Jonathan Gerlach:

These are names that kids connect to as well. It's not just like, "Hey, I have another thing from Math Academy." And they're like, "Well, oh yay, Math Academy." I don't even know if that's thing, but you get what I'm saying?

Zachary Minchow-Proffitt:

Sorry to Math Academy out there [inaudible 00:00:18].

Jonathan Gerlach:

I don't even know if that's real. So if I just called out someone that isn't...

Speaker 3:

This is the ORISE Featurecast. Join host Michael Holtz for conversations with ORISE experts on STEM workforce development, scientific and technical reviews, and the evaluation of radiation exposure and environmental contamination. You'll also hear from ORISE research program participants and their mentors as they talk about their experiences and how they are helping shape the future of science. Welcome to the ORISE Featurecast.

Michael Holtz:

Welcome to the ORISE Featurecast. As ever, it is me, your host, Michael Holtz in the communications and marketing department at the Oak Ridge Institute for Science and Education. And this is another in our continuing series of conversations with Albert Einstein Distinguished Educator Fellows. And joining me for these conversations is this cohorts co-host, I like saying that. Cohort co-host Zachary Minchow-Proffitt. Zach, welcome back.

Zachary Minchow-Proffitt:

Good morning, Michael. Good morning. Thank you for having me.

Michael Holtz:

Good morning. I'm always excited about these. We have such a good time talking to the Albert Einstein Fellows and getting to know about their work and what they're doing and how the heck they got here, because you know it's an arduous process-

Zachary Minchow-Proffitt:

I do.

Michael Holtz:

-as you know. So we love diving into all of that.

Zachary Minchow-Proffitt:

Oh man, we got a great gaggle here today as well. We got a wonderful set of folks who I'm eager to learn from, I'm excited to have, and this is just going to be the best part of my day, probably.

Michael Holtz:

Awesome. Well, Zach, tell us who we have this time.

Zachary Minchow-Proffitt:

So we have two current fellows and an alumnus. First we have Jorge Ambriz. He is a Hill Fellow this year. Jorge, why don't you go ahead and tell us a little bit about you and where you're at in your fellowship.

Jorge Ambriz:

Yeah, good morning, everybody. Well, my name is Jorge Ambriz. I'm one of the Capital Hill Fellows, and this year's cohort of Albert Einstein Fellows. And I have the pleasure of working in the office of Congressman Raul Grijalva's office from my home state of Arizona. And prior to the fellowship, I was a high school mathematics teacher in Phoenix, Arizona, where I did that for the last 10 years. And the math courses I was teaching there were geometry and AP pre-calculus, but I was also the instructional leader for the math department at my school for the last three years. And aside from that, I also taught a college preparatory elective course known as AVID, which is an acronym that stands for Advancement Via Individual Determination. And I did that for the last six years as well.

Zachary Minchow-Proffitt:

Awesome, awesome. That's so cool that you get to work in the Hill associated with your home state. I think that that's just a beautiful-

Jorge Ambriz:

Yeah, very close connections to home, so it's been wonderful.

Zachary Minchow-Proffitt:

Wonderful, thank you. We also have Katie Mauro. She is a current Fellow as well. Katie, what about you? Where are you at in your fellowship and where'd you come from?

Katie Mauro:

Sure. So thanks Zach. I'm Katie Mauro. I'm a K to fourth grade library media specialist from Newtown, Connecticut. So back in the day when you went to library, you just had a picture book read aloud, you checked out some books and you left. If you walked into a media center today, you'd also see students coding. You'd see green screen, stop-motion animation along of course with research and books. So I love incorporating cross curricular STEM activities into our media center. And this year I am placed with the Air Force and Space Force STEM Outreach Office. So we are working on-

Zachary Minchow-Proffitt:

So cool.

Katie Mauro:

-K to 12 STEM outreach. And it's been really fun transitioning some of the resources over to asynchronous and getting to know everybody.

Zachary Minchow-Proffitt:

Yes, the library is almost unrecognizable from-

Katie Mauro:

Yeah, I love that.

Zachary Minchow-Proffitt:

-20 years ago, isn't it? Yeah, that's amazing. Thank you. Thank you.

Michael Holtz:

We won't talk about the days when there were card catalogs.

Katie Mauro:

I do have one in my house, but yes.

Zachary Minchow-Proffitt:

Perfect. And we are also graced by an alumnus of our program. Jonathan Gerlach is joining us. Jonathan, why don't you go ahead and give us the skinny on where you are and what you've been up to?

