Grants and Innovation – A Great Match
February 16, 2017

INTRODUCTION
Mike Lesiecki - Good day everyone, we're now at the start of today's webinar titled: Grants and Innovation – A Great Match. I'm your host for today's webinar; my name is Mike Lesiecki here at Maricopa Community Colleges in Phoenix, Arizona.

WEBINAR DETAILS
Mike Lesiecki - Let me talk to you briefly through some webinar details so we can get through these quickly and get to our presentation. First let me remind you that this webinar is being recorded, you will be sent a link. The question window in which you will see in the lower right of your screen can be use by you to submit questions and we'll get to them as time allows. You'll be in listen only mode, but we'll ask you to respond to several audience polls as we proceed.

BROUGHT TO YOU BY
Mike Lesiecki - Today the webinar is being brought to you by the Centers Collaborative for Technical Assistance the CCTA.

The CCTA is Led By
Mike Lesiecki - You can see the five centers that are represented in this list. These five collaborate to bring to you things like today's webinar.

CCTA PURPOSE
Mike Lesiecki - The purpose of the CCTA is to respond to a request from the Department of Labor to the National Science Foundation essentially to leverage a lot of the work that the ATE Centers have done and provide technical assistance to Department of Labor TAACCCT grantees. But of course, these activities are relevant not only for NSF grants, Department of Labor grants, but in general workforce-oriented grants and programs of all kinds. The CCTA has deliverables including webinars like this with live events and recordings; and you will hear more about this at the end, a new feature, a live Q&A, which will occur for the first time, one week from today. More about that, more opportunities for you to ask specific questions of the presenters. If you look at our website you will find a series of White papers on best practices and also, convenings that occur associated with the HI-TECH conference this summer, but more about that later as we get further into the webinar.

Poll #1: Your Affiliation
Mike Lesiecki - Let's start with a poll. Let me ask you your affiliation, but first I have to launch the poll. Just a moment…and there you go. On your screen right now you should see check boxes that show you're involved with a NSF grant, a TAACCCT grant, both or neither. I see many of you are already putting your results into the poll, of course, you probably know the answer to the question. I'll give you just another moment…. Okay, I'm going to count down from 5 and I'll close this poll, 5, 4, 3, 2, 1. Polls closed. Let's go ahead and take a look at the results. Very interesting, a very even spread amongst us. Both quarter being involved with the NSF grant, a quarter on the TAACCCT side, some had both and some have neither. Interesting. Thank you for responding to that polling question.

Mike Lesiecki **-** Let me ask you one more polling question and then, we will get started for today. (Extended pause) Almost ready to go, thank you for your patience. It's important for us to know the impact of these webinars and many of us get together in conference rooms and listen to this so could you please use your response to how many people are listening with you today? Nobody, other than yourself, one other person, two other people, three or more. I mean, if it's three or more, you could put the actual answer in the question window, but I think it's enough if you do this. So thank you very much for recording these answers. Okay, we're almost ready to go. This is an easy one, you know the answer, 5, 4, 3, 2, 1. Let's take a look at the results. So it wouldn't surprise us that most of us are listening by our self, but a fair number have either 1 or 2 people involved with them. Thank you again for responding. Let's close this poll.

TODAY'S PRESENTERS
Mike Lesiecki **-** It's my pleasure today to now introduce today's presenters. Let me begin with Ann Beheler, Ann is our major presenter today. She is the PI of the National Convergence Technology Center at Collin College in Texas. Ann will say a bit more and introduce your co-presenter, please?

Ann Beheler **-** Sure I will, our center is a national IT and communications center. We're working with 60 plus colleges and I'm, also, working with other colleges to help them develop their proposals. But I am not the key presenter, Mike, thank you for that, but I'm not. The key presenter is Dr. Celeste Carter, who is the program lead for the National Science Foundation Advance Technological Education Program. She, also, has walked in our shoes. She spent a number of years in a community college setting actually as an instructor and she's been with the National Science Foundation, now for, I don't know, Celeste, seven or eight years?

Celeste Carter - It's going on eight years.

Anne Beheler: Yeah, okay, she knows what she's talking about. We're very, very fortunate to have her. Let's go ahead to the next slide, Mike.

INNOVATION
Ann Beheler - Okay, I've done several grants, several grant proposals and help several other people with their proposal and one key thing is that the National Science Foundation and actually, probably any funding agency is not going give you money for just standard oh ho hum you need a little bit of extra money in your budget. We all know we have tight budgets from time to time especially in community colleges. But we're looking for some kind of innovation, and innovation can mean a lot of different things. But you really do need to start from an innovation as the very first thing as you're putting together a grant proposal. And that might be a new method of doing things or it might be a new idea; you might be creating some kind of a new project, that's what it means in the general sense of the word *innovation*. But were going to look at what it means for a National Science Foundation ATE project proposal. We do have various levels of funding in the ATE program ranging from projects up to various centers and our remarks today actually pertain to projects. Celeste, would you like to make a comment here?

