

Madeline Salzman: Hello, everyone. Thank you so much for joining the Better Building Summit, and in particular our session today on workforce development. Thank you. I'm moving to the next Slide. This session is called Leading the Way to a Diverse and qualified Workforce. So hopefully you are in the right place. Thank you all so much for taking time out of your day to talk about these important issues. I'll quickly introduce myself. My name is Madeline Salzman. I work with the US Department of Energy in the Building Technologies office where I'm focused on a few a few different areas that include workforce development projects. I'm sure that we have, as we say here, a diverse and qualified workforce that supports high performance in green buildings across the country.

So I'll give a little bit of background information about the work there. I manage the Better Building Workforce Accelerator, which all of our presenters today are a part of. And other than that, we will jump into some housekeeping points so that we can all be on the same page. So I've been jumping around a little bit. but let's go to the first housekeeping slide. Awesome. Oh, yeah. so we'll first do introduction housekeeping, why workforce matters, present our guest speakers and then Q & A at the end. Make sense? Okay.

So just in general, please note that today's session will be recorded and archived in the Better Building solutions Center. We'll follow up when the recording and Slides are made available. And as an attendee, you are in listen-only mode, meaning your microphone is muted. But if you're experiencing any audio or visual issues at any time throughout the session, please Send a message in the Chat Window located at the bottom of your Zoom Panel. We are using Slido as you can see here. So please go to slido.com either on your computer on a separate Screen, or you can use it on your phone if you've been a part of the Summit already, you maybe have the App already downloaded.

Which is how we will be participating in Q&A for this session. So if you go to slido.com and then enter the event code DOE, I think it takes you to a Page where the list of sessions – and it should be the first one starting with Leading the Way. And you can join in. There'll be polls as well as opportunities to ask questions both with your name and also anonymously. So great. So feel free – I'll just mention if you have a question at any time, feel free to put it into Slido. We will address it at the end unless we do something with like very much a clarifying question on an acronym somebody uses or something like that.

Great. I think I'm going to the next Slide. All right. We already have a question in. *[Laughs]* Moving quick. All right. We're going to start off with some polls, so hopefully folks are in there on Slido. I have it up on

my phone. And a poll should pop up asking, "What sector are you from," with a whole bunch of options. Hopefully enough options that we don't end up with other being the most popular ones. That might've happened last year. I'll put in mine; federal government. All right. We'll just give this a couple more minutes so we can see that folks are in Slido able to participate and engage. Okay.

Over 1/4 of the folks online right now are nonprofit, which is very cool. Almost 1/3. And we've got quite a few federal and state and local government folks. Then we got that other. *[Laugh]* Always want to know who the other folks are. So maybe there will space in the queue to add that. And then, we've got industrial and manufacturing coming up now. Great. As I mentioned, we will be using Slido throughout, so if you would like to be able to participant in the discussion, ask questions of the panelists and things, I recommend you use Slido to do that. Okay.

I believe we have a second poll question, which we can launch. All right. What workforce topics or challenges most interest you? And let's enter a word. I think it'll ethically allow multiple words. But if you enter just one, then it kind of creates a word cloud. Okay. Recruitment. Education. Those are pretty popular right now, but we're getting a lot of other ones. Engaging frontline communities, cultural change, curriculum, diversity, skills. They're moving around a lot. *[Laughs]* Reaching the candidate. Stigma. Good one. All of them are good ones.

Training, systemic change, motivation, educators, new entrants, data. We've still got our big one. Career pathways, technician education, skills needed. So you can see there's really a diversity of topics here. And hopefully, our speakers will be able to touch on many of these as we go.. But this is awesome and always good to see what the elements of the day or interests of the day for the audience tend to be. Great. Well, thank you all for participating here. We will go back to the Slides where I will hopefully contextualize for the audience here how many – I can't promise all but many – of those topics fit into the work that DOE is doing.

I mentioned at the beginning I manage the Better Building Workforce Accelerator which I am really happy to work on with our panelists today and hear about kind of the framing of how we've been addressing workforce issues before I turn it over to our panelists so we can go to the next Slide. So some of you may recall if this is not your first Better Building Summit that last Summit we introduced the idea of the Better Building Workforce Accelerator, and we kind of announced our earliest partners that were involved in this effort.

We formally launched the program in September with around 40 partner

organizations that are focused on making progress either for their own organizations or own memberships, their own institution on workforce development topics. So we worked with these partners to develop specific measurable, attainable, realistic and timebound goals that focus on either increasing the interest and awareness of building energy efficiency careers nationwide, simplifying and streamlining pathways from education, training and apprenticeship to careers and then augmenting existing education and training and apprenticeship programs to fill knowledge gaps and improve skills and competencies.

And by participating in this Accelerator, our 40 or so partners participate in quarterly meetings, Webinar presentations and have the ability to publicize their goals and progress. They can recognize partners for their successful efforts, develop case studies and shareable materials and they can access national labs, academic and expert consultants in the high performance-building and efficiency sectors. So it's been a really exciting project, and I'll just talk a little bit about why we launched it. Next Slide.

So our overall goal of the Accelerator program and really our workforce efforts overall, even more broadly than the program, is to ensure career pathways for diverse and qualified building efficiency workforce that enables high performance-building. And there's a lot of barriers that currently exist in this space that we are working on trying to address. So here, you can actually see nine barriers – nine key barriers that we focused on in some of our landscape assessment research to understand what's happening in this space.

And we bucketed these different barriers into three groups. So the first is low or negative perception of these careers in general. Many young people don't necessarily say they're interested. Many Americans and people that live in this country are under-represented in the current workforce, specifically women and black Americans. And overall, there isn't a strong workforce identity really in the efficiency workforce. Many folks think of themselves as construction workers or manufacturers or building operators and are not thinking of themselves as connected in this way around efficiency.

And so, we want to focus on ways that we can showcase these careers as welcoming, rewarding and impactful. We also know that even if you get somebody – they're aware, they're interested, they want to figure out, "how do they get involved," the pathways are then confusing. Often times, the credentials are fragmented and non-transparent. Trainings are elective rather than foundational and there's extreme hiring difficulties that we've been able to see through data over the years.

And finally, let's say you have somebody, they're aware, they're interested, they've navigated those confusing pathways. Even then, you still run into issues where there might not be the baseline foundational information about energy efficiency and clean energy technologies that will really help for high-quality installation and actually delivering on the benefits that these technologies provide. So thinking about the ways that this content is either standardized or not and really ensuring better trust of the technologies that we're putting out there.

So next Slide shows a little bit how we take these challenges and barriers and use them to identify and define the ways that we want to work in this space. So we want to build interest, as I mentioned before, by showcasing these careers as welcoming, impactful and rewarding. We want to take these confusing paths and streamline them to clarify how people can connect the dots from education and training to the careers. And then, we want to improve skills in terms of what people get access to in terms of training and the competencies that they're able to access at the beginning of their career as well as lifelong learning throughout.

And that also involves increasing the use of digital tools to detect faults and manage performance. Next Slide. So as I mentioned, I won't spend a lot of time here. And I apologize for the small font. But it warms my heart that we have to use such small font to talk about how many folks that we're working with across various sectors in the space. So really trying to bring together a diverse set of stakeholders that are focused at the city and state government level, trade associations and union organizations, colleges and universities and nonprofits and small businesses. Next Slide.