Jonathan Gerlach:

Absolutely. Thank you for having me, and congrats to the current fellows. I remember my time and it was a phenomenal experience. So my name's Jonathan Gerlach, as you said. I'm currently the Senior Director of Partnerships over at Legends of Learning. I've had a very unique pathway post-fellow, but also a unique pathway pre-fellow as well. I had the pleasure of working in the office of Michael Bennett, Senator Michael Bennett from Colorado, and had a wonderful time and experience working on education policy, from everything from STEM ed policy to Native American tuition waivers while I was there. So it was a great learning experience.

Prior to that, I was actually in Hillsborough County, Florida. I started as a fourth grade teacher and then moved up to the district level working as a teacher on special assignment, director, whatever you want to call it nowadays. They changed the... Over 144 elementary schools in one of the largest districts in the nation. My big thing was that I loved bringing opportunities. I saw the fellowship as another way to bring a world to our students, and it's something that I've really been passionate about ever since, is finding ways to take my passion for science and my love for science and bringing it to more students. And that's what led me to where I am now.

Zachary Minchow-Proffitt:

That's very cool. Thank you. Thank you, Jonathan. Legends of Learning is a very cool initiative as well. It's a very cool company.

Jonathan Gerlach:

I appreciate it.

Zachary Minchow-Proffitt:

Checked out a little bit. Lots of cool things going on there.

Michael Holtz:

So one of the questions I love to ask Fellows is, how did you get to your fellowship? Because I know on the one hand, the process is arduous. On another hand, teachers are awesome and teachers should have opportunities like this. So I'll start with you, Jonathan, just working backward with the group is, what was your path to the AF and how do you feel it supports really where you are today? How did it help you lay the foundation for what you're doing these days?

Jonathan Gerlach:

Absolutely. So as I said, my path was very interesting. I actually applied twice. I was a finalist my first year, but did not get selected for a place in the first year. But I applied again. And one of the things I tell teachers nowadays when they go for this is, you never know. A lot of people see opportunities like this and they think that they are not... What would you say, qualified for this type of work when all they want is to hear educators' voices. When I was at the district level and as a teacher, I applied for almost every fellowship, every opportunity I could. And to this day, I still believe I got two out of three. Literally, I got to go work on Bahamian Reef surveys and tagged sharks in California because I applied and said, Hey, let me bring this back to the kids. I went to Space Academy and brought that back to our school district and brought engineering design challenges back in the late 2000s back, to our schools because that's what was cool. That was a great way to bring science alive.

So my path was very interesting in the fact that I just kept applying for as many different things as possible, because I didn't see it as just a way for me to evolve, but for me to bring experiences back to the district and back to my students. And that's why I encourage people to do that today. And then to the second part of your question, how did it prepare me? The fellowship itself gave me so many opportunities to make connections, to see my value beyond just micro universe that I lived in. I was one of the fellows who didn't go back to their district after my fellowship. I got approached by, at that time, Discovery Education to come and be a keynote speaker and travel and spread the idea of STEM around.

And I did that for seven and a half years after that. And I saw the fellowship as giving me opportunities to increase my impact, to really make a glocal impact. Still bringing some of that back, those experiences back to my local community, but also having a global impact beyond that as well. So the fellowship itself really made a huge impact on where I am today, and I encourage people all the time to, even if you get denied that first time or the second time or the third time, some of the fellows who I was with, they applied five times and got in the fifth one. You just never know what the different offices are going to come up with and who they're looking for that year. So that was my journey.

Zachary Minchow-Proffitt:

Wonderful.

Michael Holtz:

Love it. Katie, how about for you? And I realize you're still in your fellowship and it's still sort of early days, but what was your path and how do you feel it supports maybe what you'll take back to the classroom, if that's your path after your fellowship?

Katie Mauro:

Well, my path was a little bit different and I love sharing it because it's different. So I learned about AEF from my roommate in Antarctica while we were there. We were serving as Grosvenor Teacher Fellows for National Geographic in Lindblad. And she was like, "Hey, have you heard of AEF?" And I hadn't. She talked to me about it. I jotted it down, made a little note, and then a few months later after I was home, found that note, looked into it. I wasn't really sure if I would be a good fit. So I embed cross-curricular STEM lessons into our media center and the MakerSpace leader, but I wasn't really sure that I belonged. So I hopped onto a live AEF Q&A session, and I found myself in a breakout room with Kama. She was a 2020 fellow with USGS. And the next morning I woke up to an email from her encouraging me to apply.

And that is the reason why I'm here today. Because honestly, without her email, I'm not sure I would have.

Zachary Minchow-Proffitt:

That's good Kama.

Katie Mauro:

Yeah. So it's amazing how it works, but as Jonathan was talking about, the connection with other educators and expanding your outreach, and that's exactly what I feel like this opportunity has done for me. I'm at AGU24 conference this week, and I was explaining how the educators supporting educators is phenomenal. So this morning I walked in, I tapped into a Grosvenor Teacher Fellow Alumni session, and of course bumped into two AEF alumnis along the way. We all end up going to the sessions together or supporting their students. It's a phenomenal community. And anytime I've done something like the Grosvenor Teacher Fellow or now I'm in AEF, it's always the connections with people that make everything absolutely worth it. The connections last a-

Michael Holtz:

I love it. I also love that your path started in Antarctica.

