, she kind of breaks chemistry into three different syllables. So the secret to chemistry is chem dash is dash try. So she kind of said, well, as long as you give a good faith effort, you really try in this class, you're gonna learn chemistry, you're gonna pass, you'll be better off for it. And that, that really stuck with me that it was, it was really just kind of putting your effort to it and, uh, trying and learning something really important coming out of it.

Richard Miles 00:04:23 And is, is she still around? Has she been able to see you in your progress as a PhD professor?

Anthony Engler 00:04:29 Yeah, we're still connected on like social media things. I, I think she's fully retired as a teacher, but, uh, yeah, she, we still keep in contact through like posts on Facebook and stuff.

Richard Miles 00:04:37 Oh, great. So let's, let's fast forward to your time as an undergraduate. Did you know from the get go when you started college basically what you wanted to do in terms of research? Or how did that process unfold?

Anthony Engler 00:04:47 With my parents being a scientists themselves, my dad actually ran a lab. He was a research professor at a University of Texas medical school. So many of my weekends I would end up kind of going into lab 'cause my parents had to do an extra little experiment or something over the weekend, kind of help set a, an instrument up or cue something up. So there was lots of that just kind of in my childhood, I was very exposed to going into laboratories and, you know, putting on latex gloves, helping my parents fill out pipette tip boxes, which is kind of, you know, just something small and simple minded task that a child can do <laugh>. So that, you know, that was a, a big part of why I

was very into science. So I kind of went into college knowing that I kind of wanted to do research in the long term.

Anthony Engler 00:05:28 Uh, but I wasn't exactly sure what flavor of research I wanted to do. Having seen, my parents did a lot of protein research for like cardiovascular disease. So I kind of did not want to do that. <laugh> having been in their labs so much growing up, you know, I had a bit of an aversion to the, the biomedical fields. Uh, my sister was also kind of there, so I kind of wanted to do something off my own since I was so motivated from my high school chemistry courses, I kind of picked that as my introductory place when I started at University of Texas. But from the very first semester, I knew I wanted to get into research labs, so I actually got into a, a program called the Freshman Research Initiative. It was fairly new. I, it was like the second year, uh, that it had been put on at Texas when I joined.

Anthony Engler 00:06:06 And so that first semester you take this kind of, uh, at class lecture-based course, and they just kind of tell you about different aspects of research. What does it take to get funding? What does it mean to, you know, follow the scientific method to come out with these new research ideas and new research papers, uh, and how do you share that with, uh, the world in publishing? And so it answers a lot of these fundamental questions and research, and then they actually help you kind of find research labs on your second semester of that program. So, um, I kind of use that to my advantage to try all the different types of research labs I could. So I started off with a, uh, a nanoparticle lab where we were making, uh, metallic nanoparticles for analytical chemistry purposes. Wasn't very interested in that. So, uh, my next internship, I actually went to go, uh, the Houston Medical Research Institute and I did, uh, one on organic fluorescence dyes for cellular imaging.

Anthony Engler 00:06:54 So we use different dyes to see different parts of what's inside of a cell. And that was kinda like my first foray into organic chemistry. I got to make new molecules and that, you know, that was my first published paper was outta that, uh, internship over that summer. That had a huge impact on, you know, I was really enthusiastic about, uh, molecules just kind of in general, I'm very motivated by the idea of molecules, but also their interactions with light. So, you know, that was kind of stuck with me. I did another internship the following year, more for drug delivery. So back kind of the biomedical things, I felt like I had to give it a shot on my own. So yeah, I did some drug delivery research, uh, wasn't so interested in that. But then where I really found my passion was organic chemistry two.

Anthony Engler 00:07:34 I had a professor called, uh, professor Grant Wilson. So he taught the, the, yeah, the O chem class for chemical engineers. And so I take that class, I absolutely fall in love with the topic. I approached him after the semester's done, uh, asked him for a place in his research lab, and he said yes. And that was kind of my introduction into polymer science. So that started my love affair. And so when we were there, we were making polymers that, uh, you use to pattern computer chips. And so as these next generations, you know, this idea of Moore's Law, how do we keep scaling to smaller and smaller feature sizes when we're down into, you know, length scales of tens of nanometers? Um, that was just hugely motivating. I was, found it super interesting. And so that's, that's really, really where I got into polymer science and engineering. It kind of merged this synthetic aspect of chemistry where we had to make brand new materials, but then there was this engineering aspect where we had to go and pattern these to make useful computer chips. So it's, it combined all the things that I really loved, and that's really where I found my passion was working there for three years.