So the commitments that our partners have made have dramatic impact altogether. So folks are working on developing 16 new workforce programs. 16 of our partners are targeting underrepresented communities into their work, producing over 130 resources, training 30,000 participants, distributing 20,000 surveys and outreaching to over 450,000 people with green building career information. Next Slide. So I just wanted to give a couple highlights. We launched in September.

So I guess it's been a bit over six months or so. But just to give a flavor – because each of the partners has their own individual goals, it can be hard to describe altogether what everybody's working on. But IMT launched their Building Innovation Hub, the building performances association launched a new online career hub for high-performance contractors. EBA offered over 84 online training sessions, reaching over 4,000 participants. Roxbury Community college launched its new certified building automation technical associate program. We can go to the next Slide. There's a bunch. *[Laughs]*

IREC developed a brand-new green career map that I think will come up later in the session. The Corps Network convened an energy efficiency workforce development community of learning. The City of Milwaukee utilized technical assistance to engage underrepresented communities and identify gaps across job categories. And US Green Building Council created a new green building career site as well. So this is just a small sampling. I'm sure there's plenty of – you'll hear from other partners today especially that have been doing fantastic work.

But we're super excited to add this list and be able to share these resources with others. Next Slide. So with that, I will not take up any more time and turn it over to our speakers. So this the array of speakers we have with us today. Very excited about it. And up first, we have Erick Shambarger and Aneysha Bhat representing the City of Milwaukee's program. So Erick is the Director of Environmental Sustainability for the City of Milwaukee where he lead the Environmental Collaboration Office.

And Aneysha has a diverse background working as a biomedical engineer, technical writer and artificial intelligence product leader and now works as a Culture Strategist with public and private sector organizations on sustainability and addressing systemic challenges to organizational design. So really excited to have both of them here with us to present on what's happening in the City of Milwaukee. I'll turn it over to you guys.

Erick Shambarger: Thank you, Madeline. It's a pleasure to be here at the department of Energy City of Milwaukee. We've been long-time partners with the Better Buildings Challenge going back probably to 2012. And so, I have found that working with the department of energy and in particular the Workforce Accelerator has been very helpful in terms of engaging partners locally. So I appreciate the presentation that you gave, Madeline.

I have borrowed from that in my local presentation because I think it can really – it really does a great job of organizing the discussion and the barriers and the opportunities. So, you know, today we're going to talk a little bit about the role that our office plays in workforce development and some really cool things coming out of those. Next Slide, please. Just a little bit about us. We're the Environmental Collaboration Office. Our goal is to make Milwaukee a world-class eco city on America's Fresh Coast.

We are located on the shores of Lake Michigan. We are a cold weather climate. But we have a lot of, you know, great background and good institutional partners that can help with workforce development. We develop practical solutions that improve people's lives and the economy and the here and now, and protecting the environment is central to all of

that. We are currently developing a climate and equity plan for this city to dramatically reduce greenhouse gas emissions.

But while we do that, we want to be very intentional about opening up new career opportunities particularly for marginalized communities, communities of color who weren't fully included in the last century's economy. And we want to fix that and do a much better job. And we see the green jobs, energy efficiency jobs as a great opportunity to re-engage our residents and address many of the economic disparities that I think we have to confront head-on. You know, we just saw some data that the average income for a white family in Milwaukee, median household income is \$57,000.

And for a black family, it's as low as \$31,000. And so, that's not right, and we've got to be intentional to fix that. Next Slide, please. We have been working on green jobs for many years. There's a – we did our sustainability plan in 2013. Every chapter asked how sustainability strategies can support job creation. And the reason we do that is because I care about the long-term health of our planet, but many of our people in our community just are struggling to make it day-to-day.

And so, we have to connect job opportunities to everything we're proposing when it comes to repairing and restoring our environment. We have very limited financial resources, so we work on policy and market-based solutions to increase our impact. We aren't a workforce development agency, but we work very closely with them. We try to leverage our influence to help these other institutions that their day job is workforce development.

But to see the opportunities in energy efficiency and that there's a whole world of economic development out there around energy efficiency that we should be tapping into. And again. The Workforce Accelerator has just really been invaluable as we re-engage in this effort for our climate and equity plan. Next Slide, please. We have a number of core programs that deal with energy efficiency. I won't go through all of them, but we – our office spearheads the city's efforts on renewable energy, home energy efficiency and commercial building energy efficiency.

And so, Milwaukee Shines program provides financial incentive for people to do solar energy, and we've done a lot of work over the years to try to increase that workforce to streamline codes, permits, things like that. ME2 provides loans for homeowners to do energy efficiency upgrades, and there's a workforce that goes with that. And dating back to the last stimulus, we had a community workforce agreement. So that contractor's working in that program hired locally and paid good wages.

And then, our Better Buildings challenge and our PACE Financing program is leveraging over \$27 million of economic activity. And so, we want to be intentional, again, that the contract work that's coming out of that is benefiting communities of color and helping us raise wages and incomes in our city. Next Slide, please. So building off of the model that DOE put together, I really think it's a nice framework building interest, streamlining pathways and improving skills.

And obviously, we need to do all of that. But we actually started in the middle with the streamlining pathways, because I felt that before we start with recruitment that we really needed to have a better map to show people, you know, what's possible and where to go for training. And so, that's where we started with. And Aneysha's going to talk more about that process later in the presentation. We've made some really good progress building on the green jobs maps that had been done nationally and linking the local training providers to those maps. Next Slide, please.

As Maddie mentioned, we had to have smart goals. So we are developing and clarifying these pathways. Again. Economic equity and focusing on people of color is really central to what we're trying to do. And what we've found in this process is, we – as we put together the rest of our climate and equity plan, one of the occupations that's really standing out is electricians. Because a lot of the strategies that we're going to be proposing in our climate and equity plan deal with streetlight, Retrofit's not only putting in LEDs but fixing all of the infrastructure underneath that. We have a lot of smart city initiatives going on tied to that with the streetlight Retrofits.

We have LED Retrofits going on in buildings and of course solar energy. So a lot of this is going to come back to electricians, I believe. We know from recent research that there is – it's a field that is overwhelmingly white and male. But it's an aging workforce, and there's – so I think there's lots of opportunities to work with the IBEW and other training providers to increase that. That's occupation. Next Slide, please. We have a lot of workforce partners in our effort in Milwaukee.

And the list is growing all the time. We have our Employ Milwaukee as our workforce development agency, and Milwaukee Area Technical college has some great programs. We have – we work with the city clerk's Workforce Development Coordinator, and she's got a good program to help create mentoring structures for people of color that we want to tap into. We've also been working with unions or sewage district and Midwest Energy Research consortiums.

So lots of partners. We have a jobs and equity committee that meets every

two weeks, and it has about 30 people on it. And so, it's just a lot of interest in this, and we're making some really good progress. Next Slide. There's a question in Slido about how to engage workforce agencies. And this is one thing that I learned that we need to talk about...is this thing called OneNet. I am not an expert on it at all, but apparently if you're going to talk to your workforce agencies you got to – this is the language they talk. And because all of their funding and supports are kind of built around OneNet data...and so, they've been helpful in tying particular positions to these OneNet codes.

