

## Advisory Board Meeting 2 for 2025

**Michael Porzio:**

All right, we got the recording going. It's in theory recording both on my phone and on the computer, because they need to do that. So yeah, I am, I'm Michael Porzio. I teach at rtcc, the Advanced Manufacturing class, and this is our board meeting for this half of the year. If you two want to introduce yourself, sure.

**Jim Berry:**

I'm Jim Berry. I'm a retired pre tech teacher, and I've been doing it for forever, about 35-40 years. And so I'm also a mentor for a few teachers here as well.

**Michael Porzio:**

Do you want to explain what pre tech is?

**Jim Berry:**

Pre tech is an exploratory for ninth and 10th graders to figure out where, what type of training they want to have toward a career. So automotive welding, culinary arts, construction management, you name it. So a lot of the kids are at risk of dropping out. Kids who are who don't do well in a traditional high school setting. Usually it looks like not showing up to school at the regular high school, not achieving at an academic level, and generally having disciplinary problems as well. So those are the type of kids that I have dealt with, yeah,

**Michael Porzio:**

Derek, you want to introduce yourself?

**Derek Geno:**

Yeah, I'm Derek Geno. I, my background is sales. So I prior to my stint at massive dimension, which is a robotic 3d printing company out of Barry Vermont. My previous career was an orthodontics so I was out west covering, you know, all the all the Northwest states, selling all of the appliances and clear aligners to orthodontists to straighten teeth. And that was kind of my first introduction into 3d printing, when some of the orthodontists started buying their own desktop 3d printers to print out aligners to do, do it yourself, aligners in the offices. And so that was interesting. And so then I moved back east, and I took a job with Invisalign aligned technology, and they're the largest 3d printer of of anything in the world, yeah, because every single product they make is printed additive manufacturing.

**Jim Berry:**

Yep,  
yep. So  
where's their home office?

**Derek Geno:**

Um, Align Technology is there in San Jose, California, and then they're, they're manufacturing, the 3d printers are all in Juarez, Mexico. And then they have, they have the the people that digitally treatment plan, the orthodontic cases. They're in Costa Rica, but it's a Silicon Valley company.

**Jim Berry:**

Oh,  
shoot. I mean, makes sense now.

**Michael Porzio:**

Cool. Thank you. Gene. That's not gene, Derek I was just gonna say Gene, sadly is not on the call, I don't think he's gonna be on the board going forward, our last board meeting, we had Gene and hopefully Jim (Mail) pops on here too. Jim (Berry), I'll introduce him if he does get on so he doesn't have to. But Jim (mail) works with ABB of robotics, so they do all sorts of advanced manufacturing, as far as if it's assembling a car with welding, or even my old company, we retrofitted these to big heads onto these robots. So we worked very closely together, and he's got his hands in all sorts of manufacturing industries, from heavy machines to small stuff, yeah. All right, so let's go down our list here. All right, so in this class, advanced manufacturing, we offer IRCs. These are licensures so that the students can go directly out into the field and start working right away. We do welding IRCs. That's when, first time I had this board meeting. We're talking about the IRCs. I was not aware at the time that, are you aware, Jim, that there is no Vermont schools that are actually licensed to give out IRCs in welding, yeah, so I've been chasing that rabbit,

**Jim Berry:**

yeah, so that would be a good draw, yes,

**Michael Porzio:**

yeah. So I'm trying to get this school to be on that short list. The closest school is actually White Mountain in New Hampshire, so I've been in contact with them to see what it requires for us to do the same and likewise, on our IRCs that we can provide in advanced manufacturing is NIMS or n, I m, s, and that pretty much covers like all sorts of metal working fabrication grinding saws, sheet metal every. Has to do with our vertical mills and CNC machines. A lot of that is NIMS, but our school is also not certified to provide those licensures, this I was unaware of, so I'm also chasing that down that avenue so that we can provide those I'm hoping that by next year, the start of the first semester, we'll actually be able to give the students what they want to get, which is licensures, right? Because a lot of these that we say we provide we don't really have access to give. Is there, between the two of you, anything as far as licenses or skill sets that you think our students would be, you know, it'd be valuable for them to learn?

**Jim Berry:**

Well, I think those IRCs that you mentioned right now are great because no one else is offering them. So I look at it as an opportunity, and I would sell it like the minute you get it, I would get it out there, let them know that you can get IRCs in those areas. I think if you can, the more you

can obtain. You can't do them all, but I think if you get back at two this next year, whenever two following year is a good way to build on it. But those are two that I think make total sense for here.