Katie Mauro:

It's a little bit of a different path, but I love that it started there, too. But no, these connections, I'm so excited. We're in it and all the alumni keep telling me that you don't always see it until you're two years or five years out from the fellowship, how these connections really grow and shape your path forward. So that's the part that I'm really excited about.

Jonathan Gerlach:

Katie, I just have to say that that is really exciting to hear that you took that leap, just because so many teachers are so... They don't think enough of themselves, they don't think that they can make that difference, and the fact that you took that leap, it's really exciting and inspiring.

Katie Mauro:

Thanks, Jonathan.

Michael Holtz:

Awesome. Jorge, how about you?

Jorge Ambriz:

So like Jonathan, I was always seeking the next thing to apply to and trying to get myself into any space where I could learn, and just be more open to the opportunities that might be out there. And so I first heard of AEF through an alumni of the fellowship, Linda, who happened to be a guest speaker during a webinar that I was participating in when I was part of the T³ community through Texas Instruments. And the T³ community stands for Teachers Teaching with Technology. And so I was part of this cohort two summers ago where I was learning about TI's new and emerging technologies and how we can integrate more technology into our classroom, into our instruction, and how to engage students. And since this experience came across my path through Linda's words, kind of like Katie, I just jotted it down and it just was one of those things I found later on and I decided to apply last year. And really while I was part of that cohort, I was also on a path of completing a second master's degree in educational leadership.

So I was already in a transition point in my career where I wanted to have a bigger impact outside the classroom. And so I was really planning on expanding my skillset and really seeking ways to be a little bit more influential outside the classroom. And of course, not to mention my first master's degree as in education policy. So I really feel that the placement that this fellowship has given me really put me on a path where I can really explore all of the coursework, all of these workshops of these trainings that I've been part of over the years. And of course, now fast-forward, as I'm on Capitol Hill this year, I'm in the middle of all of this action where policies come to life, where we're analyzing, we're reading things, we're hearing what's to come next, and so it's really given me that trajectory of being able to use this year as a point of reflection in my life and in my career to see what's next for me. I still don't know, I still feel like it's very early on, but I'm excited for what this fellowship still has to offer.

Michael Holtz:

It sounds like some killer alignment going on there for you.

Jorge Ambriz:

I really took the acceptance earlier this year as a sign. I said, if this is not a sign, a very clear sign for me, I don't know what is at this point. But it really felt like everything just aligned very well this year, and so it was a no-brainer. When I got the call, I said, absolutely I will take it, and we'll figure out the logistics of moving there after. And now I',-

Zachary Minchow-Proffitt:

Because you moved from Arizona, right?

Jorge Ambriz:

Yeah. And I made the drive out here, so I wanted it to actually feel like I was making my way to DC rather than flying. And plus, because I packed a lot of things.

Zachary Minchow-Proffitt:

Right. Right, right, right, right.

Jorge Ambriz:

It was never going to fit on the plane.

Michael Holtz:

It's a life change.

Jorge Ambriz:

Yeah, it is.

Zachary Minchow-Proffitt:

That's amazing. I can't say enough about the placement process, how thoughtful it is and how much our experience has gone into where we ended up. It's a pretty cool thing.

Michael Holtz:

Zach, you want to take the next question?

Zachary Minchow-Proffitt:

Sure. So the general theme why we brought you all here today is we want to have a discussion about how we can amplify the use of federal resources, how we can use teachers as catalysts for the implementation of a lot of this federal programming that's out there, how we can help the education sector grow, and what our perspective is, through the fellowship or through our classroom experience, on some of the ways in which that's been successful. And we've seen those successes in implementation of federal resources, but also what are the ways in which now we can see a path forward and how we can help to grow that communication. So the first question is, from your time in the classroom, what do you see as maybe the best practice, or what are ways you've seen successfully implemented a lot of some of these federal programming? So for instance, free webinars, free activities, the mobile STEM type stuff. What are ways in which you've seen STEM federal resources work well in the educational sphere? Katie, you want to-

Katie Mauro:

Sure.

Zachary Minchow-Proffitt:

[inaudible 00:17:49]

Katie Mauro:

Absolutely. So one of the ways that I've used federal resources within my classroom is I've fully embedded units into my classroom as we've created different courses. So we have a course called Exploration that I teach with third and fourth grade gifted and talented students. And so one of the things that we do is I've tapped into federal resources. I found some great DOD STEM, actually, resources called Protecting Whales: Computational Thinking. It's actually DOD stem fully funded, but produced by the Smithsonian Science Center. And we've embedded that into our curriculum, and that worked really well. But as educators, we all know that we never just take a curriculum, we then dissect it a little bit. So collaboration is a huge thing. And I think one of the things we need to think about when we're looking at federal resources is teachers are always trying to make the best unit, the best lesson, and we'll pull from anywhere.