So again. This is something I've learned on the job, but apparently it's a big deal when connecting federal resources to these efforts. Next Slide. We do have plenty of green jobs training providers in the City of Milwaukee. There's a picture here from MATC. They're automated building systems. It's an excellent program. I've toured the facilities. But one of the challenges I think that Madeline alluded to in her pre-station is that it's marketed as automated building systems. It's not marketed as an energy efficiency field, per se. And there's other fields like that.

And so, I think one of the things that we're going to try to do is find these existing training programs and elevate them into a green jobs framework. Because our belief is that people want good wages, but they also want meaningful work. And I think the energy efficiency work when tied to challenges around climate change can be a really motivating thing for people to get into this industry. Next Slide, please. One of the things that's been a direct benefit of working in the Workforce Accelerator is, we got connections to national renewable energy labs technical assistance program.

We were one of the first to sign up for it, and the reason is with the American Recovery Plan we are proposing building a Net Zero modular housing facility in the City of Milwaukee for a public-private partnership. Our housing challenges are deep. And so, we see Net Zero and offsite housing as a real opportunity to bring down the cost of housing but create better working conditions in the construction trades around housing.

We're working very closely with the Department of Energy's Advanced Building Construction initiative on the project. And so, the NREL technical assistance connected us with an expert on this from the University of Nebraska, Lincoln who developed all the training certifications and kind of a roadmap of what we can do to train workers for this facility.

And as we put economic development incentives out there, we're going to have a strong workforce development component to that to try to attract a

factory partner to the City of Milwaukee. So I'd be happy to talk about that more in the Chat. I get really excited about this project, but it's been super helpful to work with DOE on it. Next Slide. Next – yeah. This, I'm going to turn it over to Aneysha to talk about her work on the Green Jobs Pathway Mapping Project.

Aneysha Bhat:

Great. Thank you, Erick, and thanks everyone for joining us today. As Erick mentioned, my name is Aneysha, and my company – Perennial Culture – works with organizations to create cultural change. So when it comes to the green jobs pathway map, what we wanted to do is, we really wanted to clarify the green jobs pathways in Milwaukee and match the national energy efficiency and green jobs maps with local training providers. And so, per our analysis, programs and training opportunities exist, but there is a lack of awareness about these opportunities.

So we really wanted to create a unified platform essentially a one-stop shop, where individuals could come and be educated about different types of entry-level jobs, different categories and training opportunities that are available to them in the Milwaukee area. Next Slide, please. So really what we wanted to do is, we wanted to collect as much information as possible about the different training opportunities existing in Milwaukee.

So we interviewed various different individuals for the Milwaukee city and county task force on climate change and economic equity, including the jobs and equity working group. And some of the information that we collected included the nature of the training programs, the target audiences, the outcomes of the programs as well as the different eligibility requirements for each of these programs so that individuals could go in understanding what types of eligibility requirements they have to meet the criteria to be eligible for these programs. Next Slide, please.

And so, here you can see a snapshot of the current pathways in the career maps. On the Left, you can see the green buildings, career map. And on the Right, you can see the solar career map. And you see that in various different maps you have different focus areas and professional skill levels as well. So you have entry level, mid-level and the advanced level. And specifically for the Milwaukee community, we really wanted to focus on the entry-level population to really clarify and establish the pathway to the clean energy and energy-efficient jobs and fill in these identified gaps. Next Slide, please.

And so, ultimately we used inspiration from the Department of labor's Website, which lists various professions and occupations, the education and training and then any type of certification or license that results from these training programs as you can see on the Left side. And so, these

categories are highlighted on the Website. So we wanted to use this as inspiration and focus on the Milwaukee community to really integrate this information in a very User-friendly and accessible format.

And so, on the Right – as you can see – this integrates in the green Table. We capture the field, the different training information and training programs available, the occupation, the training provider, what the outcome of the result – the program would be...so the certification diploma or degree that would result from completing the program; any type of eligibility requirement as well as additional information about the program that could be accessible on the Website.

So what we've provided here is just a snapshot of the green jobs pathway that we've developed. But we have an extensive list of all of the different training programs available to individuals in Milwaukee, entry-level programs, that are available to these individuals looking for clean energy jobs. So for example. One of the Comments that was made in the Chat was related to the inclusion of HVAC. HVAC-related training.

And this is something that we have captured in the larger data set and the larger pathway. But this here is just a snapshot of the high-level overview of what will be integrated in the Website. And so, really our goal is to continue to reinforce the Workforce Accelerator's mission to build a culture around green jobs and really empowering energy-efficient job creation and job growth in Milwaukee. So, Erick, I'll had it over to you.

Erick Shambarger: Yeah. Just to wrap it up, I mean, some of the – I thin where we're taking this is, ultimately we want to have a physical location and Online presence and recruiting presence. We're calling it our local green jobs Accelerator in Milwaukee. It's still under developments; but being able to have physical location where people can see and feel what it's like to be in these jobs to help the recruitment side of things but also to connect people to the existing training providers I think is something that we're looking at. So we're excited to be part of this, and I'm excited to talk more in the Chat. But I'll hand it over to the other speakers.

Madeline Salzman: Fantastic. Thank you, Erick and Aneysha. Great information on what you're doing in Milwaukee and I think a really fantastic example to be showing to others about ways we can bring lots of different groups to the table and really focus on the opportunities that this work can provide. So thank you. Up next – lots of questions are flowing in. So, Erick and Aneysha, you guys might want to take a look at the Q&A, see if there's something you want to flag or if there's some clarifying ones you can answer in Slido. But without further ado, we'll move onto Teresa Piazza, who is the Training Director with the Association of Energy Engineers.

She oversees AEE's global training program for their 18,000-plus members. It has over 20 years of experience in the training field surveying in roles of trainer, instruction supervisor, instructional designer and training manager. So we're very fortunate to have Teresa here today to talk about her work promoting opportunities with the Association of Energy Engineers. So, Teresa, I will turn it over to you.

Teresa Piazza:

Thank you so much, Madeline. I appreciate it. And thanks everybody for joining. This is pretty exciting. When I was asked to do this, so I am hopefully going to share some really good information about how we've been working in this project. But as Madeline mentioned, I am the Training Director here at AEE. And I've been in this position for a little over two years. However, for almost my entire career as mentioned I've spent completely on training and talent development. So therefore, I'm leading the efforts as part of this Workforce Accelerator program.

So in a moment, I'm going to go through some of the ways in which we're participating in the program. But first, I did want to give you a quick introduction to AEE if you're unfamiliar. Next Slide, please. Thank you. So the Association of Energy Engineers – or as we call it, AEE – were founded in 1977 by Al Thumann who led the organization for 40 years. We are a nonprofit professional society with more than 18,500 members in over 100 countries.

We have over 60 chapters in the United States and more than 40 international chapters. And something that is growing recently, we have 27 student chapters around the world. So AEE's members operate in the field of energy engineering, energy management, renewable and alternative energy, power generation, energy services, sustainability and other related areas. And so, what we do here at AEE is provide a framework for our members in which they can network and grow by staying abreast of leading industry trends.

