

**American Association of Community Colleges
SEED Center Webinars**

Transcript of Webinar

**Community College and Employer Partnerships:
Real Jobs in the Clean Economy**

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BRIAN KEATING: Well, without any further ado, I'm going to go ahead and turn things over to Todd Cohen. He is one of the leads for the SEED Center.

And, Todd, take it away.

TODD COHEN: Thanks, Brian.

Yeah, hi, everybody. Good afternoon. And I guess good morning to some of you. This is Todd Cohen. I'm with the American Association of Community Colleges. I run the SEED Initiative.

And for those of you, you know, who don't know what this is about, it's a really – it's a national initiative to advance sustainability in green workforce programs at community colleges.

And I'm really excited today because we've got a very timely event and topic. We plan these things a month in advance, and it so happens that this particular topic, community college employer partnerships, has been such a heavy focus coming out of D.C., and the Obama administration has shined such a spotlight on the model.

Most of you have probably heard his mention of this explicitly in a State of the Union address, followed by his \$8 billion College to Career Fund, which embeds some of these college-employer partnership principles, followed by last week's \$500 million CEA solicitation out of the U.S. Department of Labor, which has a heavy sector focus and employer engagement piece and requirement in that.

And the fuels for America's future, which Obama launched about a year-and-a-half or two years ago or so, which has a full aim of scaling up models of employers coming together to address a skills gap and then working with community colleges on program design and delivery. So, the concept of course isn't new, but such a bright spotlight, and we're really glad to be able to key on in that today.

And, of course, whenever the engagement model has something to do with a green space, well, that's gold for us here at SEED. That's really what we're about. And today we're going to talk about Georgia Piedmont Technical College and their relationship and partnership with Kele Corporation, which is a global supplier of building automation products.

And, really, their partnership is actually an industry-wide partnership. We're going to talk about all that. And we're lucky today to have Kele Corporation here to talk specifically about how that relationship started.

So, for those of you that have been on these before, these webinars, you know that we usually highlight several different colleges, a few different best practices, and a number of different speakers. We're taking a different tack today just because this model is so rich and there's so much meat on the bones.

We thought we would really lay it out and get into the nuts and bolts so we could figure out how this relationship, these partnerships were formed, how the process works to keep employers engaged over time, and how students are ultimately benefiting on the back end. So, it's going to be a heavy focus on one particular model and then we're going to leave lots of room for Q&A on the back end.



But Georgia Piedmont Technical College is the real lead here, a suburban college out of – northeast of Atlanta. And they built this program in the increasingly complex, increasingly green, increasingly high-tech building automation control industry, an industry that includes the likes of Siemens, Johnson Controls, and a host of the vicinity's smaller and larger suppliers.

GPTC sort of got them in a room together. We identified skills and occupational challenges and gaps, and really, industry-wide, recognized the need for some standardization, particularly in entry-level workers and control technicians, in that area.

And an associate's degree program was born, and it's been wildly successful, especially in light of the terrible economy that we've been in the last couple of years. But in two years I think the program has been up and running. We've got 150 or so students that have been trained, an 80 percent placement rate in the field, and 98 percent placement rate overall.

And that's really amazing, given that I know a lot of you colleges are struggling with the placement piece, especially in the green – in the green industry sector space. And so, you know, really great outcomes for students, and of course I think it's due in large part to the strong industry tie that we have here.

So, the model that we're going to see today is really – and we love it for a few reasons. It's about continuous employer engagement. So it wasn't a one-time industry survey. It wasn't a one-time skills summit. It's really this process of continuous feedback from employers into the design of the program. And then on the delivery side, employers heavily engaged in lecturing, internships, things like that.

And it's the college as convener which we like as well, which is the college's ability to convene the right stakeholder broker and the right relationships. A lot of these companies that we're going to talk about today are competitors. So to be able to get the in the room, broker the right relationships, get the right information and put together the right program is critical.

And it's adaptable. It's adaptable to any industry. We're talking about the green space technically today, but really, I think the model that Brian and Dave and Leonard are going to talk about today can be applied to any industry – health care, transportation, logistics. It doesn't really matter – a lot of great elements that you can take and adapt.

It's also adaptable geographically. So, unlike solar and wind that is really taking off in a couple of regions and a few states around the country, building automation controls, I mean, that's happening everywhere. It's increasingly energy efficiency technology and the industry. And I think Dave is going to talk about this a little bit. But the industry across the country needs people who can manufacture, service, install and sell these increasingly green products. And so there's opportunities out there I think across the country.

And then, of course, finally, it's green. And that's what we love. Whether these are technically green jobs or not we can debate perhaps, but I think the important point is these are jobs, they're good-paying jobs, and they happen to take place in an industry that is itself going green.



