



EPISODE 6: BUILDING AN INNOVATION TIMELINE

PODCAST TRANSCRIPT

Tim Irvine [00:00:00]:

Welcome to the federal innovator podcast. This is the podcast for, and about the innovators taking on the biggest challenges in the federal government and making change that is more human, simple and enduring. My name is Tim Irvine. I'm the lead for the Accenture federal studio.

Stephanie Wander [00:00:14]:

And I'm Stephanie Wander acting director for the Atlantic council's geo-tech center. We're so excited to speak today with Jennifer Shieh she's, chief scientist and program manager for the office of innovation and technology for the office of investment and innovation at us small business administration. Today, we're going to talk with her about driving the innovation pipeline. Welcome Jennifer.

Jennifer Shieh [00:00:38]:

Thank you so much for having me on here.

Stephanie Wander [00:00:14]:

You have a fascinating background and we wanted to know if you would start by telling us a bit about yourself and your career.

Jennifer Shieh [00:00:38]:

Yes. Having a PhD in neuroscience, probably isn't what you'd expect for someone who works at the U S small business administration as the only cabinet level federal agency dedicated to

small businesses. The SBA works to ignite change and spark action. So small businesses can start, grow, expand, and recover. And as chief scientist and program manager for the small business innovation research and small business technology programs or SPR. And STTR my whole federal career has been with the SVIR STTR programs, which we like to refer to as America's seed fund, because it's about \$4 billion of non-dilutive grants and contracts that go to fund small businesses and startups doing research and development. And often this is the earliest money in to take ideas and research results out of a laboratory and move it into the marketplace. I'm not into science because I wanted to have as big of a positive impact as I could. I really didn't know anything about the policy world, but about 11 years ago, a friend convinced me that I should check out this fellowship at the national academy of sciences. At the time I was working for a startup and someone on a career panel talked about SPR funding, and I thought, wow, I really had no idea that the federal government funded startups, we should totally apply. But that fellowship that I did, and that exposure to DC and the fact that scientists could actually have an impact through policy sent me on to another science and technology policy fellowship with the AAA's the American association for the advancement of science. And so rather than applying for SBAR



grant funding, I applied and actually got to work at the national institutes of health, the national cancer Institute in their SVIR development center. So from NCI, I moved on to the national heart lung and blood Institute coordinating their SPR and STTR programs. And then I joined the SBA office of investment and innovation in 27. I mentioned that America seed fund is about \$4 billion of capital going to small businesses. This is distributed through about 7,000 grants or contracts each year from 11 different federal departments, or really almost any agency you can think of that funds R and D is congressionally required to reserve a portion of that to go to small businesses through the SPR and STTR programs, the statutorily, an agency that has over a hundred million dollars in extra mural, R and D has to spend 3.2% of those funds through the SVIR program. And an agency with over a billion dollars has to reserve 0.4, 5% through the sibling, small business technology transfer.

Tim Irvine [00:03:31]:

When you're talking about, some of the seating, function, are you taking on the role of the federal Sherpa for those teams and, maybe looking down the road, like is that they have an immediate, technology or service that might be useful for those different agencies engaged in scientific pursuits?

Jennifer Shieh [00:03:48]:

Definitely. Really like to think about startups and, how, they're young, right? So they start small, but they're thinking big and the need for small businesses and startups, within the U S is, [00:04:00] that ability to be agile, You sometimes are going to be, it's more difficult to innovate into the future and think about what's going to happen out there in the future. So SPR and STTR, this is funding for research into. And so it's building on the foundation and the fundamental research that a lot of the federal science funding agencies also fun within university systems or through the federal labs, for example, and thinking about, okay, well, how do we actually get that into the marketplace actually turn it into the impact that these agencies and the companies really want to

have. small businesses within the U S create a lot of new jobs because there's nearly two out of every three new jobs in the U S get started buying a small business maybe they're starting small, but they're thinking big and going into the future. So as the IRNS TTR, I keep referring to it as it's. Really focused on research and development. bulk of STEM-related workers actually go into the private sector and about 37% of them actually ended up working for small firms and that's a place to experiment and to be able to try new things and pivot quickly and to try and growing.

Tim Irvine [00:05:12]:

Are you harvesting existing things and then shopping those to the agencies or are you laying the groundwork for future innovations or future applicability?