So our members create a global network across the entire energy supply chains. That includes our suppliers and energy users. Our members are found in every business sector from business hospitality retail to government and healthcare. And many are deeply involved in manufacturing and energy-related services, often developing new technologies and products that improve energy usage and span the gap between supply and demand. Others manage buildings and large facilities, ensuring that they're operating as efficiently as possible.

So our mission is to promote the scientific and educational interests of those engaged in the energy industry and to foster actions for sustainable development. And we fulfill this mission through certification programs,

conferences, training seminars, member Webinars and publications among other ways. Next Slide, please. So now that you know just a little bit more about AEE, there are a few areas that I do want to share regarding our efforts as part of the Better Buildings Workforce Accelerator, specifically in developing a diverse and qualified workforce.

And that includes our certifications, a couple of specific programs focusing on diversity and inclusion and our additional outreach and capacity-building within the energy management industry. Next Slide, please. So first and foremost, AEE offers certifications in various areas of the energy management and energy efficiency. Our certifications certify individuals subject matter expertise in a particular field. And so, we currently offer over 15 certifications. We currently have over 30,000 individuals who hold an active AEE certification.

And a sample, just a small sample of our certifications, are listed here on this Slide. And one of our Workforce Accelerator goals is to increase our number of certifications awarded by 10 percent over the next three years. In our certifications encompass areas such as energy management, energy service and commissioning sustainable development and utility services. So many of you may be familiar with our CEM – our certified energy manager certification.

And so, a person who is a CEM, who holds a certification, is someone who really knows how to optimize the energy performance of a facility, a building or an industrial plant. So this person is a systems integrator for electrical, mechanical process and building infrastructure. And they do that in order to analyze the ideal solutions to reduce energy consumption in a cost-effective approach. And all of AEE's certifications have a narrow focus to truly demonstrate a professional's expertise in that area.

So our certifications do reflect a lot more than just attending a training seminar and taking an exam. Some of you may have taken other certifications. I know I've been a part of some where you go through some quick training, and it's like a foot-stomp exam. Our requirements for certification also have education and experience requirements. So it's very well-rounded.

So for example. To earn a CEM certification, an individual with a four-year degree would need between three to five years of related experience depending on their concentration of study. So to help encourage those early in their careers or just finishing school to go ahead and apply for certification, we do offer in-training certifications. For example. Let's say you are graduating from college this year with a degree in electrical engineering. You can still attend a CEM training seminar if you're another

provider and take the certification exam.

And if you pass the exam, your energy manager in training certification will be valid for six years. Which will allow you to gain the experience necessary to be a fully certified CEM without having to wait to retake the exam. Next Slide, please. So with our certifications, we really want to deliver value for individuals who decide to invest in themselves. And by making the certification investment in themselves, individuals can expand their fundamental knowledge and develop that subject matter expertise.

So our certified professionals are able to demonstrate their unbiased approach, their high level of confidence and their commitment to quality standards in industry best practices. And many people who are familiar with us are aware that our certifications are developed for the industry, by the industry's top experts and that we are a global network. One area that we've actually been really emphasizing this year is how our members support a sustainable energy future.

So our members and certified professionals are dedicated to energy efficiencies in our title. And because these efficiencies reduce carbon emissions, this offsets climate change. So AEE members and certified professionals improve energy efficiency across the built environment. They use the latest strategies, technologies and systems to help buildings perform better, reach energy use intensity or EUI requirements, and reduce their carbon footprints.

And sometimes, this is done by planning for new constructions. Other times are able to Retrofit older buildings. But in both cases, our energy engineers use energy efficiency to improve heating, cooling, water, lighting, appliances, insulation and manufacturing equipment. Each system runs better, and we can have climate change take a step back. Next Slide, please. So along with increasing our number of certified professionals, one of our other goals as part of the Accelerator program is to increase membership in CWEEL. Which is the council on Women in Energy and Environmental Leadership, which began in 2007.

And CWEEL is a division of AEE, and their mission is to support career development for professional women; mentoring, networking and scholarships for aspiring women to pursue technical education and careers in the energy and environmental fields. "So how are they doing this?" So first, at the beginning of this month CWEEL signed on as a signatory of the Equal by 30 campaign, which works to advance the participation of women in the clean energy transition and close the gender gap.

Specifically the campaign has a public commitment by public and private

sector organizations around the world to work towards equal pay, equal leadership and equal opportunities for women in the clean energy sector by 2030. So a couple of CWEEL's goals for this campaign includes increasing our certified professionals in AEE where females represent at least 30 percent by 2030 and to increase representation of female speakers at our conferences by 2030. And AEE supports CWEEL by increasing mentorship opportunities and scholarships for women in the clean energy sector among other things. Next Slide, please.

So CWEEL's commitment to Equal by 30 goes hand-in-hand with our Workforce Accelerator goal of increasing membership in CWEEL by 25 percent within the next few years. And so, some of these activities that they're undertaking to bring value to CWEEL members is increasing the number of CWEEL chapter liaisons. These representatives coordinate between local AEE chapters and CWEEL on a number of topics, including scholarships, mentoring, fundraising and membership.

These liaisons work to inform chapters of the support CWEEL can provide to chapter members and engage the chapters in CWEEL activities. And last year, there were 12 CWEEL chapter liaisons. They are not up to 36 with the goal of 40 chapter liaisons by the end of this calendar year. They also just launched a four-part Webinar series beginning this month on clean energy and career opportunities, which examines the emerging initiatives and trends in technology and policy under the Biden Administration. But they're going to be coming up this year.

And this is to help guide people in their perspective career moves and opportunities that may be available in the future. In just this Spring, AEE produced – with CWEEL – its first journal that was 100-percent authored all by females. So that was really exciting. So it's really important to AEE that we champion this cause and continue to further its objectives. Next Slide, please. Another goal that we have as part of the Workforce Accelerator program is to develop and design a program to encourage underrepresented minorities to join our organization and build a career in energy efficiency.

And unlike CWEEL, which has been around since 2007, we are just taking off with this initiative. And the thought behind the initiative is that as a professional organization we must do much more to attract and retain underrepresented minorities, low-income students and first-generation undergrads who aspire to a major in STEM. So through this program, AEE looks to improve awareness activities for perspective college students, focus on fostering strong relationships between seasoned professionals and qualified, underrepresented minority students and raise awareness of the mentoring program that can build and develop professional skills for

underrepresented individuals.

Now, we're still in the initial phases of this initiative and are currently developing relationships with ethnically diverse engineering professionals so that they can share their stories. From there, the team that's leading this is going to work on developing partnerships with minority-majority universities with engineering programs in order to share resources for student orientation. And the goal of this is to increase interest in an energy field from day one when a student comes to school. Next Slide, please.

So in addition to our certifications and our Workforce Accelerator goals, AEE has additional outreach and capacity-building activities to help energy professionals build their careers. Our journals are leading-edge technical publications that help our members stay on top of current and emerging trends. And as I just mentioned, AEE just published its first 100-percent female-authored journal this Spring. Next Slide, please. We recently introduced a career hub for our members so that they can – we can connect companies and organizations looking for an employee to those individuals looking for a position in energy.