Celeste Carter - Sure, I would. I think when, another thing to remember when you thinking about what's innovative, you want to think about what's innovative for you and your students. So, and it's something you want to make clear in your project proposal in the description of your project. So it could be that you've read about people doing flipped classrooms. You thought this might be something that would be

pretty interesting to try. A lot people would say, "How can that be a new method or new idea when people are already doing this and publishing on it." It's innovative and it's new for you and that's what you want to present. You want to say that there's some, there's already been evidence generated that this is something that help students learn. Although you have to get pass that, "Aren't you suppose to teach me what I know? What do you mean, I have to learn this myself," with the flip class room method. But that's new for you so you want to present it in that terms in your project description. Another part of ATE that you want to keep in mind is that you need your industry partners and a lot of times even your economic development agencies or workforce investment boards. So you want to think about that in terms of what their looking at and what's new and what do they need. So those are just a couple of the ideas for that.

Ann Beheler - Okay, Mike.

Celeste Carter - …that I like to bring out on this one. Yeah.

What is the Need?
Ann Beheler **-** Mike, next slide. I think this one is going to be pretty quick. The specifics of innovations with respect to a project proposal might be, you might be focusing on something that's totally new, but exactly as Celeste has just talked about. The need might be something that's new to your college, your group of colleges, your businesses. Something that has evidence, and that's going to be a word that you're going to hear a lot. Evidence of having been successfully implemented and it may be an adoption slash adaptation in order to fit your needs. Let's go on to the next slide.

Business/Industry Involvement
Ann Beheler **-** And as Celeste, also, pointed out, this is an industry involvement. Actually, business and industry commitment is absolutely required. The ATE projects will focus on 2-year graduates, 2-year technician graduates, those that need to be able to get a job at the end of their studies. And that's important that the business and industries, people in your area say that what you're doing is important as well. Celeste, anything you want to add?

Celeste Carter - Sure, and I might add that this actually ties in with the need. Because it could be that, you know new industry is moving into your area. You go and talk to them about their workforce needs and you are writing your needs statement in response to the commit and the need that your industry partner is telling you about. So those two things kind of work together.

Ann Beheler - Yeah, and the picture that you're seeing here is actually a picture of our Business and Industry Leadership Team for our center in process. We meet once a year to go over the knowledge skills and abilities that they expect grads to have 12 to 36 months in the future. And it's an all-day meeting. It actually doesn't have to be, but they now like each other so much they stay all day. And it's a very detailed process based on a process that came from the United States Airforce; and if you want to know that you will have my email at the end and you can talk to me about that too. Next slide.

How Will You Address the Need?
Ann Beheler - Okay, how are you going to address a need that you have now identified? And it's very important that you come up with what I call an "Elevator Speech," regarding the need. You need to make it succinct, quick, get your point across, because you're going to need to have support from various internal and external stakeholders in order to complete the work of the grant and the work of the proposal. So you have some goals and objectives and some activities, some specific things on how

you're going to reach those goals. Don't, I suggest you don't have too many goals. One of my program officer along the way said, "Three or four is it. If you give me too many, than it's going to be very difficult for folks to understand." So I suggest three or four goals with associated sub-objectives and the goals need to be SMART. And you may have heard SMART before, I have in, come up with some words that I will use for the S-M-A-R-T, but there are some alternatives so you can google that. The goals do need to be specific, measureable, agreed upon and achievable, relevant and time based. And we're going to talk more about that a little bit later. Celeste, comment?

Celeste Carter - I think this is just part and parcel of continuing. You want to remember for the National Science Foundation, a lot of people ask me what do I want see in a proposal as a program officer and I'm not the first set of people that you want to convince that you got something that's really worth being funded through a federal agency. The National Science Foundation works on the merit review process so you have a panel of your peers anywhere from 4 to 6 people that are reading your proposal first and you really want them to understand your story. So you've told them you have a need; you've addressed the fact that you're working with industry. What specifically are you going to do? Maybe the industry says, "Hey you don't have a program in mechatronics and this is something we want our entry-level, that's what we need for our entry-level workforce." So again, keep the goals specific and centered and you get too many goals in there and the panelist look at and go, "Oh, they'd have to working 24 hours a day 7 days a week to accomplish that and it would probably take them 5 years. And they just asked for 2 years of funded, they're so over ambitious, there's a real problem here. So you want to think about it that way.

Ann Beheler - Celeste, isn't it true though too, that if you don't provide enough detail that's not so good either?

Celeste Carter - That's right that is correct.

Ann Beheler - Okay. Next slide, Mike.

How Will You Document Your Qualifications?
Ann Beheler **-** How are you going to document your qualifications? The panelist that review our proposals want to have confidence that the principal investigator and the co-principal investigators are qualified to do the work. And we present the information about that in a couple of ways. One is that we talk about the principal investigator and co-principal investigators in the actual body of the proposal. But additionally, we provide bio-sketches and those bio-sketches are provided on a particular format that is actually a part of the Proposal and Award Policies and Procedure Guide. You can google P-P-P-A-P-P-G 2017 to get the latest version of it and that will be your friend along with the solicitation, which is basically the statement of the opportunity for this year and that's coming out fairly soon. So it's very important that you put information about the qualification of your team in both places. I would say that usually there would more than just the principal investigator, usually it's, I think, it's a little bit stronger if you have at least one or two co-principal investigators. And you can't have no more than 4. Celeste, other comments that I've omitted?