Jennifer Shieh [00:05:21]:

This is super exciting to think about. Because small businesses and startups can be agile, can be nimble, there's actually a, balance of how we think about this, but really the SBAR program has been around since 1982. It's almost as old as me, but, um, it's been the seed for amazing technologies that the federal government is willing to take a risk in before the private sector will. So some of the most well-known companies I think from that era of just when American seed fund was just small were Qualcomm and Symantec. And some of those companies, the technologies that they developed back then, and now these companies are huge and still innovating. I used to be at the national institutes of health, , and one of the common things that people will know about would be like the Sonicare toothbrush. So, before somebody had to fund the research to show that that a vibrating toothbrush is actually going to be effective in improving your dental, health, and hygiene. but now that's in my bathroom there have been a lot of changes and I think that, with 7,000 awards each year and with a \$4 billion portfolio, there's this ability for agencies to make use of the



programs in the way that makes the most sense for. And so there is quite a bit of variety actually. So, with the department of defense, for NASA, for example, they issue their funding to small businesses through contracts. That's how they do it. And they think about themselves as a potential end user and customer of that early-stage research.

Tim Irvine [00:06:58] :

The notion of like you mentioned, Qualcomm and Symantec and Sonicare and a whole wide range of things that have come from very different places. , and I think most folks wouldn't realize where those roots came from. And you mentioned this around, talking about agile and agility. but one of my favorite quotes when contemplating the, connection between human centered design and agile is there's nothing so useless as efficiently building something that nobody wants. Peter Drucker. And, I'm curious, how do you connect the needs with opportunity?

Jennifer Shieh [00:07:31]:

The program managers who actually manage the SVIR programs, aren't necessarily the ones that are going to be in the, , programs of record at DOD, for example. And so it involves a lot of collaboration to identify who those customers might be. I think that there's some shifts more recently in terms of, some of the agencies using the SBAR program in a way to, help take some existing technologies adapt it for government youth. But for the most part, the program has historically really been taking early stage research and. Taking it through that whole development life cycle. And so with the customer side, there is a federal customer for some agencies and they put out those topics and they collaborate internally across their agency to find out what are different parts of their agency looking for, what do they need?

And then on the other hand, an agency like health and human services and NIH is a big piece of that. And so I was at NIH and really our mission at NIH was to improve human health. And it was not a we're going to put out there, the specific things that are needed. It's really much more investigator driven.

Stephanie Wander [00:08:46]:

I would really love to know how you see your programming, enabling the ecosystem to flourish, and also how you think about design and, of being human centered in terms of your customers on the grant awardee side or on the, funds, the warning side. It's not always easy to get startups who are quite busy to come to the table for government funding.

Jennifer Shieh [00:09:06]:

One of those things that we are super focused on is making sure that because at its core, this program, these programs are about innovation. and you can't get innovation unless you have the full breadth of the entire country engaged. And so where we're focusing on is making sure that there are startups, that there are entrepreneurs, potential entrepreneurs who that this opportunity exists to connect with the federal government to turn research ideas. Into impact and solve real hard problems with the federal government. And so that's to say we're extremely focused on the policy side with the, federal agencies on designing an equitable and inclusive ecosystem. And so we've been doing a lot over the last, two years, I would say in particular really focused on how we think [about that customer experience for us. really love bringing human centered design to policy, because it's, just a way to think about, , we are all human and how can policy happen unless the people who are implementing the policy can see how it connects back to what they're trying to do. we really want to make sure that we're leveraging, the entire talent across the entire country.



And we want to make sure that, culturally relevant, community conversant navigators who can help connect us to the small businesses directly. , we don't have the bandwidth to talk to every small business or potential entrepreneur, but we do talk to a lot of ecosystem builders. So the entrepreneur support organizations and resource partners that SBA supports how we try to get that message out there fully, and across the entire country.

Tim Irvine [00:10:57]:

There's something that you mentioned Jennifer around human-centered design. And I think, human centered design can be a real superpower to simplify the complex and focus on things that matter. And so I'm curious; how have you used that?

Jennifer Shieh [00:11:09]:

On the technology front, SBIR.gov. So that is our, front door to sharing information about the SDR program. And it's built on, Drupal seven, which means that that's going away and we need to migrate. And so we're taking the opportunity to really think about, well, since we have to do a full refresh, we've been doing a lot of customer journey. Workshops and interviews with, the federal agency program managers that have to report data through that system because it's, really more than just a website. It's actually a full that's the full data system, where the agencies are having to report about those 7,000 awards that they make and the billions of dollars that go out the door. one of the things we're trying to do is, help connect all those ecosystem builders so that they can learn from each other and leverage each other learnings and also best practices and collaborate. And so we've also interviewed them and we've interviewed, small businesses. Now, one of the hardest group to find we're going through this right now is retrain to interview companies that don't know about us yet but would be potentially relevant.

And so we're really trying to do a refresh. So that's all on the backend. And so parallel to that, we're also doing kind of a front-end content refresh as well, and really trying to UN government speak our website. And so we're trying to find those interviews with entrepreneurs and potential entrepreneurs, who can they go to our site and actually look at it and figure out is this relevant for me? And if it is relevant for me, what do I do next?