So what resources are really great for teachers? So as you were saying, free resources, especially STEM resources, so important. Not always full units. What I did was a little bit rare. We don't always have the opportunity to pull in full units and full lessons. So STEM activities, and while live sessions are great, I do feel like it got really oversaturated after COVID-19. So there's a lot of competition out there. Even though they're great, it's hard for a teacher to just be able to block out an hour of time for them. So I think asynchronous lessons are really great, walking students through the activity and then providing the free activity as well, and then showing them the connections to the government. So for us, we'll create asynchronous activities. It might be on cipher wheels, and then I'll walk them through the activity, and then we always have our Air Force connection and how this relates to the Air Force and why it's important.

Zachary Minchow-Proffitt:

Those on-demand activities. My students used to always groan when I would prescribe an asynchronous activity, but then I started saying, here's some on-demand resources. And they were like, this is Netflix, but for class. They're like, I can just watch these videos with Proffitt anytime. And they were all of a sudden hyped about it. So that's a great point. Thank you. Jorge, what about you? How have you seen that work well?

Jorge Ambriz:

Well, one thing I wanted to point out is that sometimes I feel like these federal resources are somewhat hidden from teachers. So what I would like to see more of is for there to be a partnership or some sort of more clear communication out there that really gives teachers access to these resources. There's just awareness of them. And like Katie, I agree there's a lot of resources we as teachers pull from to really try to enhance our units. And I was always that teacher that didn't take necessarily the curriculum for what it was, and especially year after year, as you have different students, their needs are different every year.

Zachary Minchow-Proffitt:

Absolutely.

Jorge Ambriz:

So I was always pulling different things to see what might students be interested in this year versus what we did last year. So I was never really set on certain lessons or units, but I was always trying to supplement. And that's what led me to wanting to apply to different opportunities where I could learn new things, and that's a whole other conversation. But I really think that when we leverage and complement each other's strengths, and I'm talking about the educators, and when we look at the private sectors, a lot of the private sector's capacity and resources are there. And when we bridge those two together, I think teachers can really help inform a lot of the usage and the access towards these resources. And so that's one thing I really feel that this fellowship is giving me is a platform to be able to then take everything that I know about and everything that I learned about this year and really then pay it forward and really make it more accessible for other teachers to know about.

Zachary Minchow-Proffitt:

Yeah, that educator voice, that educator perspective is so valuable in implementation, right?

Jorge Ambriz:

Absolutely.

Zachary Minchow-Proffitt:

And I think Jonathan's earlier sentiment about helping teachers find that voice is also an important part of this process. We're learning how important our perspective is as a part of implementation as those three spheres collide: education, public and private, in terms of the resource implementation. Jonathan, you have such a great pooled perspective. You've seen all three. What do you think about this? How do you feel like what's the best practice that we can use as we seek to make the best use of this for solid education?

Jonathan Gerlach:

So that's a great question. I really love this question because I see it in multiple different lights, if you will. The first one being the actual resources, the physical resources that have been created. When I was in the classroom and when I was at the district, I used a lot of NASA's type stuff. Engineering design challenges was a big thing. Back in 2007, 2008, 2009 in the classroom, we weren't doing that kind of stuff. And I was able to utilize stuff that NASA had created around engineering design and bring it to district level and push it out to students and teachers across the district, and that was really exciting because we had stuff that was cutting edge, and things like NASA and some of those, Air Force that Katie mentioned, these are names that kids connect to as well. It's not just like, "Hey, I have another thing from Math Academy." And they're like, "Well, oh, yay Math Academy." I don't even know if that's a thing, but you get what I'm saying.

Zachary Minchow-Proffitt:

Sorry, to Math Academy [inaudible 00:23:44].

Jonathan Gerlach:

I don't even know if that's real. So if I just called out someone that isn't... But the whole idea is that these resources are there and being able, especially as Fellows, and being able to bring them back, and that's one of the big things I did when I was in the fellowship was constantly, anything I found, I was sending it back to my district. I was sending it back to my teachers and saying, "Hey, check this out. Hey, do you think this could fit there?" So that level of resources I think is really, really important. But I also look at the resources, when you're talking about federal resources and we're talking about it from the fellowship aspect, and coming from the private sector, there's two other pieces I think that are forgotten. There's these free things, but there's also federal grants that are out there.