Celeste Carter - Sure, Yes. Yeah, I would just like to say, every once in a while you starting out on a new venture. Maybe your industry has asked you to develop a mechatronics program and you want to be responsive to that industry, but you actually don't have the expertise yourself. I get a lot of questions where people will say, "Well, can I have an adjunct? Can I hire an adjunct as the person who's actually the expert in this area?" And I think one of the best ways to use an adjunct, well first of all, you got to

convince them that they want to do this work. Cause going to be a lot of working doing a project. But then the next thing you want to do, you want to have your administration write a letter that says, "We're going to sustain this. We think this is important. So if this program gets off the ground, we either agree to hire the person, who is an adjunct as a full-time person as the program goes forward, or we will hire someone with a relevant expertise. Because that's another thing, you don't want, you think about the federal funds, these are actually our tax payer dollars. So you don't want something to be funded with our tax payer's dollars and then, in 3 years the whole thing falls apart, because you don't have the people there to keep everything going. So that would be the other thing wanted to point to everyone as far as documenting the qualifications of the people that are going to work on this project.

Ann Beheler **-** Thanks. Next slide.

How Will Your Work be Evaluated?
Ann Beheler - How are you going to evaluate your work? This is very, very important. It's important to have 3 or 4 key research questions. For, and how are you going to collect the evidence to determine whether you're successful or not? And usually there's an external evaluator involved. There may be an internal evaluator on your staff or at your college and usually there's an external evaluator not connected with your college who helps in the at least the analysis of this data that gets collected. And they help write, are not help write, they do write an evaluation report. I think that the stronger proposal actually layout the person that will be the proposed evaluator. I know that's problematic within some colleges, because they are required to put it out for bid, but I just don't think it's quite as strong without the evaluator actually specified. Now with respect to the research questions, let me give you an example. We do faculty training every single summer for 4 and a half intense days with a goal that those facilities can go back and teach a whole new course next year based on what we've done. So one of my research questions is, how, and I'm going to probably butcher it here, but you will get the essence of it. How effective have, has the professional development been with respect to training the faculty and what impact has occurred for the students that take the courses from those faculties. Now the second part of that is really important, because that gets the real impact. It's all well and good to train the faculty, but if they go back and say, "Hey, that was a really great class, but I'm not going to use it," which happens sometimes, but not too often. Then, it does not ultimately impact students and to me, our goal is to train our students, educate our students so that they're right skills, so that they can get a job. So we follow up our training, we do the traditional, after the training we ask, what did you think of the training; did you feel like your objectives were met or the objectives were met. But then, we do follow up surveys at 6, 18 and 30 months after the training to find out exactly how many students have been impacted by the work, by that particular class. An in aggregate over a span of about 4 years with about half of our people reporting, the number is about 75000 students and that's only with half of the participant reporting, because everything is anonymous. So we take that data; we gather that data; we give it to the evaluator; and then, they may do some spot checks to make sure that we're not embellishing, but they use that in the reports. Celeste, comments?

Celeste Carter **-** I would like to make the comment that you notice the first bullet says, 3 to 4 key research questions. And if you think back to the goals and objectives, Ann made a point to having 3 to 4 main goals. So your research question should be absolutely, clearly linked to each goal. And that's really what drives it.

Ann Beheler - I agree

Celeste Carter - Yeah, it's not that you have to dream up these research questions out of thin air. They actually are driven by what your goal was. How would you know if you were successful for goal number 1? Whatever that goal was. You know, you're going to start a flip classroom. What would that entail, first of all, to actually get that done? What happens with students? You know, I think can kind of see if you work from your goals and objectives in developing this evaluation and assessment plan, you won't have trouble developing research questions. So, I think that's a…

Ann Beheler - I agree

Celeste Carter - …that's a big point.

Ann Beheler: Yeah, I totally agree. I, also, always develop the research questions myself, and then, run them by the potential evaluator. And maybe we'll adjust how we do it or what the instrument might be to get the data. But there are research questions that I want answers for in general. Not that we, you know, say, "Evaluator you have to do it our way," but they do align with the goals and there are things I want know to know whether it's effective. Next slide, Mike.

How Will You Share/Disseminate Your Work?
Ann Beheler - How are you going to share your work? As Celeste said, this is all funded by our tax payer money. So we can't light our candle and put it under a bushel basket, if you use the vernacular. Are you going to put it on a website? Are you going to use social media to push it out? Are you going to do conference presentation? And which one are you going to do or which ones do you project that you will do? What kinds of publications are you going to do? Or are you going to do publications? Details really do matter. Now, I did not know when we wrote our initial national center grant exactly which conferences we would go to, but I gave some "for examples," some of the STEM Tech Conference, the Innovations conference, the AACC conference, WDI, some of those kind of things. I went ahead and put those conference names in there and I think the details really do make the proposals stronger. Celeste, comment?

Celeste Carter - I agree. Ann, I agree. And I would say to, reviewers, people, you know, when you're reading these things one of things people start to look at and I hear this from the reviewers a lot, some people will say, "Well, we're just going put it up on our college website." And reviewers are starting to look at that and say, "That's awfully passive. Isn't there anything else you're going to do? And how do you know if people are even going to stumble across it?" The whole idea of, "If you build it, will they come," a lot times they don't come if they don't know about it. So I would say think about this in as innovative way as you can. How do you really plan, this going to be, this is important to you. Could be very important to other people at other community and technical colleges' even 4-year. One thing that's happening in the ATE program is there's a lot of dual credit courses being offered now with high school students. How are you going to let other people know that you've actually developed this and you have something that you potentially think is a best practice? So be creative, use more than one way to share and disseminate your work. And I know, you know, coming from a community college myself, I know we're not always pushed for publications, but it's one of the ways that it helps clear up perceptions that other people have about what happens on our campuses. I hear many times from the 4-year faculty that they don't think community and technical college faculty really are up to date on some of the new leading educational innovations and I think quite the opposite. A lot of times we're out there in the forefront with problem base learning, course base learning, competencies and skills and a lot of things more than just the typical, "We're delivering a lecture using Power Point; and telling students that

they're going to have a multiple choice exam." So if there are ways you can think creatively about publications, I think that's a real plus.

