

AACC SEED Center Webinars

Transcript of Webinar

Sustaining Clean Technology Workforce Education

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BRIAN KEATING: Right now, though, I'm going to turn things over to Todd Cohen to kind of kick us off. Todd is with the American Association of Community Colleges. And Todd, I'll let you kind of take over.

TODD COHEN: Thanks, Brian. Welcome, everybody. How are you? Glad you're here today. Again, this is Todd Cohen. I'm the director of the SEED Center, which comes out of the American Association of Community Colleges.

I think most of you know SEED. We are about 466 college center – 466 colleges that have taken a pledge to educate for and build the green economy. These webinars are something we do on a monthly basis, so I'm happy to have you here today.

And we've got a good one. We'll be looking at ways that colleges – one college in particular, really, are keeping their green-focused workforce education programs alive, talk about some of the steps that they've taken to get there and some of the best practice I think are applicable to what a lot of you all are going through as you – now, I know you're doing this – just sort of taking a step back and looking at the viability of some of these clean tech and other green programs that you've put together over the last couple years.

All right, moving on here. So just a couple – let me just frame this a little bit. It's a timely topic, I think. Stimulus funding, as you all know – and we've estimated it to be about 1 ½ billion (dollars) that was particular to green training – was spent. It's dried up. Thousands of new courses, revised programs have been put into place by community colleges.

What we're really interested in now is really taking a look across the country at, you know, how these programs were started – how they were started as, in many cases, sort of small grant-funded courses or programs, and looking at how they will sustain over time institutionally at the college, so as part of either a credit-bearing program or through other avenues. And we've got a great college that we wanted to spotlight today that's making some real headway here, Skyline College in California.

The energy program that was started in 2007, I believe, was really a single solar installation course with a very modest grant at the state level, and over time, over just a few years now, through partnerships, through some strategic institutional decisions, they've built that up into 19 courses over three program areas, taught by more than a dozen faculty and – many of which from industry.

And green and clean technology has really become part of what the institution does. It's green – not a – not a flavor of the month and not something that's about to die but something that will continue over time as a real winner for the college, and with some great outcomes for students and for industry. So we've got some great speakers today, and let me introduce them real quick, and then I'll turn it over to our experts.

But Ray Hernandez is the dean – science, math, technology at Skyline College. And he's going to provide sort of that overview, that strategic institutional overview perspective on courses, course sequences and how these things are sort of kept alive on grow over time.

Aaron Wilcher, program coordinator at Skyline College – program coordinator for environmental technology at Skyline College. And Aaron's got a master's degree in city planning, community economic

development from UC Berkeley. So he's done a lot of work in clean energy workforce development, education, economic development, so just kind of seeing the (string ?) and the tie between all of those.

And Celia Canfield, founder of EcoVertex – Celia is a marketer with over 25 years of print and Web publishing experience. And she has built a very successful content creation agency, the co-founder, and she started her own marketing consulting firm after EcoVertex, and – clients such as Apple, Cisco, Microsoft, McKinsey, IBM and so forth. She's also a teacher. She teaches a Skyline course, "Effective Green Business Marketing," and she's a critical part of the program at Skyline.

And then finally, Ed Thomas, executive director at UtilityExchange.org – he's a VP for the utility and government relations at the Electric and Gas Industries Association, and Ed's responsible for the design and implementation of their utility- and government-sponsored programs. He's got a lot of experience in home energy – energy-related organizations, working with contractors, energy efficiency, renewable, et cetera. And he also teaches at Skyline, "Fundamentals of Home Performance Business Planning and Management," again, a critical part of a strategic team that helped build these programs.

So I'm going to turn it over to Aaron, is that right? Or Ray – and again, appreciate all of you being here. And then again, to the – to the folks in the audience, please – we're going to get to Q-and-A at the end. We'll have plenty of time for that. But feel free at any time to post your questions so that we get to them when times are right. So thanks, Skyline. Go ahead.

AARON WILCHER: So Aaron Wilcher here. Thanks very much, Todd. We're celebrating a post-election year. And you know, I think for everybody on the line, including ourselves, we're certainly interested in seeing some additional funding come through.

But I just want to kind of give an overview of what we're going to talk about here today. And really, our goal here is to provide a story about how we take in our momentum and capacity that we've grown in the last four or five years that Todd mentioned under federal grants and how we're institutionalizing the programs, which involves, you know, quite a number of things, culture, leadership and administration, you know, industry engagement, project management in this whole process to engage faculty, and then just what's gone on on the ground in terms of curriculum.

By and large, what we're talking about here today is for-credit associate's and certificate programs. Not-for-credit's a hot topic, as is contract education. We're not talking about that in the presentation, but happy to entertain in the Q-and-A, because that's another important way we can sustain our programs. So this is really a story about credit programs and how to – how to take – how we've taken our programs from grants and are going through the process of institutionalizing them.