**Michael Porzio:**

Yep, agreed.

**Jim Berry:**

Yeah. I would say anything that's going to make them marketable out in the work force there, that's the biggest challenge right now for the private sector is hiring people that have that knowledge base. So they're just looking for an excuse to hire, hire somebody. So any any license is better than no license, right?

**Michael Porzio:**

Yeah, currently in class, we are working towards our SolidWorks associate IRC, which is something that I can provide, which is cool. Talking to me a couple months ago. I said it would be easy, but we'll see it's challenging with the students, because a lot of them, they have difficulty with math, and there's a lot of math that is involved in CAD modeling, especially with volumetrics. So yeah, I'm staying positive. We're going to keep pushing at it. Yeah. All right. List of things to discuss. All right. So tools and equipment that we have in the shop currently. We have a full suite of pretty decent 3d printers for additive manufacturing, bamboo labs. We have an Ultimaker. We also have Haas mini mill two and a Haas lathe. So those are CNC machines. Now we also have more old fashioned Bridgeport, vertical mills. They may be old, but not obsolete. That's something still used in industry, especially with rapid prototyping. Is there any tools or equipment that two of you can think would be useful in my classroom going forward, so next year we can purchase,

**Jim Berry:**

Do they give you a number yet what you have for Perkins? No, I think they should be giving that to you soon.

**Michael Porzio:**

Okay, what does that mean?

**Jim Berry:**

What that means is that the any money that's out there from state or federal, they should be able to look at that. I think whatever you I think whatever makes sense for you, but I figure out what to get for \$1 what they have, right,

**Michael Porzio:**

Right, Yeah, it all depends on what that budget is. Any new and advanced technologies that you've come across recently. Derek?

**Derek Geno:**

I just remember the last time we we talked and Gene, who's not with us, but we both agreed that it it seems like metal is where it was heading, metal additive manufacturing,

**Michael Porzio:**

Yep, yeah. And when we were at Massive we, we were kind of talking about moving into metal and getting away from plastics. So that's what I would say.

**Michael Porzio:**

Yes, we toured VTS. Up on the hill in Randolph, the technical college, and they have a huge room that's all additive metal manufacturing. It's very advanced stuff. They definitely know what they're doing up there. It's super impressive. And I would, I would love to have additive metal in this classroom as well as that's where the industry is trending. And I mean, it's, of course, important to make sure that our students know how to run CNC machines in subtractive manufacturing, but to also have the students be geared so they know how to do additive would be excellent. The problem, of course, is the machines are quite expensive, and I don't think there's even the cheapest machine is outside of my entire class's budget. So maybe with Perkins or whatnot, there's some possibility down the line. But yes, I also agree that that would be good for the students.

**Derek Geno:**

And I don't know what the thing would be, but something to do with post processing,

**Michael Porzio:**

That's right, I don't think we talk about that last time?

**Derek Geno:**

I don't think we did.

**Michael Porzio:**

Yeah, so Jim (Berry), post processing is when you do additive manufacturing. That's where you put material together. You building up layers like 3d printing. The parts aren't always perfect when they're finished, so post processing allows you to get them. Dimensionally accurate. So it's like, you, you go in there and you machine off like burrs and little inconsistencies, and get everything nice and smooth and ready for production. Yeah, we don't have any availability to do that currently, but it would be interesting to do post processing. That's something we could do even with our current generation of machines, because we could take 3d prints and put them in the CNC machine and mill them to spec. So that would be cool.

**Derek Geno:**

That's a great point. Businesses don't factor that into their workflow when they're thinking about adopting, well, for what we were doing, a large format 3d printing. So that's like an afterthought that like, if you ask them, you know, a couple of years down the road, what would you do different, right? If you had it again.

And I think that's a biggie. Yes,

**Michael Porzio:**

Yep, I agree with that. And since these companies that are adopting out of manufacturing are going to learn the lesson one way or another, having our students prepared to know how to do that process is only going to, you know, help them going forward, because they're going to end up in in the work world where a lot of these companies are just dipping their toes into additive manufacturing is going to use post processing. So, yeah, perfect. I like that. All right. Let's see what is next. Here. We talked about equipment, software. I need to get more seats of fusion, 360 I only have, I think, one seat, and that makes it hard to train multiple students on it. So that I put down on my list. I thought, I thought I had a bunch of seats, but I actually only have one. I have plenty of SolidWorks. So these are CAD volumetric designing programs that you use for modeling.