Ann Beheler **-** Okay. Next slide, Mike.

S.M.A.R.T. Goals
Ann Beheler - Okay, let's talk about SMART Goals, let's drill down on it. And remember I said there are different words that you can attach to the S and M and A and R and the T, but let's go to the next slide.

S. M.A.R.T.
Ann Beheler **-** Okay, the goals need to be stated very specifically, very well define and clear. Panelist, well, first of all it's the right thing to do, but panelist are going to review on the order of 12 proposals. And in my opinion, it behooves you to write your proposals and your goals very clearly so there isn't any questions in the panelist mind, what you're talking about. Look it these two examples, which one do you think is more specific:

> (Examples)
> We will implement a program to increase the number of women in IT.
> (vs.)
> Based on the work of NCWIT and working with our Business Team, we will implement a recruitment and retention program to increase the number of women graduated by our IT program.

Which ones more specific? Well obviously it's the second one. And you're looking at it right now, I might put some numbers, projected numbers of what the increase will be. And another comment on numbers, I don't know, Celeste, what you think about this, but I've been told it's much, much better to talk in terms of actual numbers. You can give the percentages, but percentages can kind of give a strange view of things.

Celeste Carter - Right.

Ann Beheler **-** If you have one graduate and you're going to increase the graduate, you're going double the graduates. Well, 1 to 2 isn't huge, but 25 to 50 is. So the more specific you can make it the better. Anything else, Celeste?

Celeste Carter - I just absolutely agree with that and again, even the more detail you can give when you get to the actual way you're going to carry this out it can be important as well. You might, also, want to think about in terms of this first well define goal, you want to let people know the number of employees that the industries around you are looking to hire and that they specifically are interested in increasing the number of women in the industry. So the more specific and clear you can be the better chances are the panelist are going to say, "These people have really done their homework; they got their act together; this really makes sense."

Ann Beheler - Thanks. Mike, next slide.

S. M. A. R. T.
Ann Beheler **-** Okay, Measurable. Measurable so that you can determine progress. We're going to produce more women graduates or, "Our program will produce 30 additional women graduates from our program," not stated real well there, over a three year period. The latter is, even though it's perhaps

not a good English sentence, it is very specific about what we're doing. And it's much better than a generality, I would say that generalities ought to be, mostly left out of the proposals. Mostly, things needs to be pretty specific. Celeste?

Celeste Carter - And I would just say here, you know, we do see, because one of the review criteria for the National Science Foundation is broader impacts. And one bullet point under broader impacts is increasing the number of under-represented groups in whatever it is. Well, here's one where it's measurable, but it would be nice to know how many women are currently in the IT program. So, again, you would know why producing 30 additional women, graduates, would be a big deal. So, again, more detail.

Ann Beheler - Yeah, that's very important. Also, it would probably be a good ideal to put in the statistics for the percentage of women in the IT workforce, which, oh, by-the-way is pitiful. We just ran, we're working on a project to grow the number of women in IT with a group of 10 colleges nationally. And, yeah, it's a huge, huge, huge mountain to climb. Next slide.

S. M. **A.** R. T.
Ann Beheler - Okay the "A" has a *lot* of meaning. Agreed upon or achievable, I think both are very important. But stakeholders are important, one person can't pull off an entire project. At the very minimum, there are others within your own college that need to help. So is it better to say that one faculty member will work to improve recruitment and retention; or the entire faculty has agreed to work together along with business to improve recruitment and retention. You know, these could be, even the latter one, could be improved upon. But the importance of having agreement among the stakeholders and actually commitment from the stakeholders to do the work is very important. Celeste?

Celeste Carter **-** And I will add to that, that I think one of the things that helps reviewers a lot is if you have a very detailed management plan. So, we talked about, you know, how many, you got, you can have a principal investigator and several co-principal investigators. You can senior personnel; you can have industry, committed industry partners that are going to do something. You want to have a management plan that lets the panelist know what each person role and responsibility is. So the PI could be the person who convenes meetings and brings the entire project team together. And then you also want to say exactly what each project team member is going to be doing. You know, maybe one of the things that you're looking to have supported is you want to have a career coach. So you would have your career coach listed. If you haven't hired one, you're asking to hire one, you could say, "We've worked with so and so. We would look for a person with these types of qualification," and or "this is a person we have talked to who has agreed that if this project is funded and it goes through the proper hiring process, this is the type of person we would have doing this work." So again, the detail, it doesn't do you any good to have all these people on a proposal if panelist don't know exactly how they're going to contribute to and make everything happen.

Ann Beheler - Thanks, really good points. Mike, next slide.

S. M. A. **R.** T.
Ann Beheler **-** Okay, the "R" means a lot of different things too. Realistic, relevant, results-oriented – Within the resources available. It's important to right size the project too. Don't be too ambitious, where people on the panel look at it and say, "Aw, no way. It can't be done." But, also, don't be too conservative, it needs to have enough substance that it's worth doing. So here again, I got, basically, the

same comparison here. Our goal is specific in that we're going to add 30 women graduates as opposed to just generalities. But the same comments apply on the "R" really as applied on several of the other items we've already had. Celeste?