So Ray is going to take the college leadership culture and mission, talking about the landscape of the college and the district. I'll talk kind of about the process of getting curriculum design and project-managing this, stewarding it through. Ed is going to talk about how we've engaged industry from the energy and construction sectors and what we've learned from them and how that process went. And finally, Celia will talk about the results of that and how we've, you know, really taken kind of a strong business performance and entrepreneurship focus, combining business with our technical programs.

So with that said, I'd like to turn it over to Dean Ray Hernandez.

RAY HERNANDEZ: Great. Happy Wednesday, everybody.

As Aaron said, my name's Ray Hernandez, and I'm the dean of science, math and technology. Just to give a historical perspective of who I am, I've been in this role now for about a year and a half, and I – prior to that I'd been a faculty member in a career technical education program, actually health care. And so I kind of stem through graduating from community colleges, working in industry and then connecting overall to the community college system and really kind of growing up professionally in academia. Never thought I'd do that, and it's really been a kind of a great pathway.

So let me tell you a little bit about Skyline, just so you get that flavor. Overall, we are located in the San Francisco greater Bay Area. We are just south of San Francisco County, and we are a community college district that has three different colleges. That's Skyline College, which is in the most northern part of San Mateo County, and then just south of us is San Mateo Community College, and then south of that is Canada College.

And so in the Bay Area, we do have quite a few community college districts, and one of the things that we do is we really look at seeing how we can provide for our communities in terms of education and job placement, but also look at what is being offered across the Bay Area and really complement what we do with each other, as opposed to compete with each other. And so that's really one kind of strategic way that we look to develop programs and be able to institutionalize them once the grant funding runs out, as I know many of you kind of follow through with.

The district serves – I think we're almost up to about 30,000 students overall, and Skyline has 10,000-plus students. We offer 42 associate degree programs and 52 certificate programs.

So one thing I was asked to talk about is really, OK, we're developing these programs and, you know, as the dean of science, math and technology and a strategic player, you know, how are we going to move this from grant funding and institutionalize it into our regular curriculum? And, you know, that certainly has been a challenge. I think we have some strengths here, and will continue to be some challenges that I'll talk a little bit about.

But what I wanted to start with was really how we really frame anything we do here at the college. And so we're really looking at our mission, vision and goals. We are going through WASC accreditation right now. And just last semester, we looked at our mission and we've really redeveloped it. So it's really a new mission statement that we're using. And you can see it's very broad: To empower and transform a global community of learners.

So it really speaks to many things that we do and specifically to the green energy programs that we're looking at. You know, we're wanting to meet needs of our community but also help to vision with our community so that we can meet industry workforce demands and really help develop where green energy is going in the Bay Area.

So with that I've given you kind of a laundry list of just some of the things in terms of strategic priorities that we are looking at, OK? And so if we look at that, we're workforce development. We're actually creating this center in terms of workforce development. Like many of you, you know, we're looking at all

grants that could apply to create funding for the college, but we're very strategic in looking at those grants that really meet the mission, vision and goals of our college. And so certainly green energy in the area that we live in really fits in very well.

We're well-connected with our business and community relations, so we're always looking at partnering with our community and really helping to meet the needs of that community. As we look at the goals of our college, we're always trying to connect not only to our mission but what those specific goals are. So I wanted to share with you a couple of the goals that we have.

And so for California community colleges, there are three basic goals that we all look towards. And that is basic skills, transfer to four-year institutions and career technical education. And in many community colleges, the kind of academic side of the house just kind of siloed where people think, you know, transfer's one route and career technical education is another route. We don't see it as that. And kind of a historical framework of how divisions are set in terms of academics – many times a college will have a division of career technical education along with that leadership in that area.

Skyline doesn't do that. We've never done that. We've actually had our career technical education really infused in all parts of the college. So examples are that in the division that I oversee, science, math and technology, we have all of the allied health programs that are career technical education, we have telecommunications in this area and of course now the green energy programs. If we look at social science, creative arts, they have administration of justice and other career technical education programs. And then business, we have automotive and cosmetology.

So they're really scattered all over the college. And in that really, that really infuses not only transfer level but also how career technical education fits into that. So I think it's a really great model that really helps those discussions and support across the colleges.

If you look at that laundry list, towards the bottom is sustainability. So right now we're in the middle of revisiting our educational master plan. And in that we are very intentional in creating a sustainability portion and a focus of that. So of course the green energy programs fit very well into that, but not only the program itself, but sustainability in terms of how we look at our facilities. And we've been very fortunate over the past decade to have our county support three bonds in terms of revitalizing and revamping our facilities, current structures and new structures. An example of that is the last building that went online, which was last year, is LEED-certified. So as we look at those things again, you know, all of our conversations really include that sustainability and the green issues surrounding that.