So it's really the ultimate. We've got trained workers with upgraded skills, real-world learning experiences, satisfied employers, and in the long term a region in Georgia that is ultimately reducing waste. So, it's kind of a trifecta that we're hitting here today.

So I'm pleased and honored to have the following folks here today to talk about this: Brian Lovell, the director of the Green Technology Academy at Georgia Piedmont Technical College.

Brian has quite a bit of experience in the building automations industry. In fact, he owned his own company at one point. He is now the director of the Building Automations Systems Program at GPTC, and the director of the Green Technology Academy, which he is going to talk a little bit about. Brian, I appreciate you being here.

Dave Weigel, from Kele Corporation. He is the chief engineer. He's got 30 years experience in energy conservation analysis, building automations analysis, and renewable energy systems. He has received innovation awards from the U.S. Department of Energy. And Kele Corporation, as I mentioned, is a supplier of building automations controls products, a global company based out of Tennessee. I'm glad to have you here, Dave.

And then, finally, Leonard Lowe is going to make an appearance as well. Leonard is the chief engineer at McKenney's Mechanical Contractors and Engineering firm in Georgia. It's a large company. And Leonard designed a control system for the Georgia Aquarium, and has been very tied into GPTC – (inaudible) – students and internships, I believe, and has hired them as well.

So, it's going to be – it's a good sort of combo conversation we're going to have today, and I think Brian even had to turn away some employers that wanted to speak. So, I mean, that's amazing in and of itself. But, anyway, I've asked them to talk about all of this in a way that is adaptable to the folks on the phone. And that's the key part, is we want change happening everywhere.

So the last thing I'll say is this: We're leaving plenty of time here at the end of this for Q&A. So, at any point please post your questions. Brian mentioned how to do that. Please post them and we will get them and we will provide them to speakers and move that way.

And at the "end" end, Brian and Dave and Leonard have agreed to stay along for a few minutes afterward and chat. And I think you might want to take advantage of that, just asking questions and setting up any other kind of relationship that you want.

So, without further ado, I'm going to turn it over to the Georgia Piedmont team.

DAVE WEIGEL: All right. Thank you very much, Todd.

This is Dave Weigel. I'm with Kele Corporation. And I want to start off with – and tell you a little bit about my company, Kele, and how its involvement has come to be so widespread in the building automation industry, and then we'll get into how this jelled into the program that we're discussing today.



But, most importantly, I wanted to start off with, what is the building automation industry? It's actually a mystery to an awful lot of people. And it's not the conventional heating and air conditioning that – in a commercial building nowadays. And they're required for many different reasons.

There's a computer, and that computer controls the heating and the air conditioning and the lights, irrigation systems. And it's put in there to make the building perform optimally in terms of energy efficiency, and also to save manpower in the maintenance side of things, and to allow central control.

The same system has to integrate with other systems that are in the building – access control and security – so that they all work together in harmony. And the same with the fire alarm. An example of that is in the event of a smoky fire, when the fire alarm system responds to that, the heating and air conditioning system needs to do what needs done in order to get the smoke out of the building.

Energy monitoring systems and renewable energy systems, all are part of a total green package for a building. And the building automation system allows a central place where all these systems can be controlled, where they can all be integrated together, and where all the monitoring and verification of the results can be stored and analyzed. So that's primarily it.

We have up there on your screen some sample screens from the display of a building automation central controller. They enable the building operating people and maintenance people to observe in just a glance a boiler plant drawn in 3D that tells you what all the different temperatures are, what the pumps are doing. And this is really handy to have when you're trying to keep a building operating – an air handling system.

And there was a – the renewable energy sources in the lower left – the wind and water conservation – and the systems that monitor those, and then they're all brought together in a single dashboard to make it easy.

And Todd gave me a good introduction. I've been chief engineer at Kele for a little over 16 years now. And Kele's position in the market and the reason that we're together with Georgia Piedmont Technical College comes from the fact that Kele is independent.

People who manufacture building automation systems are names that you know. There's Honeywell, Siemens, Johnson Controls, Schneider Electric, Trane, Carrier – a whole long list. And I've left out a whole bunch. I don't want to offend anyone.

Kele does not sell the controller – the computer that controls the buildings. Kele is a distributor for all the parts that hook to it, all the sensors, all the actuators. Everything that that computer needs to know about the building and how to operate the building, those are the things that Kele provides.

Having started in 1983 when building automation was in its very infancy, Kele has grown now to be about \$100 million company. And so, this will give you a little idea of the size of the industry, and I'm going to give you some more momentarily.

Todd mentioned green jobs. Do we want to call them green or not? I'm actually one of the people who does not throw the word "green" or "sustainable" around very often. In the marketing of products,



people often come to us and want us to call a product green: We want to advertise this thermostat as being green.