Celeste Carter - So I would just add, I hear panelist as well, cause you know, a program officers always sits in the review panel and listen to everything that's said. We sometimes get to ask questions, but not all the time. But one of the things that people will say is, "You know, we're not going to wreck these two proposal, but my gosh, here's one that with the same amount of money is going to produce double the number of graduates for," whatever the industry is. Ann or someone might say, "Well, you know, they're going to graduate 30 additional women, but you know it's costing a $100,000 per person, is that really reasonable?" Right? I'm exaggerating obviously…

Ann Beheler - A bit.

Celeste Carter - Yeah, just a bit. But those type things come up as well. So that hits that realistic. So you want it to be a realistic estimate, but you also want people to understand that you are working in a relevant way and you're thinking about what you want to do with; again, I say this a lot to reviewers, I say, remember it's all of our taxpayer money. Is this how, has somebody convinced you that this is a good investment?

Ann Beheler - Okay. Next slide.

S. M. A. R. T.
Ann Beheler - And it's important to have a timeline. These projects are 2 or 3 years in general. And it's important to say that what you're going to accomplish in the 2 to 3 years. Here's an example that I will point out, "Our program will increase the number of women who graduate with an IT degree by with middle-school students." Now, I do know that's important to work with middle-school students at some point, because we have to set the expectation and get them interested in the field, but can you directly link that with graduates in 3 years. I would suggest that in order to increase the number of graduate over a 3-year period, you're going to need to adopt and adapt best practices from somebody who already knows what they're doing to get those results to happen a bit quicker. Now, Celeste, correct me if I'm wrong, but I think it would okay to do both. It would be okay to raise awareness a bit, but that wouldn't be the entire focus of the proposal. What do you think?

Celeste Carter - Exactly. I definitely agree. And one of the things to point out is that the Advance Technological Educational Program is a congressionally mandated program. Meaning, Congress said to NSF develop this program and the goal of this program is to educate highly qualified and skilled graduates to enter the advance technology industries that keep the United States globally competitive. So if all you're doing is working with middle school students, just as Ann said, there's no way you're going to have graduates that are ready, I don't know, unless business and industries really changes and they change labor laws, this isn't going to happen.

Ann Beheler - No, No.

Celeste Carter - So another thing that comes up here as far as that sort of time based, the other thing you want to be very aware of as you're going forward is what are you, what have other people done. Are there other things out there that you can adopt and adapt so that you don't have to reinvent the

wheel? Because that's another thing that people will say that, "Gosh, you know, we got all the way to references in this proposal and you know what, there's only one word on the references' page. None." And they're like, "Surely, these people should have done their homework. I mean, we can think of at least, you know, 3 or 4 sort of major projects that are out there that if they just done a little bit of homework they would have found them and they'd know that they're not starting from ground zero there's actually things they could adopt and adapt from other people." So you want to be sure that you do that homework and that you don't say, you know, "We are the only school in the entire United States that has thought about doing photonics." So, that's just an example. Right now I think there are over 34 optics and photonics programs of different types in the, across the United States, and community and technical colleges. So you'd, at least, want to know that there were that many and maybe some of them would have materials that you wouldn't than have to develop, you could actually adapt them to your institution. And then maybe your industry people say, "Well, you know, this is great for the sort of fundamentals. We'd like you to develop three new classes that, or courses, that really, specifically speak to our industry so that your graduates coming out are going to have this specific expertise." That's the type of thing that panelist will look at and say, again, "They really did their homework; they know what they're doing."

Mike Lesiecki **-** Ann, I'd like to break-in if I could with a question that's relevant here, we're just over the halfway point. So I thought we would pause for moment, Celeste if it's okay?

Celeste Carter - Sure.

Mike Lesiecki - Here's a question and a lot of interest. Do you think, you mentioned the NSFs or rather the ATE programs goals here for the workforce, how do they feel, how does the NSF feel about a focus on credentials. Establishing a credential exam or supporting industry credential exam. Is there a perspective on that?

Celeste Carter - Yep. We've actually funded, we have funded projects that have done that back in, remember, the error funding back in 2009 there was a, there was a large amounts of those funds went to develop curriculum material around IT people moving into the health arena…

Mike Lesiecki - Oh yes.

Celeste Carter - ..so it's, right? So it wasn't you were going to be a nurse or doctor or a medical technician and you need to know more about IT things. It was IT professionals moving into the health area. And the Bellevue College actually worked with one of the professional societies and developed the curriculum to support an industry validated entry-level certification for health IT entry-level technicians. So that's actually something I think is really important. And people, another to think about with our community of students who walk onto every single campus across the United States, we get everything from people, who already have, maybe even already have an advance degree, but they need specific skills and competencies. And to me the important goal always with my students, I had a bio-technology program, was I felt I was successful when they could get a job in the industry. If that meant that there was an industry validated certification or a certificate an academic certificate that demonstrated they had the skills and competency a lot of times that would be enough. So, again, you build the project description around what you think your students, your industry partners and where those students want to get and what industry's looking for. So think…

Mike Lesiecki **-** Makes sense.

Celeste Carter - …certification is a great thing.

Mike Lesiecki **-** Makes real sense. I've got one more. It's sort of a technical question, but I, it's come up, I don't know, almost 6 times already in the questions and through emails, so I will throw this one at you again. It's about evaluations, you mentioned that Celeste. But this one specifically says, "Our organization has said we cannot make a firm commitment with an evaluator prior to the proposal, even though we know and we understand it's important to do so in the proposal, it's that conundrum." Celeste can you address that?