So how do we get to the next step? So we've been in grant funding for over five years now to build this program. We've already exhausted one grant. The next and really final grant that we have will expire next summer. So we're now moving into the next phase and over the last year have been having really focused discussions in how we do that. So I guess one strategy I would encourage all of you to do is really not wait till all of the grant's just about gone – what do we do now – but really have that conversation from the onset.

So how does that happen? I think first and foremost, it happens with the support across the college and the district. So our administrative support – I think we've been very fortunate to have key high-level administrators who have been involved in career technical education and workforce development. Our

current college president, Regina Stanback Stroud, has been a dean of workforce development. She actually had gone through career technical education and was and still is a nurse. Our vice president of instruction, who just retired, has been a respiratory therapist and heavily involved in career technical education. And then for me, I have been a faculty member in career technical education.

So we have those folks who strategically are in place who really understand the needs of career technical education. And how they – we need to develop the programs not only to meet workforce needs, but also how it infuses into our general academic programs to transfer. So we're always looking at that initiative.

And a goal that we have is to increase the numbers of degrees and certificates. So any program that does that we're certainly wanting to move forward.

The community advisory boards – Aaron will talk a little bit about this, but essentially it's crucial to have that advisory board that is active and very representative of the needs of the community. And I think that is going to be a big help to institutionalizing and keep continued support.

And then the other piece is really our district board. We have been in contact with them and are always providing updates so that they understand what is going on and they see the need and are asking questions and are involved in the discussions as we're looking to institutionalize.

The institutional directives and initiatives – innovation is a priority, so we're looking at that piece and always looking at anything that's innovative to move forward. Our strategic plan includes many of the things that I just talked about, and I've already talked about the certificates and degrees.

The last piece there I want to talk about is the career advancement academies. This is a college – or a statewide initiative here in California that is really looking to couple basic skills and create pathways and stackable certificates to meet workforce needs and also to transfer. And so we're looking at these green energy programs as yet one other opportunity to infuse those.

Program establishment: the plan we are now – right now working on a three to year – five-year plan. And the big piece to this is we know that we need the support to ramp it up. We found in other programs, where we'd institutionalized them moving from grant funding to general funding, there is a lapse between getting the enrollment and having these courses and these programs vibrant. So we have support in knowing that our enrollment may be low at the beginning, but then we'll ramp up, OK?

And then the needed resources: the grant has really helped us to the – to develop the infrastructure in terms of facilities and the current program faculty that we have that Aaron will talk about.

My time is running out – (chuckles) – so I'm going to be quick about this last piece. But our needed resources: champions. Aaron Wilcher, who will be talking with you, he has been a full-time faculty member who has been dedicated to really work and bring all these pieces together. And I think without his leadership from a faculty standpoint and a coordination standpoint, I think we wouldn't be as far along as we are now.

And then I talked about some of these other things. One of the things that we do know as we move into regular enrollment, that we need to carve out some coordination time for those faculty members who are going to be running the programs.

And with that said, I think that I've talked a – mostly about that kind of context as we move forward. So I'm going to turn it over to Aaron Wilcher. I'm going to be sticking around and be happy to answer questions as we move forward. Thank you, everybody.

MR. WILCHER: Thanks, Ray.

Just as a side note here, these pictures that you're looking at here is representation of kind of campus or collegewide collaboration between career technical ed, workforce development and the department that's emerging in environmental technology. I mean, this photo here, that's Ray there on the left, Anjana Richards, the director of workforce development, in the middle, and then Bruce Greenstein, our lead faculty member in energy efficiency standing in front of a new energy efficiency test house that we opened in March. So just kind of representing that message that Ray's talking about, collaboration across the college, CTE workforce and the department itself.

So I'll kind of launch in here and talk about the grants that we receive, the federal funding that I mentioned. We were the recipients of two Department of Labor community-based job training grants that Ray talked about. And so, you know, those contributed a significant amount of investment to the college. These are programs that you're all familiar with, similar in design, regional partnerships with other colleges and workforce investment boards.

The Bay Area Clean Energy Careers grants enabled us to develop curriculum in solar installation, photovoltaic design estimation, sales and finance as well as energy efficiency and home performance curriculum. The Home Energy Retrofit Occupations grants that Ray has said federal grant money that's going away next summer – this is really underwritten development of our home performance curriculum as well as some of the business courses that Ed and Celia will talk about in marketing finance, sales and management. So I'll just quickly mention that in terms of what has sponsored a lot of this work.