And this is a free service for our members as both job seekers and employers. Next Slide, please. And I mentioned CWEEL does have a formal mentoring program that's been very successful, and we are in the process now of deploying a formal mentoring program to all AEE members based on CWEEL's successful blueprint. And next Slide, please. And the AEE foundation scholarship program was established and encouraged qualified practitioners in energy engineering, energy management and sustainability by awarding scholarships to further their education in the field.

So they're available – these scholarships are available to undergrad and graduate degree candidates who are enrolled in engineering and sustainability programs at accredited colleges and universities. And to date, the foundation has awarded over \$1 million in funds for use by over 1,500 qualified candidates. And next Slide. And then finally, we're looking to expand our training portfolio so that our members can build their knowledge and certifications.

And we really want to provide our members and certified professionals lifelong learning in their fields. You know, that's my big thing. So as one example, we're deploying a ten-part virtual certificate program on energy in Chanceport later this Summer. We're also going to be developing a leadership course specifically for those that work in the energy industry. And we hope to have that one ready by Fall. And next Slide. So through

our core mission, our specific initiatives and additional outreach, AEE continues to build a diverse and qualified workforce. Thank you.

Madeline Salzman: Fantastic. Thank you, Teresa. And I'll just say, you know, on the DOE side – as I mentioned at the beginning – our request was for each partner to develop, you know, a set of – a smart goal and then a milestone towards achieving that goal. And I think when AEE told us they wanted to be involved and wanted to set their own goals, they immediately followed us with four separate goals and partnership agreements.

So we extend the commitment that you guys have, and it's been great working with all of you and really thinking across all of these areas the role that our organizations play in the diversity and inclusion piece as well as the educational content and personal development piece. So thank you. Last but certainly not least, we have Roger Ebbage from Lane Community College. Roger has been the Director of the Energy Management and Water Conservation Programs at Lane Community College in Eugene, Oregon since 1992.

He currently serves as a PI or a principal investigator on two project grants from the NSF and has an award that he works on with the Department of Energy on efficiency workforce development programming. He is also the Board Chair for the Association of Controls Professionals and a founding member of the North American Board of Energy Practitioners. So without further ado, we will hear from Roger in the programs he has been working on. Take it away.

Roger Ebbage: Thank you, Maddie, and welcome everybody. First of all, Maddie and your team, thank you very much for the invitation to speak today. You will notice that there are a few areas on my Slide like the date of this presentation. It's not really May 17th. Oh, somebody changed it. Oh, how great. Regardless, there are a couple of other things that I will point out as we're going along. It's an honor to be a part of the Accelerator. And I think that we are going to come up with a new way to assist the energy efficiency workforce in growing.

So a little bit about Lane Community College's Energy and Water Efficiency Programs. Like Maddie said, I've been doing this since 1992. That means next year will be my 30th year with the program. During that period of time, we've had a lot of different changes, mostly in what we can do for our options. Now, we are a career technical program. And that means that our students expect to come into a community college, work for two years studying content that has been recommended by industry so when they finish with their Associate of Applied Science degree, they can leave and get an entry-level job in the industry.

Two years to become an energy efficiency expert and analyst sustainability coordinator, you name it. There are a lot of paths for our students to pursue. We have the ability to do options in our program. And what I mean by that is that we have 93 core credits that are required for a student to graduate. And as a career technical program, we have to be totally aware of our students' ability to find work. Not their ability but to make sure that there's a place for them to find work once they leave the program.

And so, we can move our program around a little bit to address what the hot workforce area is for that period of time. All that requires is that we replace 30 percent of our content with whatever the discipline is that we're trying to pursue. We've done solar design installation. So we have 70 percent of our content as building energy efficiency, and then we add on 30 percent of our content in the solar world. Electrical and water, meaning...we did sustainability. We saw a big rise in the interest in sustainability.

And so, we created the sustainability coordinator program. 30 percent of our content was on that subject. Now we're taking a look at and have actually implemented the building automation content. And so, 70 percent is our basic energy efficiency in commercial buildings content. And 30 percent is our building controls content. And by the way. I want to throw a shout-out to Roxbury Community College. If you saw them on day one and are interested in any of that content that they have, I would recommend that you stop by their college when you are in Boston.

Because they now have the state-of-the-art building automation lab in the country. I mean, it is just really something. So back to the topic. So we have developed our program over this 30-year period. We are spot-on with our content. We are now in the building controls option phase. As a matter of fact, we are going to be only an energy efficiency with building controls program from Fall 2021 forward. We expect that the building controls content will just be unbelievably needed, popular and there's a hot labor market at this point.

So we're going to stick with that and see how that goes. So now, that's our background. Career technical program; two years of school and out into the workforce. And we are energy management and building controls. So next Slide, please. So we have what's called the BECA. The Building Energy and Controls Apprenticeship program. That is our Accelerator program. And so, the questions are, "Why does the Department of Labor approve the apprenticeship program? And aren't there a lot of those? And how does energy efficiency fit into what is usually, typically a blue-collar

work environment? What are the BECA components?"

There are standard components to an apprenticeship program, and we are following that model. And then, "How does BECA work?" So next Slide, please. So why do we do a Department of labor-registered apprenticeship program? It's called a RAP, obviously. So the point is for this...is to develop a diverse Better Buildings workforce. That's what we're trying to do. The demand is there. We could have one of our programs like this in every state in the Union and not feel the demand.

That would be that big. The problem with energy management and the controls industry is that it is...I say it's behind the curtain. That means not everybody knows about us. The people that know about us are the people that are having utility bill issues with their buildings, or they are just sustainability early-adopters or energy efficiency is engrained in how their operations work. The people that we need to know about are not the end Users but the people who are leaving high school, that are entering college, veterans who are looking for an occupation once they're out of the military, displaced workers, dislocated workers, incumbent workers.

There are all these folks that would like to find work in a very interesting and doing-good sort of environment. They don't know who we are. And so, we want to bring the industry out from behind the curtain and be one of those in the list of apprenticeship programs that are offered to high school students that are just graduating. A senior goes in and sees a career counselor.

And the career counselor says, "Well, you can be an electrician. You're a trades kind of person. You like to work outside. You like to work with your hands," so on and so forth. But you're also, I see, analytical. You like doing puzzles. You're mathy...science doesn't faze you. So you can be an electrician. You can be a plumber. You can be a carpenter. You can go into nursing. You can do the variety of things that are very difficult and things that our culture interfaces with on a very daily basis. They don't interface with energy managers. But now once we get this apprenticeship program going, it's on the list.

And so, as somebody's going down the list – electrical, plumbing, carpenter, energy management. What's energy management? And then, the discussion begins. Next Slide, please. So the components are three. We have a related training, and that is the Lane Community College Energy Management and Building Controls program. It's a two-year degree program that we have put together for four years now. We've been running this now for four or five years.

And actually, we were asked by the industry to add the controls component to our content. So students coming to our program. And then as the related training, they get a two-year degree at the end of their two-year degree. There is a paid, on-the-job training component. And this is a very traditional apprenticeship program. There is a paid-on-the-job training component. 2,000 hours. Students go out in the workforce, and they get paid for spending 2,000 hours with...they're called training agents. Sorry. They're called training agents.