In the private sector, currently, my company has an EIR grant that we've partnered with. And if you don't know EIR, it's Education in Innovation and Research, and the whole thing is really working. We're working with a very large district. I won't name names right now. It's known out there, I just don't want to make calls. But we're working with a massive district on how to create, and how to take some of our content and make it even better based on what districts need. And that's not just at the superintendent level. We're working with science directors and teachers and things like that. That is provided by federal grants. And there's a lot of different federal grants out there to do stuff like that, not just at the large level, but even at the teacher and the school level as well.

The other thing I just wanted to point out is the resources of the connections that are made. As a Fellow, being able to bring those connections. I think about specifically one where there's a program that I'm somewhat connected with as well, where recently a chief of staff of a former senator saw it and heard about it and was like, "Hey, let me bring this back and bring this to congressmen, bring this to congresswomen and to senators and say, 'Hey, have you seen this type of stuff?'" Because exposure is a big part of this as well. A lot of the times teachers are doing such great things and they're part of great programs that are also hidden. Like Jorge said, there's so much that is hidden on the federal government side, but there's a lot of that's hidden from what's going on that our teachers are doing that people don't know is going on. So being able to be a conduit of bringing things both ways as a resource and being that resource, I think is really important part of this fellowship and bringing in a best practice specifically as a fellow.

Zachary Minchow-Proffitt:

The teacher-leader position, the idea, because a lot of it's about communication and visibility, as you were saying. Everybody knows NASA, or everybody knows certain agencies out there. Being that teacher-leader to bring everything home is a big piece, I think, that public education can develop. And I think that the AEF and other opportunities like it really are playing a big role in developing that population within our schools.

Jonathan Gerlach:

Absolutely agree.

Michael Holtz:

Same.

Jonathan Gerlach:

Absolutely agree.

Michael Holtz:

We've talked a bit, as you all have been speaking about your experiences, about the role that teachers play in connecting students to opportunities with federal STEM programming. How can teachers have an impact on the implementation of that federal programming? And then how can you be better supported in that implementation? And Jorge, I'll start with you, if you don't mind.

Jorge Ambriz:

I think one of the best things that we can do as teachers is, like we've been mentioning, using our voice, is to be able to provide feedback towards these resources and these agencies that are developing these resources. But also as teachers, we come with a set of knowledge that we can also lend our expertise and really share our best practices. What might be the best ways for us to roll out certain activities and certain curriculums, and of course, teachers do that on the daily. So I think that really promoting this collaboration between educators and private sector and all sectors that are helping teachers essentially with these resources, could really be a really great way for us to use our voice and to really help a bigger impact and being able to implement and develop these resources.

I think at the same time, though, as we've been mentioning as well, is we also have this almost responsibility, as teacher-leaders too, that are in these programs such as the fellowship, that we need to bring those things back, and we need to also be that voice that encourages others to seek these opportunities, not just for themselves, but essentially it's benefiting students in our communities. And so as we inform other people about these, essentially those that benefit are going to be students. And so if we can tie all of those loose sense together, I think collaboratively, we bring a really good thing to the table.

Michael Holtz:

Awesome. Katie, how about you?

Katie Mauro:

Jorge, I love that you said that, because treating Fellows like the experts they are, and then having materials, educational resources for them to look at and really consult on, I think is just the first piece that's so important, because we come from an area where we can look at a lesson and immediately know, okay, this is great, but we need to differentiate this a little bit. We can also look at a lesson and say, I know that this is written for K-twelve, but K-twelve is a very big span, so we need to break this down a little bit more. So I think being an educational consultant is a really important piece to what we're doing. I would also add that, whenever possible in any capacity, professional development. However, when I say that, I think about the most excited professional development I've ever been in.

Passionate educators help breed new passionate educators, and those passionate educators will then take those hands-on resources and be so excited when teaching it that those students will then absorb that excitement. So I do think anytime we can integrate federal STEM programs with teacher PD, whether it is virtual, asynchronous, in-person, I think if we can approach it from an aspect where what we're teaching them has that level of here's the real world connection, here's why this is so exciting, and here's why your students are going to love it, then I think we're going to see it continue.

Michael Holtz:

And Jonathan, to what you were saying before, customization, at the district, at the grade level, seems so important. So from your three-legged stool of you've touched all these areas, what are your thoughts on the question?

Jonathan Gerlach:

Absolutely. I think Jorge and Katie really nailed it. Being able to be that advocate and the consultant in this, as Katie pointed out the K-twelve aspect of, Hey, this is good for here, this grade span. One of the big things that I've always seen and that I've seen as I've created content in the private sector, created content in the federal, in all these different sectors, is that a lot of the times, especially since the people who are creating them have these ideas in their head, and even as us as Fellows as being really, truly master educators and knowing how to do this very simply, a lot of teachers aren't at that level. And being that person who can help break it down for a teacher, to help them see how it's not a large lift, but how they can actually do it with very small, easy, replicable steps, that's been a big learning that I've had as I've been in this new sector over the last few years, is truly being able to help people say, okay, yeah, my company does video games. Using video games in the classroom is great.