With grants, I mean, comes a lot of challenges and opportunities. Of course, with Skyline, what we've been able to develop with this funding as Todd had talked about was, you know, now engage more than 12 faculty members. These are workforce training programs, but we hired all of the faculty by and large with some exceptions as adjunct faculty. We're actually now in the neighborhood of 24 to 25 courses on the books. All were run through – curriculum committee has four credit programs – again, with some exceptions and not for credit. We've become a testing center for building performance institute. We have napstep (ph) testing, high school and community-based organization networks with articulation agreements. We have a partnership with our local utility to offer for-credit courses that are taking place at the energy centers, at the utilities. And, you know, as Ray mentioned, a college sustainability planning that's really now a growth of the program management for the grants. So lots of opportunity; lots of capacity-building.

Challenges, of course: You know, how do you – and many people have experienced this – how do you predict or project what skill needs will be? LMI isn't perfect. As one economist I recall said, you know, all economic projections are wrong. The amount of lead time it takes to ramp up these programs with –

you know, at the macro level, by the time you get to curriculum design, the economy is totally changed from your proposal.

And then these are one-off – I mean, it's important to note, this is one thing I'm going to talk about right now, which is, you know, really the difference between designing a training program versus designing a for-credit degree program or certificate. Under the training programs, you get, you know, sort of one client, one class. And you're designing a curriculum to meet some – you know, not to put it negatively, but a narrowly construed occupational focus; you're going to train an solar installer, you're going to train an energy auditor. Designing a certificate or an associate's degree kind of get a hedge against economic projection by being able to design groupings of courses to train for transferrable skills, to train for soft skills, things that employers constantly ask about.

So, you know, really this slide – the point that I want to make here is that there is a number of ways that we anticipated going for-credit, going the institutional route as we're designing a workforce training program, even though they're one-off. So there's not really a clean division between designing, you know, a short-term course as opposed to designing a full – a full-blown program.

There are some distinctions. As I mentioned, all of the courses by and large – I'm going to guess about 90 percent – went through curriculum committee as experimental courses. Not every college has that ability to turn those around quickly, you know, which is why people do not-for-credit stuff. But we're – we just in a unique position that we can do that.

Because we partnered with the workforce investment board to a lot of recruitments under the grant programs, we're looking at pathways really all along, what skills will make people most successful in the job market after getting the training. And so we're thinking about these pathways as we're doing kind of the one-off training design that's enabled us to think about these in the kind of bigger scale.

Industry advisement's been critical. And as was mentioned, most of the faculty are coming directly from industry.

Other things like, you know, having to adapt to the marketplace, which is part of the impetus for doing business performance courses management, marketing, sales, finance, along with the technical skills, was something that, you know, forced us to kind of adapt.

The graphic here is basically just showing a program design. It was done at a faculty retreat about a year and a half ago. So, you know, that was under the grants, and we've been anticipating this really all along.

So this slide really represents kind of my job, which is, OK, we had all – we had all this capacity-building, we had all these courses, we hire all these faculty, lots of momentum and support from administration. But, you know, guess what, the money's going to run out. And we've been thinking about this all along; it's just the closer we got, the more of a front-burner issue it became.

So how do you take what is kind of a melting pot of stuff and put it into some kind of a coherent program pathway? Well, then – therein lies the kind of project management piece, which is, you know, what is it

that you need to do to then have the application that you're going to submit the chancellor's office if your goal is to sustain your programs through, you know, a degree and a – and a certificate program?

So for us, this really involved kind of a handful of things. On the front end, doing research, we commissioned a study to look at programs nationally and regionally, asking that existential question, you know, who are we, right? Who do we look like? What flavor of program do we desire to be? If we're 14 years old, you know, we want to be – we want to be more mature and, you know, move out of that adolescent phase. So doing research, engaging faculties.

And industry is kind of another piece of this. So learning from industry what they're looking for, not at kind of the micro level of, like, you know, how do you do an energy assessment, and what does an energy auditor do, but where is – where is the sector going? And Celia and Ed'll talk about that.

Engaging faculty is an important part of this. And then finally, you know, a lot of this is being driven by curriculum committee deadlines really in terms of when we're going to submit.

The last thing I'll say here before moving on – I know we're kind of running long here – is engaging faculty, we've done this by putting them into working groups based on sectors. So there is Ed and Celia working on business performance and small business management entrepreneurship; Bruce (sp), Laura (sp) and Peter (sp) working on home performance and energy efficiency; Omer (sp), Peter (sp) and Doug (sp) working on the solar side of the house.

One of the key points I'll make here at the end is a major challenge of doing this under grants is your faculty, by and large, I would imagine, are not getting together. And so when we started to do this, one of the amazing things and most simple things that happened that created a lot of synergy was just putting them all in a room. That really hadn't happened before. So I'm going to stop there. I'll make some notes here at the end. But I think with that, I would like to turn it over to Ed.

ED THOMAS: OK. Hey, thank you very much.

What I want to do is talk, again, from the outside-looking-in perspective of being an adjunct, you know, professor at the college and helping, you know, as a sort of a consultant in this curriculum development, and the role that Celia and I played in trying to bring together the outside industry. And this is a photo of one of those advisory sessions and some logos of – NASCAR logos – (chuckles) – of some of the folks that participated.