And my answer to that is usually, no, it's made of plastic and it's full of metals. There's nothing green about that thermostat. It can be a part of a green solution, though, and building automation systems are an integral part of every green building. You have to optimize the energy use, number one.

So, are these green jobs? Absolutely they are. How big is the market? And the figures I'm quoting here and a little chart I'm going to show you are – unfortunately I can't cite sources because it's proprietary, but the U.S. market for building automation systems is roughly at \$5 billion this year, and it's climbing, and the world market is about three times that large.

And one of the really great things about this industry is that it has turned out to be very recession resistant. I've been in it and I've watched it for 30 years. When the economy starts to go sour and turn down, the companies who own the properties begin to invest money in them to make them more energy efficient. They start really wanting to tighten their belts.

On the other hand, when the economy is booming, new construction nowadays includes this building automation system in every case. So it's a very stable market for labor and employment, and I believe it's always going to stay that way.

Here is just a chart – I had some figures on the page before in the – early this decade, in 2002, the little recession we had – which is not shown on this chart; I'm sorry – but the overall construction market, nonresidential construction, was down a little over 15 percent at the very worst time of that 2001-2002 recession. The building automation systems market actually continued to grow by a little over 1 percent during that entire recession.

And here's a picture of the most recent one. You can see it's starting to happen there right after December of 2007 when nonresidential construction rolled off the table and just kept going down.

And remember that building automation is a part of that construction market, yet after not very many months, the building automations systems market began to pick back up. And this was – this is just a very good example of people putting money into their existing facilities to upgrade and trim their energy budgets during hard economic times. And the drivers for this market are these:

Energy costs. I don't think – well, let's see, I'm 54 years old; I haven't heard of electric rates going down in all my life and I don't expect they're going to. We see what oil is doing nowadays.

Environmental awareness. When anyone decides to pursue lead accreditation for their building or an Energy Star certification, or any of the myriad others that are available, to toot your horn and to put out the message that we're doing something green here, it requires a building automation system, and it requires it to be done right.

Building codes is a final item that's driving this market up – international energy code – and I've put down the names of two ASHRAE codes there: 90.1 is the actual energy standard for the United States and ASHRAE 189.1 is the standard for high performance buildings.



In order to meet these standards, more and more building automation products have to be added to buildings – additional monitoring. There’s a wealth of it. And the codes do not get less stringent as time goes on. They get more stringent. So we’re going to see more and more driven by the codes too.

And the sum of that – it makes it a great industry for employment because it doesn’t feel the full brunt of economic downturns and economic turmoil. There is no economy of scale. Every building automation product, every piece and parcel of that system has to be put in by hand. This is construction.

So it’s not something that’s going to be turned into – as many manufacturing plants – turned into something that’s done by robots, displacing people. As this market grows, the employment is going to grow with it.

And finally, at the end there, there is no trained people to hire. There’s just a dearth of them. And we’re seeing it here at Georgia Piedmont Technical College, the results of putting people through a program which makes them employable directly as building automation technicians, and people are out there willing to snap them up.

And I’m going to finish before I pass it to Brian by saying the founder of Kele was named Roger Johnson. And Roger said for – I must have heard him say a hundred times he wanted us to implement the “Kele university” and teach people what we knew about building automation. And in the end, Kele is a distributor of products; we’re not a college. And so that led to us getting together with Brian and the people at Georgia Piedmont.

BRIAN LOVELL: OK, thank you, Dave. My name is Brian Lovell, and I think the first slide I was shown as Brian Loving. (Laughter.) I am a loving guy, but my name is actually Lovell. And I’m the director of the Green Technologies Academy at Georgia Piedmont Technical College.

I spent my career in the Building Automation Industry, kind of backed into the industry, didn’t know anything about it, as many do not know today about the building automation industry, but found my way to it, worked in the industry for others for a few years and then started my own organization called Synergy Automation in 1998.

And from that vantage point I saw that there was a dearth of trained building automation technicians, very few sources – actually none at the time – for hiring individuals into my organization. So I knew this was a problem.

So I joined GPTC in the summer of 2007. At GPTC – Georgia Piedmont Technical College, formerly known as DeKalb Technical College, was founded in 1961 with – it has about 13,000 students, 5,000 of which are degree-seeking or diploma-seeking students. We are a member of the Technical College System of Georgia, the TCSG, which serves four metro Atlanta counties, are our acting president is Mr. Larry Teems.

So, how did we start this program? Well, when I started at GPTC there were already plans for a refrigeration – commercial refrigeration or supermarket refrigeration program at the college. So we agreed to begin in starting to build the BAS program. We wanted a model first to grow from, and so we



started a commercial refrigeration program that has also gained national attention as a premier program in the country.

