Andrea Belz of National Science Foundation

Speaker1: [00:00:04] This is the Investor Connect podcast program. I'm Hall Martin and the host of the show in which we interview Angel Investors, venture capital, family offices, private equity, many other investors for early stage and growth companies. I hope you enjoy this episode. Interested in learning more about investing in startups, launching a new startup need to raise funding for the startup funding espresso as a daily podcast in a short, concise format delivered to your inbox every day Monday through Friday, the time it takes to drink an espresso. We can learn about startup funding. To subscribe, go to invest connect dug again through email

[00:00:39] Into the paperbarks.

Speaker2: [00:00:46] Well, this Hall Martin with Investor Connect, they were here with Andrea Belz at the National Science Foundation, National Science Foundation of the United States government agency that supports fundamental research and education in all the medical fields of science and engineering. Andrea, thank you for joining us.

Speaker3: [00:01:02] Thank you for having me today.

Speaker2: [00:01:04] So what was your background before investing in early stage companies? What do you do before this?

Speaker3: [00:01:08] I did a number of things before this. I am a physicist by training. I worked in the Jet Propulsion Laboratory at NASA facility for many years while I was growing a consulting practice that was really focused on supporting how technologies migrate out of laboratories and into the market. And that was the same thing that I worked on for NASA over the years. I worked with a number of different startups and then joined the faculty at the University of Southern California. So I was there for several years. I was their first vice dean of technology, innovation and entrepreneurship before coming to NSF. I'm on leave from us right now in order to be here.

Speaker2: [00:01:51] Great. So what excites you right now?

Speaker3: [00:01:54] Oh, my goodness, there are so many terrific opportunities that NZDF we really focus on deep technologies, which means technologies that are really rooted in fundamental science and engineering. And so that can be in the life sciences. It can be biotech. It can be many of the algorithms being developed in artificial intelligence, new batteries for electric vehicles, technologies for environmental remediation. There are so many great things that we see and that we're funding right now.

Speaker2: [00:02:27] Great, we see a lot of startups and a lot of investors out there. What's your advice for people investing in startups? What do you tell them to do before they write that first check?

Speaker3: [00:02:37] Well, we really believe firmly in a couple of different ideas at NSF. One is that there is no substitute for really understanding deeply what the marketplace wants and where it's going. And our core program is based on the idea that we can teach scientists how to go and learn about how industries are structured and learn about potential opportunities. So we hope that this will resonate with our colleagues in the investment community and that we are always looking for mentors also for our team. So any investors who like that idea and that philosophy are welcome to contact us and we can put them in touch with some of the startups. But it's the same advice that we give to the startups themselves, which is go find out what industry is doing. Go make sure that there are problems that you're solving.

Speaker2: [00:03:35] I guess it is just my next question, what's your advice for people running startups when you tell them to do before they go out to raise funding? And so sounds like knowing the market. Is this the answer?

Speaker3: [00:03:47] When we find that because we focus on a community that's really interested in deep technologies, they often become very enchanted with their own technologies, and yet there are really meaningful problems that they can solve that they just may not be aware of. And so all of our problems really are focused on creating this virtuous cycle, this loop between laboratory research and understanding industry. So we encourage and in some of our programs, we require that the team is continuing to look at what industry is doing while they're doing their fundamental research.

Speaker2: [00:04:26] Great. Well, let's talk about the state of startup investing. How do you see the industry evolving from here?

Speaker3: [00:04:32] Well, it certainly is an interesting time for startups, I think when the pandemic began, we were really concerned about whether our funding would be easily available and in particular for our companies, because we really specialize in finding these nascent technology ventures who might not be ready for prime time or ready for private investment. We really want to help retire a lot of the risk, both the market risk and the technical risk. So I think when the pandemic began, we were quite anxious and I think we were not alone in whether companies would be able to raise funding. The last year has proven to be really exciting for the startup community and for our community as well. And so I think we all have questions about how that will continue to play out. The NSF is no different than many other organizations in that we're all coming to terms with what the world looks like at this stage of the pandemic and afterwards. But it's been great to see so much support of startups and we really hope that it will continue.

Speaker2: [00:05:39] And so is the biggest change you think we'll see in, say, the coming 12 months?

Speaker3: [00:05:44] Well, hopefully we will see a change in how we're living and interacting with each other, but I think it remains to be seen how the startup community communicates once the pandemic is over. We've all learned so much about how to present on Zoome. We've seen a lot of interest in changing the fact that previously angel investors would say, if I have to get on a plane, I'm not going to invest. And then with living here in Zoom Land, we've all found that maybe we can start to do meaningful due diligence and we can explore opportunities outside of our immediate area. How much of that will carry over when we return to being together more often? I don't know. I think we're all really interested to see that at NSF. We're really committed to making sure that we support startups around the country. And so we would really like to see these ongoing changes of being able to help allocate capital in other parts of the country that maybe haven't seen as much previously.

Speaker2: [00:06:46] So let's talk about your investment thesis. What exactly is your investment thesis and what do you look for to fund deals?

Speaker3: [00:06:53] Our investment thesis is we want to fund scientists who care deeply about what's happening in industry. And so if we have one characteristic that we're looking for, it's probably curiosity, both curiosity about scientific phenomena and how they can be harnessed for social impact and then also curiosity in terms of how people use technologies, where technologies can make a tremendous impact on an industrial basis. So our thesis is that we're looking for really curious people who have great technologies that can be effective at scale and where the private market might not be as ready to absorb that kind of a technology yet. And especially if you look at the data regarding what's happened with hardware and many of the deeper engineering technologies, you can see that there are sectors that really have never recovered from the dot com bust from 20 years ago. And it used to be that 20 years ago. I remember when I was doing startups and people would say that when you invested in software, it was considered risky because you had nothing left over in the event that things fail, there was nothing that you could really basically cash out. And now I think that the risk profile has changed so much that software is really seen as being much less risky than hardware. And so we're really interested in supporting those types of technologies that have tremendous national benefit but are harder to attract funds from the venture. And angel communities

Speaker2: [00:08:38] You talk about with some of those sectors are that are hard to fund.