And this was really an opportunity for Skyline College to validate what they thought they already knew about the industry and really get – ask these folks to kind of assess, are we going in the right direction; you know, stop us now before we build this thing because if we build it, will you use it, and then not the least of which, if we build this or as we build it, how could you help us in this process to be sure that we bring – we put out students that you would want to hire, which really kind of got to that – (inaudible) – concept of understanding the market need.

So we pulled together an industry advisory group. We followed – for those of you who are familiar with DACUM (ph), we followed the structure of that approach, largely to make sure that we were finding – we were going to get input that was actionable and that we were going to get input that was consistent with

a process and a structure that the college was already familiar with in a curriculum development kind of way, but also so that from the industry side, we weren't going to waste their time and that we were going to engage them at a high level to help us understand a cross perspective – a cross-industry perspective but also a cross-industry and academic perspective.

And I've got a bullet here around smart grid and those sorts of things, and I think it really gets to really our survey results. We did some extensive surveying of people beyond those that were in the advisory group. And then when we brought the advisory group together, we asked their help in interpreting what the survey results said. And we asked an extensive amount of information. But let me take you through just a couple of slides so you can see the kinds of questions that we asked and the kinds of input that we got that we expected to get, and some things that we didn't.

So when we asked folks around various sectors, frankly, candidly, we were looking along sort of silos perhaps of energy efficiency and solar. What we got to really quickly was discussions around the smart grid and electric vehicles and water and some sorts of things that maybe – that they saw as commonalities, as a convergence of issues that we weren't necessarily looking at, or worse yet, we were looking at electric – the college was looking at electric vehicles along the lines of an auto repair kind of issue rather than an – a utility or energy infrastructure kind of issue, which is where industry was – that was where they were putting it. So that was just one place where a smart grid and those sorts of things, smart meters, came to the forefront as an energy efficiency issue that we needed to talk about that maybe we weren't otherwise prepared to.

By the same token, when we talked to them about job functions, we talked in terms of folks that would go out and install solar panels or folks that would go out and assess buildings. But they were just as quickly to come back to us and say, no, of equal importance is being able to understand and apply technology wherever it goes and being able to manage the project and sell the project, which Celia will talk more about. But they were quick to, you know, help us understand that that job function is much more than bolting on the panels or, you know, understanding how a broad – how a building is insulated.

And another example of the kinds of things we asked (were this, you know, place here around ?) – now, we asked them about leading activities across different market segments. This is just one in residential. And again, what bubbled to the top pretty quickly was – and not so much about, you know, you've got this house, and you're teaching people how to – how to insulate it, but are they – do the students understand how to finance it? How the deal goes together was of equal importance. And again, electric vehicles and smart business – building automation systems came to the top when they said those are the kinds of activities that they see that were going to drive the employment needs of industry that we needed to take into account. So very, very insightful for us. And so what I want to do is then turn it over to Celia to talk about how we integrated that into the curriculum.

CELIA CANFIELD: So for Ed and me, what we heard was not really surprising. But I would say that the pleading from both big companies and small companies that these were the four key areas for us to really make sure that we were educating and training students, I think, was a surprise to us.

They talked a lot about their ability to really train in the finer points of the technical areas, and what they really wanted us to do was to ensure that the new employees that they would take on would have the soft skills that they needed to succeed. They reminded us that business is complex in this environment,

and in any industry where you're seeing convergence and evolution that academia needs to understand what emerging markets are and really know the dependencies and making sure that we're creating a student pool that they can turn into highly effective employees.

Clearly, we need critical thinkers. This is an emerging marketplace that requires a lot from their employees, and certainly from the students, that's not necessarily written into, you know, books at this point. So while we're doing that, they also said don't forget to make them highly collaborative and able to work in teams. So when we looked at what we could then do to really drill into those soft skills, we came to appreciate that the – what they were talking about was a way of thinking that we know is systems thinking, that they really needed to know how to do the research because in an emergent category, you don't have sort of tried and true case studies, and oftentimes they're creating their own, that everybody who touches the industry at this point in early adopter land will certainly have to be customer-centric because you have to answer a lot of questions where consumers are just getting educated, that teams are oftentimes not congealed at companies, and so we need to make sure that the students we turn out are able to be part of a highly – an effective collaborative scenario.

And finally, they really wanted us to make sure that while we're turning out technically astute and trained students that we also make sure that they had some business knowledge, so really think about it as a modern version of a Renaissance worker.

Again, we drilled into the research. And this is a very dense – (chuckles) – and very technical chart here, but you'll find some of the skills that they found important. And rather than belabor it here, I ask all of you to go back and look at it, and I'm sure Aaron will make any of the raw data available to you all.