However, it could also be a very large hurdle for some people. I don't even know how to even start. So being able to be that person, and being able to be the master educator who says, Hey, this is great. As they mentioned PD, let me now walk you through this in PD in a very simplistic way. Let me show you, model for you, what this can actually look like. Not because I have the perfect situation or the perfect set of students for this, but how this can work for almost anyone. I think that is something that is done very well by this group as well.

Michael Holtz:

Awesome. Zach, how about your thoughts on...

Zachary Minchow-Proffitt:

On how it all can work?

Michael Holtz:

How it all comes together, yeah.

Zachary Minchow-Proffitt:

I think it's right. I think there's a great sentiment in that we need to recognize some of the ways in which certain resources work for some populations and not for others. I think there's a whole lot of advancement. For instance, I was looking at the report from NASM on rural STEM education and how difficult it is to even just isolate a singular definition of virality, and how we need to think about these resources as less of a... That they are broad in availability and potential, but not necessarily prescriptive in that same way, if that makes any sense. I'm not saying that it has to work for everyone, but pieces of it could work for a lot of different people. And that's what I think the role of the federal space is, is to try to generate those kinds of resources.

In terms of how teachers can play a role, I think that we've said a lot, and I would echo what my companions here have said. I think they're all very smart about we need to support teachers in providing availability, providing access to the breadth of the federal STEM programming, and recognize that they all have something different to lend to the conversation about how it can be successful in schools.

Michael Holtz:

Awesome.

Zachary Minchow-Proffitt:

So all this stuff we've been talking about, I'm excited for the future and how we can see a lot of this innovation. We've seen the STEM development process increase over the last couple of decades. Nationally, we're all working on trying to build a better workforce. We're all working on trying to build a better future STEM professional population. What kinds of changes or innovations would you guys like to see in how we deploy these resources in order to strengthen this connection between education, the federal, and the private sector? What do you think is going to be some of those Hallmark successes that you'd like to see maybe we do more of as we seek to better this? We'll go back to, I guess, Jonathan. Maybe we'll... Let him take that off.

Jonathan Gerlach:

So I have a lot of different ideas on this. It could go many different ways. What really jumps out to me though is, and it's something that's been a little bit more close to my private sector lately, is the idea of innovation in the sense of, a lot of the times to do anything at a federal level, to do anything at a state level, you have to have research data behind it, which is great. I'm not saying that's not a good thing. However, innovation happens a lot of the times, and there might be research behind it, but not the same type of research that is always looked at. There's a great thing, I'm sure you guys are aware of the What Works Clearinghouse. It's a fantastic entity. It has all this proven resources out there. However, to get into that clearinghouse, the threshold for research is almost so high, it almost pushes back on innovation. I would really, from my standpoint, love for the federal government and these federal programs to either help allow people to get to this threshold.

For instance, we know in education, a blind study is not something that a lot of people want to do. Let's give it to half the kids, but not give it to the other half. That goes against everything we think in education, but that is the threshold for a lot of these making it into these research-driven programs that are successful. So either the federal government, like these EIR grants, helping companies who are trying to be innovative, who are trying to bring new resources into that realm, or having a way that innovation is recognized in a different way, that we look at data, we look at innovation. Because I know you all see it as well, the speed of innovation and education, since specifically COVID, I'll call it out, the fact that technology got pushed into every school because that was the solution, the short-term solution at that moment for that piece, and now it's like, okay, we've got all this innovation, but what works? What doesn't? How do we make sure that that's all happening?

But how do we also not stifle innovation with making such strict guidelines that it makes it hard to actually push things out? From my standpoint, I think that is a big thing for the future that could really help, not just from the private sector, but then it goes into the more public sector, where teachers are more willing to try something that's innovative. I use one that I think about quite a bit is AI. AI is a big thing in the classroom, and I run into teachers all over the nation, and there are districts and teachers who are absolutely gung-ho, think it's the best thing in the world, and then there's some who are so afraid of it that they won't even let their students even engage with it.

And this discrepancy of that is really pushed by this idea that we don't know what it's truly capable of. There are some great things it could do with research, but there's also some really shady things that could happen. I have a teacher friend who does an AP research class at a local high school here, who he asked his kids to create a presentation. And the kids came back and they created the presentation, and it's a video, and the video starts, and it's him, the teacher, my friend, talking, except he's never said any of those words.

Zachary Minchow-Proffitt:

They deepfaked him?