Richard Miles 00:08:30 And this was at the University of, uh, Texas, right?

Anthony Engler 00:08:33 Yes, sir.

Richard Miles 00:08:33 Okay. Yeah. So, wow. I, first thing I gotta say, Anthony, you had a extraordinarily clear vision of what you wanted to do and how you wanted to do it early on. And I gotta say, your, your internships are sound like incredibly productive and enlightening or, or maybe it's just the natural sciences, right? But most people, I know that sort of humanity, social sciences, internships are usually they learn exactly what they never wanna do ever again in life. <laugh>, <laugh>,

Anthony Engler 00:08:57 That's a valid, that's a very important thing to learn too, I learned that from some of my internships.

Richard Miles 00:09:02 Um, but it, it sounds like you were, you were able to take something constructive and very useful, uh, in, in each one of those, and it was pretty valuable.

Anthony Engler 00:09:09 Yeah, absolutely. It's, it's important to make the, the most of what's in front of you at the time.

Richard Miles 00:09:13 Okay. So, uh, you, you got your PhD, you're at Georgia Tech. And tell us, I, I guess what, what started the chain of events leading to founding a company? And then if you could sort of explain to our audience that, um, and, and I know our audience is very, very smart, but if you could explain sort of layman's terms what the product is and, uh, how it works and, and what problem it solves. But let's start by sort of what, what were the sort of the first inklings that you said you thought to yourself or with others, there's an opportunity here.

Anthony Engler 00:09:46 Yeah, sure. So for my PhD at Georgia Tech, I was involved in, uh, research projects through the Department of Defense. And so that was kind of our first foray into these plastics. So my company, polymer Solutions Inc, we manufacture and sell rapidly degradable plastics. So this technology all kind of was birthed and invented at Georgia Tech through this Department of Defense program. So essentially they wanted things that could rapidly disappear, um, on command. So you, you pull a trigger kind of thing, and then this thing will inconspicuously disappear. Um, it doesn't, you know, leave behind lots of residues or any visible things. That's where we kind of got started in this. Um, and it was just absolutely amazing to see these plastics that are in front of you, you're, they're, they're on the length scales of, you know, square inches. And then within 10 minutes of us exposing them to our stimulus, this whole plastic would just liquefy and flow into the ground to where you could not ever tell that it had ever existed there.

Anthony Engler 00:10:41 We had never seen a plastic that had these kinds of capabilities that would degrade on these kinds of timescales. So I think right from the get go, we kind of knew that we had a material that the world really hasn't ever seen or worked with before. The idea of trying to commercialize something like that is kind of born fairly early, early, it's, it's in the back of your head that's like, you have, we have something really special here and we could make something of this, but we didn't really get serious until near the end of my PhD. So we have this Create X program, so it's a startup accelerator program that's run through Georgia Tech. And so we had some people that kind of reached out to us wondering if we were interested in starting a pro, a company. And I will admit, I actually never thought of myself as an entrepreneur.

Anthony Engler 00:11:22 Um, I never really dreamed about starting a company, but after a few conversations with these guys and they kind of learned the technology that we had in our hand, um, the

excitement was just palpable all around. And then the, the real final straw that what really, uh, got us to incorporate and really go on this, this journey was, there was a company out of Zurich, Switzerland. They were a startup company called Swiss Litho, and they made this special lithography tool. So a patterning tool, how do you, it's kind of back to this patterning, computer chips idea, but this tool is a new thing. It kind of uses heat to do patterning and you can do things down to 10 nanometers, uh, very reliably, uh, just for the way it's built. Uh, so we had a, somebody from their company came out to us, they said, Hey, we've read all your research papers.

Anthony Engler 00:12:04 We, we actually use these materials for our process, for our application as the consumable in our process. And so they kind of just said, we look, we, we see that you, you kind, you're the world experts in these materials. Um, if you were to incorporate, we would be your customers on day one, kind of, uh, thing. So it's, it kind of just fell into our lap almost <laugh>, you know, there was this, this technology that we had already applied patents for pretty early on, and then we already had customers kind of knocking on our door waiting for us to be incorporated and just sell the material. So it was, it was a lot of these factors that kind of really pushed us along to incorporate. And so that happened, uh, October, 2020. So about, uh, two months before I defended my PhD thesis, we incorporated Polymer Solutions Inc. And yeah, it's the journey we've been on since then.