So as we then advised, Ed and I particularly, and certainly in concert with the adjunct professors who are teaching the technical skills, we had to ask some really hard questions. And these are the kinds of questions I would posit that all of you need to be thinking about. And first, you really need to make sure that are we using all of the materials that we have in the business department to be effective, because what we're turning out are a bunch of small business and entrepreneurs in an emergent category. And until there are lots of – a lot more big players than there are, they have to be hand in hand promoting, creating business leads and so forth.

So we know that social media and psychographics and all of the localized marketing has to be resident in these students regardless of whether they are in a business track or in a technical track. You have a lot of home proficient – or home energy contractors who are really dying because they're not highly effective marketers.

We also know that we need to get into more business fundamentals that teach exactly what the advisory group told us about, and that's project management and collaboration.

We also wanted to make sure that we were listening to the trends that were seen in the emergent category. We in the Bay Area are sort of aware of what it looks like to be an incubating field, whether it's been technology or in dot-com. We know that we're in an emergent category and that it's high-growth emphasis that we need to pay attention to.

We also think there's much to be learned from cross-pollinating so that we don't create another silo. We want to make sure that we get the best business practices from any business, industry or sector, wherever they are.

And finally, to the point that Ed's made and certain – and Aaron has referenced, and that is training up vertical students at this point doesn't do anyone any good in the broader sense. And so we want to make sure that they get good business communication skills, basic math skills and learn project management at the same time that they're getting technically trained.

So Aaron, I'm going to let you take back over and talk a little bit more about what that yielded as far as the sort of grid that we have showing us or showing on the screen now.

MR. WILCHER: Yeah. So that's – that – Celia, that's a great segue here, and I'm going to try to wrap up here as soon as I can, so we have time for Q-and-A. But there's a few points I want to make about this slide, which is kind of where we are today and an interpretation of basically what we're going to submit for our associate's degrees and certificates now that we've kind of come out on the other end of this whole process of engagement, working with faculty and industry for designing the programs.

Where we're at now and, you know, how this design works – the three tracks really reflect kind of a sector-based approach, of course, for these three areas, having, you know, pathways for all skill levels, if you're starting out from scratch or you're an electrical contractor or you're a marketing consultant – you know, how you could come back in at different levels that make sense for you, the stackable credential model, of course.

The important thing to note here, I think, or one point I'd like to make is really the strong integration of these soft skills, these business, project management, finance, sales, marketing skills throughout – both in the core curriculum, electives and also the ability to kind of cross-pollinate between these three – these three tracks, because convergences are here. They're coming in greater amounts. So it's that emphasis of not taking a vertical approach but encouraging kind of cross-discipline in approach. And I'm a recovering liberal arts person, by the way, so that's interesting for me.

But I think the other thing here is noting the capstones that – you know, other things we're hearing from industry, of course, that – you know, that emphasis on hands-on approach, internships, attacking case studies that are, you know, handed to us from industry partners.

So we've created an ability to do special projects like that as a capstone course, creating a portfolio piece, engaging our industry advisory council that consists of now more than 20 members.

The other thing is, you know, capping it off; if you're taking the entrepreneurship track or you're interested in starting a small business as a – as an energy professional, that, you know, we're going to be able to do a business plan and present that in front of members of industry as a – as a capstone approach.

So those are things I wanted to emphasize here, and with that I'll just kind of wrap up and turn to the best practices and lessons learned. I mean, I think we've really kind of been through this story that we have from – you know, with regard to this being kind of really an institutionwide – at the college and

district level involving workforce development, the senior administration, sustainability planning with the campus master plan and so forth.

We've talked also about, you know, the importance of engaging industry, you know, having them involved, I think, at the level of reviewing curriculum, contributing faculty members and, you know, really just getting their buy-in in terms of what eventually will be and has been, under the grants, the job development and recruitment. So that's been key.

I think, you know, there's this strong emphasis – I'm not going in order, necessarily, here but there's a strong emphasis on, you know, kind of pushing back against what workforce policy has asked us to do, which is sort of designing curriculum in a vacuum based on kind of supply-demand simple economic calculations – you know, measure your skill supply, measure your skill demand, you know, one to four years out, project it and then insert a widget of training in between, you know. And that's kind of the Thomas Friedman pundit line on "Charlie Rose" or whatever, and you know, the world's a lot more complicated than that, as we know.

So I think the ability to kind of design pathways – I'd take a more transferable approach, look at interdisciplinarity between verticals in the energy field. That's really what we're after. But hey, if you're an electrical contractor and you want a BPI certification, we can do that too. So I mean, I think there's a number of different ways to do this.

We didn't talk about not-for-credit. We could handle that in Q-and-A, if that's of interest to people. And you know, hey, I got on my soapbox about workforce policy.