And we started that by first establishing a vision. We had to present the vision to the president and the stakeholders of the college and get the buy-in, and then do the research necessary with the Technical College System of Georgia to submit a program request. And that program request was a curricular skeleton of four initial courses.

At that point, when the state was interested and we had the stakeholders at the college interested in the program, we went out and established a very active industry advisory board, which included the likes of Hussmann Corporation, Ingersoll Rand, Carrier, Carlyle, a number of Fortune 500 companies.

And we continued to acquire institutional buy-in as we developed this program by having frequent meetings, both industry meetings and administrative meetings, to continue the interest in the program. And we used that then as a model for the development of the Building Automation Systems program.

In 2008 we began the same process, this time focused on the building automation industry. We started the process with a vision, a meeting with our president, vice president of academic affairs and other stakeholders, and we researched the need.

That was quite difficult for the building automation industry because the Department of Labor, both in Georgia and the United States Department of Labor, doesn't track building automation as its own industry. It's a subset of air conditioning, HVAC jobs.

So it was difficult to do that research, but we were able to get information from companies like Kele and other organizations that had some of their own data about that industry, and Johnson Controls is one of those as well.

At that point we developed a skeleton of the program, which includes seven – included seven initial courses, and presented that for approval to the Technical College System of Georgia. After we obtained the approval we established a very active advisory board. And I will circle back to that in a couple of minutes.

That's when I first met Dave Weigel. I had known many people in the industry from my years in business, but a lot of folks that were on the advisory board and continue to serve on the advisory board I did not know, but presented them with a vision for where we wanted to go and how we wanted to establish this program.

The goal was to engage all of the major building automation companies in the industry, and we've just about achieved that. We got almost all of the major players in the industry advisory board now. We have them in the industry advisory board now.

And then we had to maintain institutional interests and advisory board interests, and we had to do that by balancing the interests and their needs to keep them involved in our quest to establish this program and to grow the program. And that required a certain amount of vision and credibility, and I'll circle back to that in a minute as well.



So to talk about the active advisory board, this is key in establishing a well-connected program with industry and one that changes with changes in a fast-paced, or fast-changing, industry.

And so, these are some of the things that the advisory board does. They help us with curricular review. They gave us a lot of feedback on the initial skeleton that we submitted to the TCSG about where we would want to embellish other items and learning outcomes onto that curriculum.

They are now giving us a critique of recent graduates, so skills that are not present or skills that are present and very easily observed. They give us feedback on what they see that they like in our graduates and what they think that our students and graduates need more of.

Obviously donations – this was a huge piece. The TCSG system, as I suspect many colleges around the country, has had shrinking budgets over the past several years, and we have not had the funds to start a program and establish a high-dollar laboratory without – we could not have done this without donations, and major donations, from corporations. So it was a necessary partnership. It wasn't one out of just convenience; it was necessary for this program to develop.

Obviously publicity. Advisory board members and organizations love to participate, for one reason because they can publicize their activities in the marketplace.

Higher placement rates as a result of their involvement and their exposure to students.

The training of students. We invite many of our industry partners to come in and guest lecture. We also invite them to come in and hold open lecture series.

And then an administration and industry balance, which is very important. Sometimes administrators will listen more closely when a request comes from industry. And we did use that leverage in getting some approvals at the college for the program, and getting extra space.

So that balance of interests – the balance of interests is very important. You have administration, you have industry and you have faculty interests, and you have to balance all of those interests if you're going to establish and maintain an active partnership with industry.

Administrators – and this is not an exhaustive list, but administrators are often interested in student counts, placement rates, looking good, having good publicity, bragging rights within their college system and external to that.

And then, obviously, donations, which in many cases are matched with state funds, and which were matched with state funds in our case until two years ago.

The industry's outlook is for trained prospects to hire into their organizations, corporate branding opportunities, the don't-leave-me-out scenario, when one of the major players, or one of the major companies, is involved, like Johnson Controls was early on a partner of ours in this quest.



Well, then you can use that as leverage because other industry partners want to be involved. If they're involved, it must be something good, right? So, the don't-leave-me-out syndrome, the giving back to the industry.

We found that a lot of industry partners in this case – and I suspect other industries – have had a nice career within the industry, and they want to find a way to give back to those that are trying to get into their industry. So there are a lot out there that have that altruistic motive as well.

And the sales and marketing piece for industry as well.

And then faculty, of course, has many of the same motivators that administrators do, some different, but student counts, placement rates. Faculty is also interested in job security quite often, so to be involved in something that administrators can point to as a success story is something that can motivate faculty and is one of their interests.

The vision and credibility piece, you must have someone, or a team of someones in our case, that have vision and credibility, especially with administrators and industry, so that in the case of GPTC, our college – I'm an industry guy. I spent most of my career as an entrepreneur and an industry person, so obviously I had the credibility with industry, and I had a vision, because I knew of the difficulties in finding trained personnel to hire into my organization.