Richard Miles 00:12:51 <laugh>. Wow. That's an incredible story. If, if we could go back just to the origin of the idea a moment, just so I'm, I'm clear. Did the defense department come to you and say, Hey, we wish we had a, essentially a disappearing plastic, or had you already been doing work that was leading you in that direction and they heard about it? What, what came first?

Anthony Engler 00:13:09 So yeah, my research group, which is, uh, through Paul Kohl, he was my research advisor at Georgia Tech. He has a history of kind of these vaporized plastics for semiconductor applications. Um, in the past, they wanted to make air gaps inside of your integrated circuits because air has very low dielectric constants. So he had some experience in this field, but it really wasn't the macroscopic scale and the timescales or the conditions of what our current technology is capable of. So those materials had to be heated, you know, above 120 degrees C they had to have special additives inside them, whereas the, the materials we manufacture now can degrade at under room temperature and still in seconds and hours and minutes, yeah, very, very rapidly. So we had some experience there, but then, yeah, I think it was just through a BAA or a broad area announcement.

Anthony Engler 00:13:57 So, uh, an agency kind of said, we are interested in funding research proposals within this topic. Um, and we kind of said, oh, hey, we've got some experience through here with a past material. We'll go ahead and apply this, but we're gonna propose this new material because, you know, that's the whole idea of research. We wanna do something new, not use the old materials that we've, we've been doing for the last decade. And so that's really where the, the project came around. We just wrote a proposal and they, they liked our deals and we were funded.

Richard Miles 00:14:23 Wow. And are you allowed to talk about some of the, the DOD applications for this vanishing plastic, or do they not even tell you what they're gonna use it for?

Anthony Engler 00:14:30 Uh, so we did know, uh, but they've asked us not to talk to it in public settings anymore. <laugh>

Richard Miles 00:14:35 Okay. It makes too good a story. And you're, and you'd probably get prosecuted anyway, so We'll, yeah, we won't, we don't want that to be that kind of show. So you alluded a little bit earlier to the kind of the eventually the much larger commercial market. You know, as interesting as, as sort of the defense application is, plastics is a huge business. And you know, in our second year, the Cade Prize, I think maybe second or third year, our top prize winner also, it was touted as a basically a, a biodegradable plastic. And I, I can't even begin to to explain to you what their secret sauce was, but I know polymer was in, in there somewhere, <laugh>. And one thing that was difficult for them, that team, and I'm not sure they ever actually successfully commercialized it, is the industry itself was massive. And the production, if, if I understood the problem correctly, it wasn't so much that their plan or their technology was unworkable, it was, but to switch over these massive production facilities into doing that type of plastic was just too much.

Richard Miles 00:15:36 You know, they just sort of would look at them and go like, yeah, it, it's impressive, probably works, but here's all the reasons why we can't do it. And it was just a much larger problem than the market then the researchers knew about it, of course, you know, why would they know about it? So my question to very, very long lead up to your question is sort of what does your path to market, um, look like? And I imagine you're probably getting some advice from people who are pretty familiar with the, the industry itself about what the industry needs and how they would be able to incorporate your solution.

Anthony Engler 00:16:08 Yeah. Sure. So I'm, I'm gonna take one step back and kind of explain the difference between our plastic and like a biodegradable plastic. Sure. So the kind of the biodegradable plastics is the idea that you can break them down with biological processes either through, you know, we've seen these new stories of like worms that will eat and break down plastic or a bacteria. So that, that's kind of more the, the idea behind biodegradable. So they're there for a long time, but you can recycle them and through biological processes you'll turn this plastic back into like CO₂ and water. 'cause that's how biology breaks things down. Our plastics, I would not call them biodegradable. The reason why they actually degrade so fast is they're in this, what we call a meta stable state. So they actually don't want to exist, but we've kind of trapped them into existing in their current state.