Celeste Carter: Yes, yeah, and I think there's, one of the things you can do is if you have somebody you think you might be able to work with even though you can be very open and say, "Look, it's going to have to go out for bid, but is there any way you might help me develop either a, you know, possibly a logic model, you know, here's the things we want to do; this is what we think the outcomes are going to be; this is what we'll do, we'll do focus groups with students; will, you know, develop X, Y and Z. A lot of times people are will to put some time in to that. I think we do have a resource within the ATE program, which would, can possibly help you with some of this. ATE actually funds a center on evaluation and they do webinars similar to this on developing an evaluation plan so it's, evalu - a-t-e.org so evalu-ate.org with that hyphen in there. And they also do these webinars, matter-of-fact, Mike, they probably do it through MATEC's so they're probably recorded and available.

Mike Lesiecki - They are.

Celeste Carter - Yeah. And they can help you with that problem. So, you know, and, again, tell reviewers what the restrictions are on your campus. Right?

Mike Lesiecki - Sure, that make sense.

Celeste Carter - If people know about that they're going to say "Oh, okay, we understand you've made a best stab at working from your goals to develop, how you're going to know if you're successful, evaluation and assessment and you know it's going to be refined, hopefully, when you get awarded." So that works too.

Mike Lesiecki - You know what, Ann; I'm going to turn back to you. But I'll make a comment that with all the questions that have been coming in; we have actually planned for, one week from today, a Q&A session with Dr. Carter. So in the interest of time today, we won't get to everything, but I just wanted to mention that, Ann, as I turn it back to you.

Ann Beheler - Right. Right, all of these webinars to encourage people to write good ATE proposals, there's 4 of them, one week after each one of them we're going to have a Q & A session that is a free form, ask anything you want. Especially after you've listen to the presentation and we do have that scheduled for next week on Thursday, same time, 2 o'clock eastern. Let's go to the next slide and then, we're going to jump off into the handouts.

ATE Proposal Preparation Template
Ann Beheler - Dr. Carter has created a proposal preparation template and it's a framework for you to put this grant proposal together. It highlights some questions that need to be answered. And it'll, it allows you to put things together as you get them, because a grant has a *lot*, I call them moving parts, I suppose their not moving, but they're a *lot* of little pieces to putting together a completive great

proposal. So without further a due, can we move on in to that, Mike? And Celeste in the interest of time, I'm going to leave this mostly to you to talk about, because you have 15 items and we probably…

Celeste Carter - Okay

Ann Beheler - …have about that much time.

(Template Displayed) *Question 1 displayed*
Celeste Carter **-** Okay. So let me tell that this template was actually, originally developed by some other program officer who are no longer at the National Science Foundation. And it was, it was developed for another program which was called Transforming Undergraduate Education and STEM. So I was working with these people and asked if I could use this template and then, what I did was I modified it to reflect ATE. So the nice thing about this, and I've only used it once, I actually used it in Arizona just a few weeks ago with Mike and a whole group of faculty from around Arizona. It gives you a chance to work on this within your own timeframe. You don't have to sit down and think about, "Oh my gosh, I have craft a 15-page proposal that's got all these various things in it." So you can think about this question by question and you can save it, you're going to get this electronically, you can save it. When you think about, when you wake up at 2 o'clock in the morning and you start having an anxiety attack over whether not you're going to get a proposal done and you come with this great response to some of, one of the questions here. You can always open up your computer and just type it in. I don't know if anybody else does that, but every once in a while I do. The first thing is, it says "Select the primary focus of your proposal," and then it says, "more than one box can be checked. " So if you're specifically, we've been talking about when in IT, you would definitely check, "Broaden participation in STEM fields…" Now other, you know, other things you could be doing, you could be doing that in a number of different ways, but that could be one thing you would check for that. And you could, also, check "other." If you got something else that you really want to do in partnership with your industry, then, check "other," and just write it there. The, one of the program officers that works with us a lot, Dr. Jill Singer, she tells people, use these boxes as brain dumps. So if that speaks to you at all here's box one that says, what's your target audience? Is it all about undergraduates; is about a formal education curriculum or a program; is it about developing working with a society and doing one of those certifications and developing, you know, the curriculum materials to support a student being successful. Are you going to maybe reach down to grades 7 through 12; are you thinking about dual credits? So this is where you can put as much information in there as you want. You know, maybe your whole purpose of this program is faculty professional development. So that's how you use this template. So Mike, if we can move down to the, to question 2?

Question 2- 4 displayed
Celeste Carter **-** So, again, one of things you want to think about here, so here's number 2, if applicable, describe how the project is going to provide students the opportunity to conduct research. So in ATE, there's a bunch of ways this could happen. Majority of the technician education programs support a student and actually require a student having an internship. An internship could be a research project. In some cases, people actually have developed contract research organizations on their community college campus and students get to work there. Anything there, the second one, "Research can be used as a recruitment/retention strategy…" There's a, the President's Council on Science and Technology in 2012 published a report that said the earlier a student has an undergraduate research experience in the first 2 years," which is where we're focused, "the higher the retention and completion of that student is in the major." So there's a lot of stuff in there about internships, industry and supported internships, undergraduate research for recruitment and retention. There's a lot of things in there from, you can look up the Council on Undergraduate Research CUR. There's, also, a Carleton College the SERC website,

which was developed specifically for geoscientist. Maybe you're thinking of a GIS GPS program or sustainable agriculture, precision agriculture where geo, geo actually plays a role. So, again, use that and fill it out. If it doesn't apply, skip it. The third one is "Identify your collaborators." And this is going to help you build that, that management plan. So you're going to want, you know, put as many people on there as you want. You can always take this later and say, "Oh, okay, so I thought I could get person X and they're really aren't going to do it." But maybe you got your industry that says, "Hey, you know what, we'll come and will do, if you guys will setup an evening seminar series, we're willing to come and talk about what we do in our specific industry." So those sorts of thing can be in there.