Dave Weigel and other industry partners – as Leonard Lowe is sitting to my right from another organization, McKenney's – those industry partners have great credibility with administration because administration wants to respond to the needs and requests of customers, which in this case are typically industry companies that hire our graduates.

And then Jeryll McWhorter, who was actually a former instructor of mine and a partner at Georgia Piedmont Technical College, has been with the institution for 20-some years. So he obviously had the credibility with administration that we could pull this off. And he was an integral part of it as well.

And once the credibility has been established, you need someone who can close the deal and complete the task at hand and continue to infuse interest. And we leveraged our industry partners for a lot of that. And at that point the train had left the station in our program.

So, before we get into the nuts and bolts of the program, I'll just briefly explain what we feel like we've accomplished.

This is the first Associates of Applied Science degree in the United States for building automation. It's a true industry education and partnership. We were able to establish a multimillion-dollar laboratory.

The majority of the equipment – almost all the equipment in that laboratory was donated by industry. Our college did use some matching funds to purchase some trainers, et cetera, and there was a partnership there, but most of the equipment was donated by industry.

The use of facilities as living laboratories – we'll talk more about that later in the presentation, but we actually use our buildings as laboratories where the students can apply their skill sets.



And, of course, a new revenue stream for the college. We've added quite a few students are part of this – as par of this new program.

This is a list of some of or industry partners, both of the supermarket refrigeration program and the building automation program at the launch of the two programs back in 2009. That list has probably expanded by 50 percent.

A quick picture of our initial laboratory at the time of opening in 2009.

And then moving into the building automation program itself, we've established – initially we established seven courses that matched up with other courses in our electronics program and other programs to present an Associates of Applied Science to our students.

And that has since changed and we've embellished upon that and now we have 11 courses in building automation, and you can see some of those on the screen. And obviously students have to take courses in general education topics to receive an associates degree.

Moving on to the pedagogy, a lot of what we do is focused on project-based learning. Our students, as they learn in the classroom, they also apply those skills in the laboratory setting.

Here are some of the students in one of our first cohorts working on wiring up some basic relays and learning some electrical skills. They were actually building what turned out to be an 8-bit adding machine out of relay logic, which we'll show you in a little bit here.

Here is another student working on a project in our laboratory. And I believe that one was some kind of encoding machine. I can't recall.

And then the "living laboratory" concept. Students actually have gone through some of our facilities, and continue to do that, to install sensors, equipment, much of it donated by Kele Corporation. This is our "living laboratory" concept where students apply that classroom learning to our own facilities, making the facilities better, and learning in the process, and leaving a legacy for other students to follow behind.

But beyond that, students also, in our Green Technologies Academy, have been involved in designing facilities of learning themselves. This is a design for an expansion to an existing concrete pad that we had outside of our building, C Building, where we're located, where we're housed in the Clarkston campus of Georgia Piedmont Technical College.

And so, the students came up with an idea: What if we expanded our learning spaces? And so they reduced that idea to a PowerPoint, which you see. And, actually, soon on the heels of that, the administration decided that it was something that they could pursue and allocated some funds to actually building the expansion. So the students were involved from the design, the implementation and the automation of what you see here as of a couple – I guess this was as of a year ago.

Could you go back one slide – go back two slides?



Those tanks that you see are actually water harvesting tanks, where we take rainwater from the roof, we store it, and then we apply it and use it for flushing toilet seats in our facility.

The post that you see, at that time they did not have the solar panel raised. We'll talk about that in a few minutes. But students designed their location in collaboration with other colleges to make sure that they'd get the most amount of sunlight possible year-round.

And here are some of the appurtenances that go with that water harvesting system. The students – the students actually put that – put all those controls in. They designed the system – helped design the system, mounted all the equipment, and then terminated and ran all the conduit that you see here in this slide.

This is another slide of some of their handiwork. Some of the conduit that you see here was run by industry professionals. About half of it was run by our students. And it's indistinguishable – the quality of their work is indistinguishable from industry standards because they were able to partner with industry in doing some of this work.

Another thing we focused on is communication skills. In each one of the courses, the students are required to present what it is that they've worked on. And this encourages industry involvement and administration involvement.

This 8-bit adding machine, which you saw earlier, the students working on, was actually presented at an open forum to our president, vice president and faculty, as well as our industry partners.

And I recall that this one, Siemens – the branch manager from Siemens was there, the branch manager from Johnson Controls was there. And they really impressed the audience and were able to work on communication skills, which are so key in this industry.

Our current present at the time – our former president at the time, Dr. Robin Hoffman, who is now with the SACS Commission on Colleges, is pictured there to your right, and our current vice president of academic affairs, Dr. Tanya Gorman, who was instrumental in helping us set up the student learning outcomes and competencies for this program, is pictured there to your left.