So when a student in Fresno wants to come into our program, we hook them up with a training agent down there, and they do all of their work from home because – here's something interesting – it's all online. 100-percent online. So a student in Fresno can take our related training, get connected to a training agent down in Fresno, complete their 2,000 hours and then – at the end, like every single apprenticeship program – there is a cumulative exam. Guess what ours is? You got it. It's the CEM. Certified Energy Managers Exam. That is a 17024 ANSI-accredited exam that just makes this a rocker of an exam.

As one of those exams, you can rely on what it's testing. You can rely on the security of the test. You can rely on the fact that whoever is teaching the content isn't stamping their foot on the ground every time a test question comes up in the materials. It's really quite wonderful evolution of the CEM for them to be 17024-accredited and fits right into our game plan. So next question, please. I'm sorry. *[Laughs]* That wasn't a question. Next Slide, please. Thank you. So students enrolled in the program...this is how it's going to work. Students enrolled in the program.

We are starting the program 2021. It will be a registered apprenticeship program. They complete the first year of the program to qualify for their own JP hours beginning the Summer term between the first year and the second year. Why do we do that? Why is the Summer in between first year and second year so important? Well, this is an apprenticeship program, but it's not like electrician's program. It's not like a carpentry program where the apprentice is usually the ones that goes and gets the material and bring sit to the Journey-level person; whoever that Journey-level supervisor is.

This is something where when a student starts his or her apprenticeship program, when they do their on-the-job training hours, they need to be able to do work for the company that has hired them. Now, the ratio of contributing to the workload and learning is way on the learning side when they start, but they know something going in. We can say maybe it's 25 percent contributing to the workload, 75 percent learning and then over the 2,000 hours that ratio changes to where they're really a contributing member of that training agents workforce.

And then once you're done with the whole thing, the related training and their on-the-job training, they sit for the CEM exam. Now, do they get their CEM? No, they don't. They get their Energy Management Training certificate because they have to work towards those number of hours that were mentioned earlier by Teresa. So next Slide, please. So for the Accelerator, we had developed some measurable outcomes. And so, ours is...most importantly, ours is getting a diverse student population. First of all, we need students.

That's why we're doing the apprenticeship program, is we need to have students. Right now, our enrollment is really low. And it's because people don't know about us. But once we get into that apprenticeship model and start working and students can see that there is an advantage to being an apprentice, that they know about it to begin with and then can ask questions about how it works, so on and so forth, then we can start building our population.

And so, we are looking at diversity. We are looking at the number of practitioners with both energy efficiency education and work experience. That's very valuable to employers. It is a new method for energy education for entry-level practitioners. For the longest period of time, the notion for commercial building energy auditors, commercial energy building efficiency practitioners was/is that one needs to have a mechanical engineering degree from a four-year institution. 30 years, folks. I've been doing this for 30 years, and I know that that is not the case.

If a student comes through a program like ours, that is enough information for them to be very, very helpful in an organization; whether it's utilities, school district, engineering firm – you name it. Across the board, it's very complete in terms of its content. And they have become assets to their industry. So training agents will have a hand in also training their potential employees typically what we have found when we have done internships through our program – not our apprenticeship but our two-year degree program...students will often times get hired by their internship provider.

And therefore, the internship provider – and in this case, the training agents – can train their folks for future employment. And then, you know, the bottom line is that we're just trying to do really good for the human race. You know? And so, this is one of our survival strategies. It's really kind of a joke. But anyhow. I'll survive. So I believe that's it. Thank you very much for your time. Here's my contact information. Again, we're a fully-online program.

And if you are interested in knowing more about it or have somebody that

you think would be interested in attending our program – again, fully online...it was great to hear Adele Ferranti from NYSERDA the other day present. She's a friend of mine from previous work. And so, I Sent her a note and I said, "Hey, Adele. You know we're doing this?" And she wrote back and said, "Yes. You will hear from us." So back to New York. Thank you all.

Madeline Salzman: Awesome. Thank you, Roger. And perfect timing there. Yeah. Yeah. it's been great working with Lane Community College on really trying to set up some scalable programs that give people the education they need as well as the hands-on experience. So it's often a complicated mix of factors that are needed to be brought together around bringing new people into existing programming and existing standards and really trying to connect the dots for folks. I really commend the work that you guys are doing in the space. We have now reached our Q&A period, and I'm very happy that we have plenty of time for our Q&A session.

So lots of folks have been entering things into Slido already, which is fantastic. But as more questions come up as you're listening in, please feel free to add them, and I'll also just say that I believe our speakers will have access to the Q&A submitted on this session even, you know, maybe in a day or so after it ends. So you can certainly Send out follow-up information if people have more questions. So I will invite all of the speakers from today's session to bring their cameras on. *[Laughs]*

And then, it's a little easier for us to then have folks answer questions if you can see if you're like ready to speak. And you can see on the Screen now some of the most Uploaded questions that have been submitted. So, you know, I think obviously folks can red on the Screen themselves. But, you know, the top-two questions that we're seeing here really focus on I think integrating with other resources that maybe already exist in the space of reaching underrepresented groups in these workforces.

So how are we thinking about collaborating with historically black colleges and universities or HBCU's and community colleges?" Obviously, Roger represents the community college. And then also, beyond the education and training, 'How are women and minorities currently seeing support professionally?" And so, I'll give one quick answer, which is to say that I'll suggest that folks...of course, the focus here has been on the Better Building Workforce Accelerator. But I mentioned there are other efforts going on at DOE concurrently. We have funding opportunities that we have put out to work with many of these types of groups.

And we also have other partners that we're working with. So for instance,

we have the National Association of Women in Construction that's supporting, as it sounds like, women in the construction field. We also have Emerald Cities Collaborative as a partner, and we're kind of continuing the work to figure out what the funding gaps are and if there's ways for DOE to support there. So with that, and if not any of our speakers want to chime in here first, I think maybe Erick can address an answer to at least one of these.

Erick Shambarger: Well, I'll touch base on the community college question because I think it's – we have community colleges in Milwaukee. I mentioned we're working with Milwaukee Area Technical College. But one of my critiques and what I've noticed is that their programs related to energy efficiency and building automation and solar are located in the suburban campuses. So the technical colleges in the Metro, they have a number of campuses.

And I think it's something that we're going to have to work on in the next couple of years to get people to those programs. And so, that's where I was – I kind of alluded to I think one of the things that we're really looking at seriously as having a physical location in the neighborhoods that we're trying to serve where there would be information about the technical colleges to get people excited. But right now, I feel like there's a real...it may take an hour by bus to get to the training, and that's a barrier that we have to address.

Madeline Salzman: Absolutely. Roger, I don't know...of course, representing a community college maybe you have thoughts about how they are or are not being considered in ongoing efforts.

Roger Ebbage: So it's really a great question. And the answer is, back in 2008, 2009 when I got my first National Science Foundation grant, it was to assist...because I had been doing this for so long, it was to assist other community colleges in getting started. And this is a great question because it really gives an example of how behind-the-curtain we are. We were just overloaded with requests for information to help community colleges start up energy, solar, sustainability programs because that was what Barack was talking about when he first took in the White House; when he first landed in the White House.