Speaker3: [00:08:43] So if you think about technologies, for instance, in semiconductor manufacturing, in other parts of factory improvements, many of those are not seen as being as easy or as straightforward to generate a return. The cycles can be really long. The capital outlay is much higher, and so it can appear to be harder to make those numbers work relative to how much opportunity there is with software in terms of scaling. And I think you see that on an even broader basis in terms of how the angel and the venture communities have evolved. The angel community is growing, the venture community has become much more concentrated. And I think that's also a reflection of the fact that you can get a software company off the ground with a few people investing relatively modest amounts. And that's much harder to do for some of these deeper manufacturing technologies. And so we are we're interested in supporting all technologies where technology agnostic, but we are certainly particularly concerned about areas that have a harder time raising capital.

Speaker2: [00:09:57] Great. Well, aside from raising capital, what are the challenges you find your startup space?

Speaker3: [00:10:03] Oh, my goodness, there are always so many challenges. I think one challenge that we have, as I mentioned earlier, is making sure that we can identify and support companies around the country. That's really important to us. We are always looking for opportunities to meet and connect with investors in our key program that funds startup companies. One of the opportunities is that we will match funds that are raised in the private markets. And so we would like to make sure that your community knows that we really see ourselves as aligned with you, which is why we're trying to match the funds. It's basically 50 cents on the dollar, up to a million dollars raise. And so we do that in order to put fuel on the fire and to make sure that the companies that we fund really are thinking about the private markets. And I think that's a challenge for anyone who's done startups. There is an old expression about making sure that you're surrounded by windows and not mirrors. I think that's from a Jim Collins book. And we are constantly looking for those young entrepreneurs who are interested in looking through mirrors at the site, through windows of the world around them.

Speaker2: [00:11:25] Well, great. So tell me more about the requirements or the criteria for finding the matching funds where they have to do to meet that requirement.

Speaker3: [00:11:34] So the program to which I'm referring is actually to programs, the small business, innovation, research and small business technology transfer. And these are programs that are really built to help small companies advance their technologies and retired technical risk. It's a two stage program, so the first phase is a quarter million dollars to get the company off the ground. Strictly speaking, it's two hundred fifty six K. And then those awards, the people who have those grants are eligible to apply for the second round and the second round is a million dollars. And then with both of those, there are opportunities to apply for supplemental funding for various different reasons. But one of the major opportunities is this additional half million that they can apply for as a matching program. And so the eligibility is that the key personnel must satisfy our our permanent resident and citizen and or citizenship requirements, and that the company really is trying to commercialize a technology, meaning that it started in a laboratory or started on the computer of a researcher, something that is really novel

scientifically, and then that also has a tremendous opportunity for industry transformation. We are really interested in industries transformation at scale.

Speaker2: [00:13:13] So you focus on the tax base, which sectors and applications within that group you think are good opportunities for investors to pursue.

Speaker3: [00:13:22] So you're asking me which of my children do I prefer? We really have expanded our interest across the board. The only thing we don't find is clinical trials. But we have a number of disciplines in the life sciences, such as medical devices, biomedical engineering, pharmaceutical technologies, biological technologies. We have several related to computation. We have an augmented reality and virtual reality path, artificial intelligence, high performance computing, environmental technologies, advanced manufacturing, semiconductors, photonics. We really are serious about being technology agnostic and they all have tremendous opportunities. They all have tremendous track records of success. So you can say that we're interested in all of them. It really is like asking to pick among my children.

Speaker2: [00:14:15] Understood so well in the last minute that we have here, what else should we cover that we have a.

Speaker3: [00:14:21] So we're always interested in having investors join us on our review panels, we review proposals through a merit review process that is based it's rooted in peer review and we are always looking for new reviewers. So if your community is interested in seeing some of the transformational technologies that we're looking at, they're welcome to contact us through our fun site Seed Fund on NSF dot gov. There's a way to or I'm sorry, there's a page so that they can find instructions on how to join us as reviewers. We always are looking for new reviewers and then we are also looking to continue doing outreach just like this. And Zoomlion. It's become a lot easier. But if any of your investors would like to learn more about our programs, they can check out our website. They can invite us to do outreach. We really want to be out and among the community.

Speaker2: [00:15:24] Well, that's great, we'll include that in the show, notes how best listeners get back in touch with you.

Speaker3: [00:15:29] They are welcome to email me at a Bel's at NSF dot gov. And I will be happy to direct them to people who can answer their detailed questions. But it would be great to hear from some of your community.

Speaker2: [00:15:44] Great. I want to thank you for joining us today and hope to have you back for a follow up soon.

Speaker3: [00:15:49] I would appreciate the opportunity. Thank you so much for your time today.

Speaker1: [00:15:55] Investor Cadec helps investors interested in startup funding. In this podcast series Experience, investors share their experience and advice. You can learn more at Investor Connect. Doug Alti Martin is the director of Investor Connect, which is a 5.1 C3 nonprofit dedicated to the education of investors for early stage funding. All opinions expressed by Hall and podcast guests are solely their own opinions and do not reflect the opinion of Investor Connect. This podcast is for informational purposes only and should not be relied upon as a basis for investment decisions.