Jonathan Gerlach:

They deepfaked their teacher, which is amazing that they got to, and terrifying at the same moment. So these innovations are going to come, and there's some great opportunities for them, but how do we make sure that we're not stifling, but we're also being very cautious and thoughtful about what is done? My big thing is the stifling, because I see so many districts who do just automatically say, "AI, nope, not doing it, period." It's the same districts who said, "Technology, nope, not doing it, period." We need to get past that point because when McDonald's has more technology than our classrooms do, we're in a little bit of trouble.

Zachary Minchow-Proffitt:

Might make some good fries, though.

Jonathan Gerlach:

They do.

Zachary Minchow-Proffitt:

Hopefully. I think that that's one of the ways that is actually freeing that comes from the federal space is when... Because right now, everybody has their own definitions of ethical use of, in particular, that technology. And so if we can ever find a way to generate something from NIST or somebody to say, "This is what ethical use looks like nationwide," then that almost becomes, for those very conservative districts who are worried, freeing to say, "Okay, this is okay." And I know that the burden is, there's not a barrier to entry for our kids. We have kids in middle school doing research in this space, so it's certainly something that's coming, that's for sure.

Jonathan Gerlach:

Absolutely. Absolutely. We have kids who are making their own AI in that space. I like that, though, that if we're able to get... You're spot on, Zach, in the sense of, if there is an entity that is trusted that says like, "Hey, this is what ethical and moral, good, high moral use of this program can be, and how it's also impactful," districts are more likely to open up their thought process to those different things.

Zachary Minchow-Proffitt:

Absolutely. Katie, what about you? What do you think? What would you like to see coming down the pipeline?

Katie Mauro:

What would I like to see? Well, I'd love to see more collaboration. The hard part is there's also so much happening; we just don't always see it. And we don't always see it because every agency has their own website, they have their own method for sharing resources, and I completely understand why they do. I really do. But coming at it from an educator perspective, when you have to tap into so many different websites in order to find your resources, and as I spoke about earlier, when we have a curriculum, we look for all the best things we want to incorporate into it. And if I want to pull from a couple of different federal agencies, I have to go to all their independent websites. So what would I, as a media specialist, love to see? Of course, an online database that just, I can filter and I can find everything and hey, this is the topics my students are researching right now. What do you have for me? What do the federal agencies have for me? So yes, dreamy. I would love that. An online platform.

Zachary Minchow-Proffitt:

Single sign on.

Katie Mauro:

Yes.

Zachary Minchow-Proffitt:

Yeah, absolutely.

Katie Mauro:

Sign me up. I'm in.

Zachary Minchow-Proffitt:

That would be gorgeous. Talk about eliminating the mental load of planning authentic learning for your kids.

Michael Holtz:

And just discovering, having to figure out where everything is. Having it all in one place would be-

Zachary Minchow-Proffitt:

Would be awesome.

Michael Holtz:

-a beautiful thing.

Katie Mauro:

It would be, yeah.

Zachary Minchow-Proffitt:

Thank you. Jorge, how about you?

Jorge Ambriz:

Definitely more increasing collaboration, of course, but also more than anything, having more innovative public and private partnerships that really help us drive STEM education and career development. I worked in the high school setting, so a lot of the times we're focusing with our students on what comes after high school for them and what path do they want to eventually take, whether that be going to school or going into a career or some sort of job training that they can then go into, depending on their interest. But I really think, again, that when we combine the educational sector's subject matter expertise and the private sector's capacity to be able to produce these resources, this can really lead to an exchange of information that seems to tend to highlight this fellowship in a collaborative manner, where we have those voices represented really well in what our students need and the resources that might benefit them that could have long-term solutions for them.

And so having more of those partnerships I feel would be great. And again, as I'm thinking of my students at the high school setting, if we're able to offer more internships for high school students, or fellowships even that are really catered to the skill sets that these companies and organizations might need of their workforce, I think could be such a great way for us to drive STEM education in a real world setting that has really impactful results.

Zachary Minchow-Proffitt:

Absolutely. Getting kids into those spaces. It's like what Katie said earlier about passionate educators developing other passion educators. The same thing could be said for our students. When our students have an amazing experience at a placement, say it's a summer thing or a semester thing, that just builds so much momentum for the students they know.

Jorge Ambriz:

And it gets them excited. It gets them excited towards maybe an idea that they had, or maybe they're on the verge of, "I don't know if that's what I want to do," but that could be exploratory ways for them to actually really know more about themselves and really get into a field or a field of study, even, that they might want to pursue.

Zachary Minchow-Proffitt:

And I think this is especially important, as we think about rural populations. Like what Jonathan was talking about earlier, lessening the burden of the grants and the applications, doing some offloading and streamlining those processes to make sure that the schools that need them more have more access to them, and increasing... I think that also a big piece that we can help with this pipeline is embracing and elevating the community college piece, like what we see in California where almost everybody goes to community college and then goes to a four year or something like that. There's so much value in those institutions as we seek to maintain affordable education, higher ed, training, all that kind of stuff is... There's a lot of room for growth. And I think that y'all are hitting a lot of those really important points in terms of maintaining visibility, access, and outcomes for our students, how to yield a better education environment for everybody.