OK. We also have a number of inter-institutional collaborations, one of which is Georgia Perimeter College. We're actually sitting at Georgia Perimeter College right now in the new Center for Sustainability, which is run by Dr. Joanne Chu, who has been a longstanding collaborator of the Building Automations Systems program at GPTC.

We've partnered with Laney College on the West Coast, Dr. Peter Crabtree. And the fine folks out there are doing great work in their skills-based training out there. And we've partnered with them on some NSF grants and exchanged many ideas with that group.

We've partnered with Fair (ph) State University in establishing an articulation pathway for our graduates into a four-year program that they have at Fair State. And another local college here which is heavy on sustainability, Agnes Scott College, has been a partner of ours for the last few years as well.



I wanted to speak a little bit about Georgia Perimeter College and the partnership we have with them. These were two sister institutions, actually, founded together back in the early 1960s.

In the state of Georgia, we separate our technical training from our two-year community college training. So we're both community colleges, but we're focused on, at GPTC, technical skills while GPC is often focused on transfer students – or transferring their students to four-year institutions. But GPTC is – we're separated by a parking lot – is 27,000 students.

They've had rapid growth over the last few years under Dr. Anthony Tricoli's leadership. They're the largest community college in the state of Georgia and the second-largest public institution in the state. And they've established a number of transfer agreements.

And we've partnered with GPC in a number of ways, one of which is their engineering students working with our building automation students to design solar panel mounting systems and tracking systems, and also to implement those.

And so their students, at the end of this process – it's not been an ongoing collaboration for nearly two years – will come to our conference center and present those ideas to both faculty, administration, and sometimes corporate partners, and our technical college students and vice-versa. Our students will present in front of their students as well.

So it's a very rich relationship that continues to blossom. And some of the products out of that are what you see here, some of our solar panels actually mounted on that training pad that the students designed.

And we also maintain the interests with industry speakers and guest lecturers. We have these every semester. We've had at least 15 of them that have been open to the public. Woops. I'm missing a slide there, it looks like, but I was going to show you one of the – one of the flyers for one of those events, which is not here.

But at this point I'm going to turn it over to Mr. Leonard Lowe, who is an engineer with the McKenney's Corporation, a very large mechanical contracting engineering firm here in Atlanta. And they did the controls on the world's largest aquarium here in Atlanta. And what you see pictured on the screen are several of our building automation students attending an event that they hosted a few weeks ago.

So, Leonard?

LEONARD LOWE: Thank you, Brian.

McKenney's has a group that is strictly devoted to building automation systems encompassing all of the various facets, including energy monitoring, physical security, access control, things of that nature. And we are relying more heavily on local institutions such as Georgia Perimeter Technical College to feed trained personnel into our organization so we can carry out our mission to take care of our customers.

One of the biggest problems we're having recently is the availability of trained people to put on job sites to take care of our customers with. And we've already employed one of the graduates from GPTC and are looking forward to interviewing several more.



We have continuous openings because the industry we're in, in the building automation business, is growing faster than the overall economy. We are literally always looking for trained personnel. And that's one of the reasons we partnered with GPTC is so we can have an in-feed of those trained people to continue our business model.

MR. LOVELL: Thank you, Leonard.

Another thing that we do, we have a very active Building Technologies Club, which has become the largest club on our campus, and they host and plan a number of events and activities.

One of the things that they did recently, in competition with other engineering community colleges across the country, was take an architectural design from William McDonough, who was commissioned in – I think it was the late '90s – to build a – or design a building of the future. And they took those conceptual plans and they said, well, let's actually do that. Let's try to put something like that together, let's automate it, and let's see what we can do.

So, outside of normal course work, they actually did this. And what you see here are some of the floors where they had etched circuit pathways. And then they went ahead and put the structure together, put a lot of time into it, built up the structure, and then they automated it.

And at the bottom you see the automation equipment. I'm sorry I don't have a completed project picture for you, but it was actually a building that looks very similar to that building of the future that was a conceptual design by William McDonough. They were very proud of this, and they went on to a national skills competition and took third place nationally in the architectural and engineering category for this project.

Some of the results of the – some of the results of the program: We placed, as previously stated, 80 percent in the field. The average of our graduates right now is over \$50,000 a year. We've had some – we had one student actually start in the six figures. We've had many students start in the 60s (thousand dollars) and 70s (thousand dollars). So, it's a very high-paying field.

We've had significant student growth in our program area over the last three years. And some of the new innovative collaborations that we're working on with Georgia Perimeter College next door to us, very innovative, and we hope to discuss those in the future, perhaps in another webinar. And then a continued high level of industry involvement.