**Derek Geno:**

Have you gone down the road of a daxis or the who was that other company? It also started with an A one was the French company.

**Michael Porzio:**

Oh, God, I can't remember either. I know it was like a DAX Yep.

**Derek Geno:**

Would they? Would they do you a solid and and get you some seat licenses, academic seat licenses. Mayb?

**Michael Porzio:**

That's a really good point. Yeah, right, yeah, yeah. I'll make sure to, I'll reach out to them, because, as always, these companies, they want students to learn on their program, so that then moving forwar.

**Derek Geno:**

We had a really good relationship with them. It's the French company that I went ot FomNext Frankfurt with those guys. Okay, it was AIBuild. That's Yes, yep, build and axis and Sean was very opinionated about each one,

**Michael Porzio:**

As Sean was always with everything.

**Derek Geno:**

But that would be, that would be huge, Righ?

Right, Yep, I'll definitely call out to them, reach out and see. I'm sure they'll have some sort of

deal, because it only benefits them, right? And on the topic, you brought us into topic eight. The final topic I have on here is, what is your opinion on AI moving forward in advanced manufacturing, it feels like as this year has unwound, more and more, do I see it popping up in trends? So what is your opinions? I'll start with you Jim,

**Jim Berry:**

You know, to be honest with you, I couldn't give you an answer that would be anywhere near what you guys know, sorry, I think. But I think anytime you can offer options and things like that, yep, it's definitely worth okay.

**Michael Porzio:**

Do you think AI has a place in the classroom?

**Jim Berry:**

Oh, yeah, yeah, okay. It's gonna be here. It's gonna be here. Yeah, matter what field you're in, right which I feel like we either prepare or we get left behind.

**Derek Geno:**

I don't know if it's good or bad. I really I'm with you, Jim, I just don't know. I think to maybe see a positive in it is going back to what we were talking about earlier, with the shortage in in the workforce, like people who are trained AI, can kind of fill that void, but I don't, I don't know the reach of what it's gonna be like. I know that could be any of us do.

**Michael Porzio:**

Yeah, it's, it is definitely a scary existential wave coming, and I guess all we can do is be flexible and just try and prepare our students to adapt, or at least understand, right? Because knowledge is power.

**Derek Geno:**

Well, it's too bad Jim's not on here from ABB, because I'm sure he would have an opinion about that. And you know, ABB is the 800 pound gorilla in the robotics world, yeah, I'm sure they're, thick into AI,

**Michael Porzio:**

Yep, yeah. I was just reading a manufacturing article about Microsoft who has released a multi access robotic arm that has an AI inside. Installed in the arm itself, so it's not like an external AI, and it watches what it's doing, and it will make changes to its own G code in order to optimize the part making so like it. Because, of course, when we designed the G code, that's the path that the robots follow to do their job. When we design that path, we just design whatever path makes sense, but we don't often go back in there and optimize it endlessly, because we're not just sitting around and watching all the code run right. But these things are, so they can do, oh, maybe it actually makes sense to start on side B and then flip the side A and move from this way to that way. And these things are improving the speed at which they can machine apart or 3d print apart, by like 20% over just the course of a couple days of running them. And there you

go. Productivity, right? Increased productivity. So, yeah, I'm gonna have to, I'm gonna reconnect with Jim Mail, because he'll have a whole bunch of useful stuff to talk about. So I'll add that onto this as well afterwards, if I can get hold of him. Yeah and Mark and Mark?

**Derek Geno:**

Yeah, yep. And Mark, yeah.

**Michael Porzio:**

Yeah, okay. Between the three of us, I think I ran through all my questions. I hope I didn't rush through it. But is there anything either of you would like any questions you have for me as the instructor in this class, clarifications, any Way?

**Jim Berry:**

I can help you know through administrative process, please tap into it and will do

**Michael Porzio:**

Thank you. Jim  
As well as. Derek,

**Derek Geno:**

Nope, nothing here. I love what you guys are doing down there. Keep it up. Cool, setting the future.

**Michael Porzio:**

Cool. All right, great. Thank you, both of you.

**Jim Berry:**

All right, cool.

**Michael Porzio:**

Thank you.