Our funding was there. They threw money at community colleges. Programs started up around the country. I think there are six now that are left. Because it is not a well-known industry – energy efficiency. Solar is, but take a look at in terms of Wisconsin and Madison Area Technical College. They have this booming solar program going on. The energy efficiency is behind the curtain and therefore, you know, it's not a highly recognized program. So students don't know that it's there. They don't

know they can go to it. and consequently as our money dried up, community colleges shut their programs down because they weren't generating enough enrollment.

We can change that. We can change that picture by going to our community colleges and saying, "Hey. What's the deal here? We have this crazy economy going on. We have building automation technology that is in dire need of practitioners. Where's the program?" See what they say. I would point people to the Association of Controls Professionals if they're interested in learning more about the controls industry and seeing what efforts they are making to get programs pushed out into the community colleges. Thanks.

Erick Shambarger: If I could add, Maddie, too, just some of the positive work we've had with our technical colleges. We had a program called a Better Buildings Challenge, which is encouraging building owners to cut energy use 20 percent, providing case financing. And we work directly with our technical college to train energy auditors. And then, we put them right in the field through the program to give them direct experience building energy audits. And as part of that, they give us a little DOE funding. We had them modify their curriculum to tie into Department of Energy's programs coming out of the BTO office, like asset managers. So directly training people portfolio manager and asset manager and these auditing tools. That are becoming common across the industry.

Madeline Salzman: Great. Teresa, I don't know if there's anything you want to chime in here on these two points, if there's chapters maybe working with local groups.

Teresa Piazza: That's a lot of how AEE does its work, is through our local chapters. And that's why we do put such a big emphasis on maintaining, you know, "How robust our chapters are and how much work they actually do. Because they're the ones really in the communities. And so, we do try to give them as many tools as possible. And with some of these initiatives like CWEEL and the minority student program that we're developing, we can give them some resources, some tools that they can take out that fits their actual community.

And so, that's the best way that we've been able to do that. And Roger and I talked about his apprenticeship program. And he's like, "Is that okay? You know, is it competing with" – 'cause I'm the training provider, technically, in the US. And I think there is so many pathways into this. We definitely just want to make sure that we identify all the possible pathways.

Because what somebody mentioned that, you know, "In our society you

have to have a university degree or a four or six-year degree, and that's the only way to do it" – and that's definitely not the case. A lot of our certifications, if you don't have that formal education piece behind it, you can make up for it in years of experience. And so, a lot of us probably know in many different industries that some of our lifelong practitioners are our best subject matter experts. And so, we do want to tap into that and give them the ability to earn that certification and that vacuum behind it.

Madeline Salzman: Awesome. Thank you. And I'll also just add before we move on that some of the other organizations that are participating in the Accelerator that we focused on are the American Association of Blacks and Energy, the National Society of Black Engineers. I already mentioned the National Association of Women in Construction as well as a nonprofit called the Emerald Cities Collaborative.

And so, I think one thing that we tried to focus on in terms of organizing partnerships was those organizations that are maybe already well-integrated in these spaces and trying to connect the dots between them so that, you know, as Teresa and others are thinking about how to support AEE engineers in this space, they can find ways to collaborate with the other partners who are maybe doing this work as well. So yeah. Of course, for our session today just a taste of some of the different things that are going on in this space. It looks like the next question here – oh. Scrolling. I'm having trouble seeing – okay.

The top question right now is, "In the past, the US is similar to Europe where a person was valued in society whether they were trade or university-trained. How do we best change the now-perceived perception that only university degree has value?" This is a great question, and I'll just say something that we've been thinking about a lot at DOE. I think there has been some movement and realization in this space even just as the past couple of years or so. I mean, I think more and more young people are – for instance.

You know, I think they see maybe older Millennials in groups that have really struggled with student debt *[laughs]* for a really long time and seeing, "You know, maybe that's not exactly what I want to sign up for and seeing more options." But, you know, I think we have to think about the ways that we've really institutionalized this idea. "Are we telling high school guidance counselors that their metrics of success is students going to a four-year college, and that's it?" Right?

If that is the metric of success that we're putting on our teachers in our high schools, then we're reinforcing that in the programs that we've set up. So it's absolutely about addressing the barriers that exist. It's going to be

complicated, but I think there are more and more ideas around things like President Biden has mentioned the Civilian Climate Corp and really trying to think about ways to uplift the idea that if we want a clean energy future, we have to build it. And there will be people that will be building these things. So that's my little plug at the beginning. But, Erick, I see you're unmuted, so give us a few...

Erick Shambarger: Well, yeah. I think one of the things...we started an outreach to our Milwaukee Public Schools to try to have this dialogue. And it's bigger than just energy efficiency. It's the trades in general and, "How do we support that?" And just an observation. May be controversial. But I think there's a lot of teachers that prefer people to the trades – they refer their...most struggling students to the trades, really. "Oh, this kid might – isn't going to make it to college. So send him to the trades."

And I think the reality, though, is that many of the trades require a mix of hands-on but also technical, I mean, experience. And building automation is a combination of hands-on but also – I mean, you're working with computers and stuff. So I think to lift up both career tracks as co-equal is going to be very important to – conveying that to teachers that, "You don't" – we want to expose people across the academic spectrum to opportunities in technical colleges and trades...would go a long way to help recruitment.

Aneysha Bhat: Yeah. And I just wanted to add, you know, to what Erick was saying. I think this really takes a culture shift. Right? As a culture strategist, changing the way we think about education is definitely something that takes a culture shift. And providing awareness or creating awareness about these different opportunities, career opportunities, in the middle school or high school levels is really, really...it can be very effective in providing more information to students as they're learning about different career opportunities.

Participating in things like job fairs and making sure that every different – you know, all these different types of organizations or construction companies or energy-efficient companies – whatever it is – are represented at these job fairs so that the students have exposure to these types of opportunities and just integrating and reinforcing this idea of a culture of two or four-year colleges or really anything that reinforces that type of job outlook in the clean energy efficiency industry is really going to get us to that culture shift.

Madeline Salzman: Absolutely. Roger, I think you maybe also wanted to chime in here? Thank you, Aneysha.

Roger Ebbage: No. I think I'm good. Thank you.

Madeline Salzman: Okay. Great. *[Laughs]* Teresa, I don't know...

Teresa Piazza: No. I just want to agree. It is a culture shift. And I think, you know, as a society we need to realize that the value that technical colleges and community colleges and how we really frame that is very important. It's not going to be a very easy shift. I mean, how it's been engrained in our brains for so long is something that's going to take a while. But I think, you know, what I always tell people...you know, we just need to really showcase the value. You know?

We can start showcasing the value what these people do every day, and you don't need to have an engineering degree to have a big impact and making sure people know how to communicate that. So working with – one of our goals is to work with K through 12 as well. I don't include it because it was a 15-minute presentation. But that's one of the things. To highlight some things that, you know...so go into the trades is really important. And it doesn't need – it's a lower profession. It could be a much bigger profession. You know? And so, it's really changing the narrative and showcasing how those positions in all aspects of that really provide value.

Madeline Salzman: Yeah. Absolutely.