Today we had an emergency. We weren't sure if Dave was going to join us, so I called some industry partners first thing this morning and that's why Leonard is here. And we're happy to have him. And a couple of others were ready to meet the call this morning. So that just demonstrates the level of their interest in this program.

Some of the challenges as we move forward: continuing to find facilities for students to work in, providing internships for all the students as the program grows, keeping pace with industry advancements. This is a fast-changing industry. We have to have the industry involvement to keep us



on target and on pace. And then handling the interest in the program. We have limited facilities and the interest continues to grow in our program.

Some other things on the horizon that we're working on: We've submitted a National Science Foundation Center grant with Dr. Peter Crabtree at Laney College in Oakland and San Francisco. And Dr. Chu and myself have been out there to speak once before. They have also started a building automation program on the West Coast, and we're trying to establish a national center of excellence on the East Coast and West Coast in collaboration with them through the National Science Foundation.

We're also retrofitting currently a 30,000-square-foot building and performing a Level 300G audit, doing the associated ECMs. And the implementation of those ECMs will be handled by our students. And all this has been approved through the TCSG system and our current president, Mr. Larry Teems.

And then, we would like to move towards development of BAS industry standards – certification exam for entry-level professionals, which we've discussed with definitely the folks here and some others that we've targeted to help us set that up. So that's one of the next things.

And then, lastly, I'd just like to give a special thanks to the people here today, Mr. Leonard Lowe; Mr. Dave Weigel; also our acting president, Mr. Larry Teems; Mr. Jeryll McWhorter, who is my collaborator; Dr. Tanya Gorman, our VPAA; Dr. Davis, our dean of academics; Julian Wade; Natalie Kostas; and then the folks here at GPC, Dr. Anthony Tricoli, the president; Dr. Joanne Chu; and then some other collaborators we have here at the college.

And that concludes my portion of the webinar. Thank you for your attention.

MR. COHEN: Thanks, Brian and Dave and Leonard. I appreciate that. A fantastic model, so comprehensive. You're attacking it from so many different angles.

We've got 10 minutes. And I know some of you actually already posted questions – fantastic – but now is the time to post those.

I'm going to just start with this one. Brian, I guess it can be a team answer. But you mentioned – sort of going back here to the beginning of the process of designing the program, you mentioned the difficulty in getting some labor market information, and we hear that all the time.

So, what advice – I mean, ultimately you went to Kele, it sounds like, and they gave you some of their information, but can you elaborate a little more on that, how you got that information to make the case that there was actual demand in the region?

MR. LOVELL: Yeah, I did just what you said. I contacted Johnson Controls, Kele Corporation, Stromquist here locally, which is another distributor. Mr. David and Eric Stromquist do a great job as distributors of automation equipment.

And so, those organizations which have a wide – really a global reach and would have the data necessary is where I had to go. There was just nothing at the DOL sites tracking this industry.



MR. COHEN: Gotcha. Gotcha.

All right, I'm going to read some questions here. Somebody wants to know about national credentialed certification. You mentioned the BAS industry certification exam. Where is the industry at a national level on any kind of standardization?

MR. LOVELL: Do you want to take it?

MR. WEIGEL: They're at basically zero in the building automation technology job level. There is no national certification. As I said, there are certifications for technicians more in the electrical and electronics fields, but not specifically building automation.

MR. COHEN: Is it something in the works, or are we just so far from that at this point?

MR. LOVELL: I think we have the folks necessary to pull something off at this point. We've gotten a lot of attention regionally. We have some industry advisory board members who have national responsibilities with their respective organizations, and I think we're going to start there and then obviously we're going to reach out to some of our college partners like Laney College and some others in establishing that. And we've had some talks about that already.

MR. COHEN: Gotcha.

On the placement side, Brian, you mentioned some of the – I mean, the great-paying jobs. Just somebody wants to know – just get a taste of some of the actual jobs themselves, the titles. What are just a sample of what some of those jobs might be?

MR. LOVELL: I guess – and, Dave, that's a question for you too.

MR. LOWE: Yeah, this is Leonard Lowe with McKenney's. We actually employ a large number of building automation system technicians. We have several job titles, but the premier one that we use is what we call an automation specialist. That's an individual who's been trained to go to job sites and program controllers, check out control systems, interface directly with the customers.

In some cases they go to solve problems that may occur in a particular facility. We train the customers, and our automation specialist personnel do all of those different things for our customers.

MR. LOVELL: Yeah, and just to add to that, what Leonard said, we find a wide range of jobs that students will track into. Our mission is to prepare students for entry-level positions in sales, marketing, technical – as a technician; as Leonard mentioned, working for a distributor much like Kele Corporation or Stromquist.

We're just preparing them for an entry-level position in this industry, and there are a myriad of opportunities within the industry.