Jorge Ambriz:

Yeah, absolutely.

Michael Holtz:

Absolutely. And y'all, we could continue this conversation for another two hours.

Zachary Minchow-Proffitt:

Feels like it. Absolutely.

Michael Holtz:

It's been great. But we are running out of time, so I want to ask everyone and do this around the horn. My favorite question to ask anybody is what brings you joy? And Katie, I'm going to start with you.

Katie Mauro:

What brings me joy? Exploring and connecting. So exploring our world and connecting with people as I do.

Michael Holtz:

Excellent. Jonathan.

Jonathan Gerlach:

That's a hard one. There's a lot. I'd say family and travel really bring me joy. I had the opportunity to see the Northern Lights recently, and those experiences, and providing that to my daughter and to my family, I think that's what really brings me joy, is being able to provide my family something that I didn't have when I was a kid.

Zachary Minchow-Proffitt:

Very cool.

Michael Holtz:

Very cool. Jorge.

Jorge Ambriz:

Being an Albert Einstein Fellow brings me joy.

Katie Mauro:

There it is.

Jorge Ambriz:

Bu of course, I don't just say this because I was a teacher, but learning, just the idea of learning and knowing that your learning never really stops, and of course, immersing yourself in experiences such as this one, is always great. Just to see the world and have different perspectives is one of the things that I really have appreciated of this experience. But really outside of, I like spending time with my loved ones, and I like to be active. So back home, I would like to go hiking. Here, I run every now and then, so just being outdoors also brings me a lot of joy.

Zachary Minchow-Proffitt:

Awesome.

Michael Holtz:

Awesome. Zach, how about you?

Zachary Minchow-Proffitt:

Joy, my most joyful experience recently was we got to see at the Kennedy Center an improvised Shakespeare experience.

Michael Holtz:

Dude.

Zachary Minchow-Proffitt:

Which was absolutely incredible. Our Second City touring group, five guys. At the beginning, the crowd shouts out a title for the play, and then they put on a two-hour full improvisation of a Shakespeare play, pulling from themes, and it's hilarious. They do song, they do dance, and it all wraps up, with no intermission, no prep time. It's amazing stuff.

Michael Holtz:

Oh my gosh, that sounds like fun.

Zachary Minchow-Proffitt:

And it was a total blast. I got to go with a bunch of the Fellows last week, and it was very joyful. Very, very, joyful.

Jonathan Gerlach:

Michael, I can tell you what brings me jealousy now, as well.

Michael Holtz:

I know, for real. Exactly. Same.

Zachary Minchow-Proffitt:

Well, they're here all December, so get out there and go see them in DC, if you can. How about you, Michael? What do you think? What's bringing you joy these days?

Michael Holtz:

What's bringing me joy now, I feel a bit like a kid, is Lego, actually.

Zachary Minchow-Proffitt:

Oh, cool.

Michael Holtz:

I've been building some stuff really just to spend less screen time and do something with my hands, and not doom scroll and all that fun stuff. So with the holidays, my Christmas tree is a Lego Christmas tree this year, so there you go.

Zachary Minchow-Proffitt:

Very cool.

Katie Mauro:

Very cool.

Michael Holtz:

There you go. Well, thank you all so much for the opportunity to talk with you today and share your experiences and how we can work together to improve the experience for students, and talking about your Albert Einstein Fellowship experience has been wonderful. So thank you again, and I hope at some point we'll be able to visit with you again and see where you are, like Jonathan, and what did you take out into the world after your fellowship experience?

Zachary Minchow-Proffitt:

Yeah, we'd love to have you back.

Michael Holtz:

Absolutely. So Zach, thank you again.

Zachary Minchow-Proffitt:

Thank you.

Michael Holtz:

We'll do this again soon, and I will talk [inaudible 00:50:59].

Zachary Minchow-Proffitt:

Thank you to our Fellows for being here. Thank you everybody.

Michael Holtz:

Absolutely.

Katie Mauro:

Thanks for having us.

Zachary Minchow-Proffitt:

Absolutely.

Jonathan Gerlach:

Thank you.

Speaker 3:

Thank you for listening to the ORISE Featurecast. To learn more about the Oak Ridge Institute for Science and Education, visit ORISE.ORAU.gov or find us on Facebook, Twitter, and Instagram at ORISE Connect. If you like the ORISE Featurecast, give us a review wherever you listen to podcasts. The Oak Ridge Institute for Science and Education is managed by ORAU for the US Department of Energy.