Roger Ebbage: So now I do have something to say. *[Laughs]* So one thing that we're trying to do in my program is to build our student population. And so, we're reaching out to high school students. We haven't done this a lot in the past. One of the things that I tell high school students is that we have this building automation program that it's obvious that they like digital things. So they're at home obviously for the last year-and-a-half doing digital education.

But when they're not doing that, there's social communicating, so on and so forth, playing games; getting very good at it. And my pitch to them is, "Well, how would you like to play a computer game that actually helps to save the human race?" That's what the building automation world is. So I pull up a Screen that shows how our downtown campus is operating, turning fans and running motors and air temperatures and that whole thing. And I said, "You can do this because you are a digital native. This comes automatically to you." And so, hopefully that's going to get some interest.

Madeline Salzman: Absolutely. Yeah. And, Roger, even what you just mentioned reminded me a little bit of some of the conversations that I recommend folks have, is talk to people that you work with about what motivated them to join this

industry and particularly young people and people of color. Because you might find that there's interesting ways to better represent the opportunities that are available.

You know, I'll just speak personally that I work in the building technologies office. I've been in building technologies for six years. I don't know if any time before I started working in BTO I would've described myself as like a building technologist, or somebody really obsessed with technology. But I care a lot about sustainability and equity and housing. Right? And I could see – I care about those higher values, and then I could kind of see that there is ways to connect those dots in a context that had to do with heating and ventilation and air conditioning. Right?

But, you know, I think back to where I was when I was younger that I was not looking for coursework in HVAC. *[Laughs]* Right? But it turns out I'm now interested in that space. And so, thinking about, "What are the ways to kind of appeal to different people's interest?" And I don't represent every woman in this industry by any means. *[Laughs]* But I think having these conversations can be a helpful way to kind of check out, "What are the pieces that interest people to get involved?"

We can probably move onto the next one. It's I think the real focus given the Top Boxes on existing building Retrofit work. Erick and Aneysha, I don't know if you guys want to chime in here because I know that's a big part of maybe Milwaukee's focus. I know in general this is very much DOE's area of interest. You know, we've done a lot of work, of course, on new construction as well. But when we looked at reducing carbon emissions and where truly millions of jobs are available, it's dealing with the buildings that are already there. But I don't know if, Erick and Aneysha, others are able to add specifics.

Erick Shambarger: Well, yeah. I mean, our approach has been to, "Let's figure out if we have existing programs to help existing buildings first." Because it's a long process to come up with new certifications and that sort of thing. And so, I want to make sure that the existing programs are fully – that they have all the people that they need. 'Cause we continue to hear, "Well, we got a great program, but we don't have enough people in it." So, you know, with regards to commercial buildings I think that space is pretty well set with the engineering community and things like that.

Obviously, we can do more. But in terms of the HVAC work that goes into buildings, I mean, a lot of those companies are pretty well-established, but they may not think of themselves as energy efficiency. They think of themselves as HVAC. And so, I think with our Better

Buildings challenge and things like that, we can support that. Now, on the residential side I do think that's a space that needs help. When I ran our ME2 home energy efficiency program, we wanted more energy auditors. And we ended up having to bring in and train the trainer from Connecticut to use the BPI's certification and get people up to using that standard.

So, you know, I think we're still identifying the gaps. But I agree that Retrofits are an enormous opportunity. But again. We have these existing programs. We have building automation. We have energy engineers. But we need to do more to build an identity around the energy efficiency industry and do more to boost demand through policy to get more of these existing buildings to do the work and take the Retrofit opportunity seriously.

Madeline Salzman: Absolutely. Teresa, Roger, Aneysha, if there's anything you want to add here. I'll echo what Erick said, that a big focus of ours is to not reinvent wheels and to think about, "How do we support and augment and enhance programs that are out there that are nearly already doing this work in a variety of ways?" Cool. I know the next few questions are maybe a little – can be a little more rapid-fire and are specific to some of the speakers. So, you know, Roger, I think you're probably most qualified to answer the next question of, "What incentives exist to help community colleges?" You've now become an expert in leveraging things like DOE and NSF funding. *[Laughs]* I don't know if there's other things you're aware of as well.

Roger Ebbage: So there aren't a lot of federal government incentives beyond DOE. Maybe the EPA has something. I'm not sure. But I would take a look at the National Science Foundation Advanced Technology Education Directory. They are always looking for forward-thinking, creative proposals for their project grants. And then, that could expand into a center grant if you find something really unique. And those are with millions of dollars.

But for community colleges to advance energy efficiency, I would go inside the state and start looking at the Department of Energy to see what sort of funding that they can give you and certainly take a look at the Department of Energy – I get three or four DOE E-mailings a day announcing new projects that they're funding. and so, take a look at that or sign up for the distribution list. But by all means, take a look at National Science Foundation. Their proposal deadline is usually the first week of October. So if you're thinking about doing something with community college soon, better start writing. *[Laughs]*

Madeline Salzman: Great. I'll also pass along a Link that another Workforce Accelerator partner shared a Link to, to NSF's Funding Page. So that's in the Chat

enow to folks. Thank you, Brenda, for passing that along. Teresa, I think you already answered the question Below in kind of the Chat. But I think you mentioned that some chapters maybe have certification discounts.

Teresa Piazza: Right. So it's not necessarily a discount on the certification, 'cause I believe especially with our NCI-accredited certifications it's a pretty set thing, and they have to follow those kinds of guidelines. However, it's through local chapters and through CWEEL and some of our programs and especially through the foundation. You can get discounts or scholarships applied to the training itself, especially if it's training that we provide. If it's through an accredited program like Roger's, they can apply it towards that. It just has to be within a certain field. So there is – that is available. It's really hard to keep track of it. We're able to give discounts based on the number of certifications that we have, and we do try to keep it pretty standard across the globe.

Madeline Salzman: Great. Thank you. And we are very short on time. There's a couple things I want to run through. There's a couple Links that I've Shared in the Chat. So one of them is the green buildings career map link, which I think Erick and Aneysha mentioned as something that they've used in Milwaukee but is applicable nationwide. But obviously, there's lots of questions to get to in this area. So rather than try to rush things too quickly, I think clearly there's room for more discussion here *[laughs]* and we should be engaging more folks.

And, yeah, figure out how to drive some of these issues forward. I think we don't necessarily have all of the answers just yet. But the point of the Accelerator is to really be working collaboratively with folks on how to get there. So I think there's just a couple more Slides. I do want to provide these two Links here. One is for the Accelerator Homepage on the Better Building Website where you can see the full list of partners, our fact sheet and Blog Post on our recent meetings.

You can also see a Link to the Better Buildings Workforce Development Portal that includes tons of resources I think from all of these panelists as well as others. And yeah. Feel free to dig into that. And then, the next Slide. So upcoming this Summer, you may have seen some of this already. But this is our Summer Webinar series with lots of topics happening just about every week. So please add these to your calendar and helpfully some of these pique your interest. Next Slide.

So I see somebody asked if we could have contact information. So we have this Slide. Feel free to maybe take a Screenshot or something. *[Laughs]* There's a lot of letters to take down right away. But feel free to follow up with our panelists after this. And if you have questions, stop at

our buildings in general. Feel free to follow up there. I believe on Slido you will also have access to a form to give feedback on this session and your experience with this Summit overall.

[End of Audio]