MR. COHEN: Great, great, great.



Brain, you mentioned the advisory board. I'm curious to know the types or levels of a person from the industry that you've got on those boards. I mean, who are the best kinds of people to serve?

MR. LOVELL: Sure. Well, the highest – obviously the highest a college could get – you know, decision-makers – is what we tried to get. Dave was a chief engineer for Kele Corporation when we solicited his support. Leonard is the chief engineer for McKenney's.

We have the vice – one of the vice presidents of Johnson Controls on the advisory board; many national sales and marketing managers for their respective organizations like Patrick Winkelman, vice president of sales and marketing for Distech Controls; and Jim Hall (sp), the owner of TriTech Corporation, et cetera.

My point is, shoot for the people that can make decisions, because if you find them and get them interested and get that don't-leave-me-behind syndrome going – can help in this, we found that we've gotten the best success by getting people who can actually make decisions and have high-level positions in the industry.

MR. COHEN: Great. Great.

Brian, you and I have talked a little bit about engagement of some disadvantaged populations. And I know you have built – you've got some programs in place, I think, for this program, or any kind of support services. Have you been integrating any of that into this? And how have you been able to reach out to that group or serve it in any way?

MR. LOVELL: Yes, we have a division of our college that helps disadvantaged and remedial-need students – remedial education needs – and we work closely with them. We have a large population of students in that situation, and it's very important that they're matched with a wrap-around services type division of the college where they can counsel them and they can guide them through some of the challenges that they're facing.

And we certainly have a large population of students that fall into that category. And one thing that I'll mention is having an active student club, like our Building Technologies Club, really gives the students a sense of belonging and ownership of something. And that, we found, builds a sense of community amongst the students themselves.

And success tends to breed success, and seeing other cohorts be successful in organizing events or in hosting an event really does a lot for the students. We see a lot of that. But if you have students that are just left out there that are facing those challenges, yeah, you've probably got a non-completer on your hands. You've got to get them involved in some other services at the college.

MR. COHEN: Great.

And the last question, someone wants to know, is there anything that the college would be willing to share at this point, whether – any kind of materials, learning outcomes, pathways that you've developed – anything that is sharable at this point?



MR. LOVELL: We do have things that are sharable. The real critical issue is not the curriculum, I don't think, because the curriculum, we can make that available. The real critical issue is do you have the partners in industry that can help make it successful, because without that, the program, in my estimation, would run the risk of becoming static very quickly and not serving this fast-changing industry.

So the real issue, I think, for those of that are interested in curriculum, we can provide that to you, but finding those industry partners is going to be a key part of what you need to do to be successful.

MR. COHEN: Great.

Well, I want to thank the speakers. Before I do the official thank you, though, let me just say one thing here: For us to see – we have two things coming up that everybody should be aware of. One is we've got an awards program, a national awards program, and there's money tied to that, and it's looking at colleges that have done some great things in green.

And it's not just workforce development but it might be on the community engagement side; it might be on the partnership side. See the SEED Center for more information on that. The application for that will be issued in the end of April.

And we also have a half-day workshop at the AACC annual convention, also in April. And there is a half-day workshop on this topic, campus greening. It's going to be taught by college presidents, actually.

And the target audience really are those senior administrators, presidents that are looking to lead or oversee any type of green workforce or, more broadly, sustainability initiatives on campus. So we've got a few slots left for that. It's going to be – that's going to be a great one. Just see the SEED Center, again, for information on that.

And, with that, I would like to thank Brian – Brian Lovell – and Dave Weigel and Leonard Lowe for your time and efforts. Great presentation.

This is all going to be – it's been recorded and it will be available on the SEED Center website in – I think we've said 48 hours. So check back with us. But, again, appreciate it again.

I think, again, if you stick around for a few minutes, the presenters will be chatting with you, so happy to answer any questions that they didn't get to. And please vote on rating the quality of today's webinar so we can put together things in the future that help meet your needs.

Thanks, everybody.

MR. KEATING: Absolutely.

MR. : Thank you.

MR. KEATING: All right, great. And as we said, we're going to go ahead and end the audio portion of today's webinar, but stay logged in if you can so we can go ahead and get your feedback.



As you can see there on the right-hand side of your screen, there's just a general feedback poll, what you thought of today's webinar, and then give us any general comments in the chat right below that.

But as we said in the beginning of the webinar, you can go ahead and give us any follow-up questions or any comments based on what you heard today, or so, on the webinar. And I think our presenters, Brian and Dave, are going to stay with us to go ahead and chat with you and answer any questions or respond to your comments as they come in.

So, thanks, everyone. We hope you can stay on for that follow-up chat, and we'll leave it there in terms of the audio for today, but we appreciate your participation and we look forward to seeing you on future webinars. Have a great day, everybody.

(END)