Tim Irvine [00:12:52]:

That's great. I love, the notion of government speaking website. Cause easy to get into a confusing complex kind of opaque language. And I think having, folks consistently, bump into the same problems is pretty eliminating. So that's a great example. in the federal space risk can be a very, very tricky word for agencies because it can feel like, proactively highlighting a failure or being uncertain, or maybe feeling that you're less expert in an area that you're expected to be an expert in. And yet it really feels like the work that you're doing with SBA is allowing you to you're thriving in a high risk. and getting these high, impact technologies into delivered products and services. Are there any words of wisdom or general guidance for folks that are looking for the same type of impact, but know that they need to put themselves in maybe a little bit more vulnerable space?

Jennifer Shieh [00:13:44]:

In terms of words of wisdom, that I would actually think about it as you're not shouldering all the risk on your own. And that where you're a team. And I absolutely love being on our team. We try to innovate within our programs and try different things within the small business administration. And I have regular conversations with our attorney advisor in the OTCs office. And, I love having that conversation. So one of the things to do is



engaging early and speaking with the people who have those different perspectives on risk and what type of risk an agency might be willing to shoulder. And so trying flesh out like where's the actual concern and having those conversations is, really important. So then you can think about building an innovative. With a foundation that is not too shaky.

Tim Irvine [00:14:37]:

Do you ever find that the small businesses are, surprised with the amount of risk that you're willing to help them shoulder if they haven't worked with, SBA or with you, specifically before?

Jennifer Shieh [00:14:47]:

I would say you'd had a very macro faraway high level, the different agencies because of the different ways that they make use of the program. also have that different perception to the small business community. So, Air Force, and AF works, has been changing a lot of the ways that they operate and a number of different agencies within the department of defense are as well. And trying to think about how they can move towards that type of partnership and attracting startups. And so it, is that kind of risk benefit, calculation and thinking about what's the potential impact that you can have. And then national science foundation, I think, has been really very forward leaning And they are really thinking about like, how do we. Get these super high-risk technologies to get out there and provide that little boost to the company. Our investment as the federal government is de-risking the technical work so that they can attract private sector investors who are not as willing to go in at an early stage.

Tim Irvine [00:15:56]:

I would love to have you expand a little bit on keeping inclusivity and equity in mind, as you're looking at some of the seeding

opportunities to make sure that you're casting a broad net, that you're giving voice to folks that are, maybe not historically getting those opportunities. How do you ensure that access?

Jennifer Shieh [00:16:12]:

One of the specific challenges we have within American seed fund is that there are disparities in stem and there are disparities in business ownership and leadership, and they intersect in the SBR. So one of the things we're doing also is, on the data side, trying to better understand what our baselines are like, who are we serving? Who's part of the program and who's not. And then it gets back to that ecosystem question too. how do we make sure that we're reaching people who don't typically work with the federal government and making sure that different networks are not siloed. something that our office has been really focused on where broadly a lot of us came from agencies and we knew how hard it was to do all of that while trying to run the program. And so that's kind of the service that we're trying to do across the federal government. What kinds of tools can we put together? What kinds of those ecosystem builders can we connect? so that we can create this more full partnership and collaboration.

Stephanie Wander [00:17:19]:

I just want to say I'm so inspired by just hearing about the work that you're doing. I know it's not glamorous work, but it's so essential and it, really makes a difference. So that's, really thrilling. What do you think are some of the greatest barriers, seceding and scaling innovation?

Jennifer Shieh [00:17:34]:

Seeding innovation; it's that fear of change. So when we think about innovation, there's the external innovation we're really trying to stimulate through all the small businesses



through the startups. And there's definitely fear because what we had talked about before around risk--right?--on the internal side, I'd say failing innovation though. It's really about process and infrastructure. And I think we're going to see a lot of that. challenge.

Stephanie Wander [00:18:00]:

Is there anything else you're geeking out about right now? That's what love to finish up on just for.

Jennifer Shieh [00:18:05]:

I'm really geeking out about data and evaluation. Like I'm super excited about that equity executive order and us finally being able to look at the metrics around equity and participation and really tackling policy in a data-driven way. So I don't know because I'm a policy geek. And so the fact that we had customer experience and the data and devaluation and equity all coming together is just super exciting to me.

Stephanie Wander [00:18:32]:

I am so glad that you are where you are and that you're doing like you're doing that's terrific. It's awesome to have someone that cares that much about the data and how we can make change.

Tim Irvine [00:18:41] :

Jennifer, Thank you so much for joining us today. It was a pleasure.

Stephanie Wander [00:18:44]

Yeah, absolutely. Thanks so much, Jennifer.

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