Question 4 *(only question 4 displayed)*
Celeste Carter **-** Moving on, Mike, to number 4. A short description of your propose project. Start thinking about how to get, there's the need, describe your problem or challenge; describe why it's significant within your disciplinary area. And it's based on, this is where the, the kind of newest buzz word here in Washington, D.C. for a while it was *transformative.* Everything had to be transformative, kind of hard to figure out if it's going to be transformative. But anyway, at this point, it's now, something is evidence-based. So you actually have done your homework and you know, go back to flip classrooms, you know that they've been very successful in certain areas. And your specific focus is you'd like to try a flip classroom with your students in discipline X. And so, one of the things you're going, one of your research questions is going to be, "In my institution with my student population, will this work? And what will, will I get better student learning outcomes; will they be retained; will they continue in the major?" You can see about things like that. The next one is, outline your plans for addressing it and you can use, again, you can look at past awards that you can look at on the ATE award database; actually, it's the NSF award database, but look at the ATE program. And that's a, there's a ribbon on the top of every NSF webpage, one of the tabs on that ribbon is awards. So you can do simple searches; you can do advance searches. But another thing is, is if you've had a TAACCCT award, you very well are going to have, hopefully, I know the Department of Labor wants this, lots of outcomes from your TAACCCT award and maybe this idea of moving to ATE is that there were things you learned from TAACCCT, new opportunities, new areas to move; maybe continuing all of the things you've done, but, also, taking it in a slightly new direction. You would want to put that down as well. What do you want to see happen with changes in student learning? Again, use this as a way to start getting your ideas down on paper. So Mike if we move on again. I like the yellow highlighter, that's pretty neat.

Mike Lesiecki **-** I'm having technical challenges here just a second…

Celeste Carter - Yeah.

Mike Lesiecki **-** (pause) Alright, here we go, here's number 5. Thank you.

Questions 5-6 displayed
Celeste Carter **-** Okay. So if you have an existing program and you're going to revise courses or develop new courses, you want to let our panelist know. What kind of students are coming into our courses? I mean I used to figure, that's one of the most interesting things with a community college, right, because we're open doors, it's anyone who walks through the door. So I use to have everything from a recent high school graduate to people who actually had MD's, PhD's, master's degrees and everything in between. And so, you want to let, you want to build a little bit out there so the people know what you're doing and that's, this too could be a point where, "Hey, I do engineering technology and I have one, usually, maybe, in a year I have one woman in my, in my courses. I'd like to work with some of these organizations that have come up with best practices for recruiting and retaining women and one

of the things I'd like to do is think about revising my courses and curriculum and even my delivery so that I retain more women in the courses." So that might be something you put down there. Again, things like documenting equipment, you can ask for equipment under ATE, not as much as you could with the TAACCCT awards, but you can ask for equipment. Its equipment that's related to the project itself; it can't be things that your institution should be providing. You know, so then, you can't ask for, "Gee, I need to outfit a new computer lab in order to do this," that's the kind of thing that your institution should do. But maybe you want to do some field base research and you'd like some GPS equipment and maybe some iPads so that students could be actually provided, in the field, putting data into the iPads or whatever, a laptop. Things like that you want to document that. If you're, especially if it's a big ticket item with equipment, you're going to want to have your institution say, "Hey, we understand NSF doesn't support service agreements, we're willing to provide the maintenance, have the money to provide or buy the maintenance agreement on this. So those types of things. Again, put all of your thoughts in there. Number 6.

Questions 6-7 displayed
Mike Lesiecki **-** Celeste, let me interrupt.

Celeste Carter - Sure

Mike Lesiecki - In the interest of time, watch your timing on, you might just have to highlight one thing from each of these boxes. And we will be sending out this document to all of the participants and we've got our time scheduled for next week to so give us the high level here. Thank you.

Celeste Carter - Great. Okay. So, again…

Ann Beheler - I need to, excuse me, I need a minute or so at the very end too.

Celeste Carter **-** Okay. So I think, I thing I've actually, I hope I've got the idea across of how you use this and so let's just keep scrolling through. Six and 7 is what, you know, did you do your homework? Seven is what is the equipment, identify it. Let's keep moving down.

Questions 8 – 10 displayed
Celeste Carter - How are you going to build and expand a community of users and adapters are some of your disseminations. How are you going to get faculty involved? This one is written specifically here, it says for the geosciences so it would be the GIS kinds of things, but beyond your community. And ten is identify the way these activities would be sustained beyond NSF funding. So that's that. If all of this is going to go away in three years, you haven't really crafted a very competitive proposal. So you got to think about sustainability. So moving on down.