Anthony Engler 00:16:52 So when you kind of think about, try not to do too much of a chemistry lesson here, but you know, chemical reactions, if we have this compound A going to compound B, the chemical reactions are often reversible. And so there's some temperature at which this reaction will start to go in the opposite direction. So yeah, A usually goes to B, but at some temperature that flips and B starts transforming back into A, so essentially we have picked a plastic that has this equilibrium temperature below ambient condition. So it's around minus 40 degrees. So above minus 40, this plastic doesn't want to exist. But the, the catch here is that you can only degrade or depolymerize your plastic from an active chain end. And so what we do is we make these cyclic polymers. So they're not linear anymore, they're just these giant circles and there's no chain end from where degradation can start to occur from.

Anthony Engler 00:17:42 So that kind of kinetically traps them and that's what makes them usable at room temperature or elevated temperatures. And then when you want this to, to disappear, all you have to do is break one covalent bond in your plastic comp, or molecule, and then the plastic actually just unzips itself kind of. So yeah, these are sometimes called unzipping polymers because, you know, it just, it's a spontaneous process once one bond has been cut. So it's not this idea we are not making

plastics that are meant to be degraded in biological settings. So that's the, a big difference between our technology and biodegradable plastics. So, um, you kind of commented on go to market and why it's so hard. So yeah, all these plastic companies just have an enormous economy of scale, right? They're thousands of tons per month maybe of production for, of things like polyethylene and polystyrene.

Anthony Engler 00:18:27 So, uh, for new plastics to get into those high volume markets, it's very, very hard just because you don't have the price points, you can't compete with them economically. So our go-to-market strategy is really focused on finding the right applications where the properties of our plastic cannot be substituted for anything else. So our very first go-to market customer was these lithography applications, and it's something that we call dry develop lithography. So usually when you pattern a computer chip after you shine the light in the areas where you want to, you know, pattern future things on your silicon wafer, you then have to wash it inside of a developer solution. And so that takes lots of time. The, it's a consumable, so it costs extra money. And what we do is we can design this process now where you don't even have to use this liquid developer to realize your image, since we're actually degrading these into volatile small compounds, we can just put it on a hot plate and then this thing will just evaporate and it realizes the image very fast and you don't have to use this extra consumable.

Anthony Engler 00:19:27 So it's a really, it's a money saver, but then there are some applications or some type of features that you, you cannot create with liquid developers. So down on the length scales of like 20 nanometers, if you put a liquid droplet between features of like that you introduce capillary forces. And these capillary forces are really strong on the nanometer length scale, and they can cause all your features to collapse. So are, there are some nano-sized features that are only realizable through dry developed processes, like the materials that we have. So it's applications like that are really where we're targeting first. Somebody that, there is no other substitute for this. And it's, you know, as I kind of mentioned earlier, we don't know of a commercial plastic that has these kinds of capabilities. So it's, it's really finding the right market applications for us and the right customers to begin with.

Richard Miles 00:20:14 So it sounds like in, in the first iteration at least it will be, it would be primarily industrial customer industrial processes. This wouldn't be for retail use, right? They wouldn't be water bottles.

Anthony Engler 00:20:23 No consumer applications in the beginning. Yeah. Yeah.

Richard Miles 00:20:26 Okay. Alright, that makes sense.

Anthony Engler 00:20:27 Definitely like closed systems, you know, when you're patterning computer chips, the none of that material will ever leave the tool. So we, we can kind of trap all of that gas in one place.

Richard Miles 00:20:37 I see. The fascinating, Anthony, I mean, this is really kind of exciting. I, I wish I understood it as well as you do, but, um, it, it still sounds really cool. Tell me what your next steps are, not as a researcher, but as a CEO, like sort of what, what's the next thing you've gotta do with regards to building the company or, you know, is, is there a deal that you need to make to kind of take you to the next level? Tell us what that looks like.

Anthony Engler 00:20:58 Yeah, so I'll, I'll say, so I kind of mentioned earlier, we incorporated while I was still a PhD student, so we did not have the funding to support ourselves or the customers. You

know, we did have some customers, but it wasn't enough. We weren't selling enough to support a full-time employee. So actually the first two years with this company I kind of spent as a postdoc, this is really just something I was kind of doing on the side, this is my hobby kind of thing. Uh, so the first thing you really had to do was find funding to secure yourself. So we've been very fortunate that the state of Georgia has this program called the Georgia Research Alliance, and they were able to, uh, provide us some funds to do some more prototyping. So proof of concepts that kind of push us along to be more commercial.