I think the last thing is, you know, there's been some kind of unanticipated strong allies, and boy, it's sure been a lot of fun meeting folks like Ed and Celia to really take leadership and ownership over projects that we've been working on here as part of this effort. And you know, it's – it – I mean, that's been really key, and I think that other piece about getting faculty in the same room, because if you're doing a one-off, not-for-credit, parachute somebody in, you know, people will talk about how the types of workforce training programs are of benefit to the institution, but gee, I wonder.

So hey, we've run long. I'm getting the – I'm getting the warning here. And so why don't we move on to Q-and-A, and of course there's my contact information there and so on. But you know, we can take it from here.

And I don't know who takes over at this point.

MR. COHEN: Yeah, it's me. It's Todd. Thanks to all. Great stuff. Appreciate it. And great way that you've sort of woven in everyone's perspectives here. That is a lot to chew on in there. I think there's a lot of questions. Please start posting them, folks. We've got a couple.

Before we get to them, let me say a couple things. You know, we've got – at AACC, we've got a new report and a new tool out there that we'd urge you to take a look at. We released it a few weeks ago. And it's really taking a look at it nationally. We've looked at a lot of different colleges and what it takes to put together a really great quality green workforce and economic development program together, and we developed a useful online free tool we hope colleges will take a look at, really to look – to assess

yourself, how well you are integrating some of these things that Skyline's been doing and where you can prioritize future resources.

And then I'm going to put a plug in – (sneezes) – excuse me – for what I think is probably now –I'm biased, but it's probably the best one full-day training course aimed at community colleges, particularly workforce VPs, dean's program coordinators on green clean technology. We bring in some of the best colleges and really have a down and dirty discussion about some of these hot topics and how to address them. And you become part of a sort of network, a cohort going forward. So I urge you to take a look at that and go to the SEED Center for more.

So let me – with that, I'm going to open it up for questions and again urge you to post yours as well on here. So let me – let me start off, though, first with just this one, which is – (sneezes) – excuse me – you talked about some of the companies that you brought to the table that were an active part of the process. I'm wondering now if you could talk a little bit – and maybe, Aaron, start with you – but about the contributions that you're seeing from companies, obviously prime. But in terms of equipment or other things, are you starting to see companies more willing now in your networks here offering up resources?

MR. WILCHER: That's a great question. Things are getting better, of course, here in Silicon Valley, you know, that – the tech sector hiring a lot more, unemployment going down. So I mean, I think that's emblematic of participation.

PG&E, our utility, which is the largest utility in California – Ed, correct me if I'm wrong; I believe that's true – you know, has significant, as with other investor-owned utilities in the state, significant education programs. They have as part of their workforce development mission a community college and community-based organization network called Power Pathways. That was set up kind of as this, you know, workforce training to support their HR; however, that's kind of taken more of a turn now of – you know, let's call it the Thomas Friedman, you know, Barack Obama community college model of partnering to support curriculum development and other kinds of things, like, you know, supporting just bringing third parties to the table to learn about what they need for hiring and so on.

That's soft. That's not necessarily like, you know, hey, I want a donation – although that's coming, right? So, you know, bringing folks in first at the level of, you know, hey, would you like to be on our advisory board, but then, you know, continuing to engage them, asking if they'd like to contribute to reviewing courses, asking them if they'd like to teach, you know, and just – but, you know, as a value proposition of, like, hey, this is not just me asking you for your time, but this is going to support you in your network, your hiring needs, supporting the community and so on.

So always looking for ways that I can offer resources to them as well, but there have been all those things, Todd – donations, grant support, in terms of writing letters, making contributions of in-kind – and then, hey, we're out there making meetings to them too to see if we can do contract ed and other ways of funding their kind of training needs, however that might take shape.

MS. CANFIELD: Todd, this is Celia. One of the things I can add to that is, during the advisory process, we came to appreciate from the advisers themselves that they wanted to be part of helping to train these students. And so one of the big solar companies in the room said, hey, we will give you case studies that

your students can work on; it's a win-win for us; it may lead to an internship; but we want to be an active part of helping to kind of craft the curriculum in such a way that we can get better employees from the outset.

So we expect to take full advantage of all of that from , you know, all of the advisers. And we'll be asking them to participate in judging the business plans and, you know, helping to provide the content for the capstone event. So it will start to look very fluid as you look between the academia setting and then the sort of migration into business itself.

MR. COHEN: That's great. That's great. Very comprehensive.

Let me -- somebody asked this, and I'm going to broaden the question a little bit, but so -- we have kind of a touched on this notion of collaboration, particularly among schools, community colleges in Northern California working together so you're not bombarding businesses, you're not -- there's no -- there's little overlap in terms of curriculum. So let me ask you to touch on that, but also, any collaboration with the universities in the area, particularly articulation, engineering programs, things like that, from your green-focused areas.