Questions 11 displayed
Celeste Carter **-** You get to your evaluation, put in things about the formal evaluation, potentially who you think you might be able to work with; anything you want reviewers to know that is going to have to go up for bid.

Questions 12-14 displayed
Celeste Carter - Twelve is your, is the next question down, is your program management plan. What are their expertise and what are they going to do? And then you got a timeline. If you got, if you're

developing several courses, you want to get a nice timeline down so people can look at it in one, one, you know, less, usually less than one page and say, "Oh, okay, I can see how they're going to do this."

Questions 14-15 displayed
Celeste Carter - And then, again, 14 goes back to developing a budget that's justified. You want everything to be justified. You don't want, reviewers are told not to rate a proposal based on the budget, but if they rate it well based on the merit review criteria of Intellectual American Broader Impacts, the program officer are going to go through your budget with a fine-tooth comb; and they're going to look for things like, "Gee, let's see, you're going to take automobile trips around your state to go to the other schools and you want $48000 a year in travel, that just doesn't quite fit." So you want things to be justified. And then, finally, 15 is, sorry, let me. Alright, my cell phone is on my desk. "Describe results from prior NSF support…" Again, this, I'd also say if you have had development or if you've had any support from another award that is directly related to the proposal you are writing it's fine to put that in as well. So, and I think that's all 15 questions.

ATE Proposal Preparation Template
Celeste Carter - So this will allow you, to on your timeline put thoughts down as they come to you and then you can sit and start stitching these together for your project description.

Ann Beheler **-** Thanks Celeste, I think that was really good. Next slide Mike?

Questions?
Ann Beheler - We've already done as many questions as we can.

Join Us
Ann Beheler **-** But we invite you to come back next week 2 p.m., February 23rd for the follow-up. Do go ahead and register for that one as well. It should be up on the CCTA website. If you have questions in advance you can submit them to Christina Titus, who is the program director for the CCTA that would be helpful. Next slide.

Join Us – All Webinars 3 pm Eastern
Ann Beheler **-** And then, here are the other webinars that are coming up. Each of them have a Q&A session following up. The rest of the webinars are going to be at 3 p.m. We had a conflict on this one that made it actually be at 2 p.m. Next slide.

Join us in Salt Lake City, UT
Ann Beheler - And then, don't forget in Hi-TEC, HI-TEC is the conference in the summer, it's from the 17-20, but we're going to have a specific half day that we're going to work with people to hone in on their grant ideas and work integrally with people either TAACCCT grantees or NSF grantees; people, perhaps, who are wanting to go to a higher level of a project. We will be working with them on the 21st. That registration should be going up shortly. Next slide.

DOL and NSF Workforce Convening
Ann Beheler **-** I think that's it. And I've already told you that so let's move on.

WEBINAR SURVEY

Ann Beheler **-** You do have a, when you, when we quit this, there will be a survey for you to give your feedback. Please do go ahead and provide us questions for next week. And we look forward to talking to you next week. Celeste, do you have a final word or two?

Celeste Carter **-** Just to let you know that one thing, that the program officers at National Science Foundation can do is if you have an idea and you can write a 1 to 2 page synopsis of your idea, you can email that to any of us at any time. And ask for feedback from us and we can actually help out a little bit as well with thinking about some strategies. Letting you know people that maybe you hadn't thought about that are doing something similar. And I know that's very different from Department of Labor, but it's something I think all of us who work on any, all of the programs in the division of undergraduate education really like to interact with you.

Mike Lesiecki **-** And Celeste, this Mike, you really mean that.

Celeste Carter - Yeah. Really do.

Ann Beheler – She does.

Mike Lesiecki - I have one final one that I just can't resist. It's such a good question; we do have about 60 seconds left so that's your time for the answer, Celeste.

Celeste Carter - Okay.

Mike Lesiecki - How do you grab that reviewer who's looking at your abstract and the very first minute they look at it, you want to get them nodding your head. How do you do that? How do you grab their attention and say, "Hey I want to read this." How about a great insight there?

Celeste Carter - So you know what I'd do, I'd go to somebody who does, some faculty member at your campus, who does marketing and PR courses and say, "How do I build my elevator speech? What's my first two sentences supposed to be that's going to get somebody hooked right away."

Mike Lesiecki - Good idea. I'll take that.

Ann Beheler - Hey Mike?

Mike Lesiecki - Go ahead Ann. Yeah.

Ann Beheler - One quick thing, I have to say is that the elevator speech doesn't need to be more than two or three sentences. This is from my corporate training and in those two or three sentences; the reviewer needs to know what you're going to do.

Celeste Carter - Yes.

Ann Beheler - And it has to be interesting.

Mike Lesiecki - It does. Well friends that takes us right to the top over the hour. We're perfectly on time. Celeste thank you so much for time out of that Washington schedule. Lots of stuff going on in Washington these days and

Celeste Carter - There is.

Mike Lesiecki - And we do appreciate you being here. Colleagues, I just want to remind all of you that we are going to send to you, literally, I mean send it to you, a link to the Power Point presentation, a recording of this webinar and the template document that Dr. Carter has provided to us. So you don't have to ask we'll send that automatically to you as a consequence of your registration. You should see that in about within 24 hours. Ann, thank you again and Celeste, appreciate you for being here. Interesting webinar, ton of questions and we're looking forward to next week.

Ann Beheler - Great. Well thank you all

Mike Lesiecki - Goodbye everyone. That concludes our event for today.

Celeste Carter - Bye, bye.