Anthony Engler 00:21:35 Uh, and then actually a couple months, or, well, I guess last year ago we applied for, uh, an SBIR grant through the NSF space program. And a couple months ago we were actually finally awarded the, the funds. And so for the last month I've actually been a full-time startup employee. So that's really the first thing is kind of finding funding to where you can fully focus yourself on the company is the most important step, right? So it's, we, we just achieved that and so now it's kind, yeah, lots of, lots of business and administrative things that follow that. So, you know, setting up chart of accounts and hiring accountants and finagling IP lawyers and all that type of stuff.

Richard Miles 00:22:10 So I, I know you're a very young company, but have you had any sort of big setbacks or big surprises that you've had to recover from yet? And, and if so, you know, what was the recovery like or, or how did you handle this?

Anthony Engler 00:22:22 I'd say no major long-term setbacks yet, but like when you're a an early stage startup, it almost felt like every other month or every two months we had pivoted to a new idea and it's like, oh, this is the customer we should focus on now because they're the most, their highest prospective person from bringing us in higher volume. So there's lots of those early, early on pivots that it seems crazy hectic, but it's really exciting and things move very fast. And so it's just kind of keeping up with that speed and making sure you're focusing your time on the most important thing.

Richard Miles 00:22:53 Right. Yeah, sometimes I like to tell people that you're not really an adult until you've made a terrible financial disastrous decision, <laugh>. And so I imagine may, there's an CEO equivalent, you're not really CEO until you've really screwed up and bounced back from it. So it doesn't sound like you're,

Anthony Engler 00:23:07 Now that we have all this money from the SBIR grant, though, maybe we can make that mistake now. Yeah.

Richard Miles 00:23:11 Maybe you can make that cutoff. Right. So Anthony, uh, final question here. You're a young company, but you've probably accumulated some wisdom just in the last few years about what it's like to sort of take an idea, try to move it into market, take those first steps. You know, as you heard me say at the beginning, we're, we're running our, the Cade Prize now for, gosh, the 14th year in a row, and uh, now it's the national prize. What sort of advice would you give to some of those people that are applying for the prize now they're, they're probably very similar to what situation you were in a couple years ago where you're looking for funding, you're looking for recognition. What have you learned that you would say, definitely do this and stay away from that?

Anthony Engler 00:23:47 I'd say yeah, definitely focus on the customer. What pain point do they have that your company or your product or service is solving? What problem are you solving for them? That is the number one most priority that you should be focusing on. It's, and it's really how you find

new customers. What problems do we solve for them and do we offer that at a service that they're willing to pay for it? So yeah, definitely focusing on long-term business model and where, where you're going to find your next customer. It's great to go out and find investors and get things like SBIR grants, but it's long-term, you're really not gonna go anywhere without, without bringing in customers and yeah, bringing capital into your company. I'm not sure I have much advice for Don't do that. It's a little bit tougher <laugh>.

Richard Miles 00:24:28 It's always great to see our Cade Prize finalist doing well, you know, that makes us very happy to see that. And it, it certainly sounds like you're doing well, your company's doing well. I'm sure Georgia Tech is sorry to see you go. Uh, you'll be at Louisiana State University. Um, we, we won't talk about the arrival between University of Florida and LSU <laugh>, that's not for the show, it's for other shows, but I'm sure you do quite well there. And, and I'm really, really pleased to have you on the show and then hope we can have you back at some point to talk about, uh, you know, your next success.

Anthony Engler 00:24:56 Yeah, I'd love to come back and tell you about all the things that we've grown into in the future.

Richard Miles 00:25:00 Thank you, Anthony.

Anthony Engler 00:25:01 Thanks. Have a good day. Richard.

James Di Virgilio 00:25:04 The Inventivity Pod is produced by the Cade Museum for Creativity and Invention located in Gainesville, Florida. Richard Miles and me, James Di Virgilio are your podcast hosts. Podcasts are recorded at the Heartwood Sound stage in Gainesville and edited and mixed by Rob Rothschild. Be sure to subscribe to the Inventivity Pod wherever you get your podcast, and leave a comment or review to let us know how we're doing. Until next time, be inventive.