MR. HERNANDEZ: Ray Hernandez here, dean of science, math, technology. So, you know, our focus has been to really get the career technical education portion set up. But as Aaron had mentioned at the beginning, Skyline, when we create courses, we want them to be for credit. They are transcribed. They're meaningful. So, many of the courses that have been developed have maybe CSU applicability.

We haven't started the discussions with four-year universities as of yet about transfer in engineering. We're, in parallel, also developing an environmental science pathway. So we have a career technical pathway -- that's what we've been talking about mostly today -- but at the same time, we have our academic side of the house, the transfer, general-ed side of the house working on this environmental science pathway.

And what's kind of interesting about that is, here in California there was legislation enacted about two years ago that is forcing community colleges and state universities to really have an alignment with the degrees that we provide here at the associate degree level to the four-year pathway.

And just one quick mandate is that students don't have to put in more than 60 units, semester units, in order to finish their degree and then for our CSUs -- California state universities -- to accept those degrees so that when students transfer and move forward for their baccalaureate, they only will need to complete 60 more units. So there's that pathway running, and right now for environmental science, faculty at both levels are working on creating what's called this transfer model curriculum.

So long story short is there's a lot happening at the state level, and this is an opportunity for us now to integrate our green programs into that conversation and really move forward so that we're aligning with transfer.

The other piece is the grant helped us to do a study at looking at not only the career technical associate degree pathway but looking at the environmental science pathway. So that is also helping us inform us for those pathways.

MR. COHEN: Anything you want to add, Aaron, to that?

MR. WILCHER: No, I think that's great. I think regional planning's always tricky. In this case, you know, I think where – what we've learned is, of course, many of these programs emerge from one of maybe four places – construction programs, electronics programs, facilities, things like HVAC, et cetera. Biology is another one, or let's call it ecology, sort of environmental science. That's kind of a fourth one when we did this stuff. Here regionally, I think where we're kind of distinguishing ourselves in trying to be responsible in terms of not doing curriculum overlap is in taking a strong business management, entrepreneurship approach, also converging the different verticals. And then, you know, of course working with our partner colleges just to make sure that – we're happy to share if anybody wanted, you know, curriculum to any of the courses that we're looking at, you know, more than happy to send course outlines and syllabi. They are in the public domain.

MR. COHEN: Yeah, Aaron, you know – I want to squeeze in one more question here, but let me – to that point, actually – and Celia, it's to you, too, because I think a lot of colleges are really interested in this notion of – (inaudible) – to entrepreneurship and building a strong building presence into the green technical side. So I'm curious if there are things – and maybe there are course outlines or maybe there are exercises that you've done that you're willing to share through SEED that we could post up. I don't want you to answer that right now, but I'm going to – are you willing to put something up that we could share with our 470 members or so?

MR. WILCHER: Anything that we do is in – is really in the public domain, and so the answer to that is yes.

MR. COHEN: Great. Great. So I'll just – yeah, and I think – folks listening, to key and watch for that. It should be great stuff.

Let me just squeeze in one really quick question. Ray, maybe it's for you, but it's – I have to be real succinct on this. But you mentioned – and I think it's so critical – keeping in the name of sort of sustaining these programs. You mentioned sustainability as part of – as a principle that's in the new mission, in the new master plan. I'm wondering if, real quickly, you could just say a little bit about how on the program side that might help give you a leg up on what you're trying to do, and any advice to folks that might try to do the same kind of thing at their college, what does it take to actually get that into their master plan.

MR. WILCHER: So Ray – this is Aaron again. Ray actually just had to step out. But what I can say about that is it's heavy lifting, of course, because, you know, it's kind of – it's a swell of administration that it requires. So they're looking at things, really, like, you know, increasing investment in energy efficiency projects as part of budget priority, but then also engaging faculty around the college, I think, on that note that Ray had brought up in terms of, you know, making investment for people in the English Department to develop, you know, environmental modules, environmental – you know, adding in those themes into their courses.

I think, Todd – I mean, I think it's critical both from a political and administrative kind of support across the college from faculty and administration. But then, of course, you're getting students involved from

places you may never have expected; you know, in computer science or English or – and I mean this is, I think, part of, kind of, a holistic approach of taking CTE And, you know, making it part of CTE – and let's just call it career development in thinking across the campus so that, you know, you can take several different approaches, many of them related. But at some point, I think that's kind of a marketing approach. In other words, as a program manager, you want students in your programs, and how do you get them interested? Well, you can attract them a number of different ways. So I think it's nothing but beneficial and, you know, it helps us not stand alone and makes it more encouraging that we'll be successful in the long run.

MR. : Great.

MR. COHEN: Thanks, guys.

Well, let me thank all of you – Aaron, Ray, Ed, Celia – for your time. Appreciate that. We'll look forward to hearing from you on other topics like this. And thanks for your time. And thanks, all of you for participating. And keep an eye out for the